

MP attributes backends **basexx** **bit32** blobs  
boolean buffers builders caches **callback**  
callbacks catcodes characters chemistry  
commands containers context converters  
**coroutine** ctxrunner **debug** dir directives  
document documentdata drivers environment  
experiments figures **file** **fio** floats **font** fonts  
functions global graphics **gzip** images  
interactions interfaces **io** job **language**  
languages layouts **lfs** libraries lmx loaders  
logs lpdf **lpeg** **lua** luac luatex lxml **math**  
mathematics **md5** metapost **mime** moduledata  
modules mp **mplib** noads **node** nodes number  
objects optional **os** **package** pagebuilders  
parametersets **pdf** **pdfdecode** **pdfe** physics  
**pngdecode** publications regimes resolvers  
sandbox scripts set **sha2** **sio** **socket** sorters  
sparse statistics **status** storage streams  
**string** structures **table** **tex** texconditionals  
**texconfig** texconstants texifs **texio**  
texisdefined texmodes texsystemmodes thirddata  
**token** tokens tracers trackers typesetters  
updaters url userdata **utf8** utilities  
visualizers **xcomplex** **xdecimal** **xmath** xml **xzip**  
**zip** **zlib**

ConT<sub>E</sub>Xt LMTX

# global (alias: \_G)

|                     |          |                       |          |
|---------------------|----------|-----------------------|----------|
| CONTEXTLMTXMODE     | number   | debug                 | table    |
| FFISUPPORTED        | boolean  | dimen                 | function |
| JITSUPPORTED        | boolean  | dir                   | table    |
| LUAMAJORVERSION     | number   | directives            | table    |
| LUAMINORVERSION     | number   | document              | table    |
| LUATEXENGINE        | string   | documentdata          | table    |
| LUATEXFORMATID      | number   | dofile                | function |
| LUATEXFUNCTIONALITY | number   | done                  | boolean  |
| LUATEXVERSION       | number   | drivers               | table    |
| LUAVERSION          | number   | environment           | table    |
| MP                  | function | error                 | function |
| arg                 | table    | experiments           | table    |
| asnumber_p          | function | figures               | table    |
| assert              | function | file                  | table    |
| attributes          | table    | fio                   | table    |
| backends            | table    | floats                | table    |
| basexx              | table    | flushsimplerule       | function |
| bit32               | table    | flushspecialrule      | function |
| blobs               | table    | font                  | table    |
| blockrequire        | function | fonts                 | table    |
| boolean             | table    | functions             | table    |
| buffers             | table    | getmetatable          | function |
| builders            | table    | getscriptstatus       | function |
| caches              | table    | global                | table    |
| callback            | table    | graphics              | table    |
| callbacks           | table    | gzip                  | table    |
| catcodes            | table    | handledefinitions     | function |
| characters          | table    | handletransformstring | function |
| checkimage          | function | images                | table    |
| chemistry           | table    | inspect               | function |
| collectgarbage      | function | interactions          | table    |
| commands            | table    | interfaces            | table    |
| containers          | table    | io                    | table    |
| context             | function | ipairs                | function |
| converters          | table    | job                   | table    |
| copyarray           | function | language              | table    |
| copydictionary      | function | languages             | table    |
| coroutine           | table    | last_pdf              | number   |
| createmask          | function | layouts               | table    |
| ctxrunner           | table    | lfs                   | table    |
| data                | table    | libraries             | table    |

|                        |            |                          |            |
|------------------------|------------|--------------------------|------------|
| <b>lmx</b>             | table      | <b>print</b>             | function   |
| <b>load</b>            | function   | <b>publications</b>      | table      |
| <b>loaders</b>         | data table | <b>pushleaderlevel</b>   | function   |
| <b>loadfile</b>        | function   | <b>rawequal</b>          | function   |
| <b>loadstring</b>      | function   | <b>rawget</b>            | function   |
| <b>logs</b>            | table      | <b>rawlen</b>            | function   |
| <b>lpdf</b>            | table      | <b>rawset</b>            | function   |
| <b>lpeg</b>            | table      | <b>recolor</b>           | function   |
| <b>lua</b>             | table      | <b>regimes</b>           | table      |
| <b>luac</b>            | table      | <b>require</b>           | function   |
| <b>luatex</b>          | table      | <b>required</b>          | function   |
| <b>lxml</b>            | table      | <b>resolvers</b>         | table      |
| <b>math</b>            | table      | <b>ruledspace</b>        | function   |
| <b>mathematics</b>     | table      | <b>sandbox</b>           | table      |
| <b>mathshapekern</b>   | function   | <b>scripts</b>           | table      |
| <b>md5</b>             | table      | <b>select</b>            | function   |
| <b>metapost</b>        | table      | <b>set</b>               | table      |
| <b>mime</b>            | table      | <b>setinspector</b>      | function   |
| <b>moduledata</b>      | table      | <b>setmathparameters</b> | function   |
| <b>modules</b>         | table      | <b>setmetatable</b>      | function   |
| <b>mp</b>              | function   | <b>setsplitlisthtdp</b>  | function   |
| <b>mplib</b>           | table      | <b>sha2</b>              | table      |
| <b>next</b>            | function   | <b>shipbox_ref_h</b>     | number     |
| <b>noads</b>           | table      | <b>shipbox_ref_v</b>     | number     |
| <b>node</b>            | table      | <b>sio</b>               | table      |
| <b>nodes</b>           | table      | <b>socket</b>            | table      |
| <b>number</b>          | table      | <b>sorters</b>           | table      |
| <b>objects</b>         | table      | <b>sparse</b>            | table      |
| <b>optional</b>        | table      | <b>statistics</b>        | table      |
| <b>optionalrequire</b> | function   | <b>status</b>            | table      |
| <b>os</b>              | table      | <b>storage</b>           | table      |
| <b>p_number_p</b>      | userdata   | <b>streams</b>           | table      |
| <b>p_number_u</b>      | userdata   | <b>string</b>            | table      |
| <b>package</b>         | table      | <b>structures</b>        | table      |
| <b>pagebuilders</b>    | table      | <b>table</b>             | table      |
| <b>pairs</b>           | function   | <b>tex</b>               | table      |
| <b>parametersets</b>   | table      | <b>texconditionals</b>   | data table |
| <b>pcall</b>           | function   | <b>texconfig</b>         | table      |
| <b>pdf</b>             | table      | <b>texconstants</b>      | data table |
| <b>pdfdecode</b>       | table      | <b>texifs</b>            | data table |
| <b>pdfe</b>            | table      | <b>texio</b>             | table      |
| <b>physics</b>         | table      | <b>texisdefined</b>      | data table |
| <b>pngdecode</b>       | table      | <b>texmodes</b>          | data table |
| <b>popleaderlevel</b>  | function   | <b>texsystemmodes</b>    | data table |

|                    |          |                    |          |
|--------------------|----------|--------------------|----------|
| <b>thirddata</b>   | table    | <b>userdata</b>    | table    |
| <b>toboolean</b>   | function | <b>utf</b>         | table    |
| <b>todecimal</b>   | function | <b>utf8</b>        | table    |
| <b>token</b>       | table    | <b>utilities</b>   | table    |
| <b>tokens</b>      | table    | <b>visualizers</b> | table    |
| <b>tonumber</b>    | function | <b>warn</b>        | function |
| <b>tostring</b>    | function | <b>xcomplex</b>    | table    |
| <b>tracers</b>     | table    | <b>xdecimal</b>    | table    |
| <b>trackers</b>    | table    | <b>xmath</b>       | table    |
| <b>type</b>        | function | <b>xml</b>         | table    |
| <b>typesetters</b> | table    | <b>xpcall</b>      | function |
| <b>unpack</b>      | function | <b>xzip</b>        | table    |
| <b>updaters</b>    | table    | <b>zip</b>         | table    |
| <b>url</b>         | table    | <b>zlib</b>        | table    |

# attributes (context)

## **alternates** table

N attribute  
D data  
F enable  
F handler  
F register  
D registered  
D values

## **applyoverloads** function

## **colorintents** table

N attribute  
D data  
F enable  
F handler  
F register  
D registered

## **colors** table

N attribute  
F cmyk  
F cmyktogray  
F cmyktorgb  
F colorcomponents  
D counts  
B couple  
F currentmodel  
F currentnamedmodel  
D data  
N default  
F defineintermediatecolor  
F definemultitonecolor  
F defineprocesscolor  
F defineprocesscolordirect  
F definesimplegray  
F definespotcolor  
F definetransparency  
F enable  
F filter  
N forced  
F forcedmodel  
F forcesupport  
F formatcolor

F formatgray  
F getpagecolormodel  
F gray  
F graytohsv  
F handler  
T helpers  
F complement  
F inbetween  
F justone  
F hsvtogray  
F hsvtorgb  
F hwbtorgb  
F iccprofile  
F isblack  
F labtorgb  
F labtoxyz  
N main  
S model  
D models  
F mpcolor  
F mpnamedcolor  
F mpoptions  
F namedcolorattributes  
N none  
F popset  
F processcolorcomponents  
F pushset  
F register  
D registered  
F registerspotcolor  
F rgb  
F rgbtocmyk  
F rgbtogray  
F rgbtohsv  
F rgbtoxyz  
N selector  
F setlist  
F setmodel  
F setpagecolormodel  
D sets  
F spec

|                          |            |                       |          |
|--------------------------|------------|-----------------------|----------|
| F spot                   |            | F disabletriggering   |          |
| F spotcolorname          |            | F enabletriggering    |          |
| F spotcolorparent        |            | F finalize            |          |
| F spotcolorvalue         |            | F initialize          |          |
| B supported              |            | F process             |          |
| F toattributes           |            | F selective           |          |
| F transparencycomponents |            | F simple              |          |
| B triggering             |            | F stacked             |          |
| F usecolors              |            | F stacker             |          |
| D valid                  |            | <b>system</b>         | function |
| F value                  |            | <b>tooverloads</b>    | function |
| D values                 |            | <b>transparencies</b> | table    |
| B weightgray             |            | N attribute           |          |
| F xyztolab               |            | D data                |          |
| F xyztorgb               |            | F enable              |          |
| <b>define</b>            | function   | F forcesupport        |          |
| <b>effects</b>           | table      | F handler             |          |
| N attribute              |            | T names               |          |
| D data                   |            | N color               |          |
| F enable                 |            | N colorburn           |          |
| F handler                |            | N colordodge          |          |
| F register               |            | N darken              |          |
| D registered             |            | N difference          |          |
| D values                 |            | N exclusion           |          |
| <b>handlers</b>          | table      | N hardlight           |          |
| <b>list</b>              | data table | N hue                 |          |
| <b>markasoverload</b>    | function   | N lighten             |          |
| <b>names</b>             | data table | N luminosity          |          |
| <b>negatives</b>         | table      | N multiply            |          |
| N attribute              |            | N none                |          |
| D data                   |            | N normal              |          |
| F enable                 |            | N overlay             |          |
| F handler                |            | N saturation          |          |
| F register               |            | N screen              |          |
| D registered             |            | N softlight           |          |
| F set                    |            | N none                |          |
| <b>numbers</b>           | data table | F register            |          |
| <b>ofnode</b>            | function   | D registered          |          |
| <b>private</b>           | function   | B supported           |          |
| <b>public</b>            | function   | F toattribute         |          |
| <b>restore</b>           | function   | B triggering          |          |
| <b>save</b>              | function   | F value               |          |
| <b>showcurrent</b>       | function   | D values              |          |
| <b>states</b>            | table      | <b>unsetvalue</b>     | number   |

## viewerlayers table

N attribute

F cleanup

D data

F define

F definedlayoutcomponent

F enable

F forcesupport

F handler

B hasorder

D listwise

F register

D registered

F resolve\_begin

F resolve\_end

F resolve\_reset

F resolve\_step

D scopes

F setfeatures

F start

F stop

B supported

D values

# backends (context)

**closeout** function

**codeinjections** table

F registerboxresource

F restoreboxresource

**current** string

**defaults** table

T codeinjections

F prerollreference

F vfstartcolor

F vfstopcolor

T nodeinjections

F cmykcolor

F destination

F graycolor

F injectknockout

F injectoverprint

F reference

F rgbcolor

F spotcolor

F transparency

T registrations

F transparency

D tables

**getcallbackstate** function

**included** table

B context

B date

B id

B metadata

B pdf

**initialize** function

**latelua** function

**nodeinjections** table

**nothing** function

**openout** function

**registered** table

T pdf

T codeinjections

F addbookmarks

F analyzenormalsymbol

F analyzesymbol

F attachmentid

F bitmap

F clonefield

F copyimage

F definefield

F definefieldset

F defineviewerlayer

F embedfile

F embedimage

F enabletags

F exportformdata

F fieldsurrounding

F flushmergelayer

F getbookmarks

F getboxresourcebox

F getdefaultfieldvalue

F getfieldcategory

F getfieldset

F getformatoption

F getinfo

F getpreviewfigure

F getrefobj

F insertrenderingwindow

F jp2

F jpg

F maptag

F mergebookmarks

F mergecomments

F mergefields

F mergereferences

F mergeviewerlayers

F newimage

F png

F prerollreference

F presetsymbol

F presetsymbollist

F processrendering

F registerdocumentcloseaction

F registerdocumentopenaction

F registeredsymbol

F registerpagecloseaction

- F registerpageopenaction
- F registerpattern
- F registersymbol
- F ruleactionbox
- F ruleactiondraw
- F ruleactionfill
- F ruleactionmp
- F ruleactionstroke
- F saveboxresource
- F scanimage
- F setattachmentsupport
- F setfieldcalculationset
- F setfigurealternative
- F setfigurecolorspace
- F setfiguremask
- F setformat
- F setformsmethod
- F setpagetransition
- F settaggingsupport
- F setxmpfile
- F startlayer
- F startunicodetoactualtext
- F startunicodetoactualtextdirect
- F stoplayer
- F stopunicodetoactualtext
- F stopunicodetoactualtextdirect
- F supportedformats
- F unicodetoactualtext
- F useviewerlayer
- F validfield
- F validfieldcategory
- F validfieldset
- F vfstartcolor
- F vfstopcolor
- F wrapimage
- S name
- T nodeinjections
  - F addtags
  - F annotation
  - F attachfile

- F changestackedlayer
- F cmykcolor
- F comment
- F destination
- F effect
- F getboxresourcedimensions
- F graycolor
- F injectbitmap
- F insertu3d
- F knockout
- F negative
- F overprint
- F positive
- F reference
- F rgbcolor
- F spotcolor
- F startalternate
- F startlayer
- F startstackedlayer
- F stopalternate
- F stoplayer
- F stopstackedlayer
- F transparency
- F typesetfield
- F useboxresource
- T registrations
  - F cmykindexcolor
  - F cmykspotcolor
  - F getspotcolorreference
  - F grayindexcolor
  - F grayspotcolor
  - F rgbindexcolor
  - F rgbspotcolor
  - F spotcolorname
  - F transparency

|                      |          |
|----------------------|----------|
| T tables             |          |
| <b>registrations</b> | table    |
| <b>tables</b>        | table    |
| <b>writeout</b>      | function |

## basexx (extra lua)

**decode16**    function

**decode64**    function

**decode85**    function

**decodeLZW**   function

**decodeRL**    function

**encode16**    function

**encode64**    function

**encode85**    function

**encodeLZW**   function

**encodeRL**    function

## bit32 (basic lua)

**arshift** function  
**band** function  
**bnot** function  
**bor** function  
**btest** function  
**bxor** function

**extract** function  
**lrotate** function  
**lshift** function  
**replace** function  
**rrotate** function  
**rshift** function

## blobs (context)

|                   |          |
|-------------------|----------|
| <b>append</b>     | function |
| <b>dimensions</b> | function |
| <b>dispose</b>    | function |
| <b>new</b>        | function |
| <b>pack</b>       | function |
| <b>strdp</b>      | function |
| <b>strhd</b>      | function |

|                |          |
|----------------|----------|
| <b>strht</b>   | function |
| <b>strwd</b>   | function |
| <b>tohpack</b> | function |
| <b>tonodes</b> | function |
| <b>tovpack</b> | function |
| <b>write</b>   | function |

## boolean (context)

**tocontext** function

**tonumber** function

# buffers (context)

|                       |          |                   |          |
|-----------------------|----------|-------------------|----------|
| <b>append</b>         | function | F define          |          |
| <b>assign</b>         | function | F hassomecontent  |          |
| <b>collectcontent</b> | function | F next            |          |
| <b>empty</b>          | function | F place           |          |
| <b>erase</b>          | function | F reset           |          |
| <b>exists</b>         | function | F save            |          |
| <b>get</b>            | function | <b>prepend</b>    | function |
| <b>getcontent</b>     | function | <b>raw</b>        | function |
| <b>getlines</b>       | function | <b>run</b>        | function |
| <b>gettexbuffer</b>   | function | <b>samplefile</b> | function |
| <b>loadcontent</b>    | function | <b>undent</b>     | function |
| <b>parallel</b>       | table    |                   |          |

# builders (context)

|                         |          |
|-------------------------|----------|
| <b>checkparcontext</b>  | function |
| <b>checksidefloat</b>   | function |
| <b>kernel</b>           | table    |
| F collapsing            |          |
| F hyphenating           |          |
| F kerning               |          |
| F ligaturing            |          |
| F mlisttohlist          |          |
| <b>local_box_filter</b> | function |
| <b>paragraphs</b>       | table    |
| T constructors          |          |
| N attribute             |          |
| F define                |          |
| F disable               |          |
| F enable                |          |
| F handler               |          |
| T methods               |          |
| F basic                 |          |
| F default               |          |
| F hpack                 |          |
| F oneline               |          |
| D names                 |          |
| D numbers               |          |
| F set                   |          |
| F start                 |          |
| F stop                  |          |
| T expansion             |          |
| F trace                 |          |
| F kepttogether          |          |
| F registertogether      |          |
| T solutions             |          |
| T splitters             |          |
| F define                |          |
| F optimize              |          |
| T registered            |          |
| F reset                 |          |
| F set                   |          |
| F split                 |          |
| F start                 |          |

|                       |       |
|-----------------------|-------|
| F stop                |       |
| F tag                 |       |
| <b>profiling</b>      | table |
| F add                 |       |
| F distance            |       |
| F fixedprofile        |       |
| F get                 |       |
| F list                |       |
| F pagehandler         |       |
| F profilebox          |       |
| F set                 |       |
| <b>vspacing</b>       | table |
| D categories          |       |
| F checkstrutdepth     |       |
| F collapsevbox        |       |
| T data                |       |
| D map                 |       |
| D skip                |       |
| D snapmethods         |       |
| F definesnapmethod    |       |
| B fixed               |       |
| F forcepageflush      |       |
| F forcestrutdepth     |       |
| F getnofpreviouslines |       |
| F inject              |       |
| F injectdisable       |       |
| F injectpenalty       |       |
| F injectskip          |       |
| F pagehandler         |       |
| F pageoverflow        |       |
| F popatsame           |       |
| F pushatsame          |       |
| F setmap              |       |
| F setskip             |       |
| F snapbox             |       |
| F synchronizepage     |       |
| F tocategories        |       |
| F tocategory          |       |
| F vboxhandler         |       |

## cache (context)

|                             |          |                             |          |
|-----------------------------|----------|-----------------------------|----------|
| <b>base</b>                 | string   | <b>loadcontent</b>          | function |
| <b>collapsecontent</b>      | function | <b>loaddata</b>             | function |
| <b>configfiles</b>          | function | <b>more</b>                 | string   |
| <b>contentstate</b>         | function | <b>savecontent</b>          | function |
| <b>defaults</b>             | table    | <b>savadata</b>             | function |
| <b>getfirstreadablefile</b> | function | <b>setfirstwritablefile</b> | function |
| <b>getreadablepaths</b>     | function | <b>setluanames</b>          | function |
| <b>getwritablepath</b>      | function | <b>treehash</b>             | function |
| <b>hashed</b>               | function | <b>usedpaths</b>            | function |
| <b>is_writable</b>          | function |                             |          |

## callback (basic tex)

**find**        function  
**known**     function  
**list**        function

**register**   overloaded function  
**usage**       function

# callbacks (context)

**freeze** function

**functions** table

F start\_page\_number

F stop\_page\_number

**known** function

**list** data table

**pop** function

**push** function

**register** function

**report** function

**supported** table

B alignment\_filter

B append\_line\_filter

B append\_to\_vlist\_filter

B begin\_paragraph

B build\_page\_insert

B buildpage\_filter

B define\_font

B find\_format\_file

B find\_log\_file

B get\_attribute

B glyph\_run

B handle\_overload

B hpack\_filter

B hpack\_quality

B hyphenate

B insert\_par

B intercept\_lua\_error

B intercept\_tex\_error

B kerning

B ligaturing

B linebreak\_filter

B local\_box\_filter

B make\_extensible

B math\_rule

B missing\_character

B mlist\_to\_hlist

B open\_data\_file

B paragraph\_context

B post\_linebreak\_filter

B pre\_dump

B pre\_linebreak\_filter

B pre\_output\_filter

B process\_jobname

B register\_extensible

B show\_error\_message

B show\_lua\_call

B show\_warning\_message

B show\_whatsit

B start\_file

B start\_run

B stop\_file

B stop\_run

B trace\_memory

B vpack\_filter

B vpack\_quality

B wrapup\_run

## catcodes (context)

**names** data table

**numbers** data table

**register** function

# characters (context)

|                      |            |                              |            |
|----------------------|------------|------------------------------|------------|
| <b>adobename</b>     | function   | T anudatta                   |            |
| <b>bidirectional</b> | data table | T before_half                |            |
| <b>blockrange</b>    | function   | T before_main                |            |
| <b>blocks</b>        | data table | T before_postscript          |            |
| <b>casemap</b>       | table      | T before_subscript           |            |
| <b>categories</b>    | data table | T below_mark                 |            |
| <b>category</b>      | function   | T consonant                  |            |
| <b>categorytags</b>  | data table | T dependent_vowel            |            |
| <b>classifiers</b>   | table      | T halant                     |            |
| <b>collapsed</b>     | data table | T independent_vowel          |            |
| <b>combined</b>      | data table | T nukta                      |            |
| <b>contextname</b>   | function   | T post_mark                  |            |
| <b>csletters</b>     | data table | T pre_mark                   |            |
| <b>data</b>          | data table | T ra                         |            |
| <b>decomposed</b>    | data table | T stress_tone_mark           |            |
| <b>description</b>   | function   | T twopart_mark               |            |
| <b>descriptions</b>  | data table | T vowel_modifier             |            |
| <b>detailtags</b>    | data table | <b>initialize</b>            | function   |
| <b>directions</b>    | table      | <b>is_character</b>          | data table |
| <b>emoji</b>         | table      | <b>is_command</b>            | data table |
| F compact            |            | <b>is_hyphenator</b>         | data table |
| F known              |            | <b>is_letter</b>             | data table |
| F resolve            |            | <b>is_mark</b>               | data table |
| <b>emojized</b>      | function   | <b>is_punctuation</b>        | data table |
| <b>encodes</b>       | data table | <b>is_spacing</b>            | data table |
| <b>entities</b>      | data table | <b>is_symbol</b>             | data table |
| <b>fallbacks</b>     | data table | <b>lcchars</b>               | data table |
| <b>filters</b>       | data table | <b>lccode</b>                | function   |
| <b>fractions</b>     | table      | <b>lccodes</b>               | data table |
| <b>fromnumber</b>    | function   | <b>lettered</b>              | function   |
| <b>fschars</b>       | data table | <b>lhash</b>                 | data table |
| <b>fscodes</b>       | data table | <b>linebreaks</b>            | data table |
| <b>getrange</b>      | function   | <b>lower</b>                 | function   |
| <b>graphemes</b>     | data table | <b>mathlists</b>             | data table |
| <b>hangul</b>        | data table | <b>mirrors</b>               | table      |
| <b>indigroups</b>    | table      | <b>otfscripts</b>            | data table |
| T above_mark         |            | <b>private</b>               | table      |
| T after_half         |            | <b>ranges</b>                | data table |
| T after_main         |            | <b>registerentities</b>      | function   |
| T after_postscript   |            | <b>remap_hangul_syllable</b> | function   |
| T after_subscript    |            | <b>scripthash</b>            | table      |

|                          |            |                     |            |
|--------------------------|------------|---------------------|------------|
| <b>setactivecatcodes</b> | function   | D accentmapping     |            |
| <b>setlettercatcodes</b> | function   | D commandmapping    |            |
| <b>setothercatcodes</b>  | function   | F defineaccents     |            |
| <b>shape</b>             | function   | F safechar          |            |
| <b>shaped</b>            | function   | F strtoutf          |            |
| <b>shash</b>             | data table | F strtoutfpattern   |            |
| <b>shchars</b>           | data table | F toutf             |            |
| <b>shcodes</b>           | data table | F toutfpattern      |            |
| <b>showstring</b>        | function   | <b>textclasses</b>  | table      |
| <b>specialchars</b>      | data table | <b>tonumber</b>     | function   |
| <b>specials</b>          | data table | <b>ucchars</b>      | data table |
| <b>splits</b>            | table      | <b>uccode</b>       | function   |
| T char                   |            | <b>uccodes</b>      | data table |
| T compat                 |            | <b>uhash</b>        | data table |
| <b>subscripts</b>        | table      | <b>unicodechar</b>  | function   |
| <b>superscripts</b>      | table      | <b>upper</b>        | function   |
| <b>synonyms</b>          | data table | <b>verbosemarks</b> | data table |
| <b>tex</b>               | table      |                     |            |

## chemistry (context)

|                       |            |                       |          |
|-----------------------|------------|-----------------------|----------|
| <b>component</b>      | function   | <b>method</b>         | string   |
| <b>define</b>         | function   | <b>molecule</b>       | function |
| <b>definitions</b>    | data table | <b>moleculeparser</b> | userdata |
| <b>format</b>         | string     | <b>start</b>          | function |
| <b>inlinechemical</b> | function   | <b>stop</b>           | function |
| <b>instance</b>       | string     | <b>undefine</b>       | function |

## containers (context)

**cleannname** function  
**content** function  
**define** function  
**is\_usable** function

**is\_valid** function  
**read** function  
**usecache** boolean  
**write** function

## converters (context)

|                           |          |                            |            |
|---------------------------|----------|----------------------------|------------|
| <b>A</b>                  | function | <b>cn-c</b>                | function   |
| <b>A:es</b>               | function | <b>convert</b>             | function   |
| <b>A:ru</b>               | function | <b>decimals</b>            | function   |
| <b>A:sl</b>               | function | <b>define</b>              | function   |
| <b>AK</b>                 | function | <b>gregorian_to_hebrew</b> | function   |
| <b>Alphabetic</b>         | function | <b>gregorian_to_jalali</b> | function   |
| <b>Alphabetic:es</b>      | function | <b>hebrewnumerals</b>      | function   |
| <b>Alphabetic:ru</b>      | function | <b>helpers</b>             | table      |
| <b>Alphabetic:sl</b>      | function | <b>hexstringtonumber</b>   | function   |
| <b>Character</b>          | function | <b>i</b>                   | function   |
| <b>Characters</b>         | function | <b>isleapyear</b>          | function   |
| <b>I</b>                  | function | <b>jalali_to_gregorian</b> | function   |
| <b>KA</b>                 | function | <b>lchexnumber</b>         | function   |
| <b>KR</b>                 | function | <b>lchexnumbers</b>        | function   |
| <b>R</b>                  | function | <b>leapyear</b>            | function   |
| <b>RK</b>                 | function | <b>lower</b>               | function   |
| <b>Romannumerals</b>      | function | <b>max</b>                 | function   |
| <b>Russiannumerals</b>    | function | <b>maxchrs</b>             | function   |
| <b>Sloveniannumerals</b>  | function | <b>nicenumber</b>          | function   |
| <b>Spanishnumerals</b>    | function | <b>nofdays</b>             | function   |
| <b>Word</b>               | function | <b>number</b>              | function   |
| <b>Words</b>              | function | <b>numbers</b>             | function   |
| <b>a</b>                  | function | <b>octnumber</b>           | function   |
| <b>a:es</b>               | function | <b>octstringtonumber</b>   | function   |
| <b>a:ru</b>               | function | <b>ordinal</b>             | function   |
| <b>a:sl</b>               | function | <b>r</b>                   | function   |
| <b>abjadnodotnumerals</b> | function | <b>rawcharacter</b>        | function   |
| <b>abjadnumerals</b>      | function | <b>romannumerals</b>       | function   |
| <b>alphabetic</b>         | function | <b>russiannumerals</b>     | function   |
| <b>alphabetic:es</b>      | function | <b>sequences</b>           | data table |
| <b>alphabetic:ru</b>      | function | <b>settime</b>             | function   |
| <b>alphabetic:sl</b>      | function | <b>sloveniannumerals</b>   | function   |
| <b>character</b>          | function | <b>spaceddigits</b>        | function   |
| <b>characters</b>         | function | <b>spanishnumerals</b>     | function   |
| <b>chineseallnumerals</b> | function | <b>textime</b>             | function   |
| <b>chinesecapnumerals</b> | function | <b>toabjad</b>             | function   |
| <b>chinesenumerals</b>    | function | <b>tochinese</b>           | function   |
| <b>chr</b>                | function | <b>tohebrew</b>            | function   |
| <b>chrs</b>               | function | <b>toroman</b>             | function   |
| <b>cn</b>                 | function | <b>totime</b>              | function   |
| <b>cn-a</b>               | function | <b>uchexnumber</b>         | function   |

**uchexnumbers**

**upper**

**verbose**

D data

function

function

table

F translate

**weekday**

**word**

**words**

function

function

function

## coroutine (basic lua)

|                    |          |
|--------------------|----------|
| <b>close</b>       | function |
| <b>create</b>      | function |
| <b>isyieldable</b> | function |
| <b>resume</b>      | function |

|                |          |
|----------------|----------|
| <b>running</b> | function |
| <b>status</b>  | function |
| <b>wrap</b>    | function |
| <b>yield</b>   | function |

# ctxrunner (context)

|                     |          |                  |            |
|---------------------|----------|------------------|------------|
| <b>load</b>         | function | <b>prepfiles</b> | data table |
| <b>preparedfile</b> | function | <b>resolve</b>   | function   |

# data (context)

|               |          |                  |        |
|---------------|----------|------------------|--------|
| <b>action</b> | function | <b>prerolled</b> | string |
| <b>depth</b>  | number   | <b>reference</b> | number |
| <b>height</b> | number   | <b>width</b>     | number |
| <b>objref</b> | number   |                  |        |

## debug (basic lua)

**getinfo**    function

**sethook**    function

**traceback** function

## dir (context)

|                       |          |
|-----------------------|----------|
| <b>collectpattern</b> | function |
| <b>current</b>        | function |
| <b>expandname</b>     | function |
| <b>found</b>          | function |
| <b>glob</b>           | function |
| <b>globdirs</b>       | function |
| <b>globfiles</b>      | function |

|                    |          |
|--------------------|----------|
| <b>globpattern</b> | function |
| <b>ls</b>          | function |
| <b>makedirs</b>    | function |
| <b>mkdirs</b>      | function |
| <b>pop</b>         | function |
| <b>push</b>        | function |

## directives (context)

|                |            |
|----------------|------------|
| <b>data</b>    | data table |
| <b>default</b> | function   |
| <b>disable</b> | function   |
| <b>done</b>    | table      |
| <b>enable</b>  | function   |
| <b>list</b>    | function   |
| <b>name</b>    | string     |

|                 |          |
|-----------------|----------|
| <b>register</b> | function |
| <b>report</b>   | function |
| <b>reset</b>    | function |
| <b>show</b>     | function |
| <b>value</b>    | function |
| <b>values</b>   | function |

# document (context)

|                    |            |                           |           |            |
|--------------------|------------|---------------------------|-----------|------------|
| <b>arguments</b>   | data table |                           | D modes   |            |
| <b>files</b>       | table      |                           | D modules |            |
| <b>functions</b>   | table      | <b>setargument</b>        |           | function   |
| <b>getargument</b> | function   | <b>setcommandline</b>     |           | function   |
| <b>getfilename</b> | function   | <b>setdefaultargument</b> |           | function   |
| <b>options</b>     | table      | <b>setenvironments</b>    |           | function   |
| T commandline      |            | <b>setfilename</b>        |           | function   |
| D environments     |            | <b>setfilenames</b>       |           | function   |
| D modes            |            | <b>setmodes</b>           |           | function   |
| D modules          |            | <b>setmodules</b>         |           | function   |
| T ctxfile          |            | <b>variables</b>          |           | data table |
| D environments     |            |                           |           |            |

# documentdata (context)

**variable** function

# drivers (context)

|                    |          |                   |          |
|--------------------|----------|-------------------|----------|
| <b>applyanchor</b> | function | T                 | whatsit  |
| <b>convert</b>     | function | S                 | name     |
| <b>converters</b>  | table    | T                 | json     |
| F analyze          |          | T                 | actions  |
| F engine           |          | F cleanup         |          |
| F lmtx             |          | F convert         |          |
| F resyncbox        |          | F finalize        |          |
| <b>enable</b>      | function | F initialize      |          |
| <b>gethpos</b>     | function | F outputfilename  |          |
| <b>getpos</b>      | function | F prepare         |          |
| <b>getrpos</b>     | function | F wrapup          |          |
| <b>getvpos</b>     | function | T                 | flushers |
| <b>helpers</b>     | table    | F character       |          |
| <b>install</b>     | function | F popleaderlevel  |          |
| <b>instances</b>   | table    | F pushleaderlevel |          |
| T empty            |          | F rule            |          |
| T actions          |          | F setstate        |          |
| F convert          |          | F simplerule      |          |
| F prepare          |          | F specialrule     |          |
| T flushers         |          | F updatefontstate |          |
| F popleaderlevel   |          | T                 | whatsit  |
| F pushleaderlevel  |          | S                 | name     |
| T                  | whatsit  | T                 | lua      |
| S                  | name     | T                 | actions  |
| T                  | js       | F cleanup         |          |
| T                  | actions  | F convert         |          |
| F cleanup          |          | F finalize        |          |
| F convert          |          | F initialize      |          |
| F finalize         |          | F outputfilename  |          |
| F initialize       |          | F prepare         |          |
| F outputfilename   |          | F wrapup          |          |
| F prepare          |          | T                 | flushers |
| F wrapup           |          | F character       |          |
| T                  | flushers | F popleaderlevel  |          |
| F character        |          | F pushleaderlevel |          |
| F popleaderlevel   |          | F rule            |          |
| F pushleaderlevel  |          | F simplerule      |          |
| F rule             |          | F specialrule     |          |
| F simplerule       |          | F updatefontstate |          |
| F specialrule      |          | T                 | whatsit  |
| F updatefontstate  |          | S                 | name     |

|                   |                       |          |
|-------------------|-----------------------|----------|
| T mpo             | F cleanup             |          |
| T actions         | F convert             |          |
| F finalize        | F finalize            |          |
| F initialize      | F initialize          |          |
| T flushers        | F outputfilename      |          |
| F character       | F prepare             |          |
| F popleaderlevel  | F wrapup              |          |
| F pushleaderlevel | T flushers            |          |
| F rule            | F character           |          |
| F simplerule      | F fontchar            |          |
| F specialrule     | F group               |          |
| T whatsit         | F image               |          |
| S name            | F literal             |          |
| T mps             | F popleaderlevel      |          |
| T actions         | F poporientation      |          |
| F cleanup         | F pushleaderlevel     |          |
| F convert         | F pushorientation     |          |
| F finalize        | F restore             |          |
| F initialize      | F rule                |          |
| F outputfilename  | F save                |          |
| F prepare         | F setmatrix           |          |
| F wrapup          | F setstate            |          |
| T flushers        | F simplerule          |          |
| F character       | F specialrule         |          |
| F popleaderlevel  | F startclipping       |          |
| F pushleaderlevel | F startmatrix         |          |
| F rule            | F startmirroring      |          |
| F simplerule      | F startrotation       |          |
| F specialrule     | F startscaling        |          |
| F updatefontstate | F stopclipping        |          |
| T whatsit         | F stopmatrix          |          |
| S name            | F stopmirroring       |          |
| T none            | F stoprotation        |          |
| T actions         | F stopscaling         |          |
| T flushers        | F updatefontstate     |          |
| F popleaderlevel  | T whatsit             |          |
| F pushleaderlevel | S name                |          |
| T whatsit         | <b>lmtxversion</b>    | number   |
| S name            | <b>outputfilename</b> | function |
| T pdf             | <b>report</b>         | function |
| T actions         |                       |          |

## environment (context)

|                            |            |                               |            |
|----------------------------|------------|-------------------------------|------------|
| <b>argument</b>            | function   | <b>luafile</b>                | function   |
| <b>arguments</b>           | data table | <b>luafilechunk</b>           | function   |
| <b>basicengines</b>        | data table | <b>luatexengine</b>           | string     |
| <b>currentrun</b>          | number     | <b>luatexfunctionality</b>    | number     |
| <b>definefilefallback</b>  | function   | <b>luatexversion</b>          | number     |
| <b>definefilesynonym</b>   | function   | <b>maxnofruns</b>             | number     |
| <b>engineflags</b>         | data table | <b>oldhome</b>                | string     |
| <b>filename</b>            | string     | <b>originalarguments</b>      | data table |
| <b>filenames</b>           | table      | <b>outputfilename</b>         | string     |
| <b>files</b>               | table      | <b>ownbin</b>                 | string     |
| <b>filesynonyms</b>        | data table | <b>ownmain</b>                | string     |
| <b>forcedruns</b>          | number     | <b>ownname</b>                | string     |
| <b>getargument</b>         | function   | <b>ownpath</b>                | string     |
| <b>homedir</b>             | string     | <b>prerollrun</b>             | boolean    |
| <b>initex</b>              | boolean    | <b>rawarguments</b>           | data table |
| <b>initexmode</b>          | boolean    | <b>reconstructcommandline</b> | function   |
| <b>initializearguments</b> | function   | <b>relativepath</b>           | function   |
| <b>initializefilenames</b> | function   | <b>setargument</b>            | function   |
| <b>inputfilebarename</b>   | string     | <b>splitarguments</b>         | function   |
| <b>inputfilename</b>       | string     | <b>suffix</b>                 | string     |
| <b>inputfilesuffix</b>     | string     | <b>texfile</b>                | function   |
| <b>jitsupported</b>        | boolean    | <b>texmfos</b>                | string     |
| <b>jobfilefullname</b>     | string     | <b>texos</b>                  | string     |
| <b>jobfilename</b>         | string     | <b>texroot</b>                | string     |
| <b>jobfilesuffix</b>       | string     | <b>truefilename</b>           | function   |
| <b>jobname</b>             | string     | <b>uselua module</b>          | function   |
| <b>kindofrun</b>           | number     | <b>usemodules</b>             | function   |
| <b>lmtxmode</b>            | number     | <b>validengines</b>           | data table |
| <b>loadexamodes</b>        | function   | <b>version</b>                | string     |
| <b>loadluafile</b>         | function   |                               |            |

# experiments (context)

|                |            |                 |          |
|----------------|------------|-----------------|----------|
| <b>data</b>    | data table | <b>register</b> | function |
| <b>default</b> | function   | <b>report</b>   | function |
| <b>disable</b> | function   | <b>reset</b>    | function |
| <b>done</b>    | table      | <b>show</b>     | function |
| <b>enable</b>  | function   | <b>value</b>    | function |
| <b>list</b>    | function   | <b>values</b>   | function |
| <b>name</b>    | string     |                 |          |

# figures (context)

|                         |            |                         |            |
|-------------------------|------------|-------------------------|------------|
| <b>applyratio</b>       | function   | <b>F scan</b>           |            |
| <b>badname</b>          | function   | <b>F serialize</b>      |            |
| <b>bases</b>            | data table | <b>T sizes</b>          |            |
| <b>bitmapimage</b>      | function   | <b>B art</b>            |            |
| <b>boxnumber</b>        | number     | <b>B bleed</b>          |            |
| <b>cachepaths</b>       | data table | <b>B crop</b>           |            |
| <b>check</b>            | function   | <b>B media</b>          |            |
| <b>checkers</b>         | data table | <b>B none</b>           |            |
| <b>converters</b>       | data table | <b>B trim</b>           |            |
| <b>current</b>          | function   | <b>F storedata</b>      |            |
| <b>defaultdepth</b>     | number     | <b>F totable</b>        |            |
| <b>defaultheight</b>    | number     | <b>T types</b>          |            |
| <b>defaultsearch</b>    | boolean    | <b>N jbig2</b>          |            |
| <b>defaultwidth</b>     | number     | <b>N jp2</b>            |            |
| <b>done</b>             | function   | <b>N jpg</b>            |            |
| <b>dummy</b>            | function   | <b>N none</b>           |            |
| <b>existsers</b>        | data table | <b>N pdf</b>            |            |
| <b>exists</b>           | function   | <b>N png</b>            |            |
| <b>formats</b>          | data table | <b>N stream</b>         |            |
| <b>found</b>            | data table | <b>F wrap</b>           |            |
| <b>get</b>              | function   | <b>include</b>          | function   |
| <b>getinfo</b>          | function   | <b>includers</b>        | data table |
| <b>getpdfinfo</b>       | function   | <b>initialize</b>       | function   |
| <b>getrealpage</b>      | function   | <b>loaded</b>           | data table |
| <b>guess</b>            | function   | <b>localpaths</b>       | data table |
| <b>guessfromstring</b>  | function   | <b>magics</b>           | data table |
| <b>hash</b>             | function   | <b>mergegoodies</b>     | function   |
| <b>identifiers</b>      | data table | <b>nofmissing</b>       | number     |
| <b>identify</b>         | function   | <b>nofprocessed</b>     | number     |
| <b>images</b>           | table      | <b>order</b>            | data table |
| <b>F check</b>          |            | <b>paths</b>            | data table |
| <b>F checksize</b>      |            | <b>patterns</b>         | data table |
| <b>F copy</b>           |            | <b>pop</b>              | function   |
| <b>F create</b>         |            | <b>preferquality</b>    | boolean    |
| <b>F embed</b>          |            | <b>programs</b>         | data table |
| <b>F embedfromstore</b> |            | <b>push</b>             | function   |
| <b>F fetchdata</b>      |            | <b>registerpattern</b>  | function   |
| <b>T keys</b>           |            | <b>registerresource</b> | function   |
| <b>F print</b>          |            | <b>registersuffix</b>   | function   |
| <b>F resetdata</b>      |            | <b>remappers</b>        | data table |
| <b>F resetstore</b>     |            | <b>resources</b>        | data table |

|                   |          |                 |            |
|-------------------|----------|-----------------|------------|
| <b>scale</b>      | function | <b>setpaths</b> | function   |
| <b>set</b>        | function | <b>suffixes</b> | data table |
| <b>setlookups</b> | function | <b>used</b>     | data table |
| <b>setorder</b>   | function |                 |            |

## file (basic lua)

|                          |          |
|--------------------------|----------|
| <b>addsuffix</b>         | function |
| <b>basename</b>          | function |
| <b>checksum</b>          | function |
| <b>collapsepath</b>      | function |
| <b>copy</b>              | function |
| <b>dirname</b>           | function |
| <b>expandname</b>        | function |
| <b>extname</b>           | function |
| <b>is_qualified_path</b> | function |
| <b>is_readable</b>       | function |
| <b>is_rootbased_path</b> | function |
| <b>is_writable</b>       | function |
| <b>isreadable</b>        | function |
| <b>iswritable</b>        | function |
| <b>join</b>              | function |
| <b>joinpath</b>          | function |
| <b>loadchecksum</b>      | function |
| <b>nameonly</b>          | function |
| <b>nametotable</b>       | function |
| <b>needs Updating</b>    | function |

|                      |          |
|----------------------|----------|
| <b>needsupdating</b> | function |
| <b>pathpart</b>      | function |
| <b>readdata</b>      | function |
| <b>removesuffix</b>  | function |
| <b>replacesuffix</b> | function |
| <b>reslash</b>       | function |
| <b>robustname</b>    | function |
| <b>savechecksum</b>  | function |
| <b>savedata</b>      | function |
| <b>size</b>          | function |
| <b>splitbase</b>     | function |
| <b>splitname</b>     | function |
| <b>splitpath</b>     | function |
| <b>strip</b>         | function |
| <b>suffix</b>        | function |
| <b>suffixes</b>      | function |
| <b>suffixesonly</b>  | function |
| <b>suffixonly</b>    | function |
| <b>syncmtimes</b>    | function |
| <b>withinbase</b>    | function |

## fio (extra lua)

|                          |          |
|--------------------------|----------|
| <b>getposition</b>       | function |
| <b>read2dot14</b>        | function |
| <b>readbytes</b>         | function |
| <b>readbytetable</b>     | function |
| <b>readcardinal1</b>     | function |
| <b>readcardinal1le</b>   | function |
| <b>readcardinal2</b>     | function |
| <b>readcardinal2le</b>   | function |
| <b>readcardinal3</b>     | function |
| <b>readcardinal3le</b>   | function |
| <b>readcardinal4</b>     | function |
| <b>readcardinal4le</b>   | function |
| <b>readcardinaltable</b> | function |
| <b>readcline</b>         | function |
| <b>readcstring</b>       | function |
| <b>readfixed2</b>        | function |
| <b>readfixed4</b>        | function |
| <b>readinteger1</b>      | function |

|                         |          |
|-------------------------|----------|
| <b>readinteger1le</b>   | function |
| <b>readinteger2</b>     | function |
| <b>readinteger2le</b>   | function |
| <b>readinteger3</b>     | function |
| <b>readinteger3le</b>   | function |
| <b>readinteger4</b>     | function |
| <b>readinteger4le</b>   | function |
| <b>readintegertable</b> | function |
| <b>setposition</b>      | function |
| <b>skipposition</b>     | function |
| <b>writecardinal1</b>   | function |
| <b>writecardinal1le</b> | function |
| <b>writecardinal2</b>   | function |
| <b>writecardinal2le</b> | function |
| <b>writecardinal3</b>   | function |
| <b>writecardinal3le</b> | function |
| <b>writecardinal4</b>   | function |
| <b>writecardinal4le</b> | function |

# floats (context)

|                         |          |                   |          |
|-------------------------|----------|-------------------|----------|
| <b>analysemethod</b>    | function | <b>nofstacked</b> | function |
| <b>checkedpagefloat</b> | function | <b>pop</b>        | function |
| <b>collect</b>          | function | <b>push</b>       | function |
| <b>consult</b>          | function | <b>resave</b>     | function |
| <b>flush</b>            | function | <b>save</b>       | function |
| <b>getvariable</b>      | function | <b>stacked</b>    | function |
| <b>hasstacked</b>       | function |                   |          |

## font (basic tex)

|                      |          |
|----------------------|----------|
| <b>addcharacters</b> | function |
| <b>current</b>       | function |
| <b>define</b>        | function |
| <b>getfont</b>       | function |
| <b>getfontdimen</b>  | function |
| <b>getfontspec</b>   | function |

|                     |          |
|---------------------|----------|
| <b>id</b>           | function |
| <b>max</b>          | function |
| <b>nextid</b>       | function |
| <b>setfont</b>      | function |
| <b>setfontdimen</b> | function |

# fonts (context)

## analyzers      table

- D features
- D initializers
- D methods
- F setstate
- D states
- B useunicodemarks

## checkers      table

- F getmissing
- D mapping
- F missing
- F placeholder

## cid      table

- F getmap
- F loadfile

## collections      table

- F checkenabled
- F clonevector
- F define
- T definitions
- F found
- F prepare
- F process
- F register
- F registermain
- F report
- F reset
- T vectors

## constructors      table

- F addcharacters
- F addcoreunicodes
- F aftercopyingcharacters
- F applyfinalizers
- F applymanipulators
- F assignmathparameters
- F beforecopyingcharacters
- D cache
- F calculatyscale
- F checkedfeatures
- F checkedfilename
- F collectprocessors

- F currentfonthasfeature
- D designsizes
- F enhanceparameters
- T enhancers
  - T afm
    - F apply
    - F patch
  - T patches
    - F register
  - F report
  - F register
  - F report
- T otf
  - F addfeature
  - F apply
  - F enhance
  - F patch
  - T patches
    - F register
  - F report
  - F register
  - F report
- T tfm
  - F apply
  - F patch
  - T patches
    - F register
  - F report
  - F register
  - F report
- N factor
- T features
  - D afm
  - D otf
  - D tfm
- F finalize
- F getfeatureaction
- F getmathparameter
- F getprivate
- T handlers
  - T afm

|                            |   |
|----------------------------|---|
| B autoprefixed             | F getalternate                                      |
| D cache                    | F getgsub   |
| D features                 | F getkern   |
| F getkern                  | F getmultiple                                       |
| T helpdata                 | F getstreamhash                                     |
| D bothkerned               | F getsubstitution                                   |
| D leftkerned               | T handlers  |
| D ligatures                | F ctx_camelcasing                                   |
| D rightkerned              | F devanagari_remove_joiners                         |
| D texligatures             | F devanagari_reorder_matras                         |
| F load                     | F devanagari_reorder_pre_base_reordering_consonants |
| T readers                  | F devanagari_reorder_reph                           |
| F getinfo                  | F gpos_context                                      |
| F loadfont                 | F gpos_contextchain                                 |
| F loadshapes               | F gpos_cursive                                      |
| F setfeatures              | F gpos_mark2base                                    |
| B syncspace                | F gpos_mark2ligature                                |
| N version                  | F gpos_mark2mark                                    |
| T otf                      | F gpos_pair   |
| F addfeature               | F gpos_single                                       |
| F basemodeinitializer      | F gsub_alternate                                    |
| D cache                    | F gsub_context                                      |
| F collectlookups           | F gsub_contextchain                                 |
| T coverup                  | F gsub_ligature                                     |
| T actions                  | F gsub_multiple                                     |
| F alternate                | F gsub_reversecontextchain                          |
| F chainposition            | F gsub_single                                       |
| F chainsubstitution        | F trigger_space_kerns                               |
| F kern                     | T helpers   |
| F ligature                 | F blockligatures                                    |
| F multiple                 | F pardirstate                                       |
| F pair                     | F txtfirststate                                     |
| F single                   | F load  |
| F substitution             | F loadoutlinedata                                   |
| F register                 | F loadstreamdata                                    |
| S stepkey                  | F modeinitializer                                   |
| F dataset                  | D mpscache  |
| F datasetpositionprocessor | D pdfcache  |
| S defaultbasealternate     | F plugininitializer                                 |
| S defaultnodealternate     | F pluginprocessor                                   |
| D features                 | T plugins   |
| F featuresinitializer      | T text  |
| F featuresprocessor        | D pngcache  |
| F getactualtext            | B pngenabled  |

|                   |                          |
|-------------------|--------------------------|
| T readers         | F reversechainedcontexts |
| F addunicodetable | F single                 |
| F avar            | F gvar                   |
| F cbdt            | F head                   |
| F cblc            | T helpers                |
| F cff             | F axistofactors          |
| F cff2            | F cleanname              |
| F cffcheck        | F getaxisscale           |
| T cffencoder      | F getfactors             |
| F checkhash       | F getscales              |
| F cmap            | F gotodatatable          |
| F colr            | F normalizedaxis         |
| F compact         | T normalizedaxisishash   |
| F condense        | F readvariationdata      |
| F cpal            | F reportskippedtable     |
| F ebdt            | F setvariabledata        |
| F eblc            | F hhea                   |
| F ebsc            | F hmtx                   |
| F expand          | F hvar                   |
| F extend          | F kern                   |
| F fvar            | F loadfont               |
| F gdef            | F loadshapes             |
| F getcomponents   | F loca                   |
| F getinfo         | F math                   |
| F glyf            | F maxp                   |
| F gpos            | F mvar                   |
| T gposhandlers    | F name                   |
| F chainedcontext  | F os/2                   |
| F context         | F pack                   |
| F cursive         | F parsecharstrings       |
| F extension       | F post                   |
| F marktobase      | F registerextender       |
| F marktoligature  | F rehash                 |
| F marktomark      | F sbix                   |
| F pair            | F stat                   |
| F single          | T streamreader           |
| F gsub            | F close                  |
| T gsubhandlers    | F getposition            |
| F alternate       | F getsizes               |
| F chainedcontext  | F look                   |
| F context         | F open                   |
| F extension       | F read2dot14             |
| F ligature        | F readbyte               |
| F multiple        | F readbytes              |

|                     |                     |
|---------------------|---------------------|
| F readbytetable     | F writeinteger1     |
| F readcardinal      | F writeinteger1le   |
| F readcardinal1     | F writeinteger2     |
| F readcardinal1le   | F writeinteger2le   |
| F readcardinal2     | F writeinteger3     |
| F readcardinal2le   | F writeinteger3le   |
| F readcardinal3     | F writeinteger4     |
| F readcardinal3le   | F writeinteger4le   |
| F readcardinal4     | F writestring       |
| F readcardinal4le   | F stripredundant    |
| F readcardinaltable | F svg               |
| F readchar          | N tableversion      |
| F readcline         | F unifymissing      |
| F readcstring       | F unpack            |
| F readfixed2        | F vhea              |
| F readfixed4        | F vmtx              |
| F readinteger       | F vorg              |
| F readinteger1      | F vvar              |
| F readinteger1le    | F woff2otf          |
| F readinteger2      | F registerpalette   |
| F readinteger2le    | F registerplugin    |
| F readinteger3      | F reorderlookups    |
| F readinteger3le    | F scriptandlanguage |
| F readinteger4      | F setdynamics       |
| F readinteger4le    | F setfeatures       |
| F readintegertable  | T statistics        |
| F readsignedbyte    | D usedfeatures      |
| F readstring        | D svgcache          |
| F readtag           | B svgenabled        |
| F setposition       | T tables            |
| F size              | D baselines         |
| F skip              | D features          |
| F skiplong          | D featuretypes      |
| F skipposition      | D languages         |
| F skipshort         | D scripts           |
| F writebyte         | F texthandler       |
| F writecardinal1    | T vectors           |
| F writecardinal1le  | T arab              |
| F writecardinal2    | T gpos              |
| F writecardinal2le  | N curs              |
| F writecardinal3    | N kern              |
| F writecardinal3le  | N mark              |
| F writecardinal4    | N mkmk              |
| F writecardinal4le  | T gsub              |

|                   |                        |          |
|-------------------|------------------------|----------|
| N calt            | F initializefeatures   |          |
| N ccmp            | D loadedfonts          |          |
| N cswh            | N noffontsloaded       |          |
| N dlig            | N nofsharedfonts       |          |
| N fina            | N nofsharedhashes      |          |
| N init            | N nofsharedvectors     |          |
| N isol            | N privateoffset        |          |
| N liga            | D privateslots         |          |
| N medi            | F readanddefine        |          |
| N mset            | F registerfeature      |          |
| N rclt            | F resetfeature         |          |
| N rlig            | B resolvevirtualtoo    |          |
| N version         | F scale                |          |
| T pfb             | F scaled               |          |
| F loadvector      | F setfactor            |          |
| T tfm             | F setfeature           |          |
| D cache           | F setmathparameter     |          |
| D features        | F setname              |          |
| N maxnestingdepth | B sharefonts           |          |
| N maxnestingsize  | F trytosharefont       |          |
| T readers         | N version              |          |
| F loadpk          | <b>current</b>         | function |
| F loadtfm         | <b>currentid</b>       | function |
| F loadtfmvf       | <b>definers</b>        | table    |
| F loadvf          | F addlookup            |          |
| F pktopdf         | F analyze              |          |
| F showpk          | F applypostprocessors  |          |
| F reencode        | F checkedmode          |          |
| F setfeatures     | F checkedscript        |          |
| N version         | S defaultlookup        |          |
| T vf              | F define               |          |
| T combinations    | F getspecification     |          |
| F combine         | F internal             |          |
| T combiner        | F loadfont             |          |
| D commands        | F makespecification    |          |
| D helpers         | T methods              |          |
| D math            | F install              |          |
| N version         | D variants             |          |
| D whatever        | F read                 |          |
| F hashfeatures    | F register             |          |
| F hashinstance    | F registered           |          |
| T hashmethods     | F registerfallbackfont |          |
| F normal          | F registersplit        |          |
| F virtual         | F resetnullfont        |          |

|                        |            |                         |       |
|------------------------|------------|-------------------------|-------|
| F resolve              |            | F type3                 |       |
| T resolvers            |            | T multiple              |       |
| F file                 |            | F opentype              |       |
| F name                 |            | T substitution          |       |
| F spec                 |            | F opentype              |       |
| <b>definetypeface</b>  | function   | <b>goodies</b>          | table |
| <b>dropins</b>         | table      | D colorschemes          |       |
| F clone                |            | T data                  |       |
| F getshape             |            | T dejavu-math           |       |
| F getshapes            |            | S author                |       |
| F nextid               |            | S comment               |       |
| F provide              |            | S copyright             |       |
| F registerglyph        |            | B initialized           |       |
| F registerglyphs       |            | T mathematics           |       |
| F swap                 |            | T alternates            |       |
| F swapone              |            | T dotless               |       |
| <b>encodings</b>       | table      | S comment               |       |
| T agl                  |            | S feature               |       |
| D ctxcodes             |            | N value                 |       |
| D extras               |            | T tweaks                |       |
| D names                |            | T aftercopying          |       |
| D synonyms             |            | S name                  |       |
| D unicodes             |            | S version               |       |
| D cache                |            | D designsizes           |       |
| F is_known             |            | D filenames             |       |
| D known                |            | F getcompositions       |       |
| F load                 |            | T list                  |       |
| F make_unicode_vector  |            | F load                  |       |
| D math                 |            | F prepare_features      |       |
| N version              |            | F register              |       |
| <b>enhanceid</b>       | function   | F registerpostprocessor |       |
| <b>expansions</b>      | data table | F report                |       |
| <b>formats</b>         | data table | T suffixes              |       |
| <b>getalternate</b>    | function   | <b>handlers</b>         | table |
| <b>getindices</b>      | function   | <b>hashes</b>           | table |
| <b>getkern</b>         | function   | D characters            |       |
| <b>getmultiple</b>     | function   | D classes               |       |
| <b>getsubstitution</b> | function   | D csnames               |       |
| <b>getters</b>         | table      | D descriptions          |       |
| T alternate            |            | D dynamics              |       |
| F opentype             |            | D emwidths              |       |
| T kern                 |            | D exheights             |       |
| F opentype             |            | D extensibles           |       |
| F type1                |            | D features              |       |

- D identifiers
- D italics
- D lastmathids
- D marks
- D mathparameters
- D modes
- D originals
- D parameters
- T processes
- D properties
- D quads
- D resources
- T setdynamics
- T shapes
- D spaces
- D spacings
- T streams
- D unicodes
- D unislots
- D variants
- D xheights

## helpers table

- F addextraprivate
- F addprivate
- F appendcommands
- F appendcommandtable
- F checkflags
- F checkmerge
- F checksteps
- F collectanchors
- F combineglyphs
- D commands
- F composecharacters
- F descriptiontoslot
- F dimenfactor
- F expandglyph
- T extraprivates
- F fontpatternhassize
- F getcoloredglyphs
- F getdigitwidth
- F getinstancespec
- F getparameters
- F getprivatecharornode
- F getprivatenode

- F getprivates
- F getprivateslot
- F hasprivate
- F indextoslot
- F mathscriptslots
- F name
- F nametoslot
- F newprivateslot
- F prependcommands
- F prependcommandtable
- F privateslot
- F registerglyphbox
- F scalecommands
- F setboxdirectly
- F setboxglyph
- F setboxglyphs
- F setdigitwidth
- F setmetaglyph
- F setmetaglyphs
- F splitfontpattern
- F tochar
- T vfinjectors

- F startcolor
- F stopcolor
- T vfspecials
- T backgrounds
- T outlines

## infofont function

## iterators table

- F characters
- F descriptions
- F glyphs

## loggers table

- F format
- F onetimemessage
- F register
- F reportdefinedfonts
- F reportusedfeatures

## mappings table

- F addtounicode
- F fromunicode16
- F getentry
- F loadfile
- F loadline

|                       |            |                           |       |
|-----------------------|------------|---------------------------|-------|
| F makenameparser      |            | F default                 |       |
| D overloads           |            | D defaults                |       |
| F reset               |            | F definefallbackfamily    |       |
| F tounicode           |            | F definefontfamily        |       |
| F tounicode16         |            | F definefontfamilypreset  |       |
| F tounicode16sequence |            | D extras                  |       |
| <b>metapost</b>       | table      | F fallback                |       |
| F boundingbox         |            | D fallbacks               |       |
| F boxtomp             |            | F features                |       |
| F draw                |            | F filefallback            |       |
| F fill                |            | F fontdata                |       |
| F glyph               |            | F fontfallback            |       |
| F maxbounds           |            | F fontsynonym             |       |
| F paths               |            | F goodies                 |       |
| F widthline           |            | F mathfallback            |       |
| F zeroline            |            | D methods                 |       |
| <b>names</b>          | data table | D presets                 |       |
| <b>nulldata</b>       | data table | F registerfallback        |       |
| <b>privateoffsets</b> | table      | F registerfiles           |       |
| B keepnames           |            | F registerfontalternative |       |
| N mathbase            |            | F registerfontfamily      |       |
| N mathextrabase       |            | F textfallback            |       |
| N textbase            |            | F typeface                |       |
| N textextrabase       |            | F typescript              |       |
| <b>protrusions</b>    | data table | F userdata                |       |
| <b>readers</b>        | table      | <b>specifiers</b>         | table |
| F afm                 |            | D contextmerged           |       |
| F check_lua           |            | F contextnumber           |       |
| F check_tfm           |            | D contextnumbers          |       |
| F lua                 |            | D contextsetups           |       |
| F ofm                 |            | F contexttostring         |       |
| F opentype            |            | F definecontext           |       |
| F otf                 |            | F mergecontext            |       |
| F pfb                 |            | F presetcontext           |       |
| D sequence            |            | F registercontext         |       |
| F tfm                 |            | F showcontext             |       |
| F ttc                 |            | F splitcontext            |       |
| F ttf                 |            | D synonyms                |       |
| F woff                |            | D variants                |       |
| <b>reserveid</b>      | function   | <b>symbols</b>            | table |
| <b>select</b>         | table      | T emoji                   |       |
| D alternatives        |            | F checked                 |       |
| F bodyfont            |            | F resolved                |       |
| D data                |            | F uselibrary              |       |

|                   |       |                  |       |
|-------------------|-------|------------------|-------|
| <b>tables</b>     | table | S filename       |       |
| <b>tracers</b>    | table | F ignoredfile    |       |
| <b>treatments</b> | table | F report         |       |
| F applyfixes      |       | F trace          |       |
| D data            |       | <b>typefaces</b> | table |

# functions (context)

**dummy** function

# graphics (context)

## backgrounds table

- F fetchmultipar
- F pair
- F path
- F point

## bitmaps table

- F flush
- F new
- F placeholder
- F tocontext

## identifiers table

- F bitmap
- F jp2
- F jpg
- F png

## identify function

## synchronizers table

- F collapse
- F collect
- F extend
- F getbottom
- F getd
- F geth
- F getkind
- F getsizes
- F gettask
- F gettop
- F getw
- F getx
- F gety
- F prune

## gzip (extra lua)

**compress**    function  
**compressed** function  
**decompress** function

**load**        function  
**save**        function  
**suffix**      function

# images (context)

|                       |          |  |                  |          |
|-----------------------|----------|--|------------------|----------|
| <b>check</b>          | function |  | B crop           |          |
| <b>checksize</b>      | function |  | B media          |          |
| <b>copy</b>           | function |  | B none           |          |
| <b>create</b>         | function |  | B trim           |          |
| <b>embed</b>          | function |  | <b>storedata</b> | function |
| <b>embedfromstore</b> | function |  | <b>totable</b>   | function |
| <b>fetchdata</b>      | function |  | <b>types</b>     | table    |
| <b>keys</b>           | table    |  | N jbig2          |          |
| <b>print</b>          | function |  | N jp2            |          |
| <b>resetdata</b>      | function |  | N jpg            |          |
| <b>resetstore</b>     | function |  | N none           |          |
| <b>scan</b>           | function |  | N pdf            |          |
| <b>serialize</b>      | function |  | N png            |          |
| <b>sizes</b>          | table    |  | N stream         |          |
| B art                 |          |  | <b>wrap</b>      | function |
| B bleed               |          |  |                  |          |

# interactions (context)

**attachments** data table

**fields** table

- F clone
- F define
- F defineset
- F insert

**general** table

- F getidentity
- F getidentityvariable

**help** table

- F collect
- F reference
- F register

**javascripts** table

- F addtopreamble
- F code
- D codes
- F flushpreambles

D functions

D preambles

F setpreamble

F storecode

F storepreamble

F usepreamblenow

F usescripts

**linkedList**s data table

**pages** table

F setpagetransition

F setupcanvas

**references** table

F setcloseddocument

F setclosepage

F setopendocument

F setopenpage

**renderings** data table

# interfaces (context)

|                             |            |                          |            |
|-----------------------------|------------|--------------------------|------------|
| <b>arrays</b>               | table      | <b>namesofscanners</b>   | table      |
| <b>cachedsetups</b>         | data table | <b>namespaces</b>        | table      |
| <b>cachesetup</b>           | function   | F define                 |            |
| <b>cardinals</b>            | table      | F list                   |            |
| <b>checkedspecification</b> | function   | <b>numbers</b>           | table      |
| <b>complete</b>             | data table | <b>registernamespace</b> | function   |
| <b>constants</b>            | data table | <b>registerscanner</b>   | function   |
| <b>corenamespaces</b>       | data table | <b>scanners</b>          | data table |
| <b>currentinterface</b>     | string     | <b>setconstant</b>       | function   |
| <b>currentresponse</b>      | string     | <b>setcount</b>          | function   |
| <b>definecommand</b>        | function   | <b>setdimen</b>          | function   |
| <b>defined</b>              | function   | <b>setelement</b>        | function   |
| <b>doifelsemessage</b>      | function   | <b>setformat</b>         | function   |
| <b>elements</b>             | data table | <b>setmacro</b>          | function   |
| <b>floats</b>               | table      | <b>setmessage</b>        | function   |
| <b>formats</b>              | data table | <b>setmessages</b>       | function   |
| <b>getmessage</b>           | function   | <b>settranslation</b>    | function   |
| <b>getnamespace</b>         | function   | <b>setupstrings</b>      | data table |
| <b>getsetupstring</b>       | function   | <b>setvariable</b>       | function   |
| <b>hashedsetups</b>         | data table | <b>showmessage</b>       | function   |
| <b>implement</b>            | function   | <b>storedscanners</b>    | data table |
| <b>integers</b>             | table      | <b>tolist</b>            | function   |
| <b>interfacedcommand</b>    | function   | <b>translations</b>      | data table |
| <b>interfaces</b>           | table      | <b>usednamespaces</b>    | data table |
| <b>knownscanner</b>         | function   | <b>variables</b>         | data table |
| <b>message</b>              | function   | <b>writestatus</b>       | function   |
| <b>nameofscanner</b>        | function   |                          |            |

## io (basic lua)

|                      |                     |                      |                     |
|----------------------|---------------------|----------------------|---------------------|
| <b>ask</b>           | function            | <b>output</b>        | overloaded function |
| <b>bytes</b>         | function            | <b>pathseparator</b> | string              |
| <b>characters</b>    | function            | <b>popen</b>         | overloaded function |
| <b>close</b>         | function            | <b>read</b>          | function            |
| <b>copydata</b>      | function            | <b>readall</b>       | function            |
| <b>exists</b>        | function            | <b>readnumber</b>    | function            |
| <b>fileseparator</b> | string              | <b>readstring</b>    | function            |
| <b>flush</b>         | function            | <b>savedata</b>      | function            |
| <b>input</b>         | overloaded function | <b>size</b>          | function            |
| <b>lines</b>         | overloaded function | <b>stderr</b>        | userdata            |
| <b>loadchunk</b>     | function            | <b>stdin</b>         | userdata            |
| <b>loaddata</b>      | function            | <b>stdout</b>        | userdata            |
| <b>loadlines</b>     | function            | <b>tmpfile</b>       | function            |
| <b>newreader</b>     | function            | <b>type</b>          | function            |
| <b>noflines</b>      | function            | <b>write</b>         | function            |
| <b>open</b>          | overloaded function |                      |                     |

# job (context)

|                          |          |                    |       |
|--------------------------|----------|--------------------|-------|
| <b>comment</b>           | function | D tobesaved        |       |
| <b>datasets</b>          | table    | <b>parwrappers</b> | table |
| D collected              |          | D collected        |       |
| F extend                 |          | D tobesaved        |       |
| F getdata                |          | <b>passes</b>      | table |
| F setdata                |          | F check            |       |
| D tobesaved              |          | D collected        |       |
| <b>disablesave</b>       | function | F count            |       |
| <b>embedded</b>          | table    | F define           |       |
| D collected              |          | F find             |       |
| D tobesaved              |          | F first            |       |
| <b>fileobjreferences</b> | table    | F get              |       |
| D collected              |          | F getcollected     |       |
| D tobesaved              |          | F getdata          |       |
| <b>files</b>             | table    | F getfield         |       |
| D collected              |          | F gettobesaved     |       |
| F context                |          | F inlist           |       |
| B forcerun               |          | F last             |       |
| F run                    |          | F list             |       |
| D tobesaved              |          | F save             |       |
| <b>getrandomseed</b>     | function | F savetagged       |       |
| <b>initialize</b>        | function | D tobesaved        |       |
| <b>load</b>              | function | <b>positions</b>   | table |
| <b>loadother</b>         | function | F b_column         |       |
| <b>objects</b>           | table    | F b_region         |       |
| D collected              |          | F c                |       |
| F get                    |          | D collected        |       |
| F number                 |          | F column           |       |
| F page                   |          | F columnofpos      |       |
| F save                   |          | F copy             |       |
| F set                    |          | F depth            |       |
| D tobesaved              |          | F e_column         |       |
| <b>pack</b>              | boolean  | F e_region         |       |
| <b>packversion</b>       | number   | F enhance          |       |
| <b>pagestates</b>        | table    | F extra            |       |
| D collected              |          | F get              |       |
| F countervalue           |          | F getfree          |       |
| F extend                 |          | F gethpos          |       |
| F realpage               |          | F getpos           |       |
| F realpageorder          |          | F getreserved      |       |
| F setstate               |          | F getrpos          |       |

F getsync  
F gettobesaved  
F getvpos  
F hangafter  
F hangindent  
F height  
F hsize  
N lastx  
N lasty  
F leftskip  
F lowerleft  
F lowerright  
F markregionbox  
F n  
F onsamepage  
F overlapping  
F p  
F page  
F paragraph  
F parindent  
F position  
F r  
F region  
F registerhandlers  
F replace  
F rightskip  
F set  
F setall  
F setregionbox  
F setspec

F settobesaved  
D tobesaved  
F upperleft  
F upperright  
F used  
F whd  
F width  
F x  
F xy  
F y

**register**  
**save**  
**structure**

D collected  
T components  
T tobesaved  
T branches  
S name  
S type

**variables**

D checksums  
D collected  
F getchecksum  
F makechecksum  
F restore  
F save  
F setchecksum  
D tobesaved

**version**

function  
function  
table

table

number

## language (basic tex)

|                         |          |
|-------------------------|----------|
| <b>clean</b>            | function |
| <b>clearhyphenation</b> | function |
| <b>clearpatterns</b>    | function |
| <b>current</b>          | function |
| <b>gethjcode</b>        | function |
| <b>has_language</b>     | function |
| <b>hyphenate</b>        | function |
| <b>hyphenation</b>      | function |
| <b>hyphenationmin</b>   | function |

|                         |          |
|-------------------------|----------|
| <b>id</b>               | function |
| <b>new</b>              | function |
| <b>patterns</b>         | function |
| <b>postexhyphenchar</b> | function |
| <b>posthyphenchar</b>   | function |
| <b>preexhyphenchar</b>  | function |
| <b>prehyphenchar</b>    | function |
| <b>sethjcode</b>        | function |
| <b>setwordhandler</b>   | function |

# languages (context)

|                        |            |                               |            |
|------------------------|------------|-------------------------------|------------|
| <b>addgoodiesdata</b>  | function   | F installmethod               |            |
| <b>addgoodiesfile</b>  | function   | F lasttrace                   |            |
| <b>appliedoptions</b>  | table      | F loadpatterns                |            |
| <b>associate</b>       | function   | F registerexception           |            |
| <b>associated</b>      | data table | F registerpattern             |            |
| <b>association</b>     | function   | F setfeatures                 |            |
| <b>counters</b>        | data table | <b>installed</b>              | function   |
| <b>current</b>         | function   | <b>installhandler</b>         | function   |
| <b>data</b>            | data table | <b>labels</b>                 | table      |
| <b>decimals</b>        | data table | F define                      |            |
| <b>define</b>          | function   | F split                       |            |
| <b>explicitthyphen</b> | function   | <b>loadable</b>               | function   |
| <b>flatten</b>         | function   | <b>loadwords</b>              | function   |
| <b>frequencies</b>     | table      | <b>logger</b>                 | table      |
| F averagecharwidth     |            | F report                      |            |
| F getdata              |            | <b>nofflatted</b>             | function   |
| <b>getdata</b>         | function   | <b>numbers</b>                | data table |
| <b>getnumber</b>       | function   | <b>postexhyphenchar</b>       | function   |
| <b>goodiefiles</b>     | function   | <b>posthyphenchar</b>         | function   |
| <b>hjcounts</b>        | table      | <b>preexhyphenchar</b>        | function   |
| <b>hyphenate</b>       | function   | <b>prehyphenchar</b>          | function   |
| <b>hyphenators</b>     | table      | <b>registered</b>             | data table |
| T dictionaries         |            | <b>registeredactions</b>      | table      |
| D featuresets          |            | <b>replacements</b>           | table      |
| F handler              |            | F add                         |            |
| T methods              |            | F addlist                     |            |
| F expanded             |            | F handler                     |            |
| B none                 |            | F set                         |            |
| F original             |            | <b>serializediscretionary</b> | function   |
| F tex                  |            | <b>setexceptions</b>          | function   |
| F traditional          |            | <b>setgoodieshandler</b>      | function   |
| F popmethod            |            | <b>setoptions</b>             | function   |
| F pushmethod           |            | <b>setpatterns</b>            | function   |
| F setmethod            |            | <b>setsynonym</b>             | function   |
| F setup                |            | <b>setwordhandler</b>         | function   |
| F showhyphenationtrace |            | <b>showdiscretionaries</b>    | function   |
| T traditional          |            | <b>strippedgoodiewords</b>    | function   |
| F definefeatures       |            | <b>tolang</b>                 | function   |
| F gettrace             |            | <b>transliteration</b>        | table      |
| F hyphenate            |            | F define                      |            |
| F injectthyphens       |            | F handler                     |            |

|                                 |          |              |       |
|---------------------------------|----------|--------------|-------|
| F set                           |          | <b>words</b> |       |
| <b>unload</b>                   | function | F check      | table |
| <b>urls</b>                     | table    | T data       |       |
| D characters                    |          | F disable    |       |
| N lefthyphenmin                 |          | F enable     |       |
| D mapping                       |          | T enablers   |       |
| B packslashes                   |          | B enables    |       |
| N righthyphenmin                |          | F found      |       |
| F setcharacters                 |          | F load       |       |
| <b>version</b>                  | number   | T methods    |       |
| <b>visualizediscretionaries</b> | function | N threshold  |       |

# layouts (context)

**getcanvas**                   function  
**getpagedimensions**       function  
**setupcanvas**               function

**status**                    table  
    F isleftpage  
    F lefttorrightpageaction

## lfs (extra lua)

|                       |                     |
|-----------------------|---------------------|
| <b>attributes</b>     | overloaded function |
| <b>chdir</b>          | overloaded function |
| <b>currentdir</b>     | function            |
| <b>dir</b>            | overloaded function |
| <b>isdir</b>          | overloaded function |
| <b>isfile</b>         | overloaded function |
| <b>isfound</b>        | function            |
| <b>isreadabledir</b>  | function            |
| <b>isreadablefile</b> | function            |
| <b>iswriteabledir</b> | function            |

|                        |                     |
|------------------------|---------------------|
| <b>iswriteablefile</b> | function            |
| <b>link</b>            | overloaded function |
| <b>mkdir</b>           | overloaded function |
| <b>makedirs</b>        | function            |
| <b>modification</b>    | function            |
| <b>readlink</b>        | function            |
| <b>rmdir</b>           | overloaded function |
| <b>setexecutable</b>   | function            |
| <b>symlink</b>         | function            |
| <b>touch</b>           | overloaded function |

## libraries (context)

**basiclua** data table

**basictex** data table

**builtin** data table

**extralua** data table

**extratex** data table

**functions** data table

**globals** data table

# lmx (context)

|                          |          |
|--------------------------|----------|
| <b>color</b>             | function |
| <b>convert</b>           | function |
| <b>convertfile</b>       | function |
| <b>convertstring</b>     | function |
| <b>einject</b>           | function |
| <b>eprint</b>            | function |
| <b>escape</b>            | function |
| <b>finalized</b>         | function |
| <b>finject</b>           | function |
| <b>fprint</b>            | function |
| <b>get</b>               | function |
| <b>getvariables</b>      | function |
| <b>htmfile</b>           | function |
| <b>html</b>              | table    |
| F a                      |          |
| F td                     |          |
| F th                     |          |
| <b>include</b>           | function |
| <b>inherited</b>         | table    |
| S color-background-four  |          |
| S color-background-one   |          |
| S color-background-three |          |
| S color-background-two   |          |
| S title                  |          |
| <b>initialize</b>        | function |
| <b>inject</b>            | function |
| <b>lmxfile</b>           | function |

|                           |          |
|---------------------------|----------|
| <b>loadedfile</b>         | function |
| <b>make</b>               | function |
| <b>new</b>                | function |
| <b>overloaderror</b>      | function |
| <b>popupfile</b>          | function |
| <b>print</b>              | function |
| <b>pv</b>                 | function |
| <b>report</b>             | function |
| <b>reset</b>              | function |
| <b>result</b>             | function |
| <b>set</b>                | function |
| <b>show</b>               | function |
| <b>showerror</b>          | function |
| <b>stripcss</b>           | function |
| <b>tv</b>                 | function |
| <b>type</b>               | function |
| <b>urlescape</b>          | function |
| <b>variable</b>           | function |
| <b>variables</b>          | table    |
| S color-background-blue   |          |
| S color-background-body   |          |
| S color-background-green  |          |
| S color-background-main   |          |
| S color-background-purple |          |
| S color-background-yellow |          |
| S title-default           |          |

# logs (context)

|                             |          |                            |          |
|-----------------------------|----------|----------------------------|----------|
| <b>application</b>          | function | <b>setformats</b>          | function |
| <b>categories</b>           | function | <b>setformatters</b>       | function |
| <b>direct</b>               | function | <b>setlogfile</b>          | function |
| <b>disable</b>              | function | <b>setmessenger</b>        | function |
| <b>enable</b>               | function | <b>setprocessor</b>        | function |
| <b>finalactions</b>         | function | <b>settarget</b>           | function |
| <b>flush</b>                | function | <b>settimedlog</b>         | function |
| <b>loggingerrors</b>        | function | <b>settranslations</b>     | function |
| <b>messenger</b>            | function | <b>show</b>                | function |
| <b>new</b>                  | function | <b>start_page_number</b>   | function |
| <b>newline</b>              | function | <b>start_run</b>           | function |
| <b>poplogfile</b>           | function | <b>startererrorlogging</b> | function |
| <b>poptarget</b>            | function | <b>startfilelogging</b>    | function |
| <b>private</b>              | table    | <b>status</b>              | function |
| F enablepagetiming          |          | <b>stop_page_number</b>    | function |
| F getpagetiming             |          | <b>stoperrorlogging</b>    | function |
| <b>pushlogfile</b>          | function | <b>stopfilelogging</b>     | function |
| <b>pushtarget</b>           | function | <b>subdirect</b>           | function |
| <b>registerfinalactions</b> | function | <b>subreport</b>           | function |
| <b>report</b>               | function | <b>texerrormessage</b>     | function |
| <b>reporter</b>             | function | <b>writer</b>              | function |
| <b>resetlogfile</b>         | function |                            |          |

# lpdf (context)

|                                |            |                                 |          |
|--------------------------------|------------|---------------------------------|----------|
| <b>action</b>                  | function   | <b>delayedobject</b>            | function |
| <b>adddocumentcolorspace</b>   | function   | <b>destinationspecification</b> | function |
| <b>adddocumenttextgstate</b>   | function   | <b>dictionary</b>               | function |
| <b>adddocumentpattern</b>      | function   | <b>docstring</b>                | function |
| <b>adddocumentshade</b>        | function   | <b>epdf</b>                     | table    |
| <b>addtocatalog</b>            | function   | F analyzefonts                  |          |
| <b>addtoinfo</b>               | function   | F contenttotext                 |          |
| <b>addtonames</b>              | function   | F expanded                      |          |
| <b>addtopageattributes</b>     | function   | F getpagecontent                |          |
| <b>addtopageresources</b>      | function   | F getstructure                  |          |
| <b>addtopagesattributes</b>    | function   | T image                         |          |
| <b>addxmpinfo</b>              | function   | F close                         |          |
| <b>annotationspecification</b> | function   | F copy                          |          |
| <b>array</b>                   | function   | F new                           |          |
| <b>attachmentsymbols</b>       | function   | F open                          |          |
| <b>boolean</b>                 | function   | F query                         |          |
| <b>border</b>                  | function   | F load                          |          |
| <b>checkedkey</b>              | function   | F objecttype                    |          |
| <b>checkedvalue</b>            | function   | F parsecontent                  |          |
| <b>circularshade</b>           | function   | F plugin                        |          |
| <b>cmykcode</b>                | function   | T resolvers                     |          |
| <b>collectedresources</b>      | function   | F destinations                  |          |
| <b>color</b>                   | function   | F embeddedfiles                 |          |
| <b>colorspace</b>              | function   | F javascripts                   |          |
| <b>colorspaceconstants</b>     | data table | F layers                        |          |
| <b>colorspec</b>               | function   | F pages                         |          |
| <b>colorvalue</b>              | function   | F structure                     |          |
| <b>colorvalues</b>             | function   | F widgets                       |          |
| <b>commentsymbols</b>          | function   | F stripcontent                  |          |
| <b>compresslevel</b>           | function   | F unload                        |          |
| <b>constant</b>                | function   | F verboseobject                 |          |
| <b>copyarray</b>               | function   | <b>escaped</b>                  | function |
| <b>copyboolean</b>             | function   | <b>finalizeddocument</b>        | function |
| <b>copyconstant</b>            | function   | <b>finalizefonts</b>            | function |
| <b>copydictionary</b>          | function   | <b>finalizepage</b>             | function |
| <b>copyfloat</b>               | function   | <b>finishtransparencycode</b>   | function |
| <b>copyinteger</b>             | function   | <b>flags</b>                    | table    |
| <b>copynumber</b>              | function   | T annotations                   |          |
| <b>copystring</b>              | function   | N AutoView                      |          |
| <b>copyunicode</b>             | function   | N Hidden                        |          |
| <b>deferredobject</b>          | function   | N Invisible                     |          |

|                              |          |                            |            |
|------------------------------|----------|----------------------------|------------|
| N Locked                     |          | <b>fonts</b>               | table      |
| N LockedContents             |          | F color_direct             |            |
| N NoRotate                   |          | F color_indirect           |            |
| N NoView                     |          | <b>formats</b>             | data table |
| N NoZoom                     |          | <b>frombytes</b>           | function   |
| N Print                      |          | <b>fromeight</b>           | function   |
| N Printable                  |          | <b>frompdfdoc</b>          | function   |
| N ReadOnly                   |          | <b>fromsixteen</b>         | function   |
| N ToggleNoView               |          | <b>getcatalog</b>          | function   |
| N auto                       |          | <b>getcompression</b>      | function   |
| N hidden                     |          | <b>getfontname</b>         | function   |
| N printable                  |          | <b>getfontobjectnumber</b> | function   |
| T widgets                    |          | <b>getinfo</b>             | function   |
| N Comb                       |          | <b>getmatrix</b>           | function   |
| N CommitOnSelChange          |          | <b>getnofpages</b>         | function   |
| N DoNotScroll                |          | <b>getpageproperties</b>   | function   |
| N DoNotSpellCheck            |          | <b>getpagereference</b>    | function   |
| N Edit                       |          | <b>getpagetags</b>         | function   |
| N FileSelect                 |          | <b>getpos</b>              | function   |
| N MultiLine                  |          | <b>gettrailerid</b>        | function   |
| N NoExport                   |          | <b>getversion</b>          | function   |
| N NoToggleToOff              |          | <b>getxformname</b>        | function   |
| N Password                   |          | <b>graycode</b>            | function   |
| N PopUp                      |          | <b>hasmatrix</b>           | function   |
| N PushButton                 |          | <b>immediateobject</b>     | function   |
| N Radio                      |          | <b>includeimage</b>        | function   |
| N RadiosInUnison             |          | <b>initialize</b>          | function   |
| N ReadOnly                   |          | <b>injectors</b>           | table      |
| N Required                   |          | F bitmap                   |            |
| N RichText                   |          | F jp2                      |            |
| N Sort                       |          | F jpg                      |            |
| N file                       |          | F png                      |            |
| N fixed                      |          | <b>injectxmpinfo</b>       | function   |
| N nocheck                    |          | <b>insertxmpinfo</b>       | function   |
| N protected                  |          | <b>lastreferredpage</b>    | function   |
| N readonly                   |          | <b>layerreference</b>      | function   |
| N required                   |          | <b>limited</b>             | function   |
| N sorted                     |          | <b>linearshade</b>         | function   |
| N unavailable                |          | <b>literal</b>             | function   |
| <b>flushfonts</b>            | function | <b>majorversion</b>        | function   |
| <b>flushgroup</b>            | function | <b>makenametree</b>        | function   |
| <b>flushobject</b>           | function | <b>minorversion</b>        | function   |
| <b>flushstreamfileobject</b> | function | <b>nofpages</b>            | function   |
| <b>flushstreamobject</b>     | function | <b>null</b>                | function   |

|                                  |          |
|----------------------------------|----------|
| <b>number</b>                    | function |
| <b>object</b>                    | function |
| <b>objectcompresslevel</b>       | function |
| <b>pagereference</b>             | function |
| <b>patternstream</b>             | function |
| <b>pdfcolor</b>                  | function |
| <b>pdftimestamp</b>              | function |
| <b>print</b>                     | function |
| <b>procset</b>                   | function |
| <b>protectresources</b>          | boolean  |
| <b>rectangle</b>                 | function |
| <b>reference</b>                 | function |
| <b>registerannotation</b>        | function |
| <b>registerdestination</b>       | function |
| <b>registerdocumentfinalizer</b> | function |
| <b>registerfont</b>              | function |
| <b>registerinitializer</b>       | function |
| <b>registerpagefinalizer</b>     | function |
| <b>registerpattern</b>           | function |
| <b>reserveobject</b>             | function |
| <b>rgbcode</b>                   | function |
| <b>rotationcm</b>                | function |
| <b>setcompression</b>            | function |
| <b>setincludecidset</b>          | function |
| <b>setpageorder</b>              | function |
| <b>setpagetag</b>                | function |
| <b>setversion</b>                | function |
| <b>sharedobject</b>              | function |
| <b>shareobject</b>               | function |
| <b>shareobjectreference</b>      | function |
| <b>spotcode</b>                  | function |
| <b>stream</b>                    | function |
| <b>string</b>                    | function |
| <b>toeight</b>                   | function |
| <b>topdfdoc</b>                  | function |
| <b>tosixteen</b>                 | function |
| <b>transparency</b>              | function |
| <b>transparencycode</b>          | function |
| <b>transparencygroups</b>        | table    |
| B none                           |          |
| <b>transparencyvalue</b>         | function |
| <b>unicode</b>                   | function |
| <b>usedcharacters</b>            | table    |
| <b>usedfontnames</b>             | table    |

|                           |       |
|---------------------------|-------|
| N dejavusansmonoboldttf-1 |       |
| <b>usedfontobjects</b>    | table |
| N dejavusansmonoboldttf-1 |       |
| <b>usedfontstreams</b>    | table |
| T dejavusansmonoboldttf-1 |       |
| T characters              |       |
| T descriptions            |       |
| T fonts                   |       |
| T goodies                 |       |
| S original                |       |
| T parameters              |       |
| N ascender                |       |
| N descender               |       |
| N designsize              |       |
| T expansion               |       |
| N shrink                  |       |
| N step                    |       |
| N stretch                 |       |
| N extendfactor            |       |
| N extra_space             |       |
| N extrafactor             |       |
| N factor                  |       |
| N forcedsize              |       |
| N hfactor                 |       |
| N mathsize                |       |
| N maxsize                 |       |
| N minsize                 |       |
| N mode                    |       |
| N quad                    |       |
| N scaledpoints            |       |
| N size                    |       |
| N slant                   |       |
| N slantfactor             |       |
| N space                   |       |
| N space_shrink            |       |
| N space_stretch           |       |
| N squeezefactor           |       |
| N textsize                |       |
| N units                   |       |
| N vfactor                 |       |
| N width                   |       |
| N x_height                |       |
| T properties              |       |
| S filename                |       |

|               |                    |
|---------------|--------------------|
| B finalized   | T gsub             |
| S fontname    | T anum             |
| S format      | T arab             |
| S fullname    | B dflt             |
| S hash        | B urd              |
| B hasmath     | T camelcasing      |
| N id          | T *                |
| S language    | B *                |
| S mode        | T char-ligatures   |
| S name        | T *                |
| S psname      | B *                |
| S script      | T collapse         |
| S sharedwith  | T *                |
| N subfont     | B *                |
| S writingmode | T compat-ligatures |
| T resources   | T *                |
| T alreadydone | B *                |
| T classes     | T dlig             |
| T duplicates  | T latn             |
| T features    | B dflt             |
| T gpos        | B ism              |
| T mark        | B ksm              |
| T arab        | B lsm              |
| B dflt        | B mol              |
| T cyrl        | B nsm              |
| B dflt        | B rom              |
| B srb         | B sks              |
| T grek        | B ssm              |
| B dflt        | T locl             |
| T lao         | T cyrl             |
| B dflt        | B srb              |
| T latn        | T latn             |
| B dflt        | B ism              |
| B ism         | B ksm              |
| B ksm         | B lsm              |
| B lsm         | B nsm              |
| B mol         | B sks              |
| B nsm         | B ssm              |
| B rom         | T lowercasing      |
| B sks         | T *                |
| B ssm         | B *                |
| T mkmk        | T primes           |
| T arab        | T *                |
| B dflt        | B *                |

|                 |                |
|-----------------|----------------|
| T tlig          | N Chi          |
| T *             | N Circumflex   |
| B *             | N D            |
| T trep          | N Dcaron       |
| T *             | N Dcroat       |
| B *             | N Delta        |
| T uppercasing   | N Dieresis     |
| T *             | N E            |
| B *             | N Eacute       |
| S filename      | N Ebreve       |
| S foundfilename | N Ecaron       |
| T foundtables   | N Ecircumflex  |
| T markclasses   | N Edieresis    |
| T marks         | N Edotaccent   |
| T marksets      | N Egrave       |
| N private       | N Emacron      |
| T sequences     | N Eng          |
| T sublookups    | N Eng.alt      |
| T unicodes      | N Eogonek      |
| N .null         | N Epsilon      |
| N A             | N Epsilontonos |
| N AE            | N Eta          |
| N AEacute       | N Etatonos     |
| N Aacute        | N Eth          |
| N Abreve        | N Euro         |
| N Acircumflex   | N F            |
| N Acute         | N G            |
| N Adieresis     | N Gamma        |
| N Agrave        | N Gbreve       |
| N Alpha         | N Gcaron       |
| N Alphanotos    | N Gcircumflex  |
| N Amacron       | N Gcommaaccent |
| N Aogonek       | N Gdotaccent   |
| N Aring         | N Grave        |
| N Atilde        | N H            |
| N B             | N Hbar         |
| N Beta          | N Hcircumflex  |
| N C             | N I            |
| N Cacute        | N IJ           |
| N Caron         | N Iacute       |
| N Ccaron        | N Ibreve       |
| N Ccedilla      | N Icircumflex  |
| N Ccircumflex   | N Idieresis    |
| N Cdotaccent    | N Idotaccent   |

N Igrave  
N Imacron  
N Iogonek  
N Iota  
N Iotadieresis  
N Iotatonos  
N Itilde  
N J  
N Jcircumflex  
N K  
N Kappa  
N Kcommaaccent  
N L  
N Lacute  
N Lambda  
N Lcaron  
N Lcommaaccent  
N Ldot  
N Lslash  
N M  
N Mu  
N N  
N Nacute  
N Ncaron  
N Ncommaaccent  
N Ntilde  
N Nu  
N O  
N OE  
N Oacute  
N Obreve  
N Ocircumflex  
N Odieresis  
N Ograve  
N Ohorn  
N Ohungarumlaut  
N Omacron  
N Omega  
N Omegatonos  
N Omicron  
N Omicrontonos  
N Oslash  
N Oslashacute  
N Otilde

N P  
N Phi  
N Pi  
N Psi  
N Q  
N R  
N Racute  
N Rcaron  
N Rcommaaccent  
N Rho  
N S  
N Sacute  
N Scaron  
N Scedilla  
N Scircumflex  
N Scommaaccent  
N Sigma  
N T  
N Tau  
N Tbar  
N Tcaron  
N Tcommaaccent  
N Theta  
N Thorn  
N Tilde  
N U  
N Ugrave  
N Uhorn  
N Uhungarumlaut  
N Umacron  
N Uogonek  
N Upsilon  
N Upsilon1  
N Upsilondieresis  
N Upsilontonos  
N Uring  
N Utilde  
N V  
N W  
N Wacute  
N Wcircumflex  
N Wdieresis  
N Wgrave  
N X

|                    |                  |
|--------------------|------------------|
| N Xi               | N arrowdblup     |
| N Y                | N arrowdown      |
| N Yacute           | N arrowleft      |
| N Ycircumflex      | N arrowright     |
| N Ydieresis        | N arrowup        |
| N Ygrave           | N arrowupdn      |
| N Z                | N arrowupdnbse   |
| N Zacute           | N asciicircum    |
| N Zcaron           | N asciitilde     |
| N Zdotaccent       | N asterisk       |
| N Zeta             | N asteriskmath   |
| N a                | N at             |
| N aacute           | N atilde         |
| N abreve           | N b              |
| N acircumflex      | N backslash      |
| N acute            | N bar            |
| N acutecomb        | N beta           |
| N adieresis        | N block          |
| N ae               | N braceleft      |
| N aeacute          | N braceright     |
| N agrave           | N bracketleft    |
| N alpha            | N bracketright   |
| N alphanos         | N breve          |
| N amacron          | N brokenbar      |
| N ampersand        | N bullet         |
| N angle            | N c              |
| N anoteleia        | N cacute         |
| N aogonek          | N caron          |
| N approxequal      | N carriagereturn |
| N arabic_2dots     | N ccaron         |
| N arabic_2dots_a   | N ccedilla       |
| N arabic_3dots     | N ccircumflex    |
| N arabic_3dots_a   | N cdotaccent     |
| N arabic_4dots     | N cedilla        |
| N arabic_dot       | N cent           |
| N arabic_gaf_bar   | N chi            |
| N arabic_gaf_bar_a | N circle         |
| N arabic_ring      | N circlemultiply |
| N aring            | N circleplus     |
| N arrowboth        | N circumflex     |
| N arrowdblboth     | N club           |
| N arrowdbldown     | N colon          |
| N arrowdblleft     | N colonmonetary  |
| N arrowdblright    | N comma          |

|                     |                  |
|---------------------|------------------|
| N congruent         | N equal          |
| N copyright         | N equivalence    |
| N currency          | N estimated      |
| N d                 | N eta            |
| N dagger            | N etatonos       |
| N daggerdbl         | N eth            |
| N dcaron            | N exclam         |
| N dcroat            | N exclamdbl      |
| N degree            | N exclamdown     |
| N delta             | N existential    |
| N diaeresis.symbols | N f              |
| N diamond           | N female         |
| N dieresis          | N fi             |
| N dieresistonos     | N figuredash     |
| N divide            | N filledbox      |
| N dkshade           | N filledrect     |
| N dLlTcaron         | N five           |
| N dnblock           | N fiveeighths    |
| N dollar            | N fl             |
| N dong              | N florin         |
| N dotaccent         | N four           |
| N dotbelowcomb      | N fractionslash  |
| N dotlessi          | N franc          |
| N dotlessj          | N g              |
| N dotmath           | N gamma          |
| N e                 | N gbreve         |
| N eacute            | N gcaron         |
| N ebreve            | N gcircumflex    |
| N ecaron            | N gcommaaccent   |
| N ecircumflex       | N gdotaccent     |
| N edieresis         | N germandbls     |
| N edotaccent        | N gradient       |
| N egrave            | N grave          |
| N eight             | N gravecomb      |
| N element           | N greater        |
| N ellipsis          | N greaterequal   |
| N emacron           | N guillemotleft  |
| N emdash            | N guillemotright |
| N emptyset          | N guilsinglleft  |
| N endash            | N guilsinglright |
| N eng               | N h              |
| N eogonek           | N hbar           |
| N epsilon           | N hcircumflex    |
| N epsilononos       | N heart          |

N hookabovecomb  
N house  
N hungarumlaut  
N hyphen  
N i  
N iacute  
N ibreve  
N icircumflex  
N idieresis  
N igrave  
N ij  
N imacron  
N infinity  
N integral  
N integralbt  
N integraltp  
N intersection  
N invbullet  
N invcircle  
N invsmileface  
N iogonek  
N iota  
N iotadieresis  
N iotadieresis-tonos  
N iotatonos  
N itilde  
N j  
N jcircumflex  
N jot  
N k  
N kappa  
N kcommaaccent  
N kgreenlandic  
N l  
N lacute  
N lambda  
N lcaron  
N lcommaaccent  
N ldot  
N less  
N lessequal  
N lfblock  
N lira  
N logicaland

N logicalnot  
N logicalor  
N longs  
N lozenge  
N lslash  
N ltshade  
N m  
N macron  
N male  
N minus  
N minute  
N mu  
N multiply  
N musicalnote  
N musicalnotedbl  
N n  
N nacute  
N napostrophe  
N ncaron  
N ncommaaccent  
N nine  
N nonbreakingspace  
N nonmarkingreturn  
N notdef  
N notelement  
N notequal  
N notsubset  
N ntilde  
N nu  
N numbersign  
N o  
N oacute  
N obreve  
N ocircumflex  
N odieresis  
N oe  
N ogonek  
N ograve  
N ohorn  
N ohungarumlaut  
N omacron  
N omega  
N omega1  
N omegatonos

|                  |                  |
|------------------|------------------|
| N omicron        | N quotereversed  |
| N omicrontonos   | N quoteright     |
| N one            | N quotesinglbase |
| N oneeighth      | N quotesingle    |
| N onehalf        | N r              |
| N onequarter     | N racute         |
| N onesuperior    | N radical        |
| N onethird       | N rcaron         |
| N openbullet     | N rcommaaccent   |
| N ordfeminine    | N reflexsubset   |
| N ordmasculine   | N reflexsuperset |
| N orthogonal     | N registered     |
| N oslash         | N revlogicalnot  |
| N oslashacute    | N rho            |
| N otilde         | N ring           |
| N p              | N rtblock        |
| N paragraph      | N s              |
| N parenleft      | N sacute         |
| N parenright     | N scaron         |
| N partialdiff    | N scedilla       |
| N percent        | N scircumflex    |
| N period         | N scommaaccent   |
| N periodcentered | N second         |
| N perpendicular  | N section        |
| N perthousand    | N semicolon      |
| N peseta         | N seven          |
| N phi            | N seveneighths   |
| N phil           | N sfthyphen      |
| N pi             | N shade          |
| N plus           | N sigma          |
| N plusminus      | N sigmal         |
| N product        | N similar        |
| N propersubset   | N six            |
| N propersuperset | N slash          |
| N proportional   | N smileface      |
| N psi            | N space          |
| N q              | N spade          |
| N question       | N sterling       |
| N questiondown   | N suchthat       |
| N quotedbl       | N summation      |
| N quotedblbase   | N sun            |
| N quotedblleft   | N t              |
| N quotedblright  | N tau            |
| N quoteleft      | N tbar           |

|                         |                 |
|-------------------------|-----------------|
| N tcaron                | N wacute        |
| N tcommaaccent          | N wcircumflex   |
| N therefore             | N wdieresis     |
| N theta                 | N wgrave        |
| N theta1                | N x             |
| N thinquestion          | N xi            |
| N thorn                 | N y             |
| N three                 | N yacute        |
| N threeeighths          | N ycircumflex   |
| N threequarters         | N ydieresis     |
| N threesuperior         | N yen           |
| N tilde                 | N ygrave        |
| N tildecomb             | N z             |
| N tonos                 | N zacute        |
| N trademark             | N zcaron        |
| N triagdn               | N zdotaccent    |
| N triaglf               | N zero          |
| N triagrt               | N zeta          |
| N triagup               | S version       |
| N two                   | T shared        |
| N twosuperior           | T dynamics      |
| N twothirds             | T features      |
| N u                     | B analyze       |
| N ugrave                | B checkmarks    |
| N uhorn                 | B devanagari    |
| N uhungarumlaut         | B dummies       |
| N umacron               | B extensions    |
| N underbar              | B extrafeatures |
| N underbar.small        | B extraprivates |
| N underbar.wide         | B features      |
| N underscore            | B mathrules     |
| N underscoredbl         | S mode          |
| N union                 | N number        |
| N universal             | B spacekern     |
| N uogonek               | B visualspace   |
| N upblock               | T processes     |
| N upsilon               | T rawdata       |
| N upsilondieresis       | S cache_uuid    |
| N upsilondieresis-tonos | N cache_version |
| N upsilon-tonos         | B compacted     |
| N uring                 | B condensed     |
| N utilde                | S creator       |
| N v                     | T descriptions  |
| N w                     | B expanded      |

|                        |                  |
|------------------------|------------------|
| S format               | N version        |
| T goodies              | S weight         |
| T lookuphash           | S width          |
| T metadata             | N nofglyphs      |
| N ascender             | N private        |
| N averagewidth         | T properties     |
| T boundingbox          | B hascolor       |
| N defaultvheight       | B hasitalics     |
| N descender            | B hasspacekerns  |
| S family               | N size           |
| S familyname           | N tableversion   |
| S fontname             | N time           |
| N fstype               | T specification  |
| S fullname             | S cs             |
| T horizontalmetrics    | S detail         |
| N ascender             | S fallbacks      |
| N descender            | T features       |
| N linegap              | T normal         |
| N maxadvanceheight     | B features       |
| N maxadvancewidth      | S mode           |
| N maxextent            | N number         |
| N minbottomsidebearing | S filename       |
| N mintopsidebearing    | S forced         |
| N version              | S forcedname     |
| N italicangle          | B global         |
| B monospaced           | S goodies        |
| S panoseweight         | S hash           |
| S panosewidth          | N id             |
| N pfmweight            | S lookup         |
| N pfmwidth             | N mathsize       |
| S subfamily            | S method         |
| S subfamilyname        | S name           |
| N subfontindex         | S resolved       |
| N units                | N scalemode      |
| S version              | N size           |
| T verticalmetrics      | S source         |
| N ascender             | S specification  |
| N descender            | N textsize       |
| N linegap              | T unscaled       |
| N maxadvanceheight     | N cache_version  |
| N maxadvancewidth      | T changed        |
| N maxextent            | T characters     |
| N minbottomsidebearing | T descriptions   |
| N mintopsidebearing    | T mathparameters |

|                 |                           |          |
|-----------------|---------------------------|----------|
| T parameters    | S filename                |          |
| N ascender      | S fontname                |          |
| N charwidth     | S format                  |          |
| N descender     | S fullname                |          |
| N designsized   | B hasmath                 |          |
| N extra_space   | N id                      |          |
| N italicangle   | S mode                    |          |
| N maxsize       | B monospaced              |          |
| N minsize       | S name                    |          |
| N quad          | N private                 |          |
| N slant         | S psname                  |          |
| N space         | B setitalics              |          |
| N space_shrink  | S space                   |          |
| N space_stretch | N subfont                 |          |
| N units         | S writingmode             |          |
| N vheight       | <b>usedindices</b>        | table    |
| N x_height      | T dejavusansmonoboldttf-1 |          |
| T properties    | <b>verbose</b>            | function |

## lpeg (basic lua)

|                     |          |                              |            |
|---------------------|----------|------------------------------|------------|
| <b>B</b>            | function | <b>firstofsplit</b>          | function   |
| <b>C</b>            | function | <b>frontstripper</b>         | function   |
| <b>Carg</b>         | function | <b>instringchecker</b>       | function   |
| <b>Cb</b>           | function | <b>is_lpeg</b>               | function   |
| <b>Cc</b>           | function | <b>keeper</b>                | function   |
| <b>Cf</b>           | function | <b>locale</b>                | function   |
| <b>Cg</b>           | function | <b>match</b>                 | function   |
| <b>Cmt</b>          | function | <b>oneof</b>                 | function   |
| <b>Cp</b>           | function | <b>patterns</b>              | data table |
| <b>Cs</b>           | function | <b>pcode</b>                 | function   |
| <b>Ct</b>           | function | <b>print</b>                 | function   |
| <b>P</b>            | function | <b>ptree</b>                 | function   |
| <b>R</b>            | function | <b>replacer</b>              | function   |
| <b>S</b>            | function | <b>secondofsplit</b>         | function   |
| <b>UP</b>           | function | <b>setmaxstack</b>           | function   |
| <b>UR</b>           | function | <b>setutfcasers</b>          | function   |
| <b>US</b>           | function | <b>split</b>                 | function   |
| <b>V</b>            | function | <b>splitat</b>               | function   |
| <b>afterprefix</b>  | function | <b>splitter</b>              | function   |
| <b>anywhere</b>     | function | <b>stripper</b>              | function   |
| <b>append</b>       | function | <b>times</b>                 | function   |
| <b>balancer</b>     | function | <b>tsplitat</b>              | function   |
| <b>beforesuffix</b> | function | <b>tsplitter</b>             | function   |
| <b>checkedsplit</b> | function | <b>type</b>                  | function   |
| <b>containsws</b>   | function | <b>utfchartabletopattern</b> | function   |
| <b>counter</b>      | function | <b>utfreplacer</b>           | function   |
| <b>endstripper</b>  | function | <b>version</b>               | function   |
| <b>finder</b>       | function |                              |            |

# lua (basic tex)

|                            |                     |                                |            |
|----------------------------|---------------------|--------------------------------|------------|
| <b>bytecode</b>            | table               | <b>macros</b>                  | table      |
| <b>bytedata</b>            | data table          | B enabled                      |            |
| <b>bytdone</b>             | table               | F loaded                       |            |
| <b>callbytecode</b>        | function            | F required                     |            |
| <b>delay</b>               | function            | F reset                        |            |
| <b>finalizeinitex</b>      | function            | F resolvestring                |            |
| <b>firstbytecode</b>       | number              | F resolving                    |            |
| <b>flush</b>               | function            | F showdefinitions              |            |
| <b>flushdelayed</b>        | function            | <b>messages</b>                | data table |
| <b>get_functions_table</b> | function            | <b>newindex</b>                | function   |
| <b>getbytecode</b>         | function            | <b>newtable</b>                | function   |
| <b>getcurrenttime</b>      | function            | <b>numbers</b>                 | data table |
| <b>getdebuginfo</b>        | function            | <b>registercode</b>            | function   |
| <b>getfunctionstable</b>   | overloaded function | <b>registeredcodes</b>         | function   |
| <b>getpreciseseconds</b>   | function            | <b>registerinitexfinalizer</b> | function   |
| <b>getpreciseticks</b>     | function            | <b>registername</b>            | function   |
| <b>getruntime</b>          | function            | <b>setbytecode</b>             | function   |
| <b>getstacktop</b>         | function            | <b>setexitcode</b>             | function   |
| <b>getstartupfile</b>      | function            | <b>startupfile</b>             | string     |
| <b>getversion</b>          | function            | <b>version</b>                 | string     |
| <b>lastbytecode</b>        | number              |                                |            |

## luac (context)

**inspect**    function  
**print**     function

# luatex (context)

|                             |          |                    |          |
|-----------------------------|----------|--------------------|----------|
| <b>abort</b>                | function | F enable           |          |
| <b>cleanup</b>              | function | F finish           |          |
| <b>cleanuptempfiles</b>     | function | F pause            |          |
| <b>currentfile</b>          | function | F popline          |          |
| <b>poprunstate</b>          | function | F pushline         |          |
| <b>pushrunstate</b>         | function | F registerdisabler |          |
| <b>registerdumpactions</b>  | function | F registerenabler  |          |
| <b>registerpageactions</b>  | function | F resetfilename    |          |
| <b>registerstartactions</b> | function | F resume           |          |
| <b>registerstopactions</b>  | function | F setfilename      |          |
| <b>registertempfile</b>     | function | F setup            |          |
| <b>starttime</b>            | number   | F start            |          |
| <b>synctex</b>              | table    | F stop             |          |
| F blockfilename             |          | F wrapup           |          |
| F collect                   |          | <b>wrapup</b>      | function |
| F disable                   |          |                    |          |

# lxml (context)

|                          |            |                         |          |
|--------------------------|------------|-------------------------|----------|
| <b>addindex</b>          | function   | <b>first</b>            | function |
| <b>all</b>               | function   | <b>flush</b>            | function |
| <b>applyfunction</b>     | function   | <b>flushlinewise</b>    | function |
| <b>applyselectors</b>    | function   | <b>flushsetups</b>      | function |
| <b>att</b>               | function   | <b>flushspacewise</b>   | function |
| <b>attribute</b>         | function   | <b>get_id</b>           | function |
| <b>badinclusions</b>     | function   | <b>getid</b>            | function |
| <b>chainattribute</b>    | function   | <b>getindex</b>         | function |
| <b>checkindex</b>        | function   | <b>id</b>               | function |
| <b>collected</b>         | function   | <b>idsplitter</b>       | userdata |
| <b>command</b>           | function   | <b>ifatt</b>            | function |
| <b>concat</b>            | function   | <b>ifattempty</b>       | function |
| <b>concatrange</b>       | function   | <b>include</b>          | function |
| <b>content</b>           | function   | <b>inclusion</b>        | function |
| <b>context</b>           | function   | <b>inclusions</b>       | function |
| <b>convert</b>           | function   | <b>index</b>            | function |
| <b>count</b>             | function   | <b>inlineverbatimim</b> | function |
| <b>delete</b>            | function   | <b>installsetup</b>     | function |
| <b>depth</b>             | function   | <b>last</b>             | function |
| <b>direct</b>            | function   | <b>lastatt</b>          | function |
| <b>directives</b>        | table      | <b>lastmatch</b>        | function |
| F after                  |            | <b>lastpar</b>          | function |
| F before                 |            | <b>load</b>             | function |
| F handle                 |            | <b>loadbuffer</b>       | function |
| F load                   |            | <b>loaddata</b>         | function |
| F setup                  |            | <b>loaded</b>           | table    |
| <b>displayverbatimim</b> | function   | <b>main</b>             | function |
| <b>doif</b>              | function   | <b>match</b>            | function |
| <b>doifelse</b>          | function   | <b>name</b>             | function |
| <b>doifelseempty</b>     | function   | <b>namespace</b>        | function |
| <b>doifelsetext</b>      | function   | <b>nonspace</b>         | function |
| <b>doifempty</b>         | function   | <b>par</b>              | function |
| <b>doifnot</b>           | function   | <b>param</b>            | function |
| <b>doifnotempty</b>      | function   | <b>parameter</b>        | function |
| <b>doifnottext</b>       | function   | <b>path</b>             | function |
| <b>doiftext</b>          | function   | <b>popmatch</b>         | function |
| <b>element</b>           | function   | <b>pos</b>              | function |
| <b>elements</b>          | function   | <b>position</b>         | function |
| <b>entities</b>          | data table | <b>pure</b>             | function |
| <b>filter</b>            | function   | <b>pushmatch</b>        | function |
| <b>filterlist</b>        | function   | <b>raw</b>              | function |

|                         |          |
|-------------------------|----------|
| <b>rawroot</b>          | function |
| <b>rawtex</b>           | function |
| <b>refatt</b>           | function |
| <b>register</b>         | function |
| <b>registerentity</b>   | function |
| <b>removesetup</b>      | function |
| <b>replace</b>          | function |
| <b>resetcdata</b>       | function |
| <b>resetsetups</b>      | function |
| <b>resolvedentity</b>   | function |
| <b>root</b>             | function |
| <b>save</b>             | function |
| <b>serialize</b>        | function |
| <b>setaction</b>        | function |
| <b>setatt</b>           | function |
| <b>setattribute</b>     | function |
| <b>setcdata</b>         | function |
| <b>setcommandtonone</b> | function |
| <b>setcommandtotext</b> | function |
| <b>setpar</b>           | function |
| <b>setparam</b>         | function |
| <b>setparameter</b>     | function |
| <b>setsetup</b>         | function |
| <b>snippet</b>          | function |

|                         |            |
|-------------------------|------------|
| <b>sorters</b>          | table      |
| F add                   |            |
| F compare               |            |
| F flush                 |            |
| F reset                 |            |
| F show                  |            |
| F sort                  |            |
| <b>splitid</b>          | function   |
| <b>startraw</b>         | function   |
| <b>startunesescaped</b> | function   |
| <b>stopraw</b>          | function   |
| <b>stopunesescaped</b>  | function   |
| <b>store</b>            | function   |
| <b>strip</b>            | function   |
| <b>stripped</b>         | function   |
| <b>tag</b>              | function   |
| <b>text</b>             | function   |
| <b>tobuffer</b>         | function   |
| <b>tofile</b>           | function   |
| <b>toparameters</b>     | function   |
| <b>toverbatim</b>       | function   |
| <b>verbatim</b>         | function   |
| <b>withindex</b>        | function   |
| <b>xmltexhandler</b>    | data table |

## math (basic lua)

|                    |          |                       |                     |
|--------------------|----------|-----------------------|---------------------|
| <b>abs</b>         | function | <b>min</b>            | function            |
| <b>acos</b>        | function | <b>mininteger</b>     | number              |
| <b>asin</b>        | function | <b>mod</b>            | function            |
| <b>atan</b>        | function | <b>modf</b>           | function            |
| <b>atan2</b>       | function | <b>odd</b>            | function            |
| <b>ceil</b>        | function | <b>pi</b>             | number              |
| <b>ceiling</b>     | function | <b>pow</b>            | function            |
| <b>cos</b>         | function | <b>rad</b>            | function            |
| <b>cosd</b>        | function | <b>random</b>         | overloaded function |
| <b>cosh</b>        | function | <b>randomseed</b>     | function            |
| <b>deg</b>         | function | <b>round</b>          | function            |
| <b>div</b>         | function | <b>setrandomseedi</b> | function            |
| <b>even</b>        | function | <b>sin</b>            | function            |
| <b>exp</b>         | function | <b>sind</b>           | function            |
| <b>floor</b>       | function | <b>sinh</b>           | function            |
| <b>fmod</b>        | function | <b>sqrt</b>           | function            |
| <b>huge</b>        | number   | <b>tan</b>            | function            |
| <b>initialseed</b> | number   | <b>tand</b>           | function            |
| <b>ldexp</b>       | function | <b>tanh</b>           | function            |
| <b>log</b>         | function | <b>tointeger</b>      | function            |
| <b>log10</b>       | function | <b>type</b>           | function            |
| <b>max</b>         | function | <b>ult</b>            | function            |
| <b>maxinteger</b>  | number   |                       |                     |

# mathematics (context)

|                               |            |                               |            |
|-------------------------------|------------|-------------------------------|------------|
| <b>addfallbacks</b>           | function   | <b>T more</b>                 |            |
| <b>alphabets</b>              | data table | <b>T zero</b>                 |            |
| <b>alternatives</b>           | data table | <b>privatebase</b>            | number     |
| <b>big</b>                    | function   | <b>registerdomain</b>         | function   |
| <b>boldmap</b>                | data table | <b>registerfallbackid</b>     | function   |
| <b>categories</b>             | table      | <b>remapalphabets</b>         | function   |
| <b>D functions</b>            |            | <b>renderings</b>             | table      |
| <b>charactersets</b>          | data table | <b>D mappings</b>             |            |
| <b>checkaccentbaseheight</b>  | function   | <b>D numbers</b>              |            |
| <b>checkprivateparameters</b> | function   | <b>D sets</b>                 |            |
| <b>classes</b>                | data table | <b>renderset</b>              | function   |
| <b>codes</b>                  | data table | <b>resetattributes</b>        | function   |
| <b>collected</b>              | function   | <b>resetitalics</b>           | function   |
| <b>define</b>                 | function   | <b>resolvefallbacks</b>       | function   |
| <b>dimensions</b>             | function   | <b>scaleparameters</b>        | function   |
| <b>domains</b>                | table      | <b>setdomain</b>              | function   |
| <b>extensiblecode</b>         | function   | <b>setitalics</b>             | function   |
| <b>extensibles</b>            | data table | <b>sets</b>                   | data table |
| <b>extrabase</b>              | number     | <b>startcollecting</b>        | function   |
| <b>extras</b>                 | table      | <b>stopcollecting</b>         | function   |
| <b>F add</b>                  |            | <b>styles</b>                 | data table |
| <b>F copy</b>                 |            | <b>syncboth</b>               | function   |
| <b>fallbacks</b>              | table      | <b>syncname</b>               | function   |
| <b>F apply</b>                |            | <b>syncstyle</b>              | function   |
| <b>F install</b>              |            | <b>toname</b>                 | function   |
| <b>fallbackstyleattr</b>      | function   | <b>tostyle</b>                | function   |
| <b>families</b>               | data table | <b>tweakaftercopyingfont</b>  | function   |
| <b>finishfallbacks</b>        | function   | <b>tweakbeforecopyingfont</b> | function   |
| <b>gaps</b>                   | data table | <b>tweaks</b>                 | table      |
| <b>getboth</b>                | function   | <b>F action</b>               |            |
| <b>getdomain</b>              | function   | <b>F addscripts</b>           |            |
| <b>getitalics</b>             | function   | <b>F checkspacing</b>         |            |
| <b>getstyle</b>               | function   | <b>F dimensions</b>           |            |
| <b>horizontalcode</b>         | function   | <b>F fixprimes</b>            |            |
| <b>initializeparameters</b>   | function   | <b>F fixradicals</b>          |            |
| <b>makefont</b>               | function   | <b>F version</b>              |            |
| <b>mapremap</b>               | data table | <b>utfmathaccent</b>          | function   |
| <b>overloadparameters</b>     | function   | <b>utfmathclass</b>           | function   |
| <b>preset</b>                 | function   | <b>utfmathcommand</b>         | function   |
| <b>presets</b>                | table      | <b>utfmathfiller</b>          | function   |
| <b>T less</b>                 |            | <b>utfmathstretch</b>         | function   |

**virtualize**  
**virtualized**

function  
data table

## md5 (extra lua)

|            |          |
|------------|----------|
| <b>HEX</b> | function |
| <b>dec</b> | function |
| <b>hex</b> | function |

|                |          |
|----------------|----------|
| <b>sum</b>     | function |
| <b>sumHEXA</b> | function |
| <b>sumhexa</b> | function |

# metapost (context)

|                           |          |                   |
|---------------------------|----------|-------------------|
| <b>checkformat</b>        | function | N nullary         |
| <b>checktracingonline</b> | function | N numeric         |
| <b>cm</b>                 | function | N of              |
| <b>codes</b>              | table    | N ofbinary        |
| N addto                   |          | N parametertype   |
| N ampersand               |          | N pathjoin        |
| N and                     |          | N plusorminus     |
| N assignment              |          | N primarybinary   |
| N atleast                 |          | N primarydef      |
| N begingroup              |          | N property        |
| N btex                    |          | N protection      |
| N capsule                 |          | N randomseed      |
| N colon                   |          | N relax           |
| N comma                   |          | N repeatloop      |
| N controls                |          | N rightbrace      |
| N curl                    |          | N rightbracket    |
| N cycle                   |          | N rightdelimiter  |
| N definedmacro            |          | N runscript       |
| N delimiters              |          | N save            |
| N endgroup                |          | N scantokens      |
| N equals                  |          | N secondarybinary |
| N etex                    |          | N secondarydef    |
| N everyjob                |          | N semicolon       |
| N exittest                |          | N setbounds       |
| N expandafter             |          | N shipout         |
| N fiorelse                |          | N show            |
| N if                      |          | N slash           |
| N input                   |          | N step            |
| N interim                 |          | N stop            |
| N internal                |          | N str             |
| N iteration               |          | N string          |
| N leftbrace               |          | N tag             |
| N leftbracket             |          | N tension         |
| N leftdelimiter           |          | N tertiarybinary  |
| N let                     |          | N tertiarydef     |
| N macrodef                |          | N thingstoadd     |
| N macrospecial            |          | N to              |
| N maketext                |          | N typename        |
| N message                 |          | N unary           |
| N mode                    |          | N undefinedcs     |
| N newinternal             |          | N until           |

|                           |            |                          |          |
|---------------------------|------------|--------------------------|----------|
| N void                    |            | <b>graphic</b>           | function |
| N with                    |            | <b>graphic_base_pass</b> | function |
| N within                  |            | <b>includesvgbuffer</b>  | function |
| N write                   |            | <b>includesvgfile</b>    | function |
| <b>colorinitializer</b>   | function   | <b>installplugin</b>     | function |
| <b>convert</b>            | function   | <b>isobject</b>          | function |
| <b>currentmpx</b>         | function   | <b>knownparameters</b>   | table    |
| <b>currentmpxstatus</b>   | function   | <b>lastlog</b>           | string   |
| <b>defaultformat</b>      | string     | <b>load</b>              | function |
| <b>defaultinstance</b>    | string     | <b>maketext</b>          | function |
| <b>defaultmethod</b>      | string     | <b>metafonts</b>         | table    |
| <b>directrun</b>          | function   | <b>metafun</b>           | table    |
| <b>escaped</b>            | function   | F interpolate            |          |
| <b>exectime</b>           | table      | F topath                 |          |
| <b>extensiondata</b>      | data table | <b>mptopdf</b>           | table    |
| <b>filterclippath</b>     | function   | F convertmpstopdf        |          |
| <b>flush</b>              | function   | N nofconverted           |          |
| <b>flushers</b>           | table      | <b>n</b>                 | number   |
| T pdf                     |            | <b>newlogger</b>         | function |
| F flushfigure             |            | <b>nofruns</b>           | number   |
| F startfigure             |            | <b>nofscriptruns</b>     | function |
| F stopfigure              |            | <b>nvformat</b>          | function |
| F textfigure              |            | <b>pdfliterals</b>       | function |
| F tocomment               |            | <b>pluginactions</b>     | function |
| <b>flushnormalpath</b>    | function   | <b>popformat</b>         | function |
| <b>fonts</b>              | table      | <b>popscriptrunner</b>   | function |
| F define                  |            | <b>popvariable</b>       | function |
| <b>format_number</b>      | function   | <b>popvariables</b>      | function |
| <b>format_string</b>      | function   | <b>preparetexttsdata</b> | function |
| <b>formatnumber</b>       | function   | <b>process</b>           | function |
| <b>getbendtolerance</b>   | function   | <b>processing</b>        | function |
| <b>getbuffer</b>          | function   | <b>processplugins</b>    | function |
| <b>getclippath</b>        | function   | <b>properties</b>        | table    |
| <b>getextensions</b>      | function   | <b>pushformat</b>        | function |
| <b>getextradata</b>       | function   | <b>pushscriptrunner</b>  | function |
| <b>gethashentries</b>     | function   | <b>pushvariable</b>      | function |
| <b>getinstancenames</b>   | function   | <b>pushvariables</b>     | function |
| <b>getjobdata</b>         | function   | <b>reducetogray</b>      | boolean  |
| <b>getparameter</b>       | function   | <b>registerdirect</b>    | function |
| <b>getparameterpreset</b> | function   | <b>registerscript</b>    | function |
| <b>getparameterset</b>    | function   | <b>registertokens</b>    | function |
| <b>getrecord</b>          | function   | <b>remappedtext</b>      | function |
| <b>getstatistics</b>      | function   | <b>remaptext</b>         | function |
| <b>gettext</b>            | function   | <b>reporterror</b>       | function |

|                         |          |                      |          |
|-------------------------|----------|----------------------|----------|
| <b>reportsvgfonts</b>   | function | <b>svgsplitcolor</b> | function |
| <b>reset</b>            | function | <b>svgtomp</b>       | function |
| <b>resetlastlog</b>     | function | <b>svgtopdf</b>      | function |
| <b>resetplugins</b>     | function | <b>sxsy</b>          | function |
| <b>run</b>              | function | <b>tex</b>           | table    |
| <b>runinternal</b>      | function | F get                |          |
| <b>runscript</b>        | function | F reset              |          |
| <b>scanparameters</b>   | function | F set                |          |
| <b>scripterror</b>      | function | F setfrombuffer      |          |
| <b>scriptindex</b>      | function | <b>texerrors</b>     | boolean  |
| <b>setbendtolerance</b> | function | <b>texexp</b>        | function |
| <b>setbuffer</b>        | function | <b>theclippath</b>   | function |
| <b>setextensions</b>    | function | <b>tographic</b>     | function |
| <b>setlogging</b>       | function | <b>totable</b>       | function |
| <b>setoutercolor</b>    | function | <b>types</b>         | table    |
| <b>setparameterset</b>  | function | N boolean            |          |
| <b>setrecord</b>        | function | N cmykcolor          |          |
| <b>settext</b>          | function | N color              |          |
| <b>setvariable</b>      | function | N dependent          |          |
| <b>showlog</b>          | boolean  | N independent        |          |
| <b>showsvgpage</b>      | function | N known              |          |
| <b>simple</b>           | function | N numeric            |          |
| <b>splitprescript</b>   | function | N pair               |          |
| <b>startgraphic</b>     | function | N path               |          |
| <b>startsvghashing</b>  | function | N pen                |          |
| <b>stopgraphic</b>      | function | N picture            |          |
| <b>stopsvghashing</b>   | function | N protodependent     |          |
| <b>svformat</b>         | function | N string             |          |
| <b>svgcolorremapper</b> | function | N structured         |          |
| <b>svgfactors</b>       | table    | N suffixedmacro      |          |
| N %                     |          | N tokenlist          |          |
| N bp                    |          | N transform          |          |
| N cm                    |          | N unknownboolean     |          |
| N em                    |          | N unknownpath        |          |
| N ex                    |          | N unknownpen         |          |
| N in                    |          | N unknownpicture     |          |
| N mm                    |          | N unknownstring      |          |
| N pc                    |          | N unsuffixedmacro    |          |
| N pt                    |          | N vacuum             |          |
| N px                    |          | <b>typesvgpage</b>   | function |
| <b>svgglyphtomp</b>     | function | <b>unload</b>        | function |
| <b>svgshapestomp</b>    | function | <b>untagvariable</b> | function |
| <b>svgshapestopdf</b>   | function | <b>variables</b>     | table    |

## mime (extra lua)

**b64** function

**decode** function

**decodet** table

F base64

F quoted-printable

**dot** function

**encode** function

**encodet** table

F base64

F quoted-printable

**eol** function

**normalize** function

**qp** function

**qpwrp** function

**report** function

**stuff** function

**unb64** function

**unqp** function

**wrap** function

**wrapt** table

F base64

F default

F quoted-printable

F text

**wrp** function

# mp (context)

|                   |          |                                      |          |
|-------------------|----------|--------------------------------------|----------|
| <b>autoinject</b> | function | <b>fprint</b>                        | function |
| <b>aux</b>        | function | <b>get</b>                           | table    |
| F boolean         |          | F hashentry                          |          |
| F color           |          | <b>graphformat</b>                   | function |
| F direct          |          | <b>inject</b>                        | function |
| F draw            |          | F boolean                            |          |
| F fill            |          | F cmykcolor                          |          |
| F flush           |          | F color                              |          |
| F fprint          |          | F integer                            |          |
| F integer         |          | F number                             |          |
| F number          |          | F numeric                            |          |
| F numeric         |          | F pair                               |          |
| F pair            |          | F path                               |          |
| F pairpoints      |          | F pt                                 |          |
| F path            |          | F quadruplet                         |          |
| F pathpoints      |          | F string                             |          |
| F points          |          | F transform                          |          |
| F print           |          | F triplet                            |          |
| F quadruple       |          | F whatever                           |          |
| F quadruplepoints |          | F whd                                |          |
| F quoted          |          | F xy                                 |          |
| F size            |          | <b>integer</b>                       | function |
| F string          |          | <b>lmt_color_functions</b>           | table    |
| F transform       |          | F shade                              |          |
| F triplet         |          | F step                               |          |
| F tripletpoints   |          | <b>lmt_contours_bitmap_get</b>       | function |
| F vprint          |          | <b>lmt_contours_bitmap_set</b>       | function |
| <b>boolean</b>    | function | <b>lmt_contours_cleanup</b>          | function |
| <b>cleaned</b>    | function | <b>lmt_contours_color</b>            | function |
| <b>color</b>      | function | <b>lmt_contours_edge_get_band</b>    | function |
| <b>dataset</b>    | function | <b>lmt_contours_edge_get_cell</b>    | function |
| <b>datasets</b>   | function | <b>lmt_contours_edge_paths</b>       | function |
| F load            |          | <b>lmt_contours_edge_set</b>         | function |
| <b>direct</b>     | function | <b>lmt_contours_edge_set_by_band</b> | function |
| <b>draw</b>       | function | <b>lmt_contours_edge_set_by_cell</b> | function |
| <b>expandtex</b>  | function | <b>lmt_contours_format</b>           | function |
| <b>fill</b>       | function | <b>lmt_contours_function</b>         | function |
| <b>flatten</b>    | function | <b>lmt_contours_maxmean</b>          | function |
| <b>flush</b>      | function | <b>lmt_contours_maxz</b>             | function |
| <b>format</b>     | function | <b>lmt_contours_minmean</b>          | function |
| <b>formatted</b>  | function | <b>lmt_contours_minz</b>             | function |

|                                       |          |                                |          |
|---------------------------------------|----------|--------------------------------|----------|
| <code>lmt_contours_nofvalues</code>   | function | <code>n</code>                 | function |
| <code>lmt_contours_nx</code>          | function | <code>number</code>            | function |
| <code>lmt_contours_ny</code>          | function | <code>numeric</code>           | function |
| <code>lmt_contours_range</code>       | function | <code>pair</code>              | function |
| <code>lmt_contours_shade_paths</code> | function | <code>pairpoints</code>        | function |
| <code>lmt_contours_shade_set</code>   | function | <code>path</code>              | function |
| <code>lmt_contours_shape_paths</code> | function | <code>pathpoints</code>        | function |
| <code>lmt_contours_start</code>       | function | <code>points</code>            | function |
| <code>lmt_contours_stop</code>        | function | <code>print</code>             | function |
| <code>lmt_contours_value</code>       | function | <code>F boolean</code>         |          |
| <code>lmt_contours_xrange</code>      | function | <code>F color</code>           |          |
| <code>lmt_contours_yrange</code>      | function | <code>F direct</code>          |          |
| <code>lmt_function_x</code>           | function | <code>F draw</code>            |          |
| <code>lmt_mesh_set</code>             | function | <code>F fill</code>            |          |
| <code>lmt_mesh_update</code>          | function | <code>F flush</code>           |          |
| <code>lmt_poisson_generate</code>     | function | <code>F fprint</code>          |          |
| <code>lmt_surface_do</code>           | function | <code>F integer</code>         |          |
| <code>lmt_svg_include</code>          | function | <code>F number</code>          |          |
| <code>mf_blob_add</code>              | function | <code>F numeric</code>         |          |
| <code>mf_blob_dimensions</code>       | function | <code>F pair</code>            |          |
| <code>mf_blob_index</code>            | function | <code>F pairpoints</code>      |          |
| <code>mf_blob_new</code>              | function | <code>F path</code>            |          |
| <code>mf_blob_raw_content</code>      | function | <code>F pathpoints</code>      |          |
| <code>mf_blob_raw_dimensions</code>   | function | <code>F points</code>          |          |
| <code>mf_blob_raw_reset</code>        | function | <code>F print</code>           |          |
| <code>mf_blob_raw_toutf</code>        | function | <code>F quadruple</code>       |          |
| <code>mf_blob_raw_wipe</code>         | function | <code>F quadruplepoints</code> |          |
| <code>mf_blob_size</code>             | function | <code>F quoted</code>          |          |
| <code>mf_blob_width</code>            | function | <code>F size</code>            |          |
| <code>mf_external_figure</code>       | function | <code>F string</code>          |          |
| <code>mf_finish_saving_data</code>    | function | <code>F transform</code>       |          |
| <code>mf_formatted_text</code>        | function | <code>F triplet</code>         |          |
| <code>mf_get_outline_text</code>      | function | <code>F tripletpoints</code>   |          |
| <code>mf_graphic_text</code>          | function | <code>F vprint</code>          |          |
| <code>mf_inject_blob</code>           | function | <code>processingmode</code>    | function |
| <code>mf_map_move</code>              | function | <code>quadruple</code>         | function |
| <code>mf_map_text</code>              | function | <code>quadruplepoints</code>   | function |
| <code>mf_named_color</code>           | function | <code>quoted</code>            | function |
| <code>mf_outline_text</code>          | function | <code>report</code>            | function |
| <code>mf_save_data</code>             | function | <code>scan</code>              | table    |
| <code>mf_script_index</code>          | function | <code>F boolean</code>         |          |
| <code>mf_start_saving_data</code>     | function | <code>F cmykcolor</code>       |          |
| <code>mf_stop_saving_data</code>      | function | <code>F color</code>           |          |
| <code>mode</code>                     | function | <code>F expression</code>      |          |

|                 |                      |          |
|-----------------|----------------------|----------|
| F integer       | T typescanners       |          |
| F next          | F whatever           |          |
| F number        | <b>set</b>           | table    |
| F numeric       | <b>size</b>          | function |
| F pair          | <b>skip</b>          | table    |
| F path          | F token              |          |
| F pen           | <b>solve</b>         | function |
| F property      | <b>string</b>        | function |
| F string        | <b>systemmode</b>    | function |
| F symbol        | <b>transform</b>     | function |
| F token         | <b>triplet</b>       | function |
| T tokenscanners | <b>tripletpoints</b> | function |
| F transform     | <b>vprint</b>        | function |

## mplib (extra tex)

|                         |          |                        |                     |
|-------------------------|----------|------------------------|---------------------|
| <b>execute</b>          | function | <b>injectstring</b>    | function            |
| <b>expandtex</b>        | function | <b>injecttransform</b> | function            |
| <b>finder</b>           | function | <b>injectwhatever</b>  | function            |
| <b>finders</b>          | table    | <b>new</b>             | overloaded function |
| F file                  |          | <b>peninfo</b>         | function            |
| F mpstemplate           |          | <b>propertycodes</b>   | table               |
| <b>finish</b>           | function | <b>realtimelogging</b> | boolean             |
| <b>getcallbackstate</b> | function | <b>scanboolean</b>     | function            |
| <b>getcodes</b>         | function | <b>scancmykcolor</b>   | function            |
| <b>getcolormodels</b>   | function | <b>scancolor</b>       | function            |
| <b>getfields</b>        | function | <b>scanexpression</b>  | function            |
| <b>gethashentries</b>   | function | <b>scaninteger</b>     | function            |
| <b>gethashentry</b>     | function | <b>scannext</b>        | function            |
| <b>getobjecttypes</b>   | function | <b>scannumber</b>      | function            |
| <b>getstates</b>        | function | <b>scannumeric</b>     | function            |
| <b>getstatistics</b>    | function | <b>scanpair</b>        | function            |
| <b>getstatus</b>        | function | <b>scanpath</b>        | function            |
| <b>gettolerance</b>     | function | <b>scanpen</b>         | function            |
| <b>gettype</b>          | function | <b>scanproperty</b>    | function            |
| <b>gettypes</b>         | function | <b>scanstring</b>      | function            |
| <b>injectboolean</b>    | function | <b>scansymbol</b>      | function            |
| <b>injectcmykcolor</b>  | function | <b>scantoken</b>       | function            |
| <b>injectcolor</b>      | function | <b>scantransform</b>   | function            |
| <b>injectinteger</b>    | function | <b>settolerance</b>    | function            |
| <b>injectnumber</b>     | function | <b>showcontext</b>     | function            |
| <b>injectnumeric</b>    | function | <b>skiptoken</b>       | function            |
| <b>injectpair</b>       | function | <b>solvepath</b>       | function            |
| <b>injectpath</b>       | function | <b>version</b>         | function            |

# noads (context)

|                 |       |                      |            |
|-----------------|-------|----------------------|------------|
| <b>handlers</b> | table |                      | F render   |
| F align         |       |                      | F resize   |
| F alternates    |       |                      | F showtree |
| F autofences    |       |                      | F tags     |
| F classes       |       |                      | F unscript |
| F collapse      |       |                      | F unstack  |
| F domains       |       |                      | F variants |
| F export        |       | <b>process</b>       | function   |
| F families      |       | <b>processnested</b> | function   |
| F fixscripts    |       | <b>processors</b>    | table      |
| F italics       |       | F mlisttohtml        |            |
| F kernpairs     |       | T unscript           |            |
| F makeup        |       | T unstack            |            |
| F relocate      |       | <b>processouter</b>  | function   |

## node (basic tex)

|                             |          |                      |
|-----------------------------|----------|----------------------|
| <b>checkdiscretionaries</b> | function | F flushlist          |
| <b>checkdiscretionary</b>   | function | F flushnode          |
| <b>copy</b>                 | function | F free               |
| <b>copy_list</b>            | function | F get_attribute      |
| <b>copylist</b>             | function | F get_attributes     |
| <b>count</b>                | function | F getattribute       |
| <b>current_attributes</b>   | function | F getattributelist   |
| <b>currentattributes</b>    | function | F getattributes      |
| <b>dimensions</b>           | function | F getboth            |
| <b>direct</b>               | table    | F getbox             |
| F addmargins                |          | F getchar            |
| F addxoffset                |          | F getcharspec        |
| F addxymargins              |          | F getdata            |
| F addyoffset                |          | F getdepth           |
| F appendaftertail           |          | F getdirection       |
| F checkdiscretionaries      |          | F getdisc            |
| F checkdiscretionary        |          | F getdiscpart        |
| F collapsing                |          | F getexpansion       |
| F copy                      |          | F getfam             |
| F copy_list                 |          | F getfield           |
| F copylist                  |          | F getfont            |
| F copyonly                  |          | F getglue            |
| F count                     |          | F getglyphdata       |
| F current_attributes        |          | F getglyphdimensions |
| F currentattributes         |          | F getheight          |
| F dimensions                |          | F getid              |
| F effective_glue            |          | F getindex           |
| F effectiveglue             |          | F getkern            |
| F end_of_math               |          | F getkerndimension   |
| F endofmath                 |          | F getlanguage        |
| F exchange                  |          | F getleader          |
| F fields                    |          | F getlist            |
| F find_node                 |          | F getnext            |
| F findattribute             |          | F getnormalizedline  |
| F findattributerange        |          | F getnucleus         |
| F findnode                  |          | F getoffsets         |
| F first_glyph               |          | F getoptions         |
| F firstglyph                |          | F getorientation     |
| F flattendiscretionaries    |          | F getparstate        |
| F flush_list                |          | F getpenalty         |
| F flush_node                |          | F getpost            |

|                     |                        |
|---------------------|------------------------|
| F getpre            | F is_zero_glue         |
| F getprev           | F ischar               |
| F getpropertystable | F isglyph              |
| F getproperty       | F isnextchar           |
| F getreplace        | F isnextglyph          |
| F getscale          | F isnode               |
| F getscales         | F isprevchar           |
| F getscrip          | F isprevglyph          |
| F getshift          | F isvalid              |
| F getspeciallist    | F iszeroglue           |
| F getsstate         | F kerning              |
| F getsub            | F length               |
| F getsubpre         | F ligaturing           |
| F getsubtype        | F makeextensible       |
| F getsup            | F migrate              |
| F getsuppre         | F mlist_to_hlist       |
| F getsynctexfields  | F mlisttohlist         |
| F gettotal          | F naturalhsize         |
| F getwhd            | F naturalwidth         |
| F getwidth          | F new                  |
| F getwordrange      | F newmathglyph         |
| F getxscale         | F patchattributes      |
| F getxyscales       | F prependbeforehead    |
| F getyscale         | F protect_glyph        |
| F has_attribute     | F protect_glyphs       |
| F has_field         | F protectglyph         |
| F has_glyph         | F protectglyphs        |
| F hasattribute      | F protrusionskipppable |
| F hasdimensions     | F rangedimensions      |
| F hasfield          | F remove               |
| F hasglyph          | F reverse              |
| F hasglyphoption    | F set_attribute        |
| F hpack             | F set_attributes       |
| F hyphenating       | F setattribute         |
| F id                | F setattributelist     |
| F ignoremathskip    | F setattributes        |
| F insert_after      | F setboth              |
| F insert_before     | F setbox               |
| F insertafter       | F setchar              |
| F insertbefore      | F setdata              |
| F is_char           | F setdepth             |
| F is_glyph          | F setdirection         |
| F is_node           | F setdisc              |
| F is_valid          | F setdiscpart          |

|                   |                       |          |
|-------------------|-----------------------|----------|
| F setexpansion    | F subtypes            |          |
| F setfam          | F tail                |          |
| F setfield        | F todirect            |          |
| F setfont         | F tonode              |          |
| F setglue         | F toString            |          |
| F setglyphdata    | F tovaliddirect       |          |
| F setheight       | F traverse            |          |
| F setindex        | F traverse_char       |          |
| F setkern         | F traverse_content    |          |
| F setlanguage     | F traverse_glyph      |          |
| F setleader       | F traverse_id         |          |
| F setlink         | F traverse_list       |          |
| F setlist         | F traversechar        |          |
| F setnext         | F traversecontent     |          |
| F setnucleus      | F traverseglyph       |          |
| F setoffsets      | F traverseid          |          |
| F setoptions      | F traverselist        |          |
| F setorientation  | F type                |          |
| F setpenalty      | F types               |          |
| F setpost         | F unprotect_glyph     |          |
| F setpre          | F unprotect_glyphs    |          |
| F setprev         | F unprotectglyph      |          |
| F setproperty     | F unprotectglyphs     |          |
| F setreplace      | F unset_attribute     |          |
| F setscales       | F unset_attributes    |          |
| F setscript       | F unsetattribute      |          |
| F setshift        | F unsetattributes     |          |
| F setspeciallist  | F usedlist            |          |
| F setsplit        | F uses_font           |          |
| F setstate        | F usesfont            |          |
| F setsub          | F values              |          |
| F setsubpre       | F verticalbreak       |          |
| F setsubtype      | F vpack               |          |
| F setup           | F write               |          |
| F setsuppre       | F xscaled             |          |
| F setsyntexfields | F yscaled             |          |
| F settotal        | <b>effective_glue</b> | function |
| F setwhd          | <b>effectiveglue</b>  | function |
| F setwidth        | <b>end_of_math</b>    | function |
| F show            | <b>endofmath</b>      | function |
| F slide           | <b>family_font</b>    | function |
| F softenhyphens   | <b>fields</b>         | function |
| F start_of_par    | <b>findattribute</b>  | function |
| F startofpar      | <b>first_glyph</b>    | function |

|                               |          |                           |          |
|-------------------------------|----------|---------------------------|----------|
| <b>firstglyph</b>             | function | <b>makeextensible</b>     | function |
| <b>flattendiscretionaries</b> | function | <b>mlist_to_hlist</b>     | function |
| <b>flush_list</b>             | function | <b>mlisttohlist</b>       | function |
| <b>flush_node</b>             | function | <b>new</b>                | function |
| <b>flushlist</b>              | function | <b>protect_glyph</b>      | function |
| <b>flushnode</b>              | function | <b>protect_glyphs</b>     | function |
| <b>free</b>                   | function | <b>protectglyph</b>       | function |
| <b>get_attribute</b>          | function | <b>protectglyphs</b>      | function |
| <b>getattribute</b>           | function | <b>protrusionskipable</b> | function |
| <b>getfield</b>               | function | <b>rangedimensions</b>    | function |
| <b>getglue</b>                | function | <b>remove</b>             | function |
| <b>getpropertystable</b>      | function | <b>set_attribute</b>      | function |
| <b>getproperty</b>            | function | <b>setattribute</b>       | function |
| <b>has_attribute</b>          | function | <b>setfield</b>           | function |
| <b>has_field</b>              | function | <b>setglue</b>            | function |
| <b>has_glyph</b>              | function | <b>setproperty</b>        | function |
| <b>hasattribute</b>           | function | <b>show</b>               | function |
| <b>hasfield</b>               | function | <b>slide</b>              | function |
| <b>hasglyph</b>               | function | <b>subtypes</b>           | function |
| <b>hpack</b>                  | function | <b>tail</b>               | function |
| <b>hyphenating</b>            | function | <b>tostring</b>           | function |
| <b>id</b>                     | function | <b>traverse</b>           | function |
| <b>insert_after</b>           | function | <b>traverse_id</b>        | function |
| <b>insert_before</b>          | function | <b>traverseid</b>         | function |
| <b>insertafter</b>            | function | <b>type</b>               | function |
| <b>insertbefore</b>           | function | <b>types</b>              | function |
| <b>instock</b>                | function | <b>unprotect_glyph</b>    | function |
| <b>inuse</b>                  | function | <b>unprotect_glyphs</b>   | function |
| <b>is_node</b>                | function | <b>unprotectglyph</b>     | function |
| <b>is_zero_glue</b>           | function | <b>unprotectglyphs</b>    | function |
| <b>isnode</b>                 | function | <b>unset_attribute</b>    | function |
| <b>iszeroglue</b>             | function | <b>unsetattribute</b>     | function |
| <b>kerning</b>                | function | <b>usedlist</b>           | function |
| <b>last_node</b>              | function | <b>usesfont</b>           | function |
| <b>lastnode</b>               | function | <b>values</b>             | function |
| <b>length</b>                 | function | <b>vpack</b>              | function |
| <b>ligaturing</b>             | function | <b>write</b>              | function |

# nodes (context)

|                           |            |                       |            |
|---------------------------|------------|-----------------------|------------|
| <b>accentcodes</b>        | data table | <b>fields</b>         | function   |
| <b>aligned</b>            | function   | <b>fieldtypes</b>     | table      |
| <b>append</b>             | function   | <b>fillcodes</b>      | data table |
| <b>apply</b>              | function   | <b>fillvalues</b>     | data table |
| <b>applyvisuals</b>       | function   | <b>firstcharacter</b> | function   |
| <b>astable</b>            | function   | <b>firstcharinbox</b> | function   |
| <b>basepoints</b>         | function   | <b>firstdirinbox</b>  | function   |
| <b>boundarycodes</b>      | data table | <b>flush</b>          | function   |
| <b>boxes</b>              | table      | <b>flush_list</b>     | function   |
| F count                   |            | <b>flush_node</b>     | function   |
| F dimensions              |            | <b>flushlist</b>      | function   |
| F direct                  |            | <b>flushnode</b>      | function   |
| F dispose                 |            | <b>fullhpack</b>      | function   |
| F found                   |            | <b>getattr</b>        | function   |
| F reset                   |            | <b>getattribute</b>   | function   |
| F restore                 |            | <b>getboth</b>        | function   |
| F save                    |            | <b>getbox</b>         | function   |
| F savenode                |            | <b>getchar</b>        | function   |
| <b>builders</b>           | table      | <b>getfield</b>       | function   |
| F buildpage_filter        |            | <b>getfont</b>        | function   |
| F vpack_filter            |            | <b>getid</b>          | function   |
| <b>concat</b>             | function   | <b>getleader</b>      | function   |
| <b>copy</b>               | function   | <b>getlist</b>        | function   |
| <b>copy_list</b>          | function   | <b>getnext</b>        | function   |
| <b>copylist</b>           | function   | <b>getprev</b>        | function   |
| <b>countall</b>           | function   | <b>getproperty</b>    | function   |
| <b>current_attributes</b> | function   | <b>getsubtype</b>     | function   |
| <b>currentattributes</b>  | function   | <b>gluecodes</b>      | data table |
| <b>delete</b>             | function   | <b>glyphcodes</b>     | data table |
| <b>destinations</b>       | table      | <b>handlers</b>       | table      |
| N attribute               |            | F accessibility       |            |
| T done                    |            | F adjusters           |            |
| F handler                 |            | F aligncharacter      |            |
| T stack                   |            | F backgrounds         |            |
| <b>dircodes</b>           | data table | F backgroundspage     |            |
| <b>directioncodes</b>     | data table | F backgroundsvbox     |            |
| <b>directionvalues</b>    | data table | F characters          |            |
| <b>dirvalues</b>          | data table | F checkglyphs         |            |
| <b>disccodes</b>          | data table | F checkparcounter     |            |
| <b>discretionarycodes</b> | data table | F cleanupbox          |            |
| <b>fencecodes</b>         | data table | F cleanuppage         |            |

|                        |          |                                |            |
|------------------------|----------|--------------------------------|------------|
| F export               |          | <b>insertlistafter</b>         | function   |
| F finalizebox          |          | <b>installattributehandler</b> | function   |
| F finalizelist         |          | <b>is_display_math</b>         | function   |
| F flatten              |          | <b>is_node</b>                 | function   |
| F flattenline          |          | <b>isnode</b>                  | function   |
| F migrate              |          | <b>kerncodes</b>               | data table |
| F protectglyphs        |          | <b>leftmarginwidth</b>         | function   |
| F recolor              |          | <b>linefillers</b>             | table      |
| F show                 |          | D data                         |            |
| F showwhyphenation     |          | F define                       |            |
| F stripping            |          | F enable                       |            |
| F textbackgrounds      |          | F filler                       |            |
| F unprotectglyphs      |          | F handler                      |            |
| F visualizehyphenation |          | <b>lines</b>                   | table      |
| F wipe                 |          | T boxed                        |            |
| <b>has_attribute</b>   | function | F addlinenumbers               |            |
| <b>has_field</b>       | function | F register                     |            |
| <b>hasattribute</b>    | function | F setup                        |            |
| <b>hasfield</b>        | function | D data                         |            |
| <b>hpack</b>           | function | F finalize                     |            |
| <b>idsandsubtypes</b>  | function | F number                       |            |
| <b>idstostring</b>     | function | <b>link</b>                    | function   |
| <b>injections</b>      | table    | <b>linked</b>                  | function   |
| F copy                 |          | <b>list</b>                    | function   |
| F getligaindex         |          | <b>listcodes</b>               | data table |
| F getthreshold         |          | <b>listtoutf</b>               | function   |
| F handler              |          | <b>literalvalues</b>           | data table |
| F installgetspaceboth  |          | <b>locate</b>                  | function   |
| F installnewkern       |          | <b>markcodes</b>               | data table |
| F isspace              |          | <b>markers</b>                 | table      |
| F keepcounts           |          | F get                          |            |
| F reset                |          | <b>mathcodes</b>               | data table |
| F resetcounts          |          | <b>mathvalues</b>              | data table |
| F setcursive           |          | <b>maxboxwidth</b>             | function   |
| F setkern              |          | <b>migrations</b>              | table      |
| F setligaindex         |          | F setinserts                   |            |
| F setmark              |          | F setmarks                     |            |
| F setmove              |          | <b>new</b>                     | function   |
| F setposition          |          | <b>noadcodes</b>               | data table |
| F setspacekerns        |          | <b>noadoptions</b>             | table      |
| <b>insert_after</b>    | function | N axis                         |            |
| <b>insert_before</b>   | function | N exact                        |            |
| <b>insertafter</b>     | function | N left                         |            |
| <b>insertbefore</b>    | function | N middle                       |            |

|                        |                   |                          |
|------------------------|-------------------|--------------------------|
| N no_axis              |                   | F effective_glue         |
| N right                |                   | F effectiveglue          |
| N set                  |                   | F end_of_math            |
| N unused_1             |                   | F endofmath              |
| N unused_2             |                   | F exchange               |
| <b>nodecodes</b>       | <b>data table</b> | F find_attribute         |
| <b>nopts</b>           | <b>function</b>   | F findattribute          |
| <b>nuts</b>            | <b>table</b>      | F findnode               |
| F addmargins           |                   | F first_glyph            |
| F addxoffset           |                   | F firstcharacter         |
| F addxymargins         |                   | F firstcharinbox         |
| F addyoffset           |                   | F firstglyph             |
| F append               |                   | F flattendiscretionaries |
| F appendaftertail      |                   | F flush                  |
| F apply                |                   | F flush_list             |
| F applyvisuals         |                   | F flush_node             |
| F checkdiscretionaries |                   | F flushlist              |
| F collapsing           |                   | F flushnode              |
| T colors               |                   | F free                   |
| F set                  |                   | F fullhpack              |
| T components           |                   | F get_attribute          |
| F copynocomponents     |                   | F get_synctex_fields     |
| F copyonlyglyphs       |                   | F getattr                |
| F count                |                   | F getattribute           |
| F flush                |                   | F getattributelist       |
| F get                  |                   | F getattributes          |
| F set                  |                   | F getattrlist            |
| F concat               |                   | F getattrrs              |
| F copy                 |                   | F getboth                |
| F copy_list            |                   | F getbox                 |
| F copy_node            |                   | F getboxglue             |
| F copy_only            |                   | F getchar                |
| F copy_properties      |                   | F getcharspec            |
| F copyleft             |                   | F getcomponents          |
| F copynode             |                   | F getdata                |
| F copyonly             |                   | F getdepth               |
| F copyvisual           |                   | F getdirection           |
| F count                |                   | F getdisc                |
| F countall             |                   | F getdiscpart            |
| F current_attr         |                   | F getdiscretionary       |
| F currentattributes    |                   | F getexpansion           |
| F delete               |                   | F getfam                 |
| F dimensions           |                   | F getfield               |
| F dirdimensions        |                   | F getfont                |

F getglue  
F getglyphdata  
F getglyphdimensions  
F getheight  
F getid  
F getindex  
F getkern  
F getkerndimension  
F getlang  
F getlanguage  
F getleader  
F getlist  
F getnext  
F getnormalizedline  
F getnucleus  
F getoffsets  
F getoptions  
F getorientation  
F getparstate  
F getpenalty  
F getpost  
F getpre  
F getprev  
F getprop  
F getreplace  
F getruledata  
F getscale  
F getscales  
F getscrip  
F getshift  
F getspeciallist  
F getstate  
F getsub  
F getsubpre  
F getsubtype  
F getsup  
F getsuppre  
F getsurround  
F getsyntexfields  
F gettotal  
F getvalue  
F getwhd  
F getwidth  
F getwordrange

F getxscale  
F getxyscales  
F getyscale  
F has\_attribute  
F has\_dimensions  
F has\_field  
F has\_glyph  
F hasattribute  
F hasdimensions  
F hasfield  
F hasglyph  
F hasglyphoption  
F hpack  
F hyphenating  
F ignoremathskip  
F insert\_after  
F insert\_before  
F insertafter  
F insertbefore  
F insertlistafter  
F is\_display\_math  
F is\_node  
F is\_zero\_glue  
F ischar  
F isdone  
F isglyph  
F isnextchar  
F isnextglyph  
F isnode  
F isprevchar  
F isprevglyph  
F iszeroglue  
F kerning  
F length  
F ligaturing  
F link  
F linked  
F locate  
F migrate  
F mlist\_to\_hlist  
F mlisttohlist  
F naturalhsize  
F naturalwidth  
F nestedtracedslide

|                   |                      |
|-------------------|----------------------|
| F new             | F register           |
| F newmathglyph    | F restore            |
| F patchattributes | F righthangskip      |
| T pool            | F rightmarginkern    |
| F accent          | F rightskip          |
| F baselineskip    | F rule               |
| F boundary        | F save               |
| F boxrule         | F savepos            |
| F choice          | F setmatrix          |
| F cleanup         | F setstate           |
| F delim           | F shrink             |
| F delimiter       | F startrotation      |
| F direction       | F stock              |
| F directliteral   | F stretch            |
| F disc            | F subbox             |
| F emptyrule       | F sublist            |
| F fence           | F temp               |
| F fontkern        | F usage              |
| F fraction        | F userdefined        |
| F glue            | T userids            |
| F gluespec        | F usernode           |
| F glyph           | F userrule           |
| F hlist           | F vlist              |
| F imagerule       | F wordboundary       |
| F indentskip      | F prepend            |
| F italicern       | F prependbeforehead  |
| F kern            | F processranges      |
| F latelua         | F processwords       |
| F leader          | F protect_glyph      |
| F lefthangskip    | F protect_glyphs     |
| F leftmarginkern  | F protectglyph       |
| F leftskip        | F protectglyphs      |
| F lineskip        | F protrusionskipable |
| F literal         | F rangedimensions    |
| F mathchar        | F rawprop            |
| F mathtextchar    | F reference          |
| F negatedglue     | F rehpack            |
| F noad            | F remove             |
| F originliteral   | F repacklist         |
| F outlinerule     | F replace            |
| F pageliteral     | F reverse            |
| F penalty         | T rules              |
| F radical         | T ruleactions        |
| F rawliteral      | F box                |

|                    |                    |
|--------------------|--------------------|
| F draw             | F setpre           |
| F fill             | F setprev          |
| F mp               | F setprop          |
| F stroke           | F setreplace       |
| F userrule         | F setruledata      |
| F set_attribute    | F setscale         |
| F setattr          | F setscales        |
| F setattribute     | F setscript        |
| F setattributelist | F setshift         |
| F setattributes    | F setspeciallist   |
| F setattrlist      | F setsplit         |
| F setattrs         | F setstate         |
| F setboth          | F setsub           |
| F setbox           | F setsubpre        |
| F setboxglue       | F setsubtype       |
| F setchar          | F setup            |
| F setcomponents    | F setsuppre        |
| F setdata          | F setsurround      |
| F setdepth         | F setsynctexfields |
| F setdirection     | F setvalue         |
| F setdisc          | F setvisual        |
| F setdiscpart      | F setvisuals       |
| F setdiscretionary | F setwhd           |
| F setexpansion     | F setwidth         |
| F setfam           | F show             |
| F setfield         | F slide            |
| F setfont          | F softenhyphens    |
| F setglue          | F somepenalty      |
| F setglyphdata     | F somespace        |
| F setheight        | F splitbox         |
| F setkern          | F start_of_par     |
| F setlang          | F startofpar       |
| F setlanguage      | F striprange       |
| F setleader        | F tail             |
| F setlink          | F takeattr         |
| F setlist          | F takebox          |
| F setnext          | F takelist         |
| F setnucleus       | F theprop          |
| F setoffsets       | F tonode           |
| F setoptions       | F tonodes          |
| F setorientation   | F tonut            |
| F setparproperty   | F tosequence       |
| F setpenalty       | F toString         |
| F setpost          | F tracedslide      |

- F traverse
- F traverse\_char
- F traverse\_glyph
- F traverse\_id
- F traverse\_list
- F traversechar
- F traversecontent
- F traverseglyph
- F traverseid
- F traverselist
- T traversers
  - F alignrecord
  - F boundary
  - F char
  - F content
  - F dir
  - F disc
  - F glue
  - F glyph
  - F hlist
  - F list
  - F mark
  - F next
  - F node
  - F unset
  - F vlist
  - F whatsit
- T treversers
  - F char
  - F content
  - F glyph
  - F list
  - F node
- T typesetters
  - F tohbox
  - F tohpack
  - F tonodes
  - F tovbox
  - F tovpack
- F unprotect\_glyph
- F unprotect\_glyphs
- F unprotectglyph
- F unprotectglyphs
- F unset\_attribute

- F unsetattribute
- F unsetattributes
- F untracedslide
- F usedlist
- F uses\_font
- F usesfont
- F verticalbreak
- F vianodes
- F vianuts
- F vpack
- F write
- F xscaled
- F yscaled

**packlist**  
**parcodes**  
**penaltycodes**  
**plugindata**

- F finalizer
- F initializer
- S name
- T namespace
  - N attribute
  - D data
  - F enable
  - F handler
  - F register
  - D registered
  - D values
- F processor

**points**  
**pool**

- F baselineskip
- F cleanup
- F directliteral
- F glyph
- F hlist
- F latelua
- F leader
- F lineskip
- F literal
- F originliteral
- F register
- F restore
- F save

function  
 data table  
 data table  
 table

function  
 table

|                         |            |                             |            |
|-------------------------|------------|-----------------------------|------------|
| F savepos               |            | <b>setboth</b>              | function   |
| F setmatrix             |            | <b>setbox</b>               | function   |
| F stock                 |            | <b>setboxtonaturalwd</b>    | function   |
| F usage                 |            | <b>setchar</b>              | function   |
| F usernode              |            | <b>setfield</b>             | function   |
| F vlist                 |            | <b>setfont</b>              | function   |
| <b>prepend</b>          | function   | <b>setleader</b>            | function   |
| <b>print</b>            | function   | <b>setlink</b>              | function   |
| <b>processors</b>       | table      | <b>setlist</b>              | function   |
| F alignment_filter      |            | <b>setnext</b>              | function   |
| F append_line_filter    |            | <b>setprev</b>              | function   |
| F glyph_run             |            | <b>setproperty</b>          | function   |
| F post_linebreak_filter |            | <b>shifts</b>               | table      |
| F pre_linebreak_filter  |            | D data                      |            |
| F trace_glyph_run_a     |            | F define                    |            |
| F trace_glyph_run_b     |            | F enable                    |            |
| <b>properties</b>       | table      | F handler                   |            |
| T data                  |            | <b>showboxes</b>            | function   |
| <b>pts</b>              | function   | <b>showlist</b>             | function   |
| <b>radicalcodes</b>     | data table | <b>showsimplelist</b>       | function   |
| <b>references</b>       | table      | <b>skipcodes</b>            | data table |
| N attribute             |            | <b>snapshots</b>            | table      |
| T done                  |            | F getsamples                |            |
| F handler               |            | F resetsamples              |            |
| T stack                 |            | F takesample                |            |
| <b>reheap</b>           | function   | <b>somepenalty</b>          | function   |
| <b>remove</b>           | function   | <b>somespace</b>            | function   |
| <b>repackhlist</b>      | function   | <b>specialskipcodes</b>     | table      |
| <b>replace</b>          | function   | <b>splitbox</b>             | function   |
| <b>report</b>           | function   | <b>startofpar</b>           | function   |
| <b>rightmarginwidth</b> | function   | <b>stripdiscretionaries</b> | function   |
| <b>rulecodes</b>        | data table | <b>stripping</b>            | table      |
| <b>rules</b>            | table      | T glyphs                    |            |
| D data                  |            | F set                       |            |
| F define                |            | <b>subtypes</b>             | data table |
| F enable                |            | <b>tail</b>                 | function   |
| F handler               |            | <b>takeattr</b>             | function   |
| F process               |            | <b>takebox</b>              | function   |
| F userrule              |            | <b>tasks</b>                | table      |
| <b>serialize</b>        | function   | F actions                   |            |
| <b>serializebox</b>     | function   | F appendaction              |            |
| <b>set_attribute</b>    | function   | F disableaction             |            |
| <b>setattr</b>          | function   | F disablegroup              |            |
| <b>setattribute</b>     | function   | F enableaction              |            |

|                       |          |                        |          |
|-----------------------|----------|------------------------|----------|
| F enablegroup         |          | F rule                 |          |
| F freeze              |          | F setlist              |          |
| F freezegroup         |          | F setproperties        |          |
| F new                 |          | F start                |          |
| F prependaction       |          | T steppers             |          |
| F removeaction        |          | F check                |          |
| F replaceaction       |          | F codes                |          |
| F restart             |          | F features             |          |
| F setaction           |          | F font                 |          |
| F showactions         |          | F glyphs               |          |
| F table               |          | F message              |          |
| <b>tobasepoints</b>   | function | F messages             |          |
| <b>tocentimeters</b>  | function | F nofsteps             |          |
| <b>toxiceros</b>      | function | F register             |          |
| <b>todidots</b>       | function | F reset                |          |
| <b>todimen</b>        | function | F start                |          |
| <b>toinches</b>       | function | F stop                 |          |
| <b>tomillimeters</b>  | function | F stop                 |          |
| <b>tonode</b>         | function | T transparencies       |          |
| <b>tonodes</b>        | function | F reset                |          |
| <b>tonut</b>          | function | F set                  |          |
| <b>topicas</b>        | function | F setlist              |          |
| <b>topoints</b>       | function | <b>traverse</b>        | function |
| <b>toscaledpoints</b> | function | <b>traverse_id</b>     | function |
| <b>tosequence</b>     | function | <b>traverseid</b>      | function |
| <b>tostring</b>       | function | <b>typesetters</b>     | table    |
| <b>totable</b>        | function | F hbox                 |          |
| <b>totree</b>         | function | F hpack                |          |
| <b>toutf</b>          | function | F tohbox               |          |
| <b>tracers</b>        | table    | F tohpack              |          |
| T colors              |          | F tonodes              |          |
| F reset               |          | F to vbox              |          |
| F set                 |          | F tovpack              |          |
| F setlist             |          | F vpack                |          |
| F directions          |          | <b>unset_attribute</b> | function |
| F fontchar            |          | <b>unsetattribute</b>  | function |
| T frequencies         |          | <b>usedlist</b>        | function |
| F register            |          | <b>vianodes</b>        | function |
| T pool                |          | <b>vianuts</b>         | function |
| T nodes               |          | <b>visualizebox</b>    | function |
| F rule                |          | <b>visualizers</b>     | table    |
| T nuts                |          | F attribute            |          |
| F rule                |          | T attributes           |          |
| F resetproperties     |          | F box                  |          |

|                 |                     |            |
|-----------------|---------------------|------------|
| F handler       | N par               |            |
| F markfonts     | N penalty           |            |
| T modes         | N simple            |            |
| N depth         | N simplehbox        |            |
| N dir           | N simplevbox        |            |
| N discretionary | N simplevtop        |            |
| N expansion     | N space             |            |
| N fontkern      | N strut             |            |
| N glue          | N user              |            |
| N glyph         | N vbox              |            |
| N hbox          | N vtop              |            |
| N insert        | N whatsit           |            |
| N italic        | F register          |            |
| N kern          | F setfont           |            |
| N line          | F setlayer          |            |
| N marginkern    | F setruledglyph     |            |
| N mark          | F setvisual         |            |
| N math          | <b>vpack</b>        | function   |
| N mathglue      | <b>whatsitcodes</b> | data table |
| N mathkern      | <b>write</b>        | function   |
| N origin        |                     |            |

## number (context)

|                       |            |                       |          |
|-----------------------|------------|-----------------------|----------|
|                       | function   | <b>tol6dot16</b>      | function |
| <b>basepoints</b>     | function   | <b>tobasepoints</b>   | function |
| <b>bytetodecimal</b>  | function   | <b>tobitstring</b>    | function |
| <b>compactfloat</b>   | function   | <b>tocentimeters</b>  | function |
| <b>decimaltobyte</b>  | function   | <b>tociceros</b>      | function |
| <b>dimenfactors</b>   | data table | <b>tocontext</b>      | function |
| <b>formatted</b>      | function   | <b>todidots</b>       | function |
| <b>formattedfloat</b> | function   | <b>todimen</b>        | function |
| <b>idiv</b>           | function   | <b>toevenhex</b>      | function |
| <b>maxdimen</b>       | number     | <b>toinches</b>       | function |
| <b>nopts</b>          | function   | <b>tomillimeters</b>  | function |
| <b>nubasepoints</b>   | function   | <b>tonumberf</b>      | function |
| <b>nupoints</b>       | function   | <b>tonumberg</b>      | function |
| <b>percent</b>        | function   | <b>topicsas</b>       | function |
| <b>points</b>         | function   | <b>topoints</b>       | function |
| <b>pts</b>            | function   | <b>toscaled</b>       | function |
| <b>signed</b>         | function   | <b>toscaledpoints</b> | function |
| <b>sparseexponent</b> | function   | <b>valid</b>          | function |
| <b>splitdimen</b>     | function   |                       |          |

## objects (context)

|                   |          |                  |          |
|-------------------|----------|------------------|----------|
| <b>data</b>       | table    | <b>page</b>      | function |
| <b>dimensions</b> | function | <b>reference</b> | function |
| <b>found</b>      | function | <b>register</b>  | function |
| <b>n</b>          | number   | <b>restore</b>   | function |

# optional (context)

## **curl** table

F escape  
F fetch  
F getversion  
F initialize  
F unescape

## **foreign** table

F abivalues  
F getbuffer  
F initialize  
F load  
F newbuffer  
F totable  
F types

## **ghostscript** table

F execute  
F initialize

## **graphicsmagick** table

F execute  
F initialize

## **hb** table

F getshapers  
F getversion  
F initialize  
F loadfont  
F shapestring

## **imagemagick** table

F execute  
F initialize

## **kpse** table

F expand\_braces  
F expand\_path  
F expand\_var  
F find\_file  
F find\_files  
F get\_file\_types  
F initialize  
F readable\_file  
F set\_program\_name  
F var\_value

## **loaded** table

## **lz4** table

F compress  
F decompresssize  
F framecompress  
F framedecompress  
F initialize

## **lzma** table

F compress  
F decompress  
F initialize

## **lzo** table

F compress  
F decompresssize  
F initialize

## **mujs** table

F dofile  
F execute  
F initialize  
F reset  
F setclosefile  
F setconsole  
F setfindfile  
F setopenfile  
F setreadfile  
F setseekfile

## **mysql** table

F close  
F execute  
F getmessage  
F initialize  
F open

## **postgress** table

F close  
F execute  
F getmessage  
F initialize  
F open

## **sqlite** table

F close  
F execute  
F getmessage

|              |       |              |       |
|--------------|-------|--------------|-------|
| F initialize |       | <b>zstd</b>  | table |
| F open       |       | F compress   |       |
| <b>zint</b>  | table | F decompress |       |
| F execute    |       | F initialize |       |
| F initialize |       |              |       |

## os (basic lua)

|                     |                     |                      |                     |
|---------------------|---------------------|----------------------|---------------------|
| <b>__getenv__</b>   | function            | <b>remove</b>        | overloaded function |
| <b>__setenv__</b>   | function            | <b>rename</b>        | overloaded function |
| <b>binsuffix</b>    | string              | <b>resultof</b>      | function            |
| <b>binsuffixes</b>  | table               | <b>runtime</b>       | function            |
| <b>bits</b>         | string              | <b>selfarg</b>       | table               |
| <b>clock</b>        | function            | <b>selfbase</b>      | string              |
| <b>converttime</b>  | function            | <b>selfbin</b>       | string              |
| <b>date</b>         | overloaded function | <b>selfcore</b>      | string              |
| <b>difftime</b>     | function            | <b>selfdir</b>       | string              |
| <b>enableansi</b>   | function            | <b>selfname</b>      | string              |
| <b>env</b>          | data table          | <b>selfpath</b>      | string              |
| <b>execute</b>      | overloaded function | <b>setenv</b>        | overloaded function |
| <b>exit</b>         | overloaded function | <b>setexitcode</b>   | function            |
| <b>fulltime</b>     | function            | <b>setlocale</b>     | overloaded function |
| <b>getcodepage</b>  | function            | <b>sleep</b>         | function            |
| <b>getenv</b>       | overloaded function | <b>time</b>          | function            |
| <b>gettimeofday</b> | function            | <b>timezone</b>      | function            |
| <b>isleapyear</b>   | function            | <b>tmpname</b>       | function            |
| <b>launch</b>       | function            | <b>today</b>         | function            |
| <b>libsuffix</b>    | string              | <b>type</b>          | string              |
| <b>localtime</b>    | function            | <b>uname</b>         | function            |
| <b>name</b>         | string              | <b>uuid</b>          | function            |
| <b>newline</b>      | string              | <b>validdatetime</b> | function            |
| <b>nofdays</b>      | function            | <b>weekday</b>       | function            |
| <b>now</b>          | function            | <b>where</b>         | function            |
| <b>pipeto</b>       | function            | <b>which</b>         | function            |
| <b>platform</b>     | string              |                      |                     |

## package (basic lua)

|                      |          |                    |          |
|----------------------|----------|--------------------|----------|
| <b>config</b>        | string   | <b>loadlib</b>     | function |
| <b>cpath</b>         | string   | <b>luapaths</b>    | function |
| <b>extralibpath</b>  | function | <b>path</b>        | string   |
| <b>extralibpaths</b> | function | <b>poplibpath</b>  | function |
| <b>extralupath</b>   | function | <b>popluapath</b>  | function |
| <b>extralupaths</b>  | function | <b>preload</b>     | table    |
| <b>helpers</b>       | table    | <b>pushlibpath</b> | function |
| <b>libpaths</b>      | function | <b>pushluapath</b> | function |
| <b>loaded</b>        | table    | <b>searchers</b>   | table    |
| <b>loaders</b>       | table    | <b>searchpath</b>  | function |

# pagebuilders (context)

## columnsets      table

- F add
- F block
- F check
- F currentcolumn
- F define
- F finishflush
- F flushareas
- F flushcolumn
- F flushrest
- F goto
- F noto
- F prepareflush
- F put
- F registerarea
- F reset
- F setarea

- F sethsize
- F sethspace
- F setlines
- F setproperties
- F setstart
- F setvsize

## injections      table

- F flushafter
- F flushbefore
- F save

## mixedcolumns      table

- F cleanup
- F finalize
- F getlist
- F getrest
- F getsplit
- F setsplit

## pdf (basic tex)

`immediateobj` function

## pdfc (extra tex)

|                          |            |                        |            |
|--------------------------|------------|------------------------|------------|
| <b>arraytotable</b>      | function   | <b>getnofpages</b>     | function   |
| <b>close</b>             | function   | <b>getnumber</b>       | function   |
| <b>closestream</b>       | function   | <b>getpage</b>         | function   |
| <b>dictionarytotable</b> | function   | <b>getpages</b>        | function   |
| <b>encryptioncodes</b>   | data table | <b>getsize</b>         | function   |
| <b>getarray</b>          | function   | <b>getstatus</b>       | function   |
| <b>getboolean</b>        | function   | <b>getstream</b>       | function   |
| <b>getbox</b>            | function   | <b>getstring</b>       | function   |
| <b>getcatalag</b>        | function   | <b>gettrailer</b>      | function   |
| <b>getdictionary</b>     | function   | <b>getversion</b>      | function   |
| <b>getfromarray</b>      | function   | <b>new</b>             | function   |
| <b>getfromdictionary</b> | function   | <b>objectcodes</b>     | data table |
| <b>getfromobject</b>     | function   | <b>open</b>            | function   |
| <b>getfromreference</b>  | function   | <b>openfile</b>        | function   |
| <b>getfromstream</b>     | function   | <b>openstream</b>      | function   |
| <b>getinfo</b>           | function   | <b>pagestotable</b>    | function   |
| <b>getinteger</b>        | function   | <b>readfromstream</b>  | function   |
| <b>getmemoryusage</b>    | function   | <b>readwholestream</b> | function   |
| <b>getname</b>           | function   | <b>type</b>            | function   |
| <b>getnofobjects</b>     | function   | <b>unencrypt</b>       | function   |

# physics (context)

**units** table

F registerunit

D tables

## pngdecode (extra tex)

**applyfilter** function

**expand** function

**interlace** function

**splitmask** function

**tocmyk** function

**tomask** function

# publications (context)

|                         |            |                             |          |
|-------------------------|------------|-----------------------------|----------|
| <b>addtexentry</b>      | function   | <b>concatstate</b>          | function |
| <b>analyze</b>          | function   | <b>converttoxml</b>         | function |
| <b>anywhere</b>         | function   | <b>currentspecification</b> | table    |
| <b>authorcache</b>      | data table | S author                    |          |
| <b>authorcollapsers</b> | data table | T categories                |          |
| <b>authorhashers</b>    | table      | T article                   |          |
| F invertedshort         |            | S category                  |          |
| F normal                |            | T extra                     |          |
| F normalinverted        |            | T fields                    |          |
| F normalshort           |            | S author                    |          |
| F sequential            |            | S editor                    |          |
| F sequentialshort       |            | S journal                   |          |
| F short                 |            | S keywords                  |          |
| <b>authormap</b>        | data table | S note                      |          |
| <b>authortoregister</b> | function   | S number                    |          |
| <b>btx</b>              | table      | S pages                     |          |
| <b>casters</b>          | table      | S title                     |          |
| F author                |            | S volume                    |          |
| F keyword               |            | S year                      |          |
| F pagenumber            |            | T optional                  |          |
| F range                 |            | T required                  |          |
| <b>checkeddataset</b>   | function   | T sets                      |          |
| <b>citevariants</b>     | table      | T author                    |          |
| F author                |            | T virtual                   |          |
| F authornum             |            | T book                      |          |
| F authoryear            |            | S category                  |          |
| F authoryears           |            | T extra                     |          |
| F category              |            | T fields                    |          |
| F default               |            | S address                   |          |
| F entry                 |            | S author                    |          |
| F index                 |            | S edition                   |          |
| F keywords              |            | S editor                    |          |
| F num                   |            | S keywords                  |          |
| F page                  |            | S note                      |          |
| F short                 |            | S number                    |          |
| F tag                   |            | S publisher                 |          |
| F textnum               |            | S subtitle                  |          |
| F year                  |            | S title                     |          |
| <b>collected</b>        | data table | S volume                    |          |
| <b>components</b>       | table      | S year                      |          |
| F author                |            | T optional                  |          |

|                |                        |            |
|----------------|------------------------|------------|
| T required     | S page                 |            |
| T sets         | S pages                |            |
| T author       | S volume               |            |
| T editionset   | S version              |            |
| T virtual      | D virtual              |            |
| T demo-a       | T virtualfields        |            |
| S category     | B authornum            |            |
| T extra        | B authoryear           |            |
| T fields       | B authoryears          |            |
| S author       | B num                  |            |
| S institution  | B suffix               |            |
| S organization | <b>datasets</b>        | table      |
| S subtitle     | <b>detailed</b>        | table      |
| S title        | <b>endnotes_to_btx</b> | function   |
| S year         | <b>enhancer</b>        | table      |
| T optional     | S arguments            |            |
| T required     | T askip                |            |
| T sets         | B dirty                |            |
| T author       | T gskip                |            |
| T virtual      | T kind                 |            |
| T demo-b       | T list                 |            |
| S category     | T system               |            |
| T extra        | T order                |            |
| T fields       | N steps                |            |
| S author       | <b>enhancers</b>       | table      |
| S institution  | F details              |            |
| S organization | F order                |            |
| S subtitle     | F suffixes             |            |
| S title        | <b>finder</b>          | function   |
| S year         | <b>firstofrange</b>    | function   |
| T optional     | <b>found</b>           | function   |
| T required     | <b>get</b>             | function   |
| T sets         | <b>getcasted</b>       | function   |
| T authors      | <b>getdetail</b>       | function   |
| T virtual      | <b>getdirect</b>       | function   |
| S comment      | <b>getfaster</b>       | function   |
| S copyright    | <b>getfield</b>        | function   |
| T fields       | <b>getfuzzy</b>        | function   |
| S name         | <b>getindex</b>        | function   |
| T types        | <b>inspectors</b>      | data table |
| S author       | <b>journals</b>        | table      |
| S editor       | F abbreviated          |            |
| S keywords     | F add                  |            |
| S number       | F expanded             |            |

|                           |          |                            |          |
|---------------------------|----------|----------------------------|----------|
| F load                    |          | F json                     |          |
| F save                    |          | F lua                      |          |
| <b>lastofrange</b>        | function | F refman                   |          |
| <b>lists</b>              | table    | F registercleaner          |          |
| F collectentries          |          | F xml                      |          |
| F combiinlist             |          | <b>loadreplacementfile</b> | function |
| F fetchentries            |          | <b>new</b>                 | function |
| F filterall               |          | <b>okay</b>                | function |
| F flushcombi              |          | <b>oneorange</b>           | function |
| F flushentry              |          | <b>parenttag</b>           | function |
| F flushtag                |          | <b>permitted</b>           | function |
| T methods                 |          | <b>prerollcmdstring</b>    | function |
| F dataset                 |          | <b>refman_to_btx</b>       | function |
| F force                   |          | <b>resolvedname</b>        | function |
| F global                  |          | <b>save</b>                | function |
| F local                   |          | <b>savers</b>              | table    |
| F nofregistered           |          | F bib                      |          |
| F prepareentries          |          | F lua                      |          |
| F register                |          | F xml                      |          |
| F sameasprevious          |          | <b>search</b>              | function |
| T sorters                 |          | <b>setcategory</b>         | function |
| F cite                    |          | <b>setspecification</b>    | function |
| F dataset                 |          | <b>singularorplural</b>    | function |
| F default                 |          | <b>sortedentries</b>       | function |
| F index                   |          | <b>sortmethods</b>         | table    |
| F list                    |          | T authortitle              |          |
| F reference               |          | T sequence                 |          |
| F short                   |          | T authoryear               |          |
| F used                    |          | T sequence                 |          |
| F uservariable            |          | <b>specifications</b>      | table    |
| <b>listvariants</b>       | table    | T default                  |          |
| F default                 |          | S author                   |          |
| F index                   |          | S comment                  |          |
| F num                     |          | S copyright                |          |
| F short                   |          | S name                     |          |
| F tag                     |          | S version                  |          |
| <b>load</b>               | function | D virtual                  |          |
| <b>loadbibdata</b>        | function | <b>splitauthor</b>         | function |
| <b>loaddefinitionfile</b> | function | <b>splitoneauthor</b>      | function |
| <b>loaders</b>            | table    | <b>statistics</b>          | table    |
| F bbl                     |          | N nofbytes                 |          |
| F bib                     |          | N nofdatasets              |          |
| F buffer                  |          | N nofdefinitions           |          |
| F endnote                 |          | N nofshortcuts             |          |

**tables**

D implicits  
D origins  
D privates  
D sets  
D specials  
D types  
D virtuals

**table****tags****function****tracers****table**

F showdatasetauthors  
F showdatasetcompleteness  
F showdatasetfields  
F showentry

F showfields  
F showhashedauthors  
F showtables  
F showvariants

**typesetters****table**

F author  
F string

**usedataset****function****usedentries****function****writers****table**

F author  
F keyword  
F pagenumber  
F range

## regimes (context)

|                    |            |
|--------------------|------------|
| <b>backmapping</b> | data table |
| <b>cleanup</b>     | function   |
| <b>disable</b>     | function   |
| <b>enable</b>      | function   |
| <b>fromregime</b>  | function   |
| <b>list</b>        | function   |

|                  |            |
|------------------|------------|
| <b>mapping</b>   | data table |
| <b>pop</b>       | function   |
| <b>process</b>   | function   |
| <b>push</b>      | function   |
| <b>toregime</b>  | function   |
| <b>translate</b> | function   |

# resolvers (context)

|                                     |            |                                |            |
|-------------------------------------|------------|--------------------------------|------------|
| <b>allprefixes</b>                  | function   | <b>findfiles</b>               | function   |
| <b>appendhash</b>                   | function   | <b>findgivenfile</b>           | function   |
| <b>automount</b>                    | function   | <b>findgivenfiles</b>          | function   |
| <b>booleanvariable</b>              | function   | <b>findlib</b>                 | function   |
| <b>cacheversion</b>                 | string     | <b>findpath</b>                | function   |
| <b>checkedvariable</b>              | function   | <b>findtexfile</b>             | function   |
| <b>cleanedpathlist</b>              | function   | <b>findwildcardfile</b>        | function   |
| <b>cleaners</b>                     | data table | <b>findwildcardfiles</b>       | function   |
| <b>cleanpath</b>                    | function   | <b>formatofsuffix</b>          | function   |
| <b>cleanpathlist</b>                | function   | <b>formatofvariable</b>        | function   |
| <b>cleanupbinfile</b>               | function   | <b>formats</b>                 | data table |
| <b>concatinators</b>                | data table | <b>foundintree</b>             | function   |
| <b>configbanner</b>                 | string     | <b>foundintrees</b>            | function   |
| <b>configurationfiles</b>           | function   | <b>generators</b>              | data table |
| <b>dangerous</b>                    | data table | <b>get_from_content</b>        | function   |
| <b>datastate</b>                    | function   | <b>getenv</b>                  | function   |
| <b>decompressors</b>                | table      | <b>getextrapaths</b>           | function   |
| F register                          |            | <b>getfilehashes</b>           | function   |
| F unregister                        |            | <b>gethashes</b>               | function   |
| <b>defaultsuffixes</b>              | table      | <b>getownpath</b>              | function   |
| <b>dirstatus</b>                    | function   | <b>getreadfilename</b>         | function   |
| <b>dowithfilesandreport</b>         | function   | <b>hashers</b>                 | data table |
| <b>dowithfilesintree</b>            | function   | <b>homedir</b>                 | string     |
| <b>dowithpath</b>                   | function   | <b>initialized</b>             | function   |
| <b>dowithvariable</b>               | function   | <b>installinputfilehandler</b> | function   |
| <b>executers</b>                    | table      | <b>installinputlinehandler</b> | function   |
| <b>expandbraces</b>                 | function   | <b>jobpath</b>                 | function   |
| <b>expandedpathfromlist</b>         | function   | <b>jobs</b>                    | table      |
| <b>expandedpathlist</b>             | function   | F currentcomponent             |            |
| <b>expandedpathlistfromvariable</b> | function   | F currentenvironment           |            |
| <b>expandpath</b>                   | function   | F currentproduct               |            |
| <b>expandpathfromvariable</b>       | function   | F currentproject               |            |
| <b>expansion</b>                    | function   | F justacomponent               |            |
| <b>extendtexmfvariable</b>          | function   | D processors                   |            |
| <b>filtered_from_content</b>        | function   | F productcomponent             |            |
| <b>find_file</b>                    | function   | F usefile                      |            |
| <b>find_files</b>                   | function   | <b>joinpath</b>                | function   |
| <b>findbinfile</b>                  | function   | <b>knownvariables</b>          | function   |
| <b>findctxfile</b>                  | function   | <b>libraries</b>               | table      |
| <b>finders</b>                      | data table | F optionalloaded               |            |
| <b>findfile</b>                     | function   | F validoptional                |            |

|                          |            |                               |            |
|--------------------------|------------|-------------------------------|------------|
| <b>load</b>              | function   | <b>renew</b>                  | function   |
| <b>loadbinfile</b>       | function   | <b>renewcache</b>             | function   |
| <b>loaders</b>           | data table | <b>repath</b>                 | function   |
| <b>loadlualib</b>        | function   | <b>reset</b>                  | function   |
| <b>loadtexfile</b>       | function   | <b>resetextrapaths</b>        | function   |
| <b>loadtime</b>          | function   | <b>resetresolve</b>           | function   |
| <b>locateformat</b>      | function   | <b>resolve</b>                | function   |
| <b>locators</b>          | data table | <b>savers</b>                 | data table |
| <b>luacnffallback</b>    | string     | <b>scandata</b>               | function   |
| <b>luacnfname</b>        | string     | <b>scanfiles</b>              | function   |
| <b>luacnfspec</b>        | string     | <b>schemes</b>                | table      |
| <b>luacnfstate</b>       | string     |                               |            |
| <b>macros</b>            | table      | T cleaners                    |            |
|                          |            | F md5                         |            |
| F convertfile            |            | F none                        |            |
| F decodecomment          |            | F strip                       |            |
| F enablecomment          |            | F cleanname                   |            |
| F encodecomment          |            | F fetchstring                 |            |
| F preprocessed           |            | F fetchtable                  |            |
| F processmk              |            | F install                     |            |
| F processmklx            |            | <b>setdynamic</b>             | function   |
| F processmkvi            |            | <b>setenv</b>                 | function   |
| F version                |            | <b>showpath</b>               | function   |
| <b>maxreadlevel</b>      | number     | <b>simplescanfiles</b>        | function   |
| <b>methodhandler</b>     | function   | <b>splitconfigurationpath</b> | function   |
| <b>openbinfile</b>       | function   | <b>splitexpansions</b>        | function   |
| <b>openers</b>           | data table | <b>splitmethod</b>            | function   |
| <b>openfile</b>          | function   | <b>splitpath</b>              | function   |
| <b>opentexfile</b>       | function   | <b>stackpath</b>              | function   |
| <b>ownpath</b>           | string     | <b>starttiming</b>            | function   |
| <b>popextrapath</b>      | function   | <b>stoptiming</b>             | function   |
| <b>popinputname</b>      | function   | <b>suffixes</b>               | data table |
| <b>poppath</b>           | function   | <b>suffixmap</b>              | data table |
| <b>prefixes</b>          | data table | <b>suffixofformat</b>         | function   |
| <b>prependhash</b>       | function   | <b>texdatablob</b>            | function   |
| <b>pushextrapath</b>     | function   | <b>toppath</b>                | function   |
| <b>pushinputname</b>     | function   | <b>tracers</b>                | data table |
| <b>pushpath</b>          | function   | <b>unexpandedpath</b>         | function   |
| <b>registerextrapath</b> | function   | <b>unexpandedpathlist</b>     | function   |
| <b>registerfile</b>      | function   | <b>unresolve</b>              | function   |
| <b>registerfilehash</b>  | function   | <b>updaterelations</b>        | function   |
| <b>registerintrees</b>   | function   | <b>updatescript</b>           | function   |
| <b>registermethod</b>    | function   | <b>uselibrary</b>             | function   |
| <b>registerzipfile</b>   | function   | <b>usertypes</b>              | data table |
| <b>relations</b>         | data table | <b>usezipfile</b>             | function   |

|                         |          |                                 |          |
|-------------------------|----------|---------------------------------|----------|
| <b>validatedpath</b>    | function | <b>variableofformatorsuffix</b> | function |
| <b>variable</b>         | function | <b>wildcardpattern</b>          | function |
| <b>variableofformat</b> | function |                                 |          |

## sandbox (context)

|                         |          |
|-------------------------|----------|
| <b>disablelibraries</b> | function |
| <b>disablerunners</b>   | function |
| <b>enable</b>           | function |
| <b>filehandlerone</b>   | function |
| <b>filehandlertwo</b>   | function |
| <b>finalizer</b>        | function |
| <b>getrunner</b>        | function |
| <b>initializer</b>      | function |
| <b>iohandler</b>        | function |
| <b>logcalls</b>         | function |
| <b>logfiles</b>         | function |
| <b>original</b>         | function |
| <b>overload</b>         | function |

|                          |          |
|--------------------------|----------|
| <b>possiblepath</b>      | function |
| <b>redefine</b>          | function |
| <b>register</b>          | function |
| <b>registerbinary</b>    | function |
| <b>registerlibrary</b>   | function |
| <b>registerroot</b>      | function |
| <b>registerrunner</b>    | function |
| <b>report</b>            | function |
| <b>setfilenamelogger</b> | function |
| <b>setlogger</b>         | function |
| <b>setreporter</b>       | function |
| <b>settrace</b>          | function |
| <b>validfilename</b>     | function |

# scripts (context)

**autofontfeature** table

F disable  
F enable  
F handler

**colors** data table

**decomposehangul** function

**defaults** table

N inter\_char\_half\_shrink\_factor  
N inter\_char\_half\_stretch\_factor  
N inter\_char\_hangul\_penalty  
N inter\_char\_quarter\_shrink\_factor  
N inter\_char\_quarter\_stretch\_factor  
N inter\_char\_shrink\_factor  
N inter\_char\_stretch\_factor  
N inter\_word\_stretch\_factor

**getdata** function

**getinjector** function

**getsplitter** function

**getstatus** function

**handlers** data table

**helpers** data table

**injectors** data table

**inserters** table

F nobreakspace\_after

F nobreakspace\_before

F space\_after

F space\_before

F zerowidthspace\_after

F zerowidthspace\_before

**installdataset** function

**installmethod** function

**numbertodataset** data table

**numbertohandler** data table

**reset** function

**set** function

**setstatus** function

**splitters** data table

## set (context)

**contains**    function

**create**     function

**tolist**     function

**tonumber**   function

**totable**    function

## sha2 (extra lua)

|                  |          |
|------------------|----------|
| <b>HASH256</b>   | function |
| <b>HASH384</b>   | function |
| <b>HASH512</b>   | function |
| <b>HEX256</b>    | function |
| <b>HEX384</b>    | function |
| <b>HEX512</b>    | function |
| <b>digest256</b> | function |
| <b>digest384</b> | function |
| <b>digest512</b> | function |

|                |          |
|----------------|----------|
| <b>hash256</b> | function |
| <b>hash384</b> | function |
| <b>hash512</b> | function |
| <b>hex256</b>  | function |
| <b>hex384</b>  | function |
| <b>hex512</b>  | function |
| <b>sum256</b>  | function |
| <b>sum384</b>  | function |
| <b>sum512</b>  | function |

## sio (extra lua)

|                          |          |
|--------------------------|----------|
| <b>read2dot14</b>        | function |
| <b>readbytes</b>         | function |
| <b>readbytetable</b>     | function |
| <b>readcardinal1</b>     | function |
| <b>readcardinal1le</b>   | function |
| <b>readcardinal2</b>     | function |
| <b>readcardinal2le</b>   | function |
| <b>readcardinal3</b>     | function |
| <b>readcardinal3le</b>   | function |
| <b>readcardinal4</b>     | function |
| <b>readcardinal4le</b>   | function |
| <b>readcardinaltable</b> | function |
| <b>readcline</b>         | function |
| <b>readcstring</b>       | function |
| <b>readfixed2</b>        | function |
| <b>readfixed4</b>        | function |
| <b>readinteger1</b>      | function |

|                         |          |
|-------------------------|----------|
| <b>readinteger1le</b>   | function |
| <b>readinteger2</b>     | function |
| <b>readinteger2le</b>   | function |
| <b>readinteger3</b>     | function |
| <b>readinteger3le</b>   | function |
| <b>readinteger4</b>     | function |
| <b>readinteger4le</b>   | function |
| <b>readintegertable</b> | function |
| <b>tocardinal1</b>      | function |
| <b>tocardinal1le</b>    | function |
| <b>tocardinal2</b>      | function |
| <b>tocardinal2le</b>    | function |
| <b>tocardinal3</b>      | function |
| <b>tocardinal3le</b>    | function |
| <b>tocardinal4</b>      | function |
| <b>tocardinal4le</b>    | function |

# socket (extra lua)

|                       |          |                             |
|-----------------------|----------|-----------------------------|
| <b>BLOCKSIZE</b>      | number   | S content-md5               |
| <b>_DATAGRAMSIZE</b>  | number   | S content-range             |
| <b>_SETSIZE</b>       | number   | S content-transfer-encoding |
| <b>_SOCKETINVALID</b> | number   | S content-type              |
| <b>bind</b>           | function | S cookie                    |
| <b>choose</b>         | function | S date                      |
| <b>connect</b>        | function | S diagnostic-code           |
| <b>connect4</b>       | function | S dsn-gateway               |
| <b>connect6</b>       | function | S etag                      |
| <b>dns</b>            | table    | S expect                    |
| F getaddrinfo         |          | S expires                   |
| F gethostname         |          | S final-log-id              |
| F getnameinfo         |          | S final-recipient           |
| F tohostname          |          | S from                      |
| F toip                |          | S host                      |
| <b>gettime</b>        | function | S if-match                  |
| <b>headers</b>        | table    | S if-modified-since         |
| T canonic             |          | S if-none-match             |
| S accept              |          | S if-range                  |
| S accept-charset      |          | S if-unmodified-since       |
| S accept-encoding     |          | S in-reply-to               |
| S accept-language     |          | S keywords                  |
| S accept-ranges       |          | S last-attempt-date         |
| S action              |          | S last-modified             |
| S age                 |          | S location                  |
| S allow               |          | S max-forwards              |
| S alternate-recipient |          | S message-id                |
| S arrival-date        |          | S mime-version              |
| S authorization       |          | S original-envelope-id      |
| S bcc                 |          | S original-recipient        |
| S cache-control       |          | S pragma                    |
| S cc                  |          | S proxy-authenticate        |
| S comments            |          | S proxy-authorization       |
| S connection          |          | S range                     |
| S content-description |          | S received                  |
| S content-disposition |          | S received-from-mta         |
| S content-encoding    |          | S references                |
| S content-id          |          | S referer                   |
| S content-language    |          | S remote-mta                |
| S content-length      |          | S reply-to                  |
| S content-location    |          | S reporting-mta             |

S resent-bcc  
 S resent-cc  
 S resent-date  
 S resent-from  
 S resent-message-id  
 S resent-reply-to  
 S resent-sender  
 S resent-to  
 S retry-after  
 S return-path  
 S sender  
 S server  
 S smtp-remote-recipient  
 S status  
 S subject  
 S te  
 S to  
 S trailer  
 S transfer-encoding  
 S upgrade  
 S user-agent  
 S vary  
 S via  
 S warning  
 S will-retry-until  
 S www-authenticate  
 S x-mailer  
 F lower  
 F normalize  
**http**                      table  
 N TIMEOUT  
 S USERAGENT  
 F genericform  
 F open  
 F request  
**newtry**                      function

**protect**                      function  
**report**                      function  
**select**                      function  
**sink**                      function  
**sinkt**                      table  
 F close-when-done  
 F default  
 F http-chunked  
 F keep-open  
**skip**                      function  
**sleep**                      function  
**source**                      function  
**sourcet**                      table  
 F by-length  
 F default  
 F http-chunked  
 F until-closed  
**tcp**                      function  
**tcp4**                      function  
**tcp6**                      function  
**tp**                      table  
 N TIMEOUT  
 F connect  
**try**                      function  
**udp**                      function  
**udp4**                      function  
**udp6**                      function  
**url**                      table  
 F absolute  
 F build  
 F build\_path  
 F escape  
 F parse  
 F parse\_path  
 F unescape

# sorters (context)

|                     |          |                        |            |
|---------------------|----------|------------------------|------------|
| <b>basicsorter</b>  | function |                        | B pm       |
| <b>comparers</b>    | table    |                        | B uc       |
| F basic             |          |                        | B zc       |
| <b>constants</b>    | table    |                        | B zm       |
| S defaultdigits     |          | <b>definitions</b>     | data table |
| S defaultlanguage   |          | <b>firstofsplit</b>    | function   |
| S defaultmethod     |          | <b>packch</b>          | function   |
| N digitmaximum      |          | <b>packuc</b>          | function   |
| N digitoffset       |          | <b>replacementlist</b> | function   |
| N ignoredoffset     |          | <b>setlanguage</b>     | function   |
| N replacementoffset |          | <b>sort</b>            | function   |
| T validmethods      |          | <b>splitters</b>       | table      |
| B ch                |          | F utf                  |            |
| B mc                |          | <b>strip</b>           | function   |
| B mm                |          | <b>tracers</b>         | data table |
| B pc                |          | <b>update</b>          | function   |

## sparse (context)

|               |          |
|---------------|----------|
| <b>concat</b> | function |
| <b>get</b>    | function |
| <b>max</b>    | function |
| <b>min</b>    | function |
| <b>new</b>    | function |

|                 |          |
|-----------------|----------|
| <b>range</b>    | function |
| <b>restore</b>  | function |
| <b>set</b>      | function |
| <b>traverse</b> | function |
| <b>wipe</b>     | function |

## statistics (context)

|                       |          |                      |          |
|-----------------------|----------|----------------------|----------|
| <b>benchmarktimer</b> | function | <b>resettiming</b>   | function |
| <b>checkfmtstatus</b> | function | <b>runtime</b>       | function |
| <b>currenttime</b>    | function | <b>savefmtstatus</b> | function |
| <b>elapsed</b>        | function | <b>show</b>          | function |
| <b>elapsedindeed</b>  | function | <b>showmemory</b>    | function |
| <b>elapsedseconds</b> | function | <b>showusage</b>     | function |
| <b>elapsedtime</b>    | function | <b>starttiming</b>   | function |
| <b>enable</b>         | boolean  | <b>stoptiming</b>    | function |
| <b>formatruntime</b>  | function | <b>threshold</b>     | number   |
| <b>hastiming</b>      | function | <b>timed</b>         | function |
| <b>memused</b>        | function | <b>tracefunction</b> | function |
| <b>register</b>       | function |                      |          |

## status (basic tex)

|                              |          |                          |          |
|------------------------------|----------|--------------------------|----------|
| <b>getbufferstate</b>        | function | <b>getmarkstate</b>      | function |
| <b>getcallbackstate</b>      | function | <b>getneststate</b>      | function |
| <b>getconstants</b>          | function | <b>getnodestate</b>      | function |
| <b>geterrorlinestate</b>     | function | <b>getparameterstate</b> | function |
| <b>geterrorstate</b>         | function | <b>getpoolstate</b>      | function |
| <b>getexpandstate</b>        | function | <b>getreadstate</b>      | function |
| <b>getextrastate</b>         | function | <b>getsavestate</b>      | function |
| <b>getfilestate</b>          | function | <b>getsparsestate</b>    | function |
| <b>getfontstate</b>          | function | <b>getstringstate</b>    | function |
| <b>gethalferrorlinestate</b> | function | <b>gettexstate</b>       | function |
| <b>gethashstate</b>          | function | <b>gettokenstate</b>     | function |
| <b>getinputstate</b>         | function | <b>getwarningstate</b>   | function |
| <b>getinsertstate</b>        | function | <b>iocodes</b>           | table    |
| <b>getlanguagestate</b>      | function | <b>list</b>              | function |
| <b>getlookupstate</b>        | function | <b>resetmessages</b>     | function |
| <b>getluastate</b>           | function |                          |          |

## storage (context)

|                   |          |                        |            |
|-------------------|----------|------------------------|------------|
| <b>allocate</b>   | function | <b>noftables</b>       | number     |
| <b>data</b>       | table    | <b>register</b>        | function   |
| <b>mark</b>       | function | <b>shared</b>          | data table |
| <b>marked</b>     | function | <b>storedfunctions</b> | data table |
| <b>max</b>        | number   | <b>strip</b>           | boolean    |
| <b>min</b>        | number   | <b>tofmodules</b>      | number     |
| <b>nofmodules</b> | number   | <b>toftables</b>       | number     |

## streams (context)

|                   |          |
|-------------------|----------|
| <b>collect</b>    | function |
| <b>disable</b>    | function |
| <b>enable</b>     | function |
| <b>flush</b>      | function |
| <b>initialize</b> | function |

|                    |          |
|--------------------|----------|
| <b>push</b>        | function |
| <b>start</b>       | function |
| <b>stop</b>        | function |
| <b>synchronize</b> | function |

## string (basic lua)

|                       |          |                          |          |
|-----------------------|----------|--------------------------|----------|
| <b>autodouble</b>     | function | <b>nspaces</b>           | table    |
| <b>autosingle</b>     | function | <b>optionalquoted</b>    | function |
| <b>booleanstring</b>  | function | <b>pack</b>              | function |
| <b>byte</b>           | function | <b>packrowscolumns</b>   | function |
| <b>bytepairs</b>      | function | <b>packsize</b>          | function |
| <b>bytes</b>          | function | <b>quote</b>             | function |
| <b>bytetable</b>      | function | <b>quoted</b>            | function |
| <b>char</b>           | function | <b>rep</b>               | function |
| <b>characterpairs</b> | function | <b>replacenewlines</b>   | function |
| <b>characters</b>     | function | <b>reverse</b>           | function |
| <b>checkedsplit</b>   | function | <b>split</b>             | function |
| <b>collapsespaces</b> | function | <b>splitlines</b>        | function |
| <b>containsws</b>     | function | <b>splitup</b>           | function |
| <b>count</b>          | function | <b>strip</b>             | function |
| <b>dawson</b>         | function | <b>sub</b>               | function |
| <b>dump</b>           | function | <b>texnewlines</b>       | function |
| <b>erf</b>            | function | <b>tformat</b>           | function |
| <b>erfc</b>           | function | <b>toHEX</b>             | function |
| <b>erfcx</b>          | function | <b>toboollean</b>        | function |
| <b>erfi</b>           | function | <b>tobytes</b>           | function |
| <b>escapedpattern</b> | function | <b>tocontext</b>         | function |
| <b>escapedquotes</b>  | function | <b>todec</b>             | function |
| <b>explode</b>        | function | <b>todimen</b>           | function |
| <b>f6</b>             | function | <b>tohex</b>             | function |
| <b>find</b>           | function | <b>tonodes</b>           | function |
| <b>format</b>         | function | <b>topattern</b>         | function |
| <b>formatter</b>      | function | <b>totable</b>           | function |
| <b>formatters</b>     | function | <b>tounicode16</b>       | function |
| <b>fullstrip</b>      | function | <b>toutf</b>             | function |
| <b>gmatch</b>         | function | <b>toutf32</b>           | function |
| <b>gsub</b>           | function | <b>toutf8</b>            | function |
| <b>is_boolean</b>     | function | <b>tracedchar</b>        | function |
| <b>is_empty</b>       | function | <b>tracedchars</b>       | table    |
| <b>itself</b>         | function | <b>unescapedquotes</b>   | function |
| <b>len</b>            | function | <b>unpack</b>            | function |
| <b>limit</b>          | function | <b>unquote</b>           | function |
| <b>linetable</b>      | function | <b>unquoted</b>          | function |
| <b>longtostring</b>   | function | <b>upper</b>             | function |
| <b>lower</b>          | function | <b>utfcharacter</b>      | function |
| <b>match</b>          | function | <b>utfcharacters</b>     | function |
| <b>nspaces</b>        | function | <b>utfcharactertable</b> | function |

|                   |          |                      |          |
|-------------------|----------|----------------------|----------|
| <b>utflength</b>  | function | <b>utfvaluetable</b> | function |
| <b>utfpadd</b>    | function | <b>valid</b>         | function |
| <b>utfpadding</b> | function | <b>voigt</b>         | function |
| <b>utfvalue</b>   | function | <b>voigt_hwhm</b>    | function |
| <b>utfvalues</b>  | function | <b>wordsplitter</b>  | function |

# structures (context)

|                   |          |                                      |
|-------------------|----------|--------------------------------------|
| <b>allocation</b> | function | F last                               |
| <b>blocks</b>     | table    | F next                               |
| D collected       |          | F prev                               |
| F define          |          | F previous                           |
| F empty           |          | F raw                                |
| F print           |          | F record                             |
| F save            |          | F reset                              |
| F select          |          | F restart                            |
| F setstate        |          | F restore                            |
| D states          |          | F save                               |
| D tobesaved       |          | F set                                |
| F uservariable    |          | F setlevel                           |
| <b>bookmarks</b>  | table    | F setoffset                          |
| T extras          |          | F setown                             |
| F get             |          | F setstate                           |
| F mergesections   |          | F setvalue                           |
| F register        |          | T specials                           |
| F reset           |          | F userpage                           |
| F tosections      |          | F subs                               |
| F finalize        |          | D tobesaved                          |
| F flatten         |          | F value                              |
| F installhandler  |          | F way                                |
| F merge           |          | <b>currentsectionnumber</b> function |
| S method          |          | <b>descriptions</b> table            |
| F overload        |          | <b>documents</b> table               |
| F place           |          | D data                               |
| F register        |          | F initialize                         |
| F setopened       |          | F preset                             |
| F setup           |          | F reset                              |
| <b>counters</b>   | table    | <b>floats</b> table                  |
| F add             |          | <b>formulas</b> table                |
| F analyze         |          | <b>helpers</b> table                 |
| F check           |          | F analyze                            |
| D collected       |          | F formulanumber                      |
| F compact         |          | F merged                             |
| F converted       |          | F page                               |
| F currentvalue    |          | F pageofinternal                     |
| D data            |          | F prefix                             |
| F define          |          | F prefixlastpage                     |
| F first           |          | F prefixpage                         |
| F get             |          | F simplify                           |

|                   |              |
|-------------------|--------------|
| F title           |              |
| F touserdata      |              |
| <b>inserts</b>    | <b>table</b> |
| D data            |              |
| F define          |              |
| F getdata         |              |
| F getlocation     |              |
| F getname         |              |
| F getnumber       |              |
| F setlocation     |              |
| F setup           |              |
| D stored          |              |
| <b>itemgroups</b> | <b>table</b> |
| <b>lists</b>      | <b>table</b> |
| F addto           |              |
| F analyze         |              |
| B autoreorder     |              |
| D cached          |              |
| D collected       |              |
| F discard         |              |
| F enhance         |              |
| T enhancers       |              |
| F filter          |              |
| F formulainumber  |              |
| F getresult       |              |
| F groupindex      |              |
| F hasnumberdata   |              |
| F haspagedata     |              |
| F hastitledata    |              |
| F iscached        |              |
| D kinds           |              |
| F label           |              |
| F location        |              |
| D names           |              |
| F number          |              |
| D ordered         |              |
| F page            |              |
| F popnesting      |              |
| F prefix          |              |
| F prefixednumber  |              |
| F prefixedpage    |              |
| F process         |              |
| D pushed          |              |
| F pushnesting     |              |

|                            |              |
|----------------------------|--------------|
| F realpage                 |              |
| F reordered                |              |
| T result                   |              |
| F savedlistnumber          |              |
| F savedlistprefixednumber  |              |
| F savedlisttitle           |              |
| D sectionblocks            |              |
| F sectionnumber            |              |
| F size                     |              |
| F title                    |              |
| D tobesaved                |              |
| F userdata                 |              |
| F uservalue                |              |
| <b>marks</b>               | <b>table</b> |
| F number                   |              |
| F title                    |              |
| <b>notes</b>               | <b>table</b> |
| F check_spacing            |              |
| F checkpagechange          |              |
| F define                   |              |
| F doifonsamepageasprevious |              |
| F get                      |              |
| F getdeltapage             |              |
| F getinternal              |              |
| F getn                     |              |
| F getstate                 |              |
| F hascontent               |              |
| F internal                 |              |
| F internalid               |              |
| F listindex                |              |
| D numbers                  |              |
| F ordered                  |              |
| F postpone                 |              |
| F resetpostponed           |              |
| F restore                  |              |
| F save                     |              |
| F setstate                 |              |
| D states                   |              |
| F store                    |              |
| <b>pages</b>               | <b>table</b> |
| F allmarked                |              |
| F analyze                  |              |
| D collected                |              |
| F fraction                 |              |

- F has\_changed
- F in\_body
- F is\_odd
- F mark
- F marked
- F markedlist
- N nopages
- F number
- F on\_right
- F save
- D tobosaved
- F toranges

## references

- F analyze
- F checkedfile
- F checkedfileorurl
- F checkedprogram
- F checkedrealpage
- F checkedurl
- D collected
- U componentsplitter
- F currentmetadata
- F currentorder
- D currentset
- F define
- D defined
- D derived
- F enhance
- D executers
- F expandcurrent
- F export
- T files
- T data
- F define
- F found
- F get
- F filter
- F filterdefault
- D filters
- D flaginternals
- F from
- D functions
- F get
- F getcurrentmetadata

## table

- F getcurrentprefixspec
- F getinnermethod
- F getinternalcachedlistreference
- F getinternallistreference
- F getinternalreference
- F getoutermethod
- D handlers
- F identify
- F import
- F inject
- F injectcurrentset
- S innermethod
- D internals
- F load
- F loadpresets
- F mark
- S outermethod
- D pages
- U prefixsplitter
- D productdata
- T programs
- T data
- F define
- F get
- F realpageofpage
- U referencesplitter
- D referred
- F referredpage
- F registerfinalizer
- F registerinitializer
- F registerpage
- F reset
- D runners
- F set
- F setandgetattribute
- F setcomponent
- F setinternalreference
- F setlinkmethod
- F setnextinternal
- F setnextorder
- F setreferencerealpage
- D specials
- F splitcomponent
- F splitprefix

- F splitreference
- F synchronizepage
- T testrunners
  - F inner
  - F special
  - F special operation
  - F special operation with arguments
- T testspecials
  - F deltapage
  - F i
  - F internal
  - F page
  - F realpage
  - F section
  - F userpage
- D tobereferred
- D tobesaved
- D tracedpages
- T urls
  - T data
  - F define
  - F found
  - F get
  - F untex
- D usedinternals
- D usedviews
- F valid

## registers

## table

- F analyze
- D collected
- F compare
- F define
- F enhance
- F extend
- F filter
- F filtercollected
- F finalize
- F findinternal
- F flush
- F get
- F prepare
- F process
- F setmethod
- F sort

- F store
- D tobesaved
- F unique
- F userdata

## sections

- F autodepth
- F cct
- D collected
- F current
- F currentblock
- F currentid
- F currentlevel
- F currentsectionindex
- F depthnumber
- F finddata
- F findnumber
- F fullnumber
- F getcurrentlevel
- F getlevel
- F getnumber
- F internalreference
- D levelmap
- D levels
- F matchingtilldepth
- F numberatdepth
- F numbers
- F popblock
- F prefixedconverted
- F pushblock
- F register
- D registered
- F reportstructure
- F save
- T sectionblockdata
  - T bodypart
    - S bookmark
- F set
- F setblock
- F setchecker
- F setentry
- F setinitialblock
- F setlevel
- F setnumber
- F showstructure

## table

|                 |              |                     |
|-----------------|--------------|---------------------|
| F structuredata |              | F margintext        |
| F title         |              | F math              |
| D tobesaved     |              | F mrow              |
| F typesetnumber |              | F mtable            |
| F userdata      |              | T destinationhash   |
| B verbose       |              | T extras            |
| <b>sets</b>     | <b>table</b> | F adddestination    |
| F define        |              | F addimplicit       |
| F get           |              | F addinternal       |
| F getall        |              | F addreference      |
| D setlist       |              | F combination       |
| <b>specials</b> | <b>table</b> | F delimitedsymbol   |
| D collected     |              | F description       |
| F retrieve      |              | F descriptionsymbol |
| F store         |              | F document          |
| D tobesaved     |              | F float             |
| <b>synonyms</b> | <b>table</b> | F formulacontent    |
| F analyzed      |              | F image             |
| D collected     |              | F item              |
| F compare       |              | F itemgroup         |
| F define        |              | F link              |
| F filter        |              | F listitem          |
| F finalize      |              | F mi                |
| F flush         |              | F msub              |
| F isshown       |              | F msup              |
| F isused        |              | F paragraph         |
| F meaning       |              | F publication       |
| F prepare       |              | F reference         |
| F process       |              | F registerlocation  |
| F register      |              | F registerpages     |
| F registershown |              | F registerseparator |
| F registerused  |              | F section           |
| F reset         |              | F sorting           |
| F resetall      |              | F subsentencesymbol |
| F resetlist     |              | F synonym           |
| F resetshown    |              | F tablecell         |
| F resetused     |              | F tabulate          |
| F sort          |              | F tabulatecell      |
| F synonym       |              | T finalizers        |
| D tobesaved     |              | F descriptions      |
| <b>tags</b>     | <b>table</b> | T fixes             |
| T backend       |              | F linenumber        |
| T checks        |              | T listdata          |
| F marginanchor  |              | T referencehash     |

|                     |                           |
|---------------------|---------------------------|
| F setattribute      | F setattributefunction    |
| T usedimages        | F setcombination          |
| T image             | F setconstruct            |
| T usedstyles        | F setfigure               |
| T construct         | F setfloat                |
| T highlight         | F setformulacontent       |
| F current           | F sethighlight            |
| F elementtag        | F setitem                 |
| F enabled           | F setitemgroup            |
| F exportbox         | F setlist                 |
| F finishexport      | F setnotation             |
| F getextradata      | F setnotationsymbol       |
| F getid             | F setparagraph            |
| F getmetadata       | F setproperty             |
| F gettablecell      | F setpublication          |
| F gettabulatecell   | F setregister             |
| F handler           | F setsorting              |
| F initializeexport  | F setsynonym              |
| D labels            | F settablecell            |
| F last              | F settabulatecell         |
| F lastinchain       | F settagdelimitedsymbol   |
| F localexport       | F settagsubsentencesymbol |
| F locatedtag        | F setupexport             |
| T patterns          | F setuserproperties       |
| U splitter          | D specifications          |
| D properties        | F start                   |
| F registerextradata | F stop                    |
| F registermetadata  | F strip                   |
| F restart           | D taglist                 |
| F setaspect         | T usewithcare             |

## table (basic lua)

|                        |          |                             |          |
|------------------------|----------|-----------------------------|----------|
| <b>allkeys</b>         | function | <b>pack</b>                 | function |
| <b>append</b>          | function | <b>prepend</b>              | function |
| <b>are_equal</b>       | function | <b>print</b>                | function |
| <b>collapsed</b>       | function | <b>remove</b>               | function |
| <b>collapsedhash</b>   | function | <b>reverse</b>              | function |
| <b>compact</b>         | function | <b>reversed</b>             | function |
| <b>concat</b>          | function | <b>save</b>                 | function |
| <b>contains</b>        | function | <b>sequenced</b>            | function |
| <b>copy</b>            | function | <b>serialize</b>            | function |
| <b>count</b>           | function | <b>setmetatablecall</b>     | function |
| <b>derive</b>          | function | <b>setmetatableindex</b>    | function |
| <b>deserialize</b>     | function | <b>setmetatableindices</b>  | function |
| <b>drop</b>            | function | <b>setmetatablekey</b>      | function |
| <b>fastcopy</b>        | function | <b>setmetatablenewindex</b> | function |
| <b>fastserialize</b>   | function | <b>sort</b>                 | function |
| <b>filtered</b>        | function | <b>sorted</b>               | function |
| <b>flattened</b>       | function | <b>sortedhash</b>           | function |
| <b>fromhash</b>        | function | <b>sortedhashkeys</b>       | function |
| <b>getmetatablekey</b> | function | <b>sortedhashonly</b>       | function |
| <b>getn</b>            | function | <b>sortedindexonly</b>      | function |
| <b>has_one_entry</b>   | function | <b>sortedkeys</b>           | function |
| <b>hashed</b>          | function | <b>sortedpairs</b>          | function |
| <b>identical</b>       | function | <b>sparse</b>               | function |
| <b>imerge</b>          | function | <b>strip</b>                | function |
| <b>imerged</b>         | function | <b>sub</b>                  | function |
| <b>insert</b>          | function | <b>swapped</b>              | function |
| <b>is_empty</b>        | function | <b>tocontext</b>            | function |
| <b>is_simple_table</b> | function | <b>tocsv</b>                | function |
| <b>keys</b>            | function | <b>tofile</b>               | function |
| <b>load</b>            | function | <b>tohandle</b>             | function |
| <b>loweredkeys</b>     | function | <b>tohash</b>               | function |
| <b>makewweak</b>       | function | <b>toxml</b>                | function |
| <b>merge</b>           | function | <b>twowaymapper</b>         | function |
| <b>merged</b>          | function | <b>unique</b>               | function |
| <b>mirrored</b>        | function | <b>unnest</b>               | function |
| <b>move</b>            | function | <b>unpack</b>               | function |
| <b>ordered</b>         | function | <b>values</b>               | function |
| <b>orderedhash</b>     | function |                             |          |

# tex (basic tex)

|                                   |            |                                 |          |
|-----------------------------------|------------|---------------------------------|----------|
| <b>attribute</b>                  | table      | <b>getautomigrationvalues</b>   | function |
| <b>automigrationcodes</b>         | data table | <b>getbox</b>                   | function |
| <b>badness</b>                    | function   | <b>getboxdir</b>                | function |
| <b>box</b>                        | table      | <b>getboxresourcebox</b>        | function |
| <b>boxresources</b>               | table      | <b>getboxresourcedimensions</b> | function |
| F getbox                          |            | <b>getcatcode</b>               | function |
| F getdimensions                   |            | <b>getcount</b>                 | function |
| F save                            |            | <b>getdelcode</b>               | function |
| F use                             |            | <b>getdelcodes</b>              | function |
| <b>catcode</b>                    | table      | <b>getdelimtermodevalues</b>    | function |
| <b>chardef</b>                    | function   | <b>getdimen</b>                 | function |
| <b>codes</b>                      | table      | <b>getdimensionvalue</b>        | function |
| <b>conditionals</b>               | data table | <b>getdiscoptionvalues</b>      | function |
| <b>constants</b>                  | data table | <b>getdiscstatevalues</b>       | function |
| <b>count</b>                      | table      | <b>geterrorvalues</b>           | function |
| <b>cprint</b>                     | function   | <b>getflagvalues</b>            | function |
| <b>ctdcatcodes</b>                | number     | <b>getfontoffamily</b>          | function |
| <b>ctxcatcodes</b>                | number     | <b>getfrozenparvalues</b>       | function |
| <b>definefont</b>                 | function   | <b>getglue</b>                  | function |
| <b>delcode</b>                    | table      | <b>getglyphdata</b>             | function |
| <b>dimen</b>                      | table      | <b>getglyphoptionvalues</b>     | function |
| <b>dimensiondef</b>               | function   | <b>getglyphscript</b>           | function |
| <b>directives</b>                 | data table | <b>getglyphstate</b>            | function |
| <b>discoptioncodes</b>            | data table | <b>getgroupvalues</b>           | function |
| <b>enableprimitives</b>           | function   | <b>gethelptext</b>              | function |
| <b>error</b>                      | function   | <b>gethyphenationvalues</b>     | function |
| <b>expandasvalue</b>              | function   | <b>getinsertcontent</b>         | function |
| <b>experiments</b>                | data table | <b>getinsertdepth</b>           | function |
| <b>extraprimitives</b>            | function   | <b>getinsertdistance</b>        | function |
| <b>fatalerror</b>                 | function   | <b>getinsertheight</b>          | function |
| <b>flagcodes</b>                  | data table | <b>getinsertlimit</b>           | function |
| <b>fontidentifier</b>             | function   | <b>getinsertmultiplier</b>      | function |
| <b>fontname</b>                   | function   | <b>getinsertwidth</b>           | function |
| <b>forcehmode</b>                 | function   | <b>getintegervalue</b>          | function |
| <b>forcesynctexline</b>           | function   | <b>getinteraction</b>           | function |
| <b>forcesynctextag</b>            | function   | <b>getiovalues</b>              | function |
| <b>fprint</b>                     | function   | <b>getlargestusedmark</b>       | function |
| <b>frozenparcodes</b>             | data table | <b>getlccode</b>                | function |
| <b>get</b>                        | function   | <b>getlinedir</b>               | function |
| <b>getappendlinecontextvalues</b> | function   | <b>getlist</b>                  | function |
| <b>getattribute</b>               | function   | <b>getlocalbox</b>              | function |

|                                  |            |                         |                     |
|----------------------------------|------------|-------------------------|---------------------|
| <b>getlocallevel</b>             | function   | <b>hashtokens</b>       | function            |
| <b>getmark</b>                   | function   | <b>hyphenationcodes</b> | data table          |
| <b>getmath</b>                   | function   | <b>ifs</b>              | data table          |
| <b>getmathcode</b>               | function   | <b>inimatcodes</b>      | number              |
| <b>getmathcodes</b>              | function   | <b>integerdef</b>       | function            |
| <b>getmathcontrolvalues</b>      | function   | <b>isattribute</b>      | function            |
| <b>getmathdir</b>                | function   | <b>isbox</b>            | function            |
| <b>getmathflattenvalues</b>      | function   | <b>iscount</b>          | overloaded function |
| <b>getmathoptionvalues</b>       | function   | <b>isdefined</b>        | function            |
| <b>getmathparametervalues</b>    | function   | <b>isdimen</b>          | overloaded function |
| <b>getmathstylevalues</b>        | function   | <b>isglue</b>           | function            |
| <b>getmathstylevalues</b>        | function   | <b>ismuglue</b>         | function            |
| <b>getmathvariantvalues</b>      | function   | <b>ismuskip</b>         | overloaded function |
| <b>getmode</b>                   | function   | <b>isprintable</b>      | function            |
| <b>getmodevalues</b>             | function   | <b>isskip</b>           | overloaded function |
| <b>getmuglue</b>                 | function   | <b>istoken</b>          | function            |
| <b>getmuskip</b>                 | function   | <b>istoks</b>           | function            |
| <b>getnest</b>                   | function   | <b>lastnodetype</b>     | function            |
| <b>getnormalizevalues</b>        | function   | <b>lccode</b>           | table               |
| <b>getoutputactive</b>           | function   | <b>linebreak</b>        | function            |
| <b>getpacktypevalues</b>         | function   | <b>lists</b>            | table               |
| <b>getpagecontextvalues</b>      | function   | <b>luacatcodes</b>      | number              |
| <b>getpagestate</b>              | function   | <b>magicconstants</b>   | table               |
| <b>getparbeginvalues</b>         | function   | N awfulbad              |                     |
| <b>getparcontextvalues</b>       | function   | N decentcriterium       |                     |
| <b>getpardir</b>                 | function   | N defaultcatcodetable   |                     |
| <b>getparmodevalues</b>          | function   | N defaultdeadcycles     |                     |
| <b>getparstate</b>               | function   | N defaulteqnogapstep    |                     |
| <b>getprimitiveorigins</b>       | function   | N defaultthangafter     |                     |
| <b>getregisterindex</b>          | function   | N defaulttoutputbox     |                     |
| <b>getrunstatevalues</b>         | function   | N defaultpdisplaygap    |                     |
| <b>getsfcode</b>                 | function   | N defaultrule           |                     |
| <b>getshapingpenaltiesvalues</b> | function   | N defaultspacefactor    |                     |
| <b>getskip</b>                   | function   | N defaulttolerance      |                     |
| <b>getsynctexline</b>            | function   | N deplorable            |                     |
| <b>getsynctexmode</b>            | function   | N ejectpenalty          |                     |
| <b>getsynctextag</b>             | function   | N ignoredepth           |                     |
| <b>gettextcontrolvalues</b>      | function   | N infinitebad           |                     |
| <b>gettextdir</b>                | function   | N infinitepenalty       |                     |
| <b>gettoks</b>                   | function   | N infinity              |                     |
| <b>getuccode</b>                 | function   | N largewidthexcess      |                     |
| <b>glue</b>                      | table      | N loosecriterium        |                     |
| <b>glyphoptioncodes</b>          | data table | N maxbytecodeindex      |                     |
| <b>groupcodes</b>                | data table | N maxcardinal           |                     |

|                        |                         |            |
|------------------------|-------------------------|------------|
| N maxcategorycode      | N unity                 |            |
| N maxcharactercode     | N unusedattributevalue  |            |
| N maxcharcode          | N unusedscriptvalue     |            |
| N maxdatavalue         | N unusedstatevalue      |            |
| N maxdimen             | N zeroglua              |            |
| N maxfunctionreference | <b>mathchardef</b>      | function   |
| N maxhalfvalue         | <b>mathcode</b>         | table      |
| N maxhalfword          | <b>mathcontrolcodes</b> | data table |
| N maxinteger           | <b>mathflattencodes</b> | data table |
| N maxmarkindex         | <b>mathoptioncodes</b>  | data table |
| N maxmathclasscode     | <b>modelevels</b>       | table      |
| N maxmathfamilyindex   | N horizontal            |            |
| N maxnewlinecharacter  | N math                  |            |
| N maxnofbytecodes      | N unset                 |            |
| N maxnofcatcodetables  | N vertical              |            |
| N maxnoffonts          | <b>modes</b>            | data table |
| N maxnoflanguages      | <b>mprint</b>           | function   |
| N maxnofmarks          | <b>muglua</b>           | table      |
| N maxnofmathfamilies   | <b>muskup</b>           | table      |
| N maxnofregisters      | <b>nest</b>             | table      |
| N maxquarterword       | <b>nilcatcodes</b>      | number     |
| N maxregisterindex     | <b>normalizecodes</b>   | data table |
| N maxsizeofword        | <b>notcatcodes</b>      | number     |
| N maxspacefactor       | <b>number</b>           | function   |
| N mincardinal          | <b>parcontextcodes</b>  | data table |
| N mindatavalue         | <b>poplocal</b>         | function   |
| N mindimen             | <b>primitives</b>       | function   |
| N minhalfword          | <b>print</b>            | function   |
| N mininfinity          | <b>prtcacodes</b>       | number     |
| N mininteger           | <b>pushlocal</b>        | function   |
| N minquarterword       | <b>quitlocal</b>        | function   |
| N minspacefactor       | <b>quittoks</b>         | function   |
| N nocatcodetable       | <b>resetparagraph</b>   | function   |
| N null                 | <b>rlncatcodes</b>      | number     |
| N nullflag             | <b>romannumeral</b>     | function   |
| N nullfont             | <b>round</b>            | function   |
| N onebp                | <b>runlocal</b>         | function   |
| N presetrulethickness  | <b>runstring</b>        | function   |
| N runningrule          | <b>runtoks</b>          | function   |
| N smallstretchability  | <b>saveboxresource</b>  | function   |
| N texeqtbsize          | <b>scale</b>            | function   |
| N texhashprime         | <b>scantoks</b>         | function   |
| N texhashsize          | <b>set</b>              | function   |
| N two                  | <b>setattribute</b>     | function   |

|                            |                     |                            |            |
|----------------------------|---------------------|----------------------------|------------|
| <b>setbox</b>              | function            | <b>settextdir</b>          | function   |
| <b>setboxdir</b>           | function            | <b>settoks</b>             | function   |
| <b>setcatcode</b>          | function            | <b>setuccode</b>           | function   |
| <b>setcount</b>            | function            | <b>sfcode</b>              | table      |
| <b>setdelcode</b>          | function            | <b>shiftparshape</b>       | function   |
| <b>setdimen</b>            | function            | <b>shipout</b>             | function   |
| <b>setdimensionvalue</b>   | function            | <b>showbox</b>             | function   |
| <b>setglue</b>             | function            | <b>showcontext</b>         | function   |
| <b>setglyphdata</b>        | function            | <b>skip</b>                | table      |
| <b>setglyphscript</b>      | function            | <b>snapshotpar</b>         | function   |
| <b>setglyphstate</b>       | function            | <b>sp</b>                  | function   |
| <b>setinsertcontent</b>    | function            | <b>splitbox</b>            | function   |
| <b>setinsertdistance</b>   | function            | <b>sprint</b>              | function   |
| <b>setinsertlimit</b>      | function            | <b>stringtocodesbitmap</b> | function   |
| <b>setinsertmultiplier</b> | function            | <b>systemmodes</b>         | data table |
| <b>setintegervalue</b>     | function            | <b>takebox</b>             | function   |
| <b>setinteraction</b>      | function            | <b>texcatcodes</b>         | number     |
| <b>setlccode</b>           | function            | <b>textcontrolcodes</b>    | data table |
| <b>setlinedir</b>          | function            | <b>toks</b>                | table      |
| <b>setlist</b>             | function            | <b>tonumber</b>            | function   |
| <b>setlocalbox</b>         | function            | <b>toscaled</b>            | function   |
| <b>setmath</b>             | function            | <b>tpacatcodes</b>         | number     |
| <b>setmathcode</b>         | function            | <b>tpbcatcodes</b>         | number     |
| <b>setmathdir</b>          | function            | <b>tprint</b>              | function   |
| <b>setmuglue</b>           | function            | <b>trackers</b>            | data table |
| <b>setmuskip</b>           | function            | <b>triggerbuildpage</b>    | function   |
| <b>setnest</b>             | function            | <b>txtcatcodes</b>         | number     |
| <b>setpardir</b>           | function            | <b>type</b>                | function   |
| <b>setrunstate</b>         | overloaded function | <b>urrcode</b>             | table      |
| <b>setsfcode</b>           | function            | <b>uprint</b>              | function   |
| <b>setskip</b>             | function            | <b>useboxresource</b>      | function   |
| <b>setsynctexline</b>      | function            | <b>vrbcacodes</b>          | number     |
| <b>setsynctexmode</b>      | function            | <b>write</b>               | function   |
| <b>setsynctextag</b>       | function            |                            |            |

# texconfig (basic tex)

|  |                     |   |        |
|--|---------------------|---|--------|
| <b>buffer</b> <b>size</b>                        | table               | <b>language</b> <b>size</b>                   | table  |
| N size   |                     | N size  |        |
| N step   |                     | N step  |        |
| <b>error</b> <b>line</b> <b>size</b>             | table               | <b>mark</b> <b>size</b>                       | table  |
| N size   |                     | N size  |        |
| <b>expand</b> <b>size</b>                        | table               | N step  |        |
| N size   |                     | <b>nest</b> <b>size</b>                       | table  |
| <b>file</b> <b>size</b>                          | table               | N size  |        |
| N size   |                     | N step  |        |
| N step   |                     | <b>node</b> <b>size</b>                       | table  |
| <b>first</b> <b>line</b>                         | string              | N size  |        |
| <b>font</b> <b>size</b>                          | table               | N step  |        |
| N size   |                     | <b>param</b> <b>eter</b> <b>size</b>          | table  |
| N step   |                     | N size  |        |
| <b>format</b> <b>name</b>                        | string              | N step  |        |
| <b>function</b> <b>size</b>                      | number              | <b>pool</b> <b>size</b>                       | table  |
| <b>half</b> <b>error</b> <b>line</b> <b>size</b> | table               | N size  |        |
| N size   |                     | N step  |        |
| <b>hash</b> <b>size</b>                          | table               | <b>prop</b> <b>erti</b> <b>ess</b> <b>ize</b> | number |
| N size   |                     | <b>save</b> <b>size</b>                       | table  |
| N step   |                     | N size  |        |
| <b>init</b>                                      | overloaded function | N step  |        |
| <b>input</b> <b>size</b>                         | table               | <b>shell_</b> <b>escape</b>                   | string |
| N size   |                     | <b>string</b> <b>size</b>                     | table  |
| N step   |                     | N size  |        |
| <b>insert</b> <b>size</b>                        | table               | N step  |        |
| N size   |                     | <b>token</b> <b>size</b>                      | table  |
| N step   |                     | N size  |        |
| <b>kpse_</b> <b>init</b>                         | boolean             | N step  |        |

## texio (basic tex)

**closeinput**

function

**setlogfile**

function

**terminal**

function

**write**

function

**write\_nl**

function

**writeln**

function

**writeselector**

function

**writeselectorlf**

function

**writeselectornl**

function

## token (basic tex)

|                         |          |                           |          |
|-------------------------|----------|---------------------------|----------|
| <b>create</b>           | function | <b>getexpandable</b>      | function |
| <b>expand</b>           | function | <b>getfields</b>          | function |
| <b>expand_macro</b>     | function | <b>getflags</b>           | function |
| <b>expandmacro</b>      | function | <b>getfrozen</b>          | function |
| <b>future_expand</b>    | function | <b>getfunctionvalues</b>  | function |
| <b>futureexpand</b>     | function | <b>getid</b>              | function |
| <b>get_active</b>       | function | <b>getimmutable</b>       | function |
| <b>get_cmdchrscs</b>    | function | <b>getindex</b>           | function |
| <b>get_cmdname</b>      | function | <b>getinstance</b>        | function |
| <b>get_command</b>      | function | <b>getinteger</b>         | function |
| <b>get_csname</b>       | function | <b>getmacro</b>           | function |
| <b>get_cstoken</b>      | function | <b>getmeaning</b>         | function |
| <b>get_dimension</b>    | function | <b>getnoaligned</b>       | function |
| <b>get_expandable</b>   | function | <b>getparameters</b>      | function |
| <b>get_fields</b>       | function | <b>getpermanent</b>       | function |
| <b>get_flags</b>        | function | <b>getprimitive</b>       | function |
| <b>get_frozen</b>       | function | <b>getprimitives</b>      | function |
| <b>get_id</b>           | function | <b>getprotected</b>       | function |
| <b>get_immutable</b>    | function | <b>getrange</b>           | function |
| <b>get_index</b>        | function | <b>gettok</b>             | function |
| <b>get_instance</b>     | function | <b>gettolerant</b>        | function |
| <b>get_integer</b>      | function | <b>gobble</b>             | function |
| <b>get_macro</b>        | function | <b>gobble_dimen</b>       | function |
| <b>get_meaning</b>      | function | <b>gobble_integer</b>     | function |
| <b>get_noaligned</b>    | function | <b>gobbledimen</b>        | function |
| <b>get_parameters</b>   | function | <b>gobbleinteger</b>      | function |
| <b>get_permanent</b>    | function | <b>is_defined</b>         | function |
| <b>get_primitive</b>    | function | <b>is_next_char</b>       | function |
| <b>get_protected</b>    | function | <b>is_token</b>           | function |
| <b>get_range</b>        | function | <b>isdefined</b>          | function |
| <b>get_tok</b>          | function | <b>isnextchar</b>         | function |
| <b>get_tolerant</b>     | function | <b>istoken</b>            | function |
| <b>getactive</b>        | function | <b>new</b>                | function |
| <b>getcmdchrscs</b>     | function | <b>peek_next</b>          | function |
| <b>getcmdname</b>       | function | <b>peek_next_char</b>     | function |
| <b>getcommand</b>       | function | <b>peek_next_expanded</b> | function |
| <b>getcommandid</b>     | function | <b>peeknext</b>           | function |
| <b>getcommandvalues</b> | function | <b>peeknextchar</b>       | function |
| <b>getcsname</b>        | function | <b>peeknextexpanded</b>   | function |
| <b>getcstoken</b>       | function | <b>pop_macro</b>          | function |
| <b>getdimension</b>     | function | <b>popmacro</b>           | function |

|                                    |                       |                                  |                       |
|------------------------------------|-----------------------|----------------------------------|-----------------------|
| <code>push_macro</code>            | <code>function</code> | <code>scanbox</code>             | <code>function</code> |
| <code>pushmacro</code>             | <code>function</code> | <code>scancardinal</code>        | <code>function</code> |
| <code>put_back</code>              | <code>function</code> | <code>scanchar</code>            | <code>function</code> |
| <code>put_next</code>              | <code>function</code> | <code>scancmdchr</code>          | <code>function</code> |
| <code>putback</code>               | <code>function</code> | <code>scancmdchrexploded</code>  | <code>function</code> |
| <code>putnext</code>               | <code>function</code> | <code>scancode</code>            | <code>function</code> |
| <code>save_lua</code>              | <code>function</code> | <code>scancsname</code>          | <code>function</code> |
| <code>savelua</code>               | <code>function</code> | <code>scandelimited</code>       | <code>function</code> |
| <code>scan_argument</code>         | <code>function</code> | <code>scandimen</code>           | <code>function</code> |
| <code>scan_box</code>              | <code>function</code> | <code>scandimenargument</code>   | <code>function</code> |
| <code>scan_cardinal</code>         | <code>function</code> | <code>scanfloat</code>           | <code>function</code> |
| <code>scan_char</code>             | <code>function</code> | <code>scan glue</code>           | <code>function</code> |
| <code>scan_cmdchr</code>           | <code>function</code> | <code>scaninteger</code>         | <code>function</code> |
| <code>scan_cmdchr_expanded</code>  | <code>function</code> | <code>scanintegerargument</code> | <code>function</code> |
| <code>scan_code</code>             | <code>function</code> | <code>scankey</code>             | <code>function</code> |
| <code>scan_csname</code>           | <code>function</code> | <code>scankeyword</code>         | <code>function</code> |
| <code>scan_delimited</code>        | <code>function</code> | <code>scankeywordcs</code>       | <code>function</code> |
| <code>scan_dimen</code>            | <code>function</code> | <code>scanletters</code>         | <code>function</code> |
| <code>scan_dimen_argument</code>   | <code>function</code> | <code>scanluacardinal</code>     | <code>function</code> |
| <code>scan_float</code>            | <code>function</code> | <code>scanluainteger</code>      | <code>function</code> |
| <code>scan glue</code>             | <code>function</code> | <code>scanluanumber</code>       | <code>function</code> |
| <code>scan_integer</code>          | <code>function</code> | <code>scannext</code>            | <code>function</code> |
| <code>scan_integer_argument</code> | <code>function</code> | <code>scannextchar</code>        | <code>function</code> |
| <code>scan_key</code>              | <code>function</code> | <code>scannextexploded</code>    | <code>function</code> |
| <code>scan_keyword</code>          | <code>function</code> | <code>scanreal</code>            | <code>function</code> |
| <code>scan_keyword_cs</code>       | <code>function</code> | <code>scanscale</code>           | <code>function</code> |
| <code>scan_letters</code>          | <code>function</code> | <code>scanskip</code>            | <code>function</code> |
| <code>scan_luacardinal</code>      | <code>function</code> | <code>scanstring</code>          | <code>function</code> |
| <code>scan_luainteger</code>       | <code>function</code> | <code>scantoken</code>           | <code>function</code> |
| <code>scan_luanumber</code>        | <code>function</code> | <code>scantokencode</code>       | <code>function</code> |
| <code>scan_next</code>             | <code>function</code> | <code>scantokenlist</code>       | <code>function</code> |
| <code>scan_next_char</code>        | <code>function</code> | <code>scantoks</code>            | <code>function</code> |
| <code>scan_next_expanded</code>    | <code>function</code> | <code>scanvalue</code>           | <code>function</code> |
| <code>scan_real</code>             | <code>function</code> | <code>scanword</code>            | <code>function</code> |
| <code>scan_scale</code>            | <code>function</code> | <code>serialize</code>           | <code>function</code> |
| <code>scan_skip</code>             | <code>function</code> | <code>set_char</code>            | <code>function</code> |
| <code>scan_string</code>           | <code>function</code> | <code>set_dimension</code>       | <code>function</code> |
| <code>scan_token</code>            | <code>function</code> | <code>set_integer</code>         | <code>function</code> |
| <code>scan_token_code</code>       | <code>function</code> | <code>set_lua</code>             | <code>function</code> |
| <code>scan_tokenlist</code>        | <code>function</code> | <code>set_macro</code>           | <code>function</code> |
| <code>scan_toks</code>             | <code>function</code> | <code>setchar</code>             | <code>function</code> |
| <code>scan_value</code>            | <code>function</code> | <code>setdimension</code>        | <code>function</code> |
| <code>scan_word</code>             | <code>function</code> | <code>setinteger</code>          | <code>function</code> |
| <code>scanargument</code>          | <code>function</code> | <code>setlua</code>              | <code>function</code> |

|                           |          |                         |          |
|---------------------------|----------|-------------------------|----------|
| <b>setmacro</b>           | function | <b>skipnextexpanded</b> | function |
| <b>skip_next</b>          | function | <b>type</b>             | function |
| <b>skip_next_expanded</b> | function | <b>undefine_macro</b>   | function |
| <b>skipnext</b>           | function | <b>undefinemacro</b>    | function |

# tokens (context)

## accessors table

- F active
- F cmd
- F cmdchrsc
- F cmdname
- F command
- F csname
- F expandable
- F frozen
- F index
- F name
- F protected
- F range

## astable function

## bits table

- N active
- N alignment
- N begingroup
- N character
- N close
- N comment
- N endgroup
- N endoffline
- N escape
- N ignore
- N invalid
- N letter
- N mathshift
- N open
- N other
- N parameter
- N space
- N subscript
- N superscript
- N whitespace

## cache table

- U NC
- U NR
- U bf
- U buff\_finish
- U c\_font\_compact

- U color
- U colordefalc
- U colordefflc
- U colordefflt
- U colordefrlt
- U dofinishreference
- U dostarttext
- U finishjob
- U firstofoneargument
- U firstoftwoarguments
- U gobbleoneargument
- U goto
- U iftrue
- U input
- U loadfoundtypescriptfile
- U resetctxscanner
- U rlap
- U secondoftwoarguments
- U setfalsevalue
- U setsectionblock
- U setupsystem
- U startcolumns
- U starttabulate
- U starttitle
- U startxtitle
- U stopcolumns
- U stoptabulate
- U stoptitle
- U stopxtitle
- U texsetup
- U xmlw

## commands data table

## compile function

## constant function

## converters table

- S toboolean
- S todimen
- S toglue
- S tonumber
- S tostring

## create function

|                   |          |                   |
|-------------------|----------|-------------------|
| <b>defined</b>    | function | F cmdchrexploded  |
| <b>flags</b>      | function | F code            |
| <b>getinteger</b> | function | F conditional     |
| <b>getters</b>    | table    | F count           |
| F box             |          | F csname          |
| F count           |          | F csnameunchecked |
| F cstoken         |          | F delimited       |
| F dimen           |          | F dimen           |
| F glue            |          | F dimenargument   |
| F macro           |          | F dimension       |
| F meaning         |          | F float           |
| F skip            |          | F glue            |
| F token           |          | F gluespec        |
| <b>gobble</b>     | function | F gluevalues      |
| <b>isdefined</b>  | function | F hash            |
| <b>istoken</b>    | function | F hbox            |
| <b>new</b>        | function | F integer         |
| <b>pickup</b>     | function | F integerargument |
| <b>popmacro</b>   | function | F ischar          |
| <b>presets</b>    | table    | F key             |
| T 1 argument      |          | F keyword         |
| T 1 string        |          | F keywordcs       |
| T 2 arguments     |          | F letters         |
| T 2 strings       |          | F list            |
| T 3 arguments     |          | F luacardinal     |
| T 3 strings       |          | F luainteger      |
| T 4 arguments     |          | F luanumber       |
| T 4 strings       |          | F lxmlid          |
| T 5 strings       |          | F next            |
| T 6 strings       |          | F nextchar        |
| T 7 strings       |          | F nextexpanded    |
| T 8 strings       |          | F number          |
| <b>pushmacro</b>  | function | F optional        |
| <b>scanners</b>   | table    | F peek            |
| F argument        |          | F peekchar        |
| F argumentasis    |          | F peekexpanded    |
| F array           |          | F real            |
| F boolean         |          | F scanclose       |
| F box             |          | F scanopen        |
| F bracketed       |          | F skip            |
| F bracketedasis   |          | F skipexpanded    |
| F cardinal        |          | F string          |
| F char            |          | F table           |
| F cmdchr          |          | F token           |

- F tokencode
- F tokenlist
- F tokens
- F toks
- F value
- F vbox
- F verbatim
- F vtop
- F whd
- F word
- setinteger** function
- setters** table

- F box
- F char
- F count
- F dimen
- F glue
- F lua
- F macro
- F skip

- shortcuts** table

- T bits
  - N active
  - N alignment
  - N begingroup
  - N character
  - N close
  - N comment
  - N endgroup
  - N endofline
  - N escape
  - N ignore
  - N invalid
  - N letter
  - N mathshift
  - N open
  - N other
  - N parameter
  - N space
  - N subscript
  - N superscript
  - N whitespace
- N close
- F inspect

- N open
- F report
- F scanargument
- F scanargumentasis
- F scanarray
- F scanboolean
- F scanbox
- F scanbracketed
- F scanbracketedasis
- F scancardinal
- F scanclose
- F scancode
- F scanconditional
- F scancsname
- F scancsnameunchecked
- F scandelimited
- F scandimen
- F scandimenargument
- F scandimension
- F scanglue
- F scangluespec
- F scangluevalues
- F scanhash
- F scanhbox
- F scaninteger
- F scanintegerargument
- F scankeyword
- F scankeywordcs
- F scanletters
- F scanlist
- T scanners
  - F argument
  - F argumentasis
  - F array
  - F boolean
  - F box
  - F bracketed
  - F bracketedasis
  - F cardinal
  - F char
  - F cmdchr
  - F cmdchrexploded
  - F code
  - F conditional

|                   |                  |
|-------------------|------------------|
| F count           | F toks           |
| F csname          | F value          |
| F csnameunchecked | F vbox           |
| F delimited       | F verbatim       |
| F dimen           | F vtop           |
| F dimenargument   | F whd            |
| F dimension       | F word           |
| F float           | F scannumber     |
| F glue            | F scanopen       |
| F gluespec        | F scanoptional   |
| F gluevalues      | F scanstring     |
| F hash            | F scantable      |
| F hbox            | F scantokenlist  |
| F integer         | F scantoks       |
| F integerargument | F scanvbox       |
| F ischar          | F scanverbatim   |
| F key             | F scanvtop       |
| F keyword         | F scanword       |
| F keywordcs       | F toboolean      |
| F letters         | F todimen        |
| F list            | T tokens         |
| F luacardinal     | T accessors      |
| F luainteger      | F active         |
| F luanumber       | F cmd            |
| F lxmlid          | F cmdchrsc       |
| F next            | F cmdname        |
| F nextchar        | F command        |
| F nextexpanded    | F csname         |
| F number          | F expandable     |
| F optional        | F frozen         |
| F peek            | F index          |
| F peekchar        | F name           |
| F peekexpanded    | F protected      |
| F real            | F range          |
| F scanclose       | F astable        |
| F scanopen        | T cache          |
| F skip            | U NC             |
| F skipexpanded    | U NR             |
| F string          | U bf             |
| F table           | U buff_finish    |
| F token           | U c_font_compact |
| F tokencode       | U color          |
| F tokenlist       | U colordefalc    |
| F tokens          | U colordefflc    |

|                           |                      |
|---------------------------|----------------------|
| U colordefflt             | F cstoken            |
| U colordefrlt             | F dimen              |
| U dofinishreference       | F glue               |
| U dostarttext             | F macro              |
| U finishjob               | F meaning            |
| U firstofoneargument      | F skip               |
| U firstoftwoarguments     | F token              |
| U gobbleoneargument       | F gobble             |
| U goto                    | F isdefined          |
| U iftrue                  | F istoken            |
| U input                   | F new                |
| U loadfoundtypescriptfile | F pickup             |
| U resetctxscanner         | F popmacro           |
| U rlap                    | T presets            |
| U secondoftwoarguments    | F pushmacro          |
| U setfalsevalue           | F setinteger         |
| U setsectionblock         | T setters            |
| U setupsystem             | F box                |
| U startcolumns            | F char               |
| U starttabulate           | F count              |
| U starttitle              | F dimen              |
| U startxtitle             | F glue               |
| U stopcolumns             | F lua                |
| U stoptabulate            | F macro              |
| U stoptitle               | F skip               |
| U stopxtitle              | T shortcuts          |
| U texsetup                | N close              |
| U xmlw                    | F inspect            |
| D commands                | N open               |
| F compile                 | F report             |
| F constant                | F scanargument       |
| T converters              | F scanargumentasis   |
| S toboolean               | F scanarray          |
| S todimen                 | F scanboolean        |
| S toglue                  | F scanbox            |
| S tonumber                | F scanbracketed      |
| S tostring                | F scanbracketedasis  |
| F create                  | F scancardinal       |
| F defined                 | F scanclose          |
| F flags                   | F scancode           |
| F getinteger              | F scanconditional    |
| T getters                 | F scansname          |
| F box                     | F scansnameunchecked |
| F count                   | F scandalimited      |

|                       |                          |
|-----------------------|--------------------------|
| F scandimen           | F scanstring             |
| F scandimenargument   | F scantable              |
| F scandimension       | F scantokenlist          |
| F scanglue            | F scantoks               |
| F scangluespec        | F scanvbox               |
| F scangluevalues      | F scanverbatim           |
| F scanhash            | F scanvtop               |
| F scanhbox            | F scanword               |
| F scaninteger         | F toboolean              |
| F scanintegerargument | F todimen                |
| F scankeyword         | F tonumber               |
| F scankeywordcs       | F tostring               |
| F scanletters         | D values                 |
| F scanlist            | F tonumber               |
| F scannumber          | F tostring               |
| F scanopen            | <b>values</b> data table |
| F scanoptional        |                          |

## tracers (context)

**printerror**    function  
**printwarning**    function

**showlines**    function

## trackers (context)

|                       |            |                 |          |
|-----------------------|------------|-----------------|----------|
| <b>data</b>           | data table | <b>register</b> | function |
| <b>default</b>        | function   | <b>report</b>   | function |
| <b>disable</b>        | function   | <b>reset</b>    | function |
| <b>done</b>           | table      | <b>savehash</b> | function |
| <b>dumphashtofile</b> | function   | <b>show</b>     | function |
| <b>enable</b>         | function   | <b>value</b>    | function |
| <b>list</b>           | function   | <b>values</b>   | function |
| <b>name</b>           | string     |                 |          |

# typesetters (context)

|                       |       |                   |                  |
|-----------------------|-------|-------------------|------------------|
| <b>alignments</b>     | table |                   | T handlers       |
| F handler             |       |                   | F installhandler |
| F set                 |       |                   | F processmath    |
| <b>breakpoints</b>    | table |                   | F set            |
| F define              |       |                   | F setcolor       |
| F handler             |       |                   | F setmath        |
| D mapping             |       |                   | F tomode         |
| T methods             |       | <b>firstlines</b> | table            |
| T numbers             |       | T actions         |                  |
| F set                 |       | F default         |                  |
| F setreplacement      |       | F line            |                  |
| <b>cases</b>          | table | F word            |                  |
| T actions             |       | F handler         |                  |
| F handler             |       | F set             |                  |
| F register            |       | <b>fontkerns</b>  | table            |
| F set                 |       | F handler         |                  |
| <b>characteralign</b> | table | <b>initials</b>   | table            |
| F handler             |       | T actions         |                  |
| F resetcharacteralign |       | F default         |                  |
| F setcharacteralign   |       | F addanchortoline |                  |
| <b>characters</b>     | table | F addtoline       |                  |
| F handler             |       | F calculatedelta  |                  |
| T methods             |       | F checkline       |                  |
| F replacensp          |       | F handler         |                  |
| F replacenspaces      |       | F moveinline      |                  |
| <b>checkers</b>       | table | F set             |                  |
| F handler             |       | <b>injectors</b>  | table            |
| F reset               |       | F check           |                  |
| F set                 |       | T list            |                  |
| <b>cleaners</b>       | table | F mark            |                  |
| F handler             |       | F reset           |                  |
| F set                 |       | F set             |                  |
| <b>digits</b>         | table | F show            |                  |
| T actions             |       | <b>italics</b>    | table            |
| F handler             |       | F enablemath      |                  |
| F set                 |       | F enabletext      |                  |
| <b>directions</b>     | table | F forcevariant    |                  |
| F getfences           |       | F handler         |                  |
| F getglobal           |       | F reset           |                  |
| F getmethod           |       | F set             |                  |
| F handler             |       | <b>kerns</b>      | table            |

|                            |          |
|----------------------------|----------|
| D factors                  |          |
| F handler                  |          |
| F keepligature             |          |
| D mapping                  |          |
| F set                      |          |
| <b>localboxes</b>          | table    |
| F handler                  |          |
| <b>manipulators</b>        | table    |
| F apply                    |          |
| F applyspecification       |          |
| T methods                  |          |
| F Word                     |          |
| F Words                    |          |
| F abbreviatedjournal       |          |
| F expandedjournal          |          |
| F lowercase                |          |
| F stripperperiod           |          |
| F uppercase                |          |
| T patterns                 |          |
| U list                     |          |
| U pair                     |          |
| F splitspecification       |          |
| <b>margins</b>             | table    |
| F finalhandler             |          |
| F globalhandler            |          |
| F localhandler             |          |
| F save                     |          |
| <b>marksuspects</b>        | function |
| <b>paragraphs</b>          | table    |
| F addanchortoline          |          |
| F addtoline                |          |
| F calculatedelta           |          |
| F checkline                |          |
| F handler                  |          |
| F moveinline               |          |
| F set                      |          |
| <b>periodkerns</b>         | table    |
| D factors                  |          |
| F handler                  |          |
| D mapping                  |          |
| F set                      |          |
| <b>processors</b>          | table    |
| F apply                    |          |
| F register                 |          |
| F reset                    |          |
| F split                    |          |
| F startapply               |          |
| F stopapply                |          |
| F stripped                 |          |
| F toString                 |          |
| <b>rubies</b>              | table    |
| F attach                   |          |
| F check                    |          |
| <b>showsuspects</b>        | function |
| <b>spacings</b>            | table    |
| F define                   |          |
| F handler                  |          |
| D mapping                  |          |
| T numbers                  |          |
| T frenchpunctuation        |          |
| T characters               |          |
| S name                     |          |
| N number                   |          |
| F reset                    |          |
| F set                      |          |
| F setup                    |          |
| <b>wrappers</b>            | table    |
| F handler                  |          |
| <b>xtables</b>             | table    |
| F cleanup                  |          |
| F construct                |          |
| F create                   |          |
| F finish_row               |          |
| F flush                    |          |
| F initialize_construct     |          |
| F initialize_reflow_height |          |
| F initialize_reflow_width  |          |
| F next_row                 |          |
| F reflow_height            |          |
| F reflow_width             |          |
| F set_construct            |          |
| F set_reflow_height        |          |
| F set_reflow_width         |          |

## updaters (context)

**apply**      function  
**register**   function

## url (context)

|                  |          |
|------------------|----------|
| <b>addscheme</b> | function |
| <b>barepath</b>  | function |
| <b>construct</b> | function |
| <b>decode</b>    | function |
| <b>encode</b>    | function |
| <b>escape</b>    | function |
| <b>filename</b>  | function |

|                    |          |
|--------------------|----------|
| <b>hashed</b>      | function |
| <b>hasscheme</b>   | function |
| <b>query</b>       | function |
| <b>split</b>       | function |
| <b>toquery</b>     | function |
| <b>unescape</b>    | function |
| <b>unescapeget</b> | function |

## utf8 (basic lua)

**char**           function  
**charpattern** string  
**codepoint**     function

**codes**          function  
**len**            function  
**offset**         function

# utilities (context)

## **debugger**            table

F disable  
F enable  
F savestats  
F showstats  
F showtraceback

## **files**                table

F close  
F getposition  
F getsize  
F look  
F open  
F read2dot14  
F readbyte  
F readbytes  
F readbytetable  
F readcardinal  
F readcardinal1  
F readcardinal1le  
F readcardinal2  
F readcardinal2le  
F readcardinal3  
F readcardinal3le  
F readcardinal4  
F readcardinal4le  
F readcardinaltable  
F readchar  
F readcline  
F readcstring  
F readfixed2  
F readfixed4  
F readinteger  
F readinteger1  
F readinteger1le  
F readinteger2  
F readinteger2le  
F readinteger3  
F readinteger3le  
F readinteger4  
F readinteger4le  
F readintegertable

F readsignedbyte  
F readstring  
F readtag  
F setposition  
F size  
F skip  
F skiplong  
F skipposition  
F skipshort  
F writebyte  
F writecardinal1  
F writecardinal1le  
F writecardinal2  
F writecardinal2le  
F writecardinal3  
F writecardinal3le  
F writecardinal4  
F writecardinal4le  
F writeinteger1  
F writeinteger1le  
F writeinteger2  
F writeinteger2le  
F writeinteger3  
F writeinteger3le  
F writeinteger4  
F writeinteger4le  
F writestring

## **formatters**           table

F formatcolumns  
F list  
F stripzeros

## **ghostscript**           table

F convert  
F statistics

## **graphicmagick**        table

F convert  
F statistics

## **graphicsmagick**      table

F convert  
F statistics

## **lua**                    table

- B alwaysstripcode
- F checkmemory
- F compile
- F loadedluacode
- F loadstring
- F loadstripped
- N nofstrippedbytes
- N nofstrippedchunks
- F registerfinalizer
- B stripcode
- T strippedchunks
- F strippedloadstring
- T suffixes
  - S lua
  - S luc
  - S lui
  - S luj
  - S luv
  - S tma
  - S tmc
  - S tua
  - S tuc

## packers table

- F hashed
- F new
- F pack
- F simplehashed
- F strip
- F unpack
- N version

## parsers table

- F add\_settings\_to\_array
- F arguments\_to\_table
- F array\_to\_string
- F csvsplitter
- F getparameters
- F groupedsplitat
- F hash\_to\_string
- T hashes
  - T settings\_to\_set
    - T text,hidden,paper,page,leftpage,rightpage
      - B hidden
      - B leftpage
      - B page

- B paper
- B rightpage
- B text
- F iterator
- F keq\_to\_hash
- F listitem
- F make\_settings\_to\_hash\_pattern
- F mergehashes
- F options\_to\_array
- F options\_to\_hash
- T patterns
  - U settings\_to\_array
  - U settings\_to\_hash\_a
  - U settings\_to\_hash\_b
  - U settings\_to\_hash\_c
  - U settings\_to\_hash\_d
  - U unittotex
- F process\_stripped\_settings
- F rfc4180splitter
- F runtime
- F settings\_to\_array
- F settings\_to\_array\_obey\_fences
- F settings\_to\_array\_with\_repeat
- F settings\_to\_hash
- F settings\_to\_hash\_colon\_too
- F settings\_to\_hash\_strict
- F settings\_to\_hash\_tolerant
- F settings\_to\_numbers
- F settings\_to\_set
- F simple\_hash\_to\_string
- F splitmethod
- F splitthousands
- F stepper
- F stripped\_settings\_to\_array
- F totime
- F unittotex
- F unittotxml

## randomizer table

- F get
- F getnumber
- F getrepeatable
- F getrepeatableseed
- F getseed
- F newrepeatable

|                    |       |                     |       |
|--------------------|-------|---------------------|-------|
| F popseed          |       | F sparse            |       |
| F pushseed         |       | <b>streams</b>      | table |
| F repeatable       |       | F close             |       |
| F reuseseed        |       | F getposition       |       |
| F setseed          |       | F getsize           |       |
| F setseedi         |       | F getstring         |       |
| <b>randomizers</b> | table | F look              |       |
| F poisson          |       | F open              |       |
| <b>sequencers</b>  | table | F openstring        |       |
| F appendaction     |       | F read2dot14        |       |
| F appendgroup      |       | F readbyte          |       |
| F compile          |       | F readbytes         |       |
| F disableaction    |       | F readbytetable     |       |
| F disablegroup     |       | F readcardinal      |       |
| F enableaction     |       | F readcardinal1     |       |
| F enablegroup      |       | F readcardinal11e   |       |
| D functions        |       | F readcardinal2     |       |
| F localize         |       | F readcardinal21e   |       |
| F new              |       | F readcardinal3     |       |
| F nodeprocessor    |       | F readcardinal31e   |       |
| F prependaction    |       | F readcardinal4     |       |
| F prependgroup     |       | F readcardinal41e   |       |
| F removeaction     |       | F readcardinaltable |       |
| F replaceaction    |       | F readchar          |       |
| F setkind          |       | F readcline         |       |
| F tostring         |       | F readcstring       |       |
| <b>setters</b>     | table | F readfixed2        |       |
| F disable          |       | F readfixed4        |       |
| F enable           |       | F readinteger       |       |
| F initialize       |       | F readinteger1      |       |
| F list             |       | F readinteger11e    |       |
| F new              |       | F readinteger2      |       |
| F register         |       | F readinteger21e    |       |
| F report           |       | F readinteger3      |       |
| F reset            |       | F readinteger31e    |       |
| F show             |       | F readinteger4      |       |
| <b>stacker</b>     | table | F readinteger41e    |       |
| F new              |       | F readintegertable  |       |
| <b>storage</b>     | table | F readsignedbyte    |       |
| F allocate         |       | F readstring        |       |
| F checked          |       | F setposition       |       |
| F mark             |       | F size              |       |
| F marked           |       | F skip              |       |
| F setinitializer   |       | F skipbytes         |       |

|                       |              |                   |              |
|-----------------------|--------------|-------------------|--------------|
| F skiplong            |              | F removevalue     |              |
| F skipshort           |              | F replacevalue    |              |
| F tocardinal1         |              | <b>tar</b>        | <b>table</b> |
| F tocardinal1le       |              | T archives        |              |
| F tocardinal2         |              | F closearchive    |              |
| F tocardinal2le       |              | T files           |              |
| F tocardinal3         |              | F fetch           |              |
| F tocardinal3le       |              | F hash            |              |
| F tocardinal4         |              | F list            |              |
| F tocardinal4le       |              | F pack            |              |
| <b>strings</b>        | <b>table</b> | F unpack          |              |
| F collapse            |              | F openarchive     |              |
| F collapsecrlf        |              | T registeredfiles |              |
| T formatters          |              | T streams         |              |
| F add                 |              | F fetch           |              |
| F new                 |              | F hash            |              |
| F newcollector        |              | F list            |              |
| F newrepeater         |              | F pack            |              |
| F nice                |              | F unpack          |              |
| T striplinepatterns   |              | T strings         |              |
| U collapse            |              | F fetch           |              |
| U prune               |              | F hash            |              |
| U prune and collapse  |              | F list            |              |
| U prune and no empty  |              | F pack            |              |
| U prune and to space  |              | F unpack          |              |
| U retain              |              | <b>templates</b>  | <b>table</b> |
| U retain and collapse |              | F load            |              |
| U retain and no empty |              | F replace         |              |
| F striplines          |              | F replacer        |              |
| F striplong           |              | F resolve         |              |
| F tabtospace          |              | <b>zipfiles</b>   | <b>table</b> |
| T tracers             |              | F close           |              |
| <b>tables</b>         | <b>table</b> | F found           |              |
| F accesstable         |              | F gunzipfile      |              |
| F definedtable        |              | F hash            |              |
| F definetable         |              | F list            |              |
| F encapsulate         |              | F open            |              |
| F insertaftervalue    |              | F unzip           |              |
| F insertbeforevalue   |              | F unzipdir        |              |
| F migratetable        |              | F zipdir          |              |

## visualizers (context)

|                              |            |                        |            |
|------------------------------|------------|------------------------|------------|
| <b>escapepatterns</b>        | data table | <b>signal</b>          | string     |
| <b>getspecification</b>      | function   | <b>signalpattern</b>   | userdata   |
| <b>getvisualizer</b>         | function   | <b>specifications</b>  | data table |
| <b>load</b>                  | function   | <b>visualize</b>       | function   |
| <b>makenested</b>            | function   | <b>visualizebuffer</b> | function   |
| <b>makepattern</b>           | function   | <b>visualizefile</b>   | function   |
| <b>newgrammar</b>            | function   | <b>visualizestring</b> | function   |
| <b>newhandler</b>            | function   | <b>write</b>           | function   |
| <b>parsedxml</b>             | function   | <b>writeargument</b>   | function   |
| <b>pattern</b>               | function   | <b>writedefault</b>    | function   |
| <b>register</b>              | function   | <b>writeemptyline</b>  | function   |
| <b>registerescapecommand</b> | function   | <b>writenewline</b>    | function   |
| <b>registerescapepline</b>   | function   | <b>writespace</b>      | function   |
| <b>registerescapepattern</b> | function   |                        |            |

# xcomplex (extra lua)

|                |          |               |          |
|----------------|----------|---------------|----------|
| <b>I</b>       | function | F sqrt        |          |
| <b>__add</b>   | function | F tan         |          |
| <b>__div</b>   | function | F tanh        |          |
| <b>__eq</b>    | function | F topair      |          |
| <b>__index</b> | table    | F tostring    |          |
| F I            |          | F totable     |          |
| F __add        |          | F __mul       |          |
| F __div        |          | S __name      |          |
| F __eq         |          | F __pow       |          |
| T __index      |          | F __sub       |          |
| F I            |          | F __tostring  |          |
| F __add        |          | F __unm       |          |
| F __div        |          | F abs         |          |
| F __eq         |          | F acos        |          |
| F __mul        |          | F acosh       |          |
| S __name       |          | F arg         |          |
| F __pow        |          | F asin        |          |
| F __sub        |          | F asinh       |          |
| F __tostring   |          | F atan        |          |
| F __unm        |          | F atanh       |          |
| F abs          |          | F conj        |          |
| F acos         |          | F cos         |          |
| F acosh        |          | F cosh        |          |
| F arg          |          | F exp         |          |
| F asin         |          | F i           |          |
| F asinh        |          | F imag        |          |
| F atan         |          | F log         |          |
| F atanh        |          | F new         |          |
| F conj         |          | F pow         |          |
| F cos          |          | F proj        |          |
| F cosh         |          | F real        |          |
| F exp          |          | F sin         |          |
| F i            |          | F sinh        |          |
| F imag         |          | F sqrt        |          |
| F log          |          | F tan         |          |
| F new          |          | F tanh        |          |
| F pow          |          | F topair      |          |
| F proj         |          | F tostring    |          |
| F real         |          | F totable     |          |
| F sin          |          | <b>__mul</b>  | function |
| F sinh         |          | <b>__name</b> | string   |

|                   |          |                 |          |
|-------------------|----------|-----------------|----------|
| <b>__pow</b>      | function | <b>i</b>        | function |
| <b>__sub</b>      | function | <b>imag</b>     | function |
| <b>__tostring</b> | function | <b>log</b>      | function |
| <b>__unm</b>      | function | <b>new</b>      | function |
| <b>abs</b>        | function | <b>pow</b>      | function |
| <b>acos</b>       | function | <b>proj</b>     | function |
| <b>acosh</b>      | function | <b>real</b>     | function |
| <b>arg</b>        | function | <b>sin</b>      | function |
| <b>asin</b>       | function | <b>sinh</b>     | function |
| <b>asinh</b>      | function | <b>sqrt</b>     | function |
| <b>atan</b>       | function | <b>tan</b>      | function |
| <b>atanh</b>      | function | <b>tanh</b>     | function |
| <b>conj</b>       | function | <b>topair</b>   | function |
| <b>cos</b>        | function | <b>tostring</b> | function |
| <b>cosh</b>       | function | <b>totable</b>  | function |
| <b>exp</b>        | function |                 |          |

## xdecimal (extra lua)

|                |          |                |
|----------------|----------|----------------|
| <b>__add</b>   | function | F getprecision |
| <b>__band</b>  | function | F ln           |
| <b>__bor</b>   | function | F log          |
| <b>__bxor</b>  | function | F max          |
| <b>__div</b>   | function | F min          |
| <b>__eq</b>    | function | F minus        |
| <b>__idiv</b>  | function | F new          |
| <b>__index</b> | table    | F plus         |
| F __add        |          | F pow          |
| F __band       |          | F rotate       |
| F __bor        |          | F setprecision |
| F __bxor       |          | F shift        |
| F __div        |          | F sqrt         |
| F __eq         |          | F toengstring  |
| F __idiv       |          | F tonumber     |
| T __index      |          | F tostring     |
| F __add        |          | F trim         |
| F __band       |          | F __le         |
| F __bor        |          | F __lt         |
| F __bxor       |          | F __mod        |
| F __div        |          | F __mul        |
| F __eq         |          | S __name       |
| F __idiv       |          | F __pow        |
| F __le         |          | F __shl        |
| F __lt         |          | F __shr        |
| F __mod        |          | F __sub        |
| F __mul        |          | F __tostring   |
| S __name       |          | F __unm        |
| F __pow        |          | F abs          |
| F __shl        |          | F band         |
| F __shr        |          | F bor          |
| F __sub        |          | F bxor         |
| F __tostring   |          | F conj         |
| F __unm        |          | F copy         |
| F abs          |          | F exp          |
| F band         |          | F getprecision |
| F bor          |          | F ln           |
| F bxor         |          | F log          |
| F conj         |          | F max          |
| F copy         |          | F min          |
| F exp          |          | F minus        |

|                   |          |                     |          |
|-------------------|----------|---------------------|----------|
| F new             |          | <b>band</b>         | function |
| F plus            |          | <b>bor</b>          | function |
| F pow             |          | <b>bxor</b>         | function |
| F rotate          |          | <b>conj</b>         | function |
| F setprecision    |          | <b>copy</b>         | function |
| F shift           |          | <b>exp</b>          | function |
| F sqrt            |          | <b>getprecision</b> | function |
| F toengstring     |          | <b>ln</b>           | function |
| F tonumber        |          | <b>log</b>          | function |
| F tostring        |          | <b>max</b>          | function |
| F trim            |          | <b>min</b>          | function |
| <b>__le</b>       | function | <b>minus</b>        | function |
| <b>__lt</b>       | function | <b>new</b>          | function |
| <b>__mod</b>      | function | <b>plus</b>         | function |
| <b>__mul</b>      | function | <b>pow</b>          | function |
| <b>__name</b>     | string   | <b>rotate</b>       | function |
| <b>__pow</b>      | function | <b>setprecision</b> | function |
| <b>__shl</b>      | function | <b>shift</b>        | function |
| <b>__shr</b>      | function | <b>sqrt</b>         | function |
| <b>__sub</b>      | function | <b>toengstring</b>  | function |
| <b>__tostring</b> | function | <b>tonumber</b>     | function |
| <b>__unm</b>      | function | <b>tostring</b>     | function |
| <b>abs</b>        | function | <b>trim</b>         | function |

## xmath (extra lua)

|                 |          |                  |          |
|-----------------|----------|------------------|----------|
| <b>acos</b>     | function | <b>isnormal</b>  | function |
| <b>acosh</b>    | function | <b>j0</b>        | function |
| <b>asin</b>     | function | <b>j1</b>        | function |
| <b>asinh</b>    | function | <b>jn</b>        | function |
| <b>atan</b>     | function | <b>ldexp</b>     | function |
| <b>atan2</b>    | function | <b>lgamma</b>    | function |
| <b>atanh</b>    | function | <b>log</b>       | function |
| <b>cbrt</b>     | function | <b>log10</b>     | function |
| <b>ceil</b>     | function | <b>log1p</b>     | function |
| <b>copysign</b> | function | <b>log2</b>      | function |
| <b>cos</b>      | function | <b>logb</b>      | function |
| <b>cosh</b>     | function | <b>modf</b>      | function |
| <b>deg</b>      | function | <b>nan</b>       | number   |
| <b>erf</b>      | function | <b>nearbyint</b> | function |
| <b>erfc</b>     | function | <b>nextafter</b> | function |
| <b>exp</b>      | function | <b>pi</b>        | number   |
| <b>exp2</b>     | function | <b>pow</b>       | function |
| <b>expm1</b>    | function | <b>rad</b>       | function |
| <b>fabs</b>     | function | <b>remainder</b> | function |
| <b>fdim</b>     | function | <b>remquo</b>    | function |
| <b>floor</b>    | function | <b>round</b>     | function |
| <b>fma</b>      | function | <b>scalbn</b>    | function |
| <b>fmax</b>     | function | <b>sin</b>       | function |
| <b>fmin</b>     | function | <b>sinh</b>      | function |
| <b>fmod</b>     | function | <b>sqrt</b>      | function |
| <b>frexp</b>    | function | <b>tan</b>       | function |
| <b>gamma</b>    | function | <b>tanh</b>      | function |
| <b>hypot</b>    | function | <b>tgamma</b>    | function |
| <b>inf</b>      | number   | <b>trunc</b>     | function |
| <b>isfinite</b> | function | <b>y0</b>        | function |
| <b>isinf</b>    | function | <b>y1</b>        | function |
| <b>isnan</b>    | function | <b>yn</b>        | function |

# xml (context)

|                           |          |                        |            |
|---------------------------|----------|------------------------|------------|
| <b>addentitiesdoctype</b> | function | F family               |            |
| <b>addspecialcode</b>     | function | F fontspecification    |            |
| <b>after</b>              | function | F mappedstylevalue     |            |
| <b>all</b>                | function | F padding              |            |
| <b>applylpath</b>         | function | F size                 |            |
| <b>applyselector</b>      | function | F style                |            |
| <b>assign</b>             | function | F stylevalue           |            |
| <b>attribute</b>          | function | F todimension          |            |
| <b>badinclusions</b>      | function | F variant              |            |
| <b>before</b>             | function | F weight               |            |
| <b>body</b>               | function | <b>defaulthandlers</b> | table      |
| <b>builtinentities</b>    | table    | D file                 |            |
| B amp                     |          | D parsedxml            |            |
| B apos                    |          | D string               |            |
| B gt                      |          | D tex                  |            |
| B lt                      |          | D texline              |            |
| B quot                    |          | D texspace             |            |
| <b>CDATA</b>              | function | D verbose              |            |
| <b>CDATATOTEXT</b>        | function | <b>defaultprotocol</b> | string     |
| <b>checkbom</b>           | function | <b>delete</b>          | function   |
| <b>checkedempty</b>       | function | <b>delete_element</b>  | function   |
| <b>checkerror</b>         | function | <b>despecialized</b>   | function   |
| <b>checknamespace</b>     | function | <b>each</b>            | function   |
| <b>checkns</b>            | function | <b>each_element</b>    | function   |
| <b>cleansed</b>           | function | <b>elements</b>        | function   |
| <b>collect</b>            | function | <b>elementtocdata</b>  | function   |
| <b>collect_elements</b>   | function | <b>empty</b>           | function   |
| <b>collect_tags</b>       | function | <b>entities</b>        | data table |
| <b>collect_texts</b>      | function | <b>erase</b>           | function   |
| <b>collected</b>          | function | <b>errorhandler</b>    | function   |
| <b>collecttexts</b>       | function | <b>escaped</b>         | function   |
| <b>compactelement</b>     | function | <b>expressions</b>     | table      |
| <b>content</b>            | function | F attribute            |            |
| <b>convert</b>            | function | F boolean              |            |
| <b>copy</b>               | function | F child                |            |
| <b>count</b>              | function | F contains             |            |
| <b>cprint</b>             | function | F count                |            |
| <b>CSS</b>                | table    | F error                |            |
| F applyselector           |          | F find                 |            |
| F colorspecification      |          | F hasclass             |            |
| F dimension               |          | F idstring             |            |

|                   |          |                            |          |
|-------------------|----------|----------------------------|----------|
| F lower           |          | F upper                    |          |
| F name            |          | F upperall                 |          |
| F number          |          | F xml                      |          |
| F oneof           |          | T xml                      |          |
| F print           |          | F all                      |          |
| F quit            |          | F att                      |          |
| F tag             |          | F attribute                |          |
| F text            |          | F attributes               |          |
| F undefined       |          | F cdata                    |          |
| F upper           |          | F chainattribute           |          |
| <b>fillin</b>     | function | F count                    |          |
| <b>filter</b>     | function | F default                  |          |
| <b>finalizers</b> | table    | F elements                 |          |
| F paragraphs      |          | F empty                    |          |
| T tex             |          | F first                    |          |
| F all             |          | F function                 |          |
| F attribute       |          | F index                    |          |
| F chainattribute  |          | F last                     |          |
| F chainpath       |          | F lowerall                 |          |
| F command         |          | F match                    |          |
| F concat          |          | F name                     |          |
| F concatrange     |          | F position                 |          |
| F context         |          | F reverse                  |          |
| F count           |          | F table                    |          |
| F ctxtext         |          | F tag                      |          |
| F default         |          | F tags                     |          |
| F depth           |          | F text                     |          |
| F first           |          | F texts                    |          |
| F function        |          | F upperall                 |          |
| F index           |          | <b>first</b>               | function |
| F last            |          | <b>found</b>               | function |
| F lettered        |          | <b>functions</b>           | table    |
| F lower           |          | F classes                  |          |
| F lowerall        |          | F hasclass                 |          |
| F match           |          | <b>getbuffer</b>           | function |
| F name            |          | <b>gethandlers</b>         | function |
| F param           |          | <b>gethandlersfunction</b> | function |
| F parameter       |          | <b>helpers</b>             | table    |
| F position        |          | F recursetext              |          |
| F reverse         |          | <b>include</b>             | function |
| F stripped        |          | <b>inclusion</b>           | function |
| F tag             |          | <b>inclusions</b>          | function |
| F tags            |          | <b>index</b>               | function |
| F text            |          | <b>inheritattributes</b>   | function |

|                              |          |                            |          |
|------------------------------|----------|----------------------------|----------|
| <b>inheritedconvert</b>      | function | <b>privatetoken</b>        | function |
| <b>inject</b>                | function | <b>process</b>             | function |
| <b>inject_element</b>        | function | <b>process_attributes</b>  | function |
| <b>inject_element_after</b>  | function | <b>process_elements</b>    | function |
| <b>inject_element_before</b> | function | <b>processattributes</b>   | function |
| <b>injectafter</b>           | function | <b>profiled</b>            | table    |
| <b>injectbefore</b>          | function | <b>pure</b>                | function |
| <b>insert</b>                | function | <b>pushmatch</b>           | function |
| <b>insert_element</b>        | function | <b>raw</b>                 | function |
| <b>insert_element_after</b>  | function | <b>registerentity</b>      | function |
| <b>insert_element_before</b> | function | <b>registerns</b>          | function |
| <b>insertafter</b>           | function | <b>reindex</b>             | function |
| <b>insertbefore</b>          | function | <b>remap_name</b>          | function |
| <b>insertcdata</b>           | function | <b>remap_namespace</b>     | function |
| <b>insertcomment</b>         | function | <b>remap_tag</b>           | function |
| <b>inspect</b>               | function | <b>remapname</b>           | function |
| <b>is_valid</b>              | function | <b>remapnamespace</b>      | function |
| <b>kind</b>                  | function | <b>remaptag</b>            | function |
| <b>last</b>                  | function | <b>rename</b>              | function |
| <b>lastmatch</b>             | function | <b>renamespace</b>         | function |
| <b>load</b>                  | function | <b>reparsedentitylpeg</b>  | userdata |
| <b>lpath</b>                 | function | <b>replace</b>             | function |
| <b>lpathcached</b>           | function | <b>replace_element</b>     | function |
| <b>lpathcalls</b>            | function | <b>resetinjectors</b>      | function |
| <b>lshow</b>                 | function | <b>resolvns</b>            | function |
| <b>makestandalone</b>        | function | <b>root</b>                | function |
| <b>match</b>                 | function | <b>save</b>                | function |
| <b>name</b>                  | function | <b>selection</b>           | function |
| <b>newhandlers</b>           | function | <b>separate</b>            | function |
| <b>nodesettostring</b>       | function | <b>serialize</b>           | function |
| <b>originalload</b>          | function | <b>serializetotext</b>     | function |
| <b>package</b>               | function | <b>setcdata</b>            | function |
| <b>parent</b>                | function | <b>setcomment</b>          | function |
| <b>parsedentitylpeg</b>      | userdata | <b>sethandlersfunction</b> | function |
| <b>pihandlers</b>            | table    | <b>setinjectors</b>        | function |
| F injector                   |          | <b>setproperty</b>         | function |
| F tex                        |          | <b>settings</b>            | function |
| <b>placeholders</b>          | table    | <b>specialcodes</b>        | table    |
| F unknown_any_entity         |          | S "                        |          |
| F unknown_dec_entity         |          | S #                        |          |
| F unknown_hex_entity         |          | S \$                       |          |
| <b>popmatch</b>              | function | S %                        |          |
| <b>position</b>              | function | S &                        |          |
| <b>privatecodes</b>          | table    | S '                        |          |

|                                 |          |                                  |          |
|---------------------------------|----------|----------------------------------|----------|
| <code>S &lt;</code>             |          | <code>texttocdata</code>         | function |
| <code>S &gt;</code>             |          | <code>tocdata</code>             | function |
| <code>S \</code>                |          | <code>toelement</code>           | function |
| <code>S {</code>                |          | <code>tostring</code>            | function |
| <code>S  </code>                |          | <code>totable</code>             | function |
| <code>S }</code>                |          | <code>toxml</code>               | function |
| <code>S ~</code>                |          | <code>tprint</code>              | function |
| <code>specialhandler</code>     | table    | <code>traverse</code>            | function |
| <code>sprint</code>             | function | <code>unescaped</code>           | function |
| <code>string</code>             | function | <code>unescapedentitylpeg</code> | userdata |
| <code>strip</code>              | function | <code>unprivatized</code>        | function |
| <code>strip_whitespace</code>   | function | <code>unspecialized</code>       | function |
| <code>stripelement</code>       | function | <code>wipe</code>                | function |
| <code>stripleadingspaces</code> | function | <code>withelement</code>         | function |
| <code>table</code>              | function | <code>withelements</code>        | function |
| <code>text</code>               | function | <code>wrap</code>                | function |
| <code>textonly</code>           | function | <code>xmlns</code>               | table    |

## xzip (extra lua)

**adler32**            function

**compress**        function

**compresssize**    function

**crc32**            function

**decompress**      function

**decompresssize** function

## zip (extra lua)

**archives**

table

**closearchive**

function

**openarchive**

function

**registeredfiles**

table

## zlib (extra lua)

**adler32**           function  
**compress**        function  
**compresssize**   function

**crc32**           function  
**decompress**      function  
**decompresssize** function