MP attributes backends bit32 blobs boolean buffers builders caches callbacks catcodes characters chemistry commands containers context converters coroutine ctxrunner debug dir dircodes directives document documentdata drivers environment experiments ffi figures file fio floats fonts functions global graphics gzip images interactions interfaces io job languages layouts lfs libraries lmx logs lpdf peg ltn12 lua luatex lxml math mathematics md5 metapost mime moduledata modules mp mplib noads node nodes number objects os packag pagebuilders parametersets por pdfe pdfscanner physics publications regimes resolvers sandbox scripts set sha2 sio socket sorters statistics storage streams string structures tabl texconditionals texconfin texconstants texifs texisdefined texmodes texsystemmodes thirddata token tokens tracers trackers typesetters updaters url userdata utf8 utilities vf visualizers xml zip zlib

# ConT<sub>E</sub>Xt MkIV

## global (alias: \_G)

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| lfs             | table    | rawlen          | function   |
|-----------------|----------|-----------------|------------|
| libraries       | table    | rawset          | function   |
| lmx             | table    | readarray       | function   |
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| logs            | table    | requireswiglib  | function   |
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| ltn12           | table    | sandbox         | table      |
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| lxml            | table    | set             | table      |
| math            | table    | setinspector    | function   |
| mathematics     | table    | setmetatable    | function   |
| md5             | table    | sha2            | table      |
| metapost        | table    | sio             | table      |
| mime            | table    | socket          | table      |
| module          | function | sorters         | table      |
| moduledata      | table    | statistics      | table      |
| modules         | table    | status          | table      |
| mp              | function | storage         | table      |
| mplib           | table    | streams         | table      |
| next            | function | string          | table      |
| noads           | table    | structures      | table      |
| node            | table    | swiglib         | function   |
| nodes           | table    | table           | table      |
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| package         | table    | texifs          | data table |
| pagebuilders    | table    | texio           | table      |
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| pdf             | table    | thirddata       | table      |
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| pdfscanner      | table    | token           | table      |
| physics         | table    | tokens          | table      |
| print           | function | tonumber        | function   |
| publications    | table    | tostring        | function   |
| rawequal        | function | tracers         | table      |
|                 |          |                 |            |

function trackers

rawget

table

| type        | function | utilities   | table    |
|-------------|----------|-------------|----------|
| typesetters | table    | V           | string   |
| unpack      | function | vf          | table    |
| updaters    | table    | visualizers | table    |
| url         | table    | xml         | table    |
| userdata    | table    | xpcall      | function |
| utf         | table    | zip         | table    |
| utf8        | table    | zlih        | table    |

## attributes (context)

| applyoverloads   | function | N    | mai n          |           |
|------------------|----------|------|----------------|-----------|
| colorintents     | table    |      | main           |           |
|                  | table    |      | model          |           |
| N attribute      |          |      | models         |           |
| D data           |          |      | mpcolor        |           |
| F enable         |          |      | mpnamedcolor   |           |
| F handler        |          |      | mpoptions      |           |
| F register       |          |      | namedcolorattr | ibutes    |
| D registered     | 4-61-    |      | none           |           |
| colors           | table    |      | popset         |           |
| N attribute      |          |      | processcolorco | omponents |
| F cmyk           |          |      | pushset        |           |
| F cmyktogray     |          |      | register       |           |
| F cmyktorgb      |          |      | registered     | _         |
| F colorcomponent | S        |      | registerspotco | lor       |
| D counts         |          |      | rgb            |           |
| B couple         |          |      | rgbtocmyk      |           |
| F currentmodel   |          |      | rgbtogray      |           |
| F currentnamedmo | del      |      | rgbtohsv       |           |
| D data           |          |      | selector       |           |
| N default        |          |      | setlist        |           |
| F defineintermed |          |      | setmodel       |           |
| F definemultiton |          |      | setpagecolormo | odel      |
| F defineprocessc |          | D    | sets           |           |
| F definesimplegr | -        | F    | spec           |           |
| F definespotcolo |          |      | spot           |           |
| F definetranspar | ency     | F    | spotcolorname  |           |
| F enable         |          |      | spotcolorparer |           |
| F filter         |          |      | spotcolorvalue | 2         |
| N forced         |          |      | supported      |           |
| F forcedmodel    |          | F    | toattributes   |           |
| F forcesupport   |          | F    | transparencyco | omponents |
| F formatcolor    |          | В    | triggering     |           |
| F formatgray     |          | F    | usecolors      |           |
| F getpagecolormo | del      | D    | valid          |           |
| F gray           |          | F    | value          |           |
| F graytohsv      |          | D    | values         |           |
| F handler        |          |      | weightgray     |           |
| F hsvtogray      |          | defi |                | function  |
| F hsvtorgb       |          | effe | ects           | table     |
| F iccprofile     |          | N    | attribute      |           |
| F isblack        |          | D    | data           |           |

| E                 |                        |      | N1              |         |
|-------------------|------------------------|------|-----------------|---------|
| F enable          |                        |      | N colordodge    |         |
| F handler         |                        |      | N darken        |         |
| F register        |                        |      | N difference    |         |
| D registered      |                        |      | N exclusion     |         |
| D values handlers | table                  |      | N hardlight     |         |
| list              |                        |      | N hue           |         |
|                   | data table             |      | N lighten       |         |
| markasoverload    | function<br>data table |      | N luminosity    |         |
| names             |                        |      | N multiply      |         |
| negatives         | table                  |      | N none          |         |
| N attribute       |                        |      | N normal        |         |
| D data            |                        |      | N overlay       |         |
| F enable          |                        |      | N saturation    |         |
| F handler         |                        |      | N screen        |         |
| F register        |                        |      | N softlight     |         |
| D registered      |                        |      | none            |         |
| F set             |                        | F    | register        |         |
| numbers           | data table             | D    | registered      |         |
| ofnode            | function               | В    | supported       |         |
| private           | function               | F    | toattribute     |         |
| public            | function               | В    | triggering      |         |
| restore           | function               | F    | value           |         |
| save              | function               | D    | values          |         |
| showcurrent       | function               | unse | tvalue          | number  |
| states            | table                  | view | erlayers        | table   |
| F disabletrigger  | ing                    | N    | attribute       |         |
| F enabletriggeri  | ng                     | F    | cleanup         |         |
| F finalize        |                        | D    | data            |         |
| F initialize      |                        | F    | define          |         |
| F process         |                        | F    | definedlayoutco | mponent |
| F selective       |                        | F    | enable          |         |
| F stacked         |                        | F    | forcesupport    |         |
| F stacker         |                        | F    | handler         |         |
| system            | function               | В    | hasorder        |         |
| tooverloads       | function               | D    | listwise        |         |
| transparencies    | table                  | F    | register        |         |
| N attribute       |                        | D    | registered      |         |
| D data            |                        | F    | resolve_begin   |         |
| F enable          |                        | F    | resolve_end     |         |
| F forcesupport    |                        | F    | resolve_reset   |         |
| F handler         |                        | F    | resolve_step    |         |
| T names           |                        | D    | scopes          |         |
| N color           |                        | _    |                 |         |
|                   |                        | F    | setfeatures     |         |
| N colorburn       |                        |      | start           |         |

B supported

#### backends (context)

F getbookmarks

codeinjections table F getdefaultfieldvalue F boxresourcedimensions F getfieldcategory F getfieldset F registerboxresource F restoreboxresource F getformatoption current strina F aetinfo defaults table F getpreviewfigure T codeiniections F insertrenderingwindow F getpagedimensions F mergebookmarks F lmtxmode F mergecomments F setpagedimensions F mergefields T nodeiniections F mergereferences T registrations F mergeviewerlavers D tables F newimage included table F prerollreference B context F presetsymbol R date F presetsymbollist Bid F processrendering B metadata F registerdocumentcloseaction B pdf F registerdocumentopenaction install function F registeredsymbol nodeinjections table F registerpagecloseaction noflatelua function F registerpageopenaction nothina function F registersymbol pdf table F scanimage T codeinjections F setfieldcalculationset F addbookmarks F setfigurealternative F analyzenormalsymbol F setfigurecolorspace F setfiguremask F analyzesymbol F attachmentid F setformat F clonefield F setformsmethod F copyimage F setpagetransition F definefield F setupcanvas F definefieldset F setupidentity F defineviewerlayer F setxmpfile F embedfile F startlayer F embedimage F startunicodetoactualtext F enabletags F startunicodetoactualtextdirect F exportformdata F stoplayer F fieldsurrounding F stopunicodetoactualtext F flushmergelayer F stopunicodetoactualtextdirect

F supportedformats

F unicodetoactualtext
F useviewerlayer
F validfield
F validfieldcategory

F validfieldset

F wrapimage S comment

T nodeinjections

F addtagsF annotationF attachfile

F changestackedlayer

F cmykcolor
F comment
F destination
F effect
F graycolor
F injectbitmap

F insertmovie
F insertswf
F insertu3d
F knockout

F negative F overprint F positive
F reference
F rgbcolor
F spotcolor
F startlayer

F startstackedlayer

F stoplayer

F stopstackedlayer
F transparency
F typesetfield
T registrations
F cmykindexcolor

F cmykspotcolor

F getspotcolorreference

F grayindexcolor F grayspotcolor F rgbindexcolor F rgbspotcolor F spotcolorname F transparency

T tables
D vfspecials

registrations table
tables table
timestamp function

## bit32 (basic lua)

| arshift | function | extract | function |
|---------|----------|---------|----------|
| band    | function | lrotate | function |
| bnot    | function | lshift  | function |
| bor     | function | replace | function |
| btest   | function | rrotate | function |
| bxor    | function | rshift  | function |

## blobs (context)

| append     | function | strht   | function |
|------------|----------|---------|----------|
| dimensions | function | strwd   | function |
| dispose    | function | tohpack | function |
| new        | function | tonodes | function |
| pack       | function | tovpack | function |
| strdp      | function | write   | function |
| strhd      | function |         |          |

## boolean (context)

tocontext function
tonumber function

## buffers (context)

| append         | function | F define         |                     |
|----------------|----------|------------------|---------------------|
| assign         | function | F hassomecontent |                     |
| collectcontent | function | F next           |                     |
| erase          | function | F place          |                     |
| exists         | function | F reset          |                     |
| get            | function | F save           |                     |
| getcontent     | function | prepend          | $ \hbox{function} $ |
| getlines       | function | raw              | $ \hbox{function} $ |
| gettexbuffer   | function | run              | function            |
| loadcontent    | function | samplefile       | $ \hbox{function} $ |
| parallel       | table    | undent           | function            |
|                |          |                  |                     |

## builders (context)

| checksidefloat   | function | F start                |
|------------------|----------|------------------------|
| kernel           | table    | F stop                 |
| F hyphenating    |          | F tag                  |
| F hyphenation    |          | <b>profiling</b> table |
| F kerning        |          | F add                  |
| F ligaturing     |          | F distance             |
| F mlist_to_hlist | :        | F fixedprofile         |
| paragraphs       | table    | F get                  |
| T constructors   |          | F list                 |
| N attribute      |          | F pagehandler          |
| F define         |          | F profilebox           |
| F disable        |          | F set                  |
| F enable         |          | <b>vspacing</b> table  |
| F handler        |          | F analyze              |
| T methods        |          | D categories           |
| F basic          |          | F collapsevbox         |
| F default        |          | T data                 |
| F hpack          |          | D map                  |
| F oneline        |          | D skip                 |
| D names          |          | D snapmethods          |
| D numbers        |          | F definesnapmethod     |
| F set            |          | B fixed                |
| F start          |          | F forcepageflush       |
| F stop           |          | F forcestrutdepth      |
| T expansion      |          | F getnofpreviouslines  |
| F trace          |          | F pagehandler          |
| F keeptogether   |          | F pageoverflow         |
| F registertogeth | ner      | F popatsame            |
| T solutions      |          | F pushatsame           |
| T splitters      |          | F setmap               |
| F define         |          | F setskip              |
| F optimize       |          | F snapbox              |
| T registered     |          | F synchronizepage      |
| F reset          |          | F tocategories         |
| F set            |          | F tocategory           |
| F split          |          | F vboxhandler          |

## caches (context)

| ask                  | boolean  | is_writable          | function |
|----------------------|----------|----------------------|----------|
| base                 | string   | loadcontent          | function |
| collapsecontent      | function | loaddata             | function |
| configfiles          | function | more                 | string   |
| contentstate         | function | relocate             | boolean  |
| defaults             | table    | savecontent          | function |
| define               | function | savedata             | function |
| direct               | boolean  | setfirstwritablefile | function |
| force                | boolean  | setluanames          | function |
| getfirstreadablefile | function | tree                 | string   |
| getreadablepaths     | function | treehash             | function |
| getwritablepath      | function | usedpaths            | function |
| hashed               | function |                      |          |

#### callback (basic tex)

find function
list function

register overloaded function

#### callbacks (context)

freeze function B hyphenate functions table B insert local par F process rule B kerning B ligaturing F start page number F stop page number B linebreak filter known function B make\_extensible list data table B mlist\_to\_hlist gog function B new graf function push B open read file function register B page objnum provider function report B post linebreak filter supported table B pre dump B append to vlist filter B pre linebreak filter B build page insert B pre output filter B buildpage filter B process input buffer B call edit B process jobname B contribute\_filter B process\_output\_buffer B define font B process pdf image content B find cidmap file B process rule B find\_data\_file B read\_cidmap\_file B find\_enc\_file B read data file B find font file B read enc file B find format file B read font file B find\_image\_file B read map file B find map file B read opentype file B find opentype file B read pk file B find\_output\_file B read\_truetype\_file B find\_pk\_file B read\_type1\_file B find read file B read vf file B find\_truetype\_file B show\_error\_hook B find\_type1\_file B show\_error\_message B find\_vf\_file B show\_lua\_error\_hook B find write file B show warning message B finish pdffile B start file B finish\_pdfpage B start\_page\_number B finish\_synctex B start\_run B font descriptor objnum provider B stop file B glyph\_not\_found B stop\_page\_number B glyph\_stream\_provider B stop\_run B hpack filter B vpack filter B hpack\_quality B vpack\_quality

#### catcodes (context)

 register function

#### characters (context)

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

shape function shaped function shash data table data table shchars shcodes data table function showstring **specialchars** data table specials data table splits table

T char T compat

subscripts superscripts synonyms tex

table table data table table

D accentmapping D commandmapping F defineaccents F safechar

F toutf

F toutfpattern textclasses table tonumber function ucchars data table function uccode uccodes data table uhash data table unicodechar function function upper

#### chemistry (context)

| component      | function   |  |
|----------------|------------|--|
| define         | function   |  |
| definitions    | data table |  |
| format         | string     |  |
| inlinechemical | function   |  |
| instance       | string     |  |
| method         | string     |  |

molecule
moleculeparser
start
stop
structures
undefine
function
function
number
function

## containers (context)

| cleanname | function | is_valid | function |
|-----------|----------|----------|----------|
| content   | function | read     | function |
| define    | function | usecache | boolean  |
| is_usable | function | write    | function |

#### converters (context)

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

## coroutine (basic lua)

| create      | function | status | function |
|-------------|----------|--------|----------|
| isyieldable | function | wrap   | function |
| resume      | function | yield  | function |
| running     | function |        |          |

#### ctxrunner (context)

load function prepfiles data table
preparedfile function resolve function

#### dir (context)

| collectpattern | function | globpattern |
|----------------|----------|-------------|
| current        | function | ls          |
| expandname     | function | makedirs    |
| found          | function | mkdirs      |
| glob           | function | рор         |
| globdirs       | function | push        |
| alohfiles      | function |             |

function

function function function function

## directives (context)

| data    | data table | name     | string   |
|---------|------------|----------|----------|
| default | function   | register | function |
| disable | function   | report   | function |
| done    | table      | reset    | function |
| enable  | function   | show     | function |
| list    | function   | value    | function |

#### document (context)

arguments files functions getargument getfilename options data table table table function function table D modes
D modules
etargument

function setargument setcommandline function setdefaultargument function setenvironments function setfilename function setfilenames function setmodes function setmodules function variables data table

D environments
D modes
D modules

T ctxfile

T commandline

D environments

## documentdata (context)

variable function

#### drivers (context)

convert function
enable function
helpers table

F tomatrix

install function
instances table

T default
T actions
F convert
F outputfilename

T flushers

S name T pdf

> T actions F convert

> > F outputfilename
> > F prepare

T flushers S name

lmtxversion number
outputfilename function

## environment (context)

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

#### experiments (context)

| data    | data table |
|---------|------------|
| default | function   |
| disable | function   |
| enable  | function   |
| list    | function   |
| name    | strina     |

register function report function reset function show function value function

#### figures (context)

T sizes

B art

applvratio function B bleed badname function B crop bases data table B media bitmapimage function R none boxnumber number B trim data table cachepaths F totable check function T types checkers data table N jbig2 converters data table N jp2 current function N ipq defaultdepth number N memstream defaultheight number N none defaultsearch hool ean N pdf defaultwidth number N png done function N stream function dummv F wrap existers data table include function exists includers data table function formats data table initialize function found data table loaded data table data table function localpaths get data table aetinfo function magics getpdfinfo function mergegoodies function getrealpage function nofmissing number nofprocessed function number auess data table guessfromstring order function function data table hash paths identifiers data table data table patterns identify function function gog table images preferguality boolean data table F check programs function F checksize push registerpattern function F copy registerresource function F create registersuffix function F embed data table resources T keys scale function F print set function F scan setlookups function F serialize function

setmemstream

function

setorder

### file (basic lua)

| addsuffix         | function | needsupdating | function |
|-------------------|----------|---------------|----------|
| basename          | function | pathpart      | function |
| checksum          | function | readdata      | function |
| collapsepath      | function | removesuffix  | function |
| сору              | function | replacesuffix | function |
| dirname           | function | reslash       | function |
| expandname        | function | robustname    | function |
| extname           | function | savechecksum  | function |
| is_qualified_path | function | savedata      | function |
| is_readable       | function | size          | function |
| is_rootbased_path | function | splitbase     | function |
| is_writable       | function | splitname     | function |
| isreadable        | function | splitpath     | function |
| iswritable        | function | strip         | function |
| join              | function | suffix        | function |
| joinpath          | function | suffixes      | function |
| loadchecksum      | function | suffixesonly  | function |
| nameonly          | function | suffixonly    | function |
| nametotable       | function | syncmtimes    | function |
| needs_updating    | function | withinbase    | function |

# fio (extra lua)

| checkpermission   | function | readfixed4       | function |
|-------------------|----------|------------------|----------|
| getposition       | function | readinteger1     | function |
| read2dot14        | function | readinteger2     | function |
| readbytes         | function | readinteger3     | function |
| readbytetable     | function | readinteger4     | function |
| readcardinal1     | function | readintegertable | function |
| readcardinal2     | function | readline         | function |
| readcardinal3     | function | recordfilename   | function |
| readcardinal4     | function | setposition      | function |
| readcardinaltable | function | skipposition     | function |
| readfixed2        | function |                  |          |

# floats (context)

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

### font (basic tex)

| addcharacters | function   |          | id           | function |
|---------------|------------|----------|--------------|----------|
| current       | function   |          | max          | function |
| define        | function   |          | nextid       | function |
| each          | overloaded | function | originaleach | function |
| fonts         | table      |          | read_tfm     | function |
| frozen        | function   |          | read_vf      | function |
| getfont       | overloaded | function | setexpansion | function |
| getparameters | function   |          | setfont      | function |

### fonts (context)

| analyzers          | table    | F collectprocessors     |
|--------------------|----------|-------------------------|
| D features         |          | F currentfonthasfeature |
| D initializers     |          | D designsizes           |
| D methods          |          | D dontembed             |
| F setstate         |          | F enhanceparameters     |
| D states           |          | T enhancers             |
| B useunicodemarks  |          | T afm                   |
| checkers           | table    | F apply                 |
| F getmissing       |          | F patch                 |
| F missing          |          | T patches               |
| F placeholder      |          | F register              |
| cid                | table    | F report                |
| F getmap           |          | F register              |
| F loadfile         |          | F report                |
| collections        | table    | T otf                   |
| F checkenabled     |          | F addfeature            |
| F clonevector      |          | F apply                 |
| F define           |          | F enhance               |
| T definitions      |          | F patch                 |
| F found            |          | T patches               |
| F prepare          |          | F register              |
| F process          |          | F report                |
| F registermain     |          | F register              |
| F report           |          | F report                |
| F reset            |          | T tfm                   |
| T vectors          |          | F apply                 |
| constructors       | table    | F patch                 |
| F addcharacters    |          | T patches               |
| F addcoreunicodes  |          | F register              |
| B addtounicode     |          | F report                |
| F aftercopyingcha  | racters  | F register              |
| F applymanipulato  | rs       | F report                |
| F assignmathparame | eters    | N factor                |
| B autocleanup      |          | T features              |
| F beforecopyingcha | aracters | D afm                   |
| D cache            |          | D otf                   |
| B cacheintex       |          | D tfm                   |
| F calculatescale   |          | F finalize              |
| F checkedfeatures  |          | F getfeatureaction      |
| F checkedfilename  |          | F getmathparameter      |
| F cleanuptable     |          | F getprivate            |

| T handlers                 | F featuresprocessor                                 |
|----------------------------|---|
| T afm                      | F getactualtext                                     |
| 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 devanagari_remove_joiners                         |
| D rightkerned              | F devanagari_reorder_matras                         |
| D texligatures             | F devanagari_reorder_pre_base_reordering_consonants |
| Fload                      | F devanagari_reorder_reph                           |
| T readers                  | F gpos_context                                      |
| F getinfo                  | F gpos_contextchain                                 |
| Floadfont                  | F gpos_cursive                                      |
| F loadshapes               | F gpos_mark2base                                    |
| F setfeatures              | F gpos_mark2ligature                                |
| B syncspace                | F gpos_mark2mark                                    |
| N version                  | F gpos_pair   |
| T otf                      | F gpos_single                                       |
| F addfeature               | F gsub_alternate                                    |
| F basemodeinitializer      | F gsub_context                                      |
| D cache                    | F gsub_contextchain                                 |
| F collectlookups           | F gsub_ligature                                     |
| T coverup                  | F gsub_multiple                                     |
| T actions                  | F gsub_reversecontextchain                          |
| F alternate                | F gsub_single                                       |
| F chainposition            | F trigger_space_kerns                               |
| F chainsubstitution        | T helpers   |
| F kern                     | F blockligatures                                    |
| F ligature                 | F pardirstate                                       |
| F multiple                 | F txtdirstate                                       |
| F pair                     | F load  |
| F single                   | F loadoutlinedata                                   |
| F substitution             | F loadstreamdata                                    |
| F register                 | F modeinitializer                                   |
| S stepkey                  | D pdfcache  |
| F dataset                  | F plugininitializer                                 |
| F datasetpositionprocessor | F pluginprocessor                                   |
| S defaultbasealternate     | T plugins   |
| S defaultnodealternate     | T png   |
| D features                 | F topdf   |
| F featuresinitializer      | D pngcache  |
|                            |   |

| B pngenabled      | F reversechainedcontextsingle |
|-------------------|-------------------------------|
| T readers         | F single                      |
| F addunicodetable | F gvar                        |
| F avar            | F head                        |
| F cbdt            | T helpers                     |
| F cblc            | F axistofactors               |
| F cff             | F cleanname                   |
| F cff2            | F getaxisscale                |
| F cffcheck        | F getfactors                  |
| T cffencoder      | F getscales                   |
| F checkhash       | F gotodatatable               |
| F cmap            | F normalizedaxis              |
| F colr            | T normalizedaxishash          |
| F compact         | 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 getsize                     |
| F chainedcontext  | F look                        |
| F context         | F open                        |
| F extension       | F read2dot14                  |
| F ligature        | F readbyte                    |
| F multiple        | F readbytes                   |
|                   |                               |

F readbytetable F vora F readcardinal F vvar F readcardinal1 F woff2otf F readcardinal2 F registerpalette F readcardinal2le F registerplugin F readcardinal3 F reorderlookups F readcardinal3le F scriptandlanguage F readcardinal4 F setdynamics F readcardinal4le F setfeatures F readcardinaltable T statistics F readchar D usedfeatures F readfixed2 F storepdfdata F readfixed4 T svq F readinteger F filterglyph F readinteger1 F topdf F readinteger2 D sygcache F readinteger2le B sygenabled F readinteger3 T tables F readinteger3le D baselines F readinteger4 D features F readinteger4le D featuretypes F readintegertable D languages F readsignedbyte D scripts F readstring N version F readtag T pfb F setposition F loadvector F size T tfm F skip D cache D features F skiplong F skipposition N maxnestingdepth F skipshort N maxnestingsize F writebyte T readers F writecardinal2 F loadpk F writecardinal2le F loadtfm F writecardinal4 F loadtfmvf F loadvf F writecardinal4le F pktopdf F writestring F showpk F stripredundant F sva F reencode N tableversion F setfeatures F unifymissing N version F unpack T vf T combinations F vhea F vmtx F combine

| T combiner               | S units              |
|--------------------------|----------------------|
| D commands               | S vfactor            |
| D helpers                | S width              |
| D math                   | S xheight            |
| D predefined             | T properties         |
| N version                | S autoitalicamount   |
| D whatever               | S cidinfo            |
| F hashfeatures           | T effect             |
| F hashinstance           | S ddelta             |
| T hashmethods            | S effect             |
| F normal                 | S factor             |
| F virtual                | S hdelta             |
| F initializefeatures     | S hfactor            |
| T keys                   | S vfactor            |
| T characters             | S wdelta             |
| T descriptions           | S width              |
| T parameters             | S embedding          |
| S ascender               | S encodingbytes      |
| S descender              | S filename           |
| S designsize             | S finalized          |
| T expansion              | S fontname           |
| S auto                   | S format             |
| S shrink                 | S fullname           |
| S step                   | S hasitalics         |
| S stretch                | S hasmath            |
| S extendfactor           | S mathitalics        |
| S factor                 | S mode               |
| S hfactor                | S name               |
| S mathsize               | S nostackmath        |
| S mode                   | S psname             |
| T protrusion             | S textitalics        |
| S auto                   | S virtualized        |
| S quad                   | D loadedfonts        |
| S scaledpoints           | S namemode           |
| S scriptpercentage       | N noffontsloaded     |
| S scriptscriptpercentage | N nofsharedfonts     |
| S size                   | N nofsharedhashes    |
| S slantfactor            | N nofsharedvectors   |
| S slantperpoint          | N privateoffset      |
| T spacing                | D privateslots       |
| S extra                  | F readanddefine      |
| S shrink                 | F registerfeature    |
| S stretch                | F resetfeature       |
| S width                  | B resolvevirtualtoo  |
| 2 410(1)                 | D 1630tVCVII tuattou |

| F scale   |                   | D unicodes   |            |
|---|-------------------|--|------------|
| F scaled  |                   | D cache  |            |
| F setfactor   |                   | F is_known   |            |
| F setfeature  |                   | D known  |            |
| F setmathparamet  | er                | F load   |            |
| F setname   |                   | F make_unicode_ve  | ctor       |
| B sharefonts  |                   | D math   |            |
| F trytosharefont  | :                 | N version  |            |
| N version   |                   | enhanceid  | function   |
| current   | function          | expansions   | data table |
| currentid   | function          | formats  | data table |
| definers  | table             | getalternate   | function   |
| F addlookup   |                   | getkern  | function   |
| F analyze   |                   | getmultiple  | function   |
| F applypostproce  | essors            | getsubstitution  | function   |
| F checkedmode   |                   | getters  | table      |
| F checkedscript   |                   | T alternate  |            |
| F current   |                   | F opentype   |            |
| S defaultlookup   |                   | T kern   |            |
| F define  |                   | F opentype   |            |
| F getspecificati  | .on               | F type1  |            |
| F internal  |                   | F type3  |            |
| F loadfont  |                   | T multiple   |            |
| F makespecificat  | cion              | F opentype   |            |
| T methods   |                   | T substitution   |            |
| F install   |                   | F opentype   |            |
| 1 Instact   |                   | goodies  | table      |
| D variants  |                   | goodics  |            |
|   |                   | D colorschemes   |            |
| D variants  |                   |  |            |
| D variants<br>F read  |                   | D colorschemes   |            |
| D variants<br>F read<br>F register  |                   | D colorschemes<br>T data   |            |
| D variants<br>F read<br>F register<br>F registered  |                   | D colorschemes<br>T data<br>T dejavu-math  |            |
| D variants F read F register F registered F registersplit   |                   | D colorschemes<br>T data<br>T dejavu-math<br>S author  |            |
| D variants F read F register F registered F registersplit F resetnullfont   |                   | D colorschemes<br>T data<br>T dejavu-math<br>S author<br>S comment   |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve   |                   | D colorschemes T data T dejavu-math S author S comment S copyright   |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers   |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized   |            |
| D variants F read F register F registersplit F resetnullfont F resolve T resolvers F file F name F spec   |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics   |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec  definetypeface                                    | function          | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates  |            |
| D variants F read F register F registersplit F resetnullfont F resolve T resolvers F file F name F spec   | function<br>table | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless  |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec definetypeface encodings T agl                     |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless S comment                                  |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec definetypeface encodings T agl D ctxcodes          |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless S comment S feature                        |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec definetypeface encodings T agl                     |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless S comment S feature N value                |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec definetypeface encodings T agl D ctxcodes          |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless S comment S feature N value T kerns        |            |
| D variants F read F register F registered F registersplit F resetnullfont F resolve T resolvers F file F name F spec definetypeface encodings T agl D ctxcodes D extras |                   | D colorschemes T data T dejavu-math S author S comment S copyright B initialized T mathematics T alternates T dotless S comment S feature N value T kerns S name |            |

| S author             |      | D    | quads                   |          |
|----------------------|------|------|-------------------------|----------|
| S comment            |      | D    | resources               |          |
| S copyright          |      | Т    | setdynamics             |          |
| B initialized        |      | Т    | shapes                  |          |
| T mathematics        |      | D    | spaces                  |          |
| T alternates         |      | D    | spacings                |          |
| T dotless            |      | Т    | streams                 |          |
| S comment            |      | D    | unicodes                |          |
| S feature            |      | D    | variants                |          |
| N value              |      | D    | xheights                |          |
| T kerns              |      | help | ers                     | table    |
| S name               |      | F    | ${\tt addextraprivate}$ |          |
| S version            |      | F    | addprivate              |          |
| D designsizes        |      | F    | appendcommands          |          |
| D filenames          |      | F    | appendcommandtab        | le       |
| F getcompositions    |      | F    | checkflags              |          |
| T list               |      | F    | checkmerge              |          |
| F load               |      | F    | checksteps              |          |
| F prepare_features   |      | F    | collectanchors          |          |
| F register           |      | D    | commands                |          |
| F registerpostproces | ssor | F    | descriptiontoslo        | t        |
| F report             |      | F    | dimenfactor             |          |
| T suffixes           |      | F    | expandglyph             |          |
| <b>handlers</b> t    | able | Т    | extraprivates           |          |
| <b>hashes</b> t      | able | F    | fontpatternhassi        | .ze      |
| D characters         |      | F    | getcoloredglyphs        |          |
| D classes            |      | F    | getdigitwidth           |          |
| D csnames            |      | F    | getinstancespec         |          |
| D descriptions       |      | F    | getparameters           |          |
| D dynamics           |      | F    | getprivatecharor        | node     |
| D emwidths           |      | F    | getprivatenode          |          |
| D exheights          |      | F    | getprivates             |          |
| D extensibles        |      | F    | getprivateslot          |          |
| D features           |      | F    | hasprivate              |          |
| D identifiers        |      | F    | indextoslot             |          |
| D italics            |      | F    | name                    |          |
| D lastmathids        |      | F    | nametoslot              |          |
| D marks              |      | F    | prependcommands         |          |
| D mathparameters     |      | F    | prependcommandta        | ble      |
| D modes              |      | F    | privateslot             |          |
| D originals          |      | F    | setdigitwidth           |          |
| D parameters         |      | F    | splitfontpattern        | ı        |
| T processes          |      | F    | tochar                  |          |
| D properties         |      | info | font                    | function |

| iterators        | table      | N textextrabase  |            |
|------------------|------------|------------------|------------|
| F characters     |            | protrusions      | data table |
| F descriptions   |            | readers          | table      |
| F glyphs         |            | Fafm             |            |
| loggers          | table      | F check_lua      |            |
| F add_placeholde | rs         | -<br>F check_tfm |            |
| D category_to_pl |            | –<br>F lua       |            |
| F format         |            | Fofm             |            |
| F onetimemessage |            | F opentype       |            |
| F register       |            | Fotf             |            |
| F reportdefinedf | onts       | F pfb            |            |
| F reportusedfeat |            | D sequence       |            |
| mappings         | table      | F tfm            |            |
| F addtounicode   |            | F ttc            |            |
| F fromunicode16  |            | F ttf            |            |
| F loadfile       |            | F woff           |            |
| F loadline       |            | reserveid        | function   |
| F makenameparser |            | select           | table      |
| D overloads      |            | D alternatives   |            |
| F reset          |            | F bodyfont       |            |
| F tounicode      |            | D data           |            |
| F tounicodel6    |            | F default        |            |
| F tounicodel6seq | uence      | D defaults       |            |
| metapost         | table      | F definefallback | rfamily    |
| F boundingbox    |            | F definefontfami | ily        |
| F boxtomp        |            | F definefontfami | llypreset  |
| F draw           |            | D extras         |            |
| F fill           |            | F fallback       |            |
| F maxbounds      |            | D fallbacks      |            |
| F output         |            | F features       |            |
| F paths          |            | F filefallback   |            |
| F widthline      |            | F fontdata       |            |
| F zeroline       |            | F fontfallback   |            |
| mp               | table      | F fontsynonym    |            |
| D cache          |            | F goodies        |            |
| B inline         |            | F mathfallback   |            |
| N version        |            | D methods        |            |
| names            | data table | D presets        |            |
| nulldata         | data table | F registerfallba | ack        |
| privateoffsets   | table      | F registerfiles  |            |
| B keepnames      |            | F registerfontal | ternative  |
| N mathbase       |            | F registerfontfa | amily      |
| N mathextrabase  |            | F textfallback   |            |
| N textbase       |            | F typeface       |            |
|                  |            |                  |            |

| F typescript      |       | T emoji        |       |
|-------------------|-------|----------------|-------|
| F userdata        |       | F checked      |       |
| specifiers        | table | F resolved     |       |
| D contextmerged   |       | F uselibrary   |       |
| F contextnumber   |       | tables         | table |
| D contextnumbers  |       | D data         |       |
| D contextsetups   |       | F savefont     |       |
| F contexttostring |       | F saveoriginal |       |
| F definecontext   |       | tracers        | table |
| F mergecontext    |       | treatments     | table |
| F presetcontext   |       | F applyfixes   |       |
| F registercontext |       | D data         |       |
| F showcontext     |       | S filename     |       |
| F splitcontext    |       | F ignoredfile  |       |
| D synonyms        |       | F report       |       |
| D variants        |       | F trace        |       |
|                   |       |                |       |

typefaces table

symbols

table

### functions (context)

**dummy** function

### graphics (context)

#### backgrounds table F fetchmultipar

F pair F path F point

identifiers table

F bitmap

F jp2

F jpg F png

identify function

# gzip (extra lua)

| close | function | open   | function |
|-------|----------|--------|----------|
| lines | function | save   | function |
| load  | function | suffix | function |

# images (context)

| check     | function | B none    |          |
|-----------|----------|-----------|----------|
| checksize | function | B trim    |          |
| сору      | function | totable   | function |
| create    | function | types     | table    |
| embed     | function | N jbig2   |          |
| keys      | table    | N jp2     |          |
| print     | function | N jpg     |          |
| scan      | function | N memstro | eam      |
| serialize | function | N none    |          |
| sizes     | table    | N pdf     |          |
| B art     |          | N png     |          |
| B bleed   |          | N stream  |          |
| B crop    |          | wrap      | function |
| B media   |          |           |          |

# img (basic tex)

new overloaded function

#### interactions (context)

attachments data table D functions fields table D preambles F clone F setpreamble F define F storecode F defineset F storepreamble F insert F usepreamblenow general table F usescripts linkedlists data table F getidentity pages table F setupidentity help table F setpagetransition F collect F setupcanvas table references F reference F register F setclosedocument javascripts table F setclosepage F addtopreamble F setopendocument F setopenpage F code renderings data table D codes soundclips data table F flushpreambles

#### interfaces (context)

data table function addvalidkeys cachedsetups data table function cachesetup checkedspecification function data table complete data table constants data table corenamespaces currentinterface string currentresponse string definecommand function defined function doifelsemessage function elements data table formats data table getcheckedparameters function function getmessage function getnamespace getsetupstring function hashedsetups data table function implement interfacedcommand function interfaces table invalidkey function function message namespaces table

F define

F list

registernamespace registerscanner scanners setconstant setcount setdimen setelement setformat setmacro setmessage setmessages settranslation setupstrings setuserinterface setvalidkevs setvariable showmessage storedscanners strings syntax tolist translations usednamespaces

variables

writestatus

function function data table function function function function function function function function function data table function function function function data table table data table function data table data table data table

function

#### io (basic lua)

ask function
bytes function
characters function
close function
copydata function
exists function
fileseparator string
flush function

loadchunk function
loaddata function
loadlines function
noflines function

open overloaded function
output overloaded function

pathseparator string

function read readall function readnumber function readstring function saved lines function savedata function size function stderr userdata stdin userdata stdout userdata function tmpfile function type write function

# job (context)

| comment           | function | D    | tobesaved    |       |
|-------------------|----------|------|--------------|-------|
| datasets          | table    | pass | es           | table |
| D collected       |          | F    | check        |       |
| F extend          |          | D    | collected    |       |
| F getdata         |          | F    | count        |       |
| F setdata         |          | F    | define       |       |
| D tobesaved       |          | F    | find         |       |
| disablesave       | function | F    | first        |       |
| embedded          | table    | F    | get          |       |
| D collected       |          | F    | getcollected |       |
| D tobesaved       |          | F    | getdata      |       |
| fileobjreferences | table    | F    | getfield     |       |
| D collected       |          | F    | gettobesaved |       |
| D tobesaved       |          | F    | inlist       |       |
| files             | table    | F    | last         |       |
| D collected       |          | F    | list         |       |
| F context         |          | F    | save         |       |
| B forcerun        |          | F    | savetagged   |       |
| F run             |          | D    | tobesaved    |       |
| D tobesaved       |          | posi | tions        | table |
| getrandomseed     | function | F    | b_column     |       |
| initialize        | function | F    | b_region     |       |
| load              | function | F    | С            |       |
| loadother         | function | D    | collected    |       |
| objects           | table    | F    | column       |       |
| D collected       |          | F    | сору         |       |
| F get             |          | F    | depth        |       |
| F number          |          | F    | e_column     |       |
| F page            |          | F    | e_region     |       |
| F save            |          | F    | enhance      |       |
| F set             |          | F    | extra        |       |
| D tobesaved       |          | Т    | free         |       |
| pack              | boolean  | F    | get          |       |
| packversion       | number   | F    | gethpos      |       |
| pagestates        | table    | F    | getpos       |       |
| D collected       |          |      | getreserved  |       |
| F countervalue    |          | F    | gettobesaved |       |
| F extend          |          |      | getvpos      |       |
| F realpage        |          |      | hangafter    |       |
| F realpageorder   |          |      | hangindent   |       |
| F setstate        |          | F    | height       |       |

| F hsize            | S used         |          |
|--------------------|----------------|----------|
| F leftskip         | F whd          |          |
| F lowerleft        | F width        |          |
| F lowerright       | F x            |          |
| F markregionbox    | F xy           |          |
| Fn                 | Fу             |          |
| F onsamepage       | prepare        | function |
| F overlapping      | register       | function |
| F p                | save           | function |
| T page             | structure      | table    |
| F paragraph        | D collected    |          |
| F parindent        | T components   |          |
| F position         | T tobesaved    |          |
| Fr                 | T branches     |          |
| F region           | S name         |          |
| F registerhandlers | S type         |          |
| F replace          | variables      | table    |
| F rightskip        | D checksums    |          |
| F set              | D collected    |          |
| F setall           | F getchecksum  |          |
| F setregionbox     | F makechecksum |          |
| F setspec          | F restore      |          |
| F settobesaved     | F save         |          |
| D tobesaved        | F setchecksum  |          |

F upperleft

F upperright

D tobesaved

number

version

# lang (basic tex)

| clean             | function | id               | function |
|-------------------|----------|------------------|----------|
| clear_hyphenation | function | new              | function |
| clear_patterns    | function | patterns         | function |
| exceptions        | function | postexhyphenchar | function |
| gethjcode         | function | posthyphenchar   | function |
| hyphenate         | function | preexhyphenchar  | function |
| hyphenation       | function | prehyphenchar    | function |
| hyphenationmin    | function | sethjcode        | function |

# languages (context)

|                        | £          |                          |            |
|------------------------|------------|--------------------------|------------|
| associate              | function   | F registerpattern        |            |
| associated             | data table | F setfeatures            | £          |
| association            | function   | installed                | function   |
| counters               | data table | labels                   | table      |
| current                | function   | F define                 |            |
| data                   | data table | F split                  | £          |
| decimals               | data table | loadable                 | function   |
| define                 | function   | loadwords                | function   |
| explicithyphen         | function   | logger                   | table      |
| flatten                | function   | F report                 |            |
| frequencies            | table      | nofflattened             | function   |
| F averagecharwidth     |            | numbers                  | data table |
| F getdata              |            | postexhyphenchar         | function   |
| getdata                | function   | posthyphenchar<br>       | function   |
| getnumber              | function   | preexhyphenchar          | function   |
| hjcounts               | table      | prehyphenchar<br>        | function   |
| hyphenate              | function   | registered               | data table |
| hyphenators            | table      | replacements             | table      |
| T dictionaries         |            | F add                    |            |
| D featuresets          |            | F addlist                |            |
| F handler              |            | F handler                |            |
| T methods              |            | F set                    |            |
| F expanded             |            | serializediscretionary   | function   |
| B none                 |            | setexceptions            | function   |
| F original             |            | setsynonym               | function   |
| F tex                  |            | showdiscretionaries      | function   |
| F traditional          |            | unload                   | function   |
| F popmethod            |            | urls                     | table      |
| F pushmethod           |            | D characters             |            |
| F setmethod            |            | N lefthyphenmin          |            |
| F setup                |            | D mapping                |            |
| F showhyphenationtrace |            | B packslashes            |            |
| T traditional          |            | N righthyphenmin         |            |
| F definefeatures       |            | F setcharacters          |            |
| F gettrace             |            | version                  | number     |
| F hyphenate            |            | visualizediscretionaries | function   |
| F injecthyphens        |            | words                    | table      |
| F installmethod        |            | F check                  |            |
| F lasttrace            |            | T data                   |            |
| F loadpatterns         |            | F disable                |            |
| F registerexception    |            | F enable                 |            |

T enablers
B enables
F found

F load

T methods

N threshold

### layouts (context)

status table
 F isleftpage

F leftorrightpageaction

#### lfs (extra lua)

lock dir

attributes overloaded function chdir overloaded function currentdir function dir overloaded function overloaded function isdir isfile overloaded function isfound function link overloaded function lock function

overloaded function

mkdir overloaded function mkdirs function readlink overloaded function rmdir overloaded function setmode overloaded function shortname overloaded function symlinkattributes overloaded function touch overloaded function unlock 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)

| color         | function |
|---------------|----------|
| convert       | function |
| convertfile   | function |
| convertstring | function |
| einject       | function |
| eprint        | function |
| escape        | function |
| finalized     | function |
| finject       | function |
| fprint        | function |
| get           | function |
| getvariables  | function |
| htmfile       | function |
| html          | table    |
| Fa            |          |
| F td          |          |
| F th          |          |
| include       | function |

- S color-background-four
  - S color-background-one

table

- S color-background-three
- S color-background-two
- S title

inherited

| initialize | function |
|------------|----------|
| inject     | function |
| lmxfile    | function |

| loadedfile    | function |
|---------------|----------|
| make          | function |
| new           | function |
| overloaderror | function |
| popupfile     | function |
| print         | function |
| pv            | function |
| report        | function |
| reset         | function |
| result        | function |
| set           | function |
| show          | function |
| showdebuginfo | function |
| showerror     | function |
| stripcss      | function |
| tv            | function |
| type          | function |
| urlescape     | function |
| variable      | function |
| variables     | 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)

| application          | function | setformats        | function |
|----------------------|----------|-------------------|----------|
| categories           | function | setformatters     | function |
| direct               | function | setlogfile        | function |
| disable              | function | setmessenger      | function |
| enable               | function | setprocessor      | function |
| exporters            | table    | setprogram        | function |
| extendbanner         | function | settarget         | function |
| finalactions         | function | settimedlog       | function |
| flush                | function | settranslations   | function |
| help                 | function | show              | function |
| loggingerrors        | function | show_close        | function |
| messenger            | function | show_load         | function |
| new                  | function | show_open         | function |
| newline              | function | simple            | function |
| poptarget            | function | simpleline        | function |
| pushtarget           | function | simplelines       | function |
| registerfinalactions | function | start_page_number | function |
| report               | function | starterrorlogging | function |
| reportbanner         | function | startfilelogging  | function |
| reporter             | function | status            | function |
| reporters            | table    | stop_page_number  | function |
| F banner             |          | stoperrorlogging  | function |
| F export             |          | stopfilelogging   | function |
| F help               |          | subdirect         | function |
| F info               |          | subreport         | function |
| F lines              |          | system            | function |
| F version            |          | texerrormessage   | function |
| reportline           | function | writer            | function |
| reportlines          | function |                   |          |

# lpdf (context)

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

| N NoRotate            |            | frompdfdoc          | function |
|-----------------------|------------|---------------------|----------|
| N NoView              |            | fromsixteen         | function |
| N NoZoom              |            | getcatalog          | function |
| N Print               |            | getcompression      | function |
| N Printable           |            | getfontname         | function |
| N ReadOnly            |            | getfontobjnumber    | function |
| N ToggleNoView        |            | getinfo             | function |
| N auto                |            | getmetadata         | function |
| N hidden              |            | getpageproperties   | function |
| N printable           |            | getversion          | function |
| T widgets             |            | getxformname        | function |
| N Comb                |            | graycode            | function |
| N CommitOnSelChange   |            | id                  | function |
| N DoNotScroll         |            | immediateobj        | function |
| N DoNotSpellCheck     |            | includechar         | function |
| N Edit                |            | includecharlist     | function |
| N FileSelect          |            | includefont         | function |
| N MultiLine           |            | includeimage        | function |
| N NoExport            |            | injectxmpinfo       | function |
| N NoToggleToOff       |            | insertxmpinfo       | function |
| N Password            |            | layerreference      | function |
| N PopUp               |            | limited             | function |
| N PushButton          |            | linearshade         | function |
| N Radio               |            | literal             | function |
| N RadiosInUnison      |            | majorversion        | function |
| N ReadOnly            |            | minorversion        | function |
| N Required            |            | nametree            | function |
| N RichText            |            | nofpages            | function |
| N Sort                |            | null                | function |
| N file                |            | number              | function |
| N fixed               |            | obj                 | function |
| N nocheck             |            | objectcompresslevel | function |
| N protected           |            | pagereference       | function |
| N readonly            |            | patternstream       | function |
| N required            |            | pdfcolor            | function |
| N sorted              |            | pdftimestamp        | function |
| N unavailable         |            | permitdetail        | function |
| flushers              | function   | print               | function |
| flushobject           | function   | procset             | function |
| flushstreamfileobject | function   | protectresources    | boolean  |
| flushstreamobject     | function   | rectangle           | function |
| formats               | data table | reference           | function |
| frombytes             | function   | registerannotation  | function |
| fromeight             | function   | registerdestination | function |
|                       |            |                     |          |

| registerdocumentfinalizer | function | setversion           | function |
|---------------------------|----------|----------------------|----------|
| registerfont              | function | shareobject          | function |
| registerpagefinalizer     | function | shareobjectreference | function |
| registerpattern           | function | spotcode             | function |
| reserveobject             | function | stream               | function |
| rgbcode                   | function | string               | function |
| rotationcm                | function | toeight              | function |
| setcompression            | function | topdfdoc             | function |
| setdates                  | function | tosixteen            | function |
| setmapfile                | function | transparency         | function |
| setmapline                | function | transparencycode     | function |
| setomitcharset            | function | transparencygroups   | table    |
| setomitcidset             | function | B none               |          |
| setsuppressoptionalinfo   | function | transparencyvalue    | function |
| settime                   | function | unicode              | function |
| settrailerid              | function | verbose              | function |

# lpeg (basic lua)

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

### ltn12 (extra lua)

| BLOCKSIZE | number | F simplify      | F simplify |  |
|-----------|--------|-----------------|------------|--|
| filter    | table  | F table         |            |  |
| F chain   |        | <b>source</b> t | able       |  |
| F cycle   |        | F cat           |            |  |
| pump      | table  | F chain         |            |  |
| F all     |        | F empty         |            |  |
| F step    |        | F error         |            |  |
| sink      | table  | F file          |            |  |
| F chain   |        | F rewind        |            |  |
| F error   |        | F simplify      |            |  |
| F file    |        | F string        |            |  |
| F null    |        |                 |            |  |

#### lua (basic tex)

| bytecode                       | table      |
|--------------------------------|------------|
| bytedata                       | data table |
| bytedone                       | table      |
| collectgarbage                 | function   |
| delay                          | function   |
| finalize                       | function   |
| firstbytecode                  | number     |
| flush                          | function   |
| flushdelayed                   | function   |
| <pre>get_functions_table</pre> | function   |
| getbytecode                    | function   |
| getcalllevel                   | function   |
| getluaname                     | function   |
| getstacktop                    | function   |
| lastbytecode                   | number     |
| macros                         | table      |

B enabled F loaded F required
F reset
F resolvestring
F resolving
F showdefinitions

string mask data table messages table name function newtable data table numbers registercode function registeredcodes function registerfinalizer function registername function function setbytecode setluaname function startupfile string version string

#### luatex (context)

abort function F finish cleanup function F pause cleanuptempfiles function F popline currentfile function F pushline registerdumpactions function F registerdisabler registerpageactions function F registerenabler registerstartactions function F resetfilename registerstopactions function F resume registertempfile function F setfilename starttime number F setup svnctex table F start F blockfilename F stop F collect F wrapup wrapup

function

F disable

F enable

# lxml (context)

| - 4.42 - 4      | f          | £1             | £        |
|-----------------|------------|----------------|----------|
| addindex        | function   | flush          | function |
| all             | function   | flushlinewise  | function |
| applyfunction   | function   | flushsetups    | function |
| applyselectors  | function   | flushspacewise | function |
| att             | function   | get_id         | function |
| attribute       | function   | getid          | function |
| badinclusions   | function   | getindex       | function |
| chainattribute  | function   | id             | function |
| checkindex      | function   | idsplitter     | userdata |
| collected       | function   | include        | function |
| command         | function   | inclusion      | function |
| concat          | function   | inclusions     | function |
| concatrange     | function   | index          | function |
| content         | function   | inlineverbatim | function |
| context         | function   | installsetup   | function |
| convert         | function   | last           | function |
| count           | function   | lastatt        | function |
| delete          | function   | lastmatch      | function |
| direct          | function   | lastpar        | function |
| directives      | table      | load           | function |
| F after         |            | loadbuffer     | function |
| F before        |            | loaddata       | function |
| F handle        |            | loaded         | table    |
| F load          |            | main           | function |
| F setup         |            | match          | function |
| displayverbatim | function   | name           | function |
| doif            | function   | namespace      | function |
| doifelse        | function   | nonspace       | function |
| doifelseempty   | function   | par            | function |
| doifelsetext    | function   | param          | function |
| doifempty       | function   | parameter      | function |
| doifnot         | function   | path           | function |
| doifnotempty    | function   | popmatch       | function |
| doifnottext     | function   | pos            | function |
| doiftext        | function   | position       | function |
| element         | function   | pure           | function |
| elements        | function   | pushmatch      | function |
| entities        | data table | raw            | function |
| filter          | function   | rawroot        | function |
| filterlist      | function   | rawtex         | function |
| first           | function   | refatt         | function |

| register                 | function |
|--------------------------|----------|
| registerentity           | function |
| removesetup              | function |
| replace                  | function |
| resetcdata               | function |
| resetsetups              | function |
| resolvedentity           | function |
| root                     | function |
| save                     | function |
| serialize                | function |
| setaction                | function |
| setatt                   | function |
| setattribute             | function |
| setcdata                 | function |
| ${\tt setcommandtonone}$ | function |
| ${\tt setcommandtotext}$ | function |
| setpar                   | function |
| setparam                 | function |
| setparameter             | function |
| setsetup                 | function |
| snippet                  | function |
| sorters                  | table    |

F reset F show F sort function splitid startraw function function startunescaped function stopraw stopunescaped function store function strip function stripped function tag function text function tobuffer function tofile function function toparameters toverbatim function verbatim function withindex function xmltexhandler data table

F compare F flush

## math (basic lua)

| abs         | function | maxin |
|-------------|----------|-------|
| acos        | function | min   |
| asin        | function | minin |
| atan        | function | mod   |
| atan2       | function | modf  |
| ceil        | function | odd   |
| ceiling     | function | рi    |
| cos         | function | pow   |
| cosd        | function | rad   |
| cosh        | function | rando |
| deg         | function | rando |
| div         | function | round |
| even        | function | setra |
| exp         | function | sin   |
| floor       | function | sind  |
| fmod        | function | sinh  |
| frexp       | function | sqrt  |
| huge        | number   | tan   |
| initialseed | number   | tand  |
| ldexp       | function | tanh  |
| log         | function | toint |
| log10       | function | type  |
| max         | function | ult   |
|             |          |       |

| maxinteger     | number     |          |
|----------------|------------|----------|
| min            | function   |          |
| mininteger     | number     |          |
| mod            | function   |          |
| modf           | function   |          |
| odd            | function   |          |
| pi             | number     |          |
| pow            | function   |          |
| rad            | function   |          |
| random         | overloaded | function |
| randomseed     | function   |          |
| round          | function   |          |
| setrandomseedi | function   |          |
| sin            | function   |          |
| sind           | function   |          |
| sinh           | function   |          |
| sqrt           | function   |          |
| tan            | function   |          |
| tand           | function   |          |
| tanh           | function   |          |
| tointeger      | function   |          |
| type           | function   |          |

function

## mathematics (context)

| addfallbacks           | function   | mapremap               | data table |
|------------------------|------------|------------------------|------------|
| alphabets              | data table | overloaddimensions     | function   |
| alternatives           | data table | overloadparameters     | function   |
| big                    | function   | privatebase            | number     |
| boldmap                | data table | registerdomain         | function   |
| categories             | table      | registerfallbackid     | function   |
| D functions            | cabec      | remapalphabets         | function   |
| charactersets          | data table | renderings             | table      |
| checkaccentbaseheight  | function   | D mappings             | 10010      |
| checkprivateparameters | function   | D numbers              |            |
| classes                | data table | D sets                 |            |
| codes                  | data table | renderset              | function   |
| define                 | function   | resetattributes        | function   |
| dimensions             | function   | resetitalics           | function   |
| domains                | table      | resolvefallbacks       | function   |
| extensiblecode         | function   | scaleparameters        | function   |
| extensibles            | data table | setdomain              | function   |
| extrabase              | number     | setitalics             | function   |
| extras                 | table      | setridofprime          | function   |
| F add                  |            | sets                   | data table |
| F copy                 |            | styles                 | data table |
| fallbacks              | table      | syncboth               | function   |
| F apply                |            | syncname               | function   |
| F install              |            | syncstyle              | function   |
| fallbackstyleattr      | function   | toname                 | function   |
| families               | data table | tostyle                | function   |
| finishfallbacks        | function   | tweakaftercopyingfont  | function   |
| gaps                   | data table | tweakbeforecopyingfont | function   |
| getboth                | function   | tweaks                 | table      |
| getdomain              | function   | utfmathaccent          | function   |
| getitalics             | function   | utfmathclass           | function   |
| getridofprime          | function   | utfmathcommand         | function   |
| getstyle               | function   | utfmathfiller          | function   |
| horizontalcode         | function   | utfmathstretch         | function   |
| initializeparameters   | function   | virtualize             | function   |
| makefont               | function   | virtualized            | data table |

#### md5 (extra lua)

| HEX     | function |
|---------|----------|
| crypt   | function |
| dec     | function |
| decrypt | function |
| exor    | function |

hex function
sum function

sumHEXA overloaded function
sumhexa overloaded function

# metapost (context)

| checkformat      | function   | getstatistics       | function |
|------------------|------------|---------------------|----------|
| cm               | function   | gettext             | function |
| collapse         | boolean    | graphic             | function |
| colorinitializer | function   | graphic_base_pass   | function |
| comment          | function   | installplugin       | function |
| convert          | function   | isobject            | function |
| currentmpx       | function   | lastlog             | string   |
| defaultformat    | string     | load                | function |
| defaultinstance  | string     | maketext            | function |
| defaultmethod    | string     | metafun             | table    |
| directrun        | function   | F interpolate       |          |
| escaped          | function   | F topath            |          |
| exectime         | table      | mptopdf             | table    |
| extensiondata    | data table | F convertmpstopdf   |          |
| filterclippath   | function   | N nofconverted      |          |
| flush            | function   | n                   | number   |
| flushers         | table      | nofscriptruns       | function |
| T pdf            |            | nvformat            | function |
| F comment        |            | pdfliterals         | function |
| F flushfigure    |            | pluginactions       | function |
| F startfigure    |            | popformat           | function |
| F stopfigure     |            | popscriptrunner     | function |
| F textfigure     |            | popvariable         | function |
| flushliteral     | function   | popvariables        | function |
| flushnormalpath  | function   | preparetextextsdata | function |
| flushreset       | function   | process             | function |
| fonts            | table      | processplugins      | function |
| F define         |            | processspecial      | function |
| T flusher        |            | properties          | table    |
| F flushfigure    |            | pushformat          | function |
| F startfigure    |            | pushscriptrunner    | function |
| F stopfigure     |            | pushvariable        | function |
| N instances      |            | pushvariables       | function |
| F process        |            | quickanddirty       | function |
| format_number    | function   | reducetogray        | boolean  |
| format_string    | function   | reporterror         | function |
| formatnumber     | function   | reset               | function |
| getclippath      | function   | resetlastlog        | function |
| getextensions    | function   | resetplugins        | function |
| getextradata     | function   | run                 | function |
| getjobdata       | function   | runscript           | function |

| scripterror    | function |
|----------------|----------|
| setextensions  | function |
| setoutercolor  | function |
| settext        | function |
| setvariable    | function |
| showlog        | boolean  |
| simple         | function |
| splitprescript | function |
| startgraphic   | function |
| stopgraphic    | function |
| svformat       | function |
| sxsy           | function |
| tex            | table    |

| F reset         |          |
|-----------------|----------|
| F set           |          |
| F setfrombuffer |          |
| texerrors       | boolean  |
| texexp          | function |
| theclippath     | function |
| tographic       | function |
| totable         | function |
| unload          | function |
| untagvariable   | function |
| variables       | table    |
|                 |          |

F get

#### mime (extra lua)

**b64** function

F base64

F quoted-printable

dot function

encode overloaded function

encodet overloaded table

F base64

F quoted-printable

eol function

normalize overloaded function

**qp** function

qpwrp function
report function

stuff overloaded function

unb64 function
unqp function

wrap overloaded function

wrapt overloaded table

F base64

F default

F quoted-printable

F text

wrp function

# mp (context)

| BackSpace            | function | OuterMarginWidth    | function |
|----------------------|----------|---------------------|----------|
| BaseLineSkip         | function | OverlayDepth        | function |
| BodyFontSize         | function | OverlayHeight       | function |
| BottomDistance       | function | OverlayLineWidth    | function |
| BottomHeight         | function | OverlayOffset       | function |
| BottomSpace          | function | OverlayRegion       | function |
| CurrentColumn        | function | OverlayWidth        | function |
| CurrentHeight        | function | PageDepth           | function |
| CurrentWidth         | function | PageFraction        | function |
| CutSpace             | function | PageNumber          | function |
| EmWidth              | function | PageOffset          | function |
| ExHeight             | function | PaperBleed          | function |
| FooterDistance       | function | PaperHeight         | function |
| FooterHeight         | function | PaperWidth          | function |
| HSize                | function | PrintPaperHeight    | function |
| HeaderDistance       | function | PrintPaperWidth     | function |
| HeaderHeight         | function | RealPageNumber      | function |
| InPageBody           | function | RightEdgeDistance   | function |
| InnerEdgeDistance    | function | RightEdgeWidth      | function |
| InnerEdgeWidth       | function | RightMarginDistance | function |
| InnerMarginDistance  | function | RightMarginWidth    | function |
| InnerMarginWidth     | function | SpineWidth          | function |
| LastPageNumber       | function | StrutDepth          | function |
| LayoutColumnDistance | function | StrutHeight         | function |
| LayoutColumnWidth    | function | SubPageNumber       | function |
| LayoutColumns        | function | TextHeight          | function |
| LeftEdgeDistance     | function | TextWidth           | function |
| LeftEdgeWidth        | function | TopDistance         | function |
| LeftMarginDistance   | function | TopHeight           | function |
| LeftMarginWidth      | function | TopSkip             | function |
| LineHeight           | function | TopSpace            | function |
| MakeupHeight         | function | VSize               | function |
| MakeupWidth          | function | _f_                 | function |
| NOfColumns           | function | _get_count_         | function |
| NOfPages             | function | _get_dimen_         | function |
| NOfSubPages          | function | _get_macro_         | function |
| OnOddPage            | function | _get_toks_          | function |
| OnRightPage          | function | _set_count_         | function |
| OuterEdgeDistance    | function | _set_dimen_         | function |
| OuterEdgeWidth       | function | _set_macro_         | function |
| OuterMarginDistance  | function | _set_toks_          | function |

| aux               | table    | inhash                 | function |
|-------------------|----------|------------------------|----------|
| F boolean         |          | integer                | function |
| F flush           |          | isarray                | function |
| F fprint          |          | isobject               | function |
| F integer         |          | mf_blob_add            | function |
| F number          |          | mf_blob_dimensions     | function |
| F numeric         |          | mf_blob_index          | function |
| F pair            |          | mf_blob_new            | function |
| F pairpoints      |          | mf_blob_raw_content    | function |
| F path            |          | mf_blob_raw_dimensions | function |
| F pathpoints      |          | mf_blob_raw_reset      | function |
| F points          |          | mf_blob_raw_toutf      | function |
| F print           |          | mf_blob_raw_wipe       | function |
| F quadruple       |          | mf_blob_size           | function |
| F quadruplepoints |          | mf_blob_width          | function |
| F quoted          |          | mf_default_color_model | function |
| F size            |          | mf_external_figure     | function |
| F string          |          | mf_finish_saving_data  | function |
| F triplet         |          | mf_formatted_text      | function |
| F tripletpoints   |          | mf_get_outline_text    | function |
| F vprint          |          | mf_graphic_text        | function |
| boolean           | function | mf_inject_blob         | function |
| cleaned           | function | mf_made_text           | function |
| dataset           | function | mf_named_color         | function |
| datasets          | function | mf_outline_text        | function |
| F load            |          | mf_path_left           | function |
| dimension         | function | mf_path_length         | function |
| disposehash       | function | mf_path_point          | function |
| flush             | function | mf_path_reset          | function |
| format            | function | mf_path_right          | function |
| formatted         | function | mf_save_data           | function |
| fprint            | function | mf_some_text           | function |
| fromhash          | function | mf_start_saving_data   | function |
| get               | table    | mf_stop_saving_data    | function |
| F boolean         |          | mf_tb_dimensions       | function |
| F number          |          | mf_tt_dimensions       | function |
| F numeric         |          | mf_tt_initialize       | function |
| F path            |          | mode                   | function |
| F string          |          | n                      | function |
| getcount          | function | newhash                | function |
| getdimen          | function | number                 | function |
| getmacro          | function | numeric                | function |
| gettoks           | function | pair                   | function |
| graphformat       | function | pairpoints             | function |

| path           | function | quadruplepoints | function |
|----------------|----------|-----------------|----------|
| pathleft       | function | quoted          | function |
| pathlength     | function | report          | function |
| pathpoint      | function | set             | table    |
| pathpoints     | function | F path          |          |
| pathreset      | function | setcount        | function |
| pathright      | function | setdimen        | function |
| points         | function | setmacro        | function |
| positionanchor | function | settoks         | function |
| positionbox    | function | size            | function |
| positioncurve  | function | string          | function |
| positionpage   | function | systemmode      | function |
| positionpath   | function | texstr          | function |
| positionpxy    | function | textextanchor   | function |
| positionregion | function | texvar          | function |
| positionwhd    | function | tohash          | function |
| positionxy     | function | triplet         | function |
| prefix         | function | tripletpoints   | function |
| print          | function | utflen          | function |
| processingmode | function | utfsub          | function |
| quadruple      | function | vprint          | function |

#### mplib (extra tex)

char\_depth function
char\_height function
char\_width function
execute function
fields function
finder function
finders table
 F file

F mpstemplate

finish function

get\_boolean function
get\_number function
get\_numeric function
get\_path function
get\_string function

**new** overloaded function

pen\_info function
solve\_path function
statistics function
version function

## noads (context)

F render

| handlers     | table | F                | resize    |          |
|--------------|-------|------------------|-----------|----------|
| F align      |       | F showtree       |           |          |
| F alternates |       | F                | tags      |          |
| F autofences |       | F                | unscript  |          |
| F classes    |       | F unstack        |           |          |
| F collapse   |       | F variants       |           |          |
| F domains    |       | proc             | ess       | function |
| F families   |       | proc             | essnested | function |
| F fixscripts |       | proc             | essors    | table    |
| F italics    |       | F mlist_to_hlist |           |          |
| F kernpairs  |       | Т                | unscript  |          |
| F makeup     |       | Т                | unstack   |          |
| F relocate   |       | proc             | essouter  | function |

#### node (basic tex)

F getfont

check discretionaries function F aetalue check discretionary function F getheight copy function F getid copy list function F aetkern function count F getlang function current attr F getleader dimensions function F getlist direct table F getnext F check discretionaries F getnucleus F check discretionary F getoffsets F copy F getpenalty F copy list F getprev F getproperty F count F current attr F getshift F dimensions F aetsub F effective glue F getsubtype F end\_of\_math F getsup F find attribute F getwhd F getwidth F first glyph F flatten discretionaries F has attribute F flush list F has\_field F flush node F has glyph F flush properties table F hpack F hyphenating F free F get attribute F insert after F get\_properties\_table F insert before F get\_synctex\_fields F is\_char F is\_direct F getattributelist F aetboth F is glyph F getbox F is node F getchar F is\_zero\_glue F getcomponents F kerning F getdata F last node F getdepth F length F getdir F ligaturing F getdirection F getdisc F prepend prevdepth F getexpansion F protect\_glyph F getfam F protect\_glyphs F getfield F protrusion skippable

F rangedimensions

| F | remove              | F traverse_char         |          |
|---|---------------------|-------------------------|----------|
| F | set_attribute       | F traverse_glyph        |          |
| F | set_properties_mode | F traverse_id           |          |
| F | set_synctex_fields  | F traverse_list         |          |
| F | setattributelist    | F unprotect_glyph       |          |
| F | setboth             | F unprotect_glyphs      |          |
| F | setbox              | F unset_attribute       |          |
| F | setchar             | F usedlist              |          |
| F | setcomponents       | F uses_font             |          |
| F | setdata             | F vpack                 |          |
| F | setdepth            | F write                 |          |
| F | setdir              | effective_glue          | function |
| F | setdirection        | end_of_math             | function |
| F | setdisc             | family_font             | function |
| F | setexpansion        | fields                  | function |
| F | setfam              | find_attribute          | function |
| F | setfield            | first_glyph             | function |
| F | setfont             | fix_node_lists          | function |
| F | setglue             | flatten_discretionaries | function |
| F | setheight           | flush_list              | function |
| F | setkern             | flush_node              | function |
| F | setlang             | flush_properties_table  | function |
| F | setleader           | free                    | function |
| F | setlink             | get_attribute           | function |
| F | setlist             | get_properties_table    | function |
| F | setnext             | getboth                 | function |
| F | setnucleus          | getchar                 | function |
| F | setoffsets          | getdisc                 | function |
| F | setpenalty          | getfield                | function |
| F | setprev             | getfont                 | function |
| F | setproperty         | getglue                 | function |
| F | setshift            | getid                   | function |
| F | setsplit            | getleader               | function |
| F | setsub              | getlist                 | function |
| F | setsubtype          | getnext                 | function |
| F | setsup              | getprev                 | function |
| F | setwhd              | getproperty             | function |
| F | setwidth            | getsubtype              | function |
| F | slide               | getwhd                  | function |
| F | tail                | has_attribute           | function |
| F | todirect            | has_field               | function |
| F | tonode              | has_glyph               | function |
| F | tostring            | hpack                   | function |
| F | traverse            | hyphenating             | function |
|   |                     |                         |          |

| id                   | function | setfield         | function |
|----------------------|----------|------------------|----------|
| insert_after         | function | setglue          | function |
| insert_before        | function | setproperty      | function |
| is_char              | function | slide            | function |
| is_glyph             | function | subtype          | function |
| is_node              | function | subtypes         | function |
| is_zero_glue         | function | tail             | function |
| kerning              | function | tostring         | function |
| last_node            | function | traverse         | function |
| length               | function | traverse_char    | function |
| ligaturing           | function | traverse_glyph   | function |
| make_extensible      | function | traverse_id      | function |
| mlist_to_hlist       | function | traverse_list    | function |
| new                  | function | type             | function |
| next                 | function | types            | function |
| prepend_prevdepth    | function | unprotect_glyph  | function |
| prev                 | function | unprotect_glyphs | function |
| protect_glyph        | function | unset_attribute  | function |
| protect_glyphs       | function | usedlist         | function |
| protrusion_skippable | function | uses_font        | function |
| rangedimensions      | function | values           | function |
| remove               | function | vpack            | function |
| set_attribute        | function | whatsits         | function |
| set_properties_mode  | function | write            | function |

## nodes (context)

| accentcodes                      | data table | effective glue          | function   |
|----------------------------------|------------|-------------------------|------------|
| aligned                          | function   | end of math             | function   |
| append                           | function   | fencecodes              | data table |
| apply                            | function   | fields                  | function   |
| applyvisuals                     | function   | fillcodes               | data table |
| astable                          | function   | find_attribute          | function   |
| basepoints                       | function   | first_glyph             | function   |
| boundarycodes                    | data table | firstcharacter          | function   |
| boxes                            | table      | firstcharinbox          | function   |
| F dimensions                     |            | firstdirinbox           | function   |
| F direct                         |            | firstglyph              | function   |
| F found                          |            | flatten_discretionaries | function   |
| F reset                          |            | flush                   | function   |
| F restore                        |            | flush_list              | function   |
| F save                           |            | flush_node              | function   |
| builders                         | table      | free                    | function   |
| F buildpage_filter               |            | fullhpack               | function   |
| F vpack_filter                   |            | getattr                 | function   |
| <pre>check_discretionaries</pre> | function   | getattribute            | function   |
| codes                            | data table | getboth                 | function   |
| concat                           | function   | getbox                  | function   |
| сору                             | function   | getchar                 | function   |
| copy_list                        | function   | getfield                | function   |
| copy_node                        | function   | getfont                 | function   |
| count                            | function   | getglue                 | function   |
| countall                         | function   | getid                   | function   |
| current_attr                     | function   | getleader               | function   |
| delete                           | function   | getlist                 | function   |
| destinations                     | table      | getnext                 | function   |
| N attribute                      |            | getprev                 | function   |
| T done                           |            | getsubtype              | function   |
| F handler                        |            | gluecodes               | data table |
| T stack                          |            | gluevalues              | data table |
| dimensionfields                  | data table | glyphcodes              | data table |
| dimensions                       | function   | handlers                | table      |
| dircodes                         | data table | F accessibility         |            |
| directioncodes                   | data table | F backgrounds           |            |
| directionvalues                  | data table | F backgroundspage       |            |
| dirvalues                        | data table | F backgroundsvbox       |            |
| disccodes                        | data table | F characters            |            |
| discretionarycodes               | data table | F checkforleaks         |            |

| F checkglyphs           |            | is_display_math | function   |
|-------------------------|------------|-----------------|------------|
| F checkparcounter       |            | is_node         | function   |
| F cleanupbox            |            | is_nut          | function   |
| F cleanuppage           |            | is_zero_glue    | function   |
| F export                |            | kerncodes       | data table |
| F finalizebox           |            | kerning         | function   |
| F flatten               |            | keys            | table      |
| F flattenline           |            | T whatsit       |            |
| F migrate               |            | last node       | function   |
| F protectglyphs         |            | leadercodes     | data table |
| F stripping             |            | leftmarginwidth | function   |
| F textbackgrounds       |            | length          | function   |
| F unprotectglyphs       |            | ligaturing      | function   |
| has attribute           | function   | linefillers     | table      |
| has_field               | function   | D data          |            |
| _<br>has_glyph          | function   | F define        |            |
| hpack                   | function   | F enable        |            |
| hyphenating             | function   | F filler        |            |
| idsandsubtypes          | function   | F handler       |            |
| idstostring             | function   | lines           | table      |
| ignorablefields         | data table | T boxed         |            |
| injections              | table      | F register      |            |
| F copy                  |            | F setup         |            |
| F getligaindex          |            | F stage_one     |            |
| F getthreshold          |            | F stage_two     |            |
| F handler               |            | D data          |            |
| F installgetspaceboth   |            | F finalize      |            |
| F installnewkern        |            | F number        |            |
| F isspace               |            | N scratchbox    |            |
| F keepcounts            |            | link            | function   |
| F reset                 |            | linked          | function   |
| F resetcounts           |            | list            | function   |
| F setcursive            |            | listablefields  | data table |
| F setkern               |            | listcodes       | data table |
| F setligaindex          |            | listtoutf       | function   |
| F setmark               |            | literalvalues   | data table |
| F setmove               |            | load            | function   |
| F setposition           |            | locate          | function   |
| F setspacekerns         |            | margincodes     | data table |
| insert_after            | function   | marginkerncodes | data table |
| insert_before           | function   | markers         | table      |
| insert_list_after       | function   | F get           |            |
| installattributehandler |            | mathcodes       | data table |
| is_direct               | function   | maxboxwidth     | function   |

mlist to hlist function F free new function F fullhpack noadcodes data table F get\_synctex\_fields table noadoptions F getattr N axis F getattribute N exact F getattributelist N left F getattrlist N middle F aetboth F getbox N no axis N right F getboxglue N set F getchar N unused 1 F getcomponents N unused 2 F getdata nodecodes data table F getdepth nopts function F getdir table nuts F getdirection F getdisc F append F apply F getdiscretionary F applyvisuals F getexpansion F check discretionaries F getfam F concat F getfield F copy F getfont F copy\_list F getglue F getglyphdata F copy\_no\_components F copy node F getheight F copy\_only\_glyphs F getid F copy\_properties F getkern F copyvisual F getlang F getlanguage F count F countall F getleader F current attr F getlist F delete F getnext F dimensions F getnucleus F getoffsets F effective glue F end\_of\_math F getorientation F find attribute F getpenalty F first\_glyph F getprev F firstcharacter F getprop F firstcharinbox F getruledata F firstglyph F getshift F flatten\_discretionaries F getsub F flush F getsubtype F flush list F getsup

F flush node

F getsurround

F getvalue F fraction F getwhd F glue F getwidth F gluespec F has attribute F glyph F has field F hlist F italickern F has glyph F hpack F kern F hyphenating F latelua F leader F insert\_after F insert before F leftmarginkern F insert list after F leftskip F is direct F lineskip F is\_display\_math F literal F mathchar F is node F mathtextchar F is\_nut F is\_zero\_glue F negatedglue F ischar F noad F isdone F originliteral F outlinerule F isglyph F pageliteral F kerning F last node F penalty F leftmarginwidth F radical F length F rawliteral F ligaturing F register F link F restore F linked F rightmarginkern F locate F rightskip F mlist to hlist F rule F nestedtracedslide F save F new F savepos F setmatrix T pool F accent F shrink F baselineskip F stretch F boundary F subbox F choice F submlist F cleanup F temp F delim F textdir F delimiter F usage F direction T userids F directliteral N margins.inline F disc N splitters.one F emptyrule N splitters.two F fence F usernode

F userrule

F fontkern

F setfield F vlist F wordboundary F setfont F prepend F setglue F processranges F setglyphdata F processwords F setheight F protect glyph F setkern F protect\_glyphs F setland F protrusion\_skippable F setlanguage F setleader F rangedimensions F setlink F rawprop F setlist F reference F rehpack F setnext F remove F setnucleus F setoffsets F repackhlist F replace F setorientation F rightmarginwidth F setpenalty T rules F setprev T ruleactions F setprop F box F setruledata F draw F setshift F fill F setsplit F mp F setsub F stroke F setsubtype F userrule F setsup F set attribute F setsurround F setunsetattributes F set synctex fields F setattr F setvalue F setattribute F setvisual F setattributelist F setvisuals F setattributes F setwhd F setattrlist F setwidth F sethoth F slide F setbox F somepenalty F setboxglue F somespace F setchar F splitbox F setcomponents F striprange F setdata F tail F setdepth F takeattr F setdir F takebox F setdirection F takelist F setdisc F theprop F setdiscretionary F tonode F tonodes F setexpansion F setfam F tonut

| F tosequence       |            | F initializer           |          |
|--------------------|------------|-------------------------|----------|
| F tostring         |            | S name                  |          |
| F tracedslide      |            | T namespace             |          |
| F traverse         |            | N attribute             |          |
| F traverse_char    |            | D data                  |          |
| F traverse_glyph   |            | F enable                |          |
| F traverse_id      |            | F handler               |          |
| F traverse_list    |            | F register              |          |
| T traversers       |            | D registered            |          |
| F boundary         |            | D values                |          |
| F char             |            | F processor             |          |
| F dir              |            | points                  | function |
| F disc             |            | pool                    | table    |
| F glue             |            | F baselineskip          |          |
| F glyph            |            | F cleanup               |          |
| F hlist            |            | F directliteral         |          |
| F list             |            | F glyph                 |          |
| F next             |            | F hlist                 |          |
| F node             |            | F latelua               |          |
| F vlist            |            | F lineskip              |          |
| F whatsit          |            | F literal               |          |
| T typesetters      |            | F originliteral         |          |
| F tohbox           |            | F register              |          |
| F tohpack          |            | F restore               |          |
| F tonodes          |            | F save                  |          |
| F tovbox           |            | F savepos               |          |
| F tovpack          |            | F setmatrix             |          |
| F unprotect_glyph  |            | F special               |          |
| F unprotect_glyphs |            | F usage                 |          |
| F unset_attribute  |            | F vlist                 |          |
| F unsetattribute   |            | prepend                 | function |
| F unsetattributes  |            | print                   | function |
| F untracedslide    |            | processors              | table    |
| F use_components   |            | F contribute_filter     |          |
| F usedlist         |            | B enabled               |          |
| F uses_font        |            | F hpack_filter          |          |
| F vianodes         |            | F post_linebreak_filter |          |
| F vianuts          |            | F pre_linebreak_filter  |          |
| F vpack            |            | F tracer                |          |
| F write            |            | properties              | table    |
| packlist           | function   | T data                  |          |
| penaltycodes       | data table | protect_glyph           | function |
| plugindata         | table      | protect_glyphs          | function |
| F finalizer        |            | protrusion_skippable    | function |

| pts                | function   | F define             |            |
|--------------------|------------|----------------------|------------|
| radicalcodes       | data table | F enable             |            |
| rangedimensions    | function   | F handler            |            |
| reference          | function   | show                 | function   |
| references         | table      | showboxes            | function   |
| N attribute        |            | showcodes            | function   |
| T done             |            | showlist             | function   |
| F handler          |            | showsimplelist       | function   |
| T stack            |            | skipcodes            | data table |
| rehpack            | function   | skipvalues           | data table |
| remove             | function   | slide                | function   |
| repackhlist        | function   | snapshots            | table      |
| replace            | function   | F getparameters      |            |
| report             | function   | F getsamples         |            |
| rightmarginwidth   | function   | F resetsamples       |            |
| rulecodes          | data table | F takesample         |            |
| rules              | table      | somepenalty          | function   |
| D data             |            | somespace            | function   |
| F define           |            | splitbox             | function   |
| F enable           |            | stripdiscretionaries | function   |
| F handler          |            | stripping            | table      |
| F userrule         |            | T glyphs             |            |
| save               | function   | F set                |            |
| serialize          | function   | subtypes             | data table |
| serializebox       | function   | tail                 | function   |
| set_attribute      | function   | takeattr             | function   |
| setattr            | function   | takebox              | function   |
| setattribute       | function   | tasks                | table      |
| setattributes      | function   | F actions            |            |
| setboth            | function   | F appendaction       |            |
| setbox             | function   | F disableaction      |            |
| setboxtonaturalwd  | function   | F disablegroup       |            |
| setchar            | function   | F enableaction       |            |
| setfield           | function   | F enablegroup        |            |
| setfont            | function   | F freeze             |            |
| setglue            | function   | F freezegroup        |            |
| setleader          | function   | F new                |            |
| setlink            | function   | F prependaction      |            |
| setlist            | function   | F removeaction       |            |
| setnext            | function   | F replaceaction      |            |
| setprev            | function   | F restart            |            |
| setunsetattributes | function   | F setaction          |            |
| shifts             |            |                      |            |
| 31111113           | table      | F showactions        |            |

| tobasepoints      | function | T steppers       |            |
|-------------------|----------|------------------|------------|
| tocentimeters     | function | F check          |            |
| tociceros         | function | F codes          |            |
| todidots          | function | F features       |            |
| todimen           | function | F font           |            |
| toinches          | function | F glyphs         |            |
| tomillimeters     | function | F message        |            |
| tonewciceros      | function | F messages       |            |
| tonewdidots       | function | F nofsteps       |            |
| tonode            | function | F register       |            |
| tonodes           | function | F reset          |            |
| tonut             | function | F start          |            |
| topicas           | function | F stop           |            |
| topoints          | function | F stop           |            |
| toscaledpoints    | function | T transparencies |            |
| tosequence        | function | F reset          |            |
| tostring          | function | F set            |            |
| totable           | function | F setlist        |            |
| totree            | function | traverse         | function   |
| toutf             | function | traverse_char    | function   |
| tracers           | table    | traverse_glyph   | function   |
| T characters      |          | traverse_id      | function   |
| F collect         |          | traverse_list    | function   |
| F equal           |          | traversers       | table      |
| F start           |          | F char           |            |
| F string          |          | F glyph          |            |
| F unicodes        |          | F list           |            |
| T colors          |          | F node           |            |
| F reset           |          | typesetters      | table      |
| F set             |          | F hbox           |            |
| F setlist         |          | F hpack          |            |
| F fontchar        |          | F tohbox         |            |
| T frequencies     |          | F tohpack        |            |
| F register        |          | F tonodes        |            |
| T pool            |          | F tovbox         |            |
| T nodes           |          | F tovpack        |            |
| F rule            |          | F vpack          |            |
| T nuts            |          | unprotect_glyph  | function   |
| F rule            |          | unprotect_glyphs | function   |
| F resetproperties |          | unset_attribute  | function   |
| F rule            |          | unsetattribute   | function   |
| F setlist         |          | unsetattributes  | function   |
| F setproperties   |          | usedlist         | function   |
| F start           |          | usercodes        | data table |
|                   |          |                  |            |

uses\_font vianodes vianuts visualizebox visualizers table

F attribute

T attributes

F box

F handler F markfonts function function function function F register F setfont F setlayer F setruledglyph F setvisual

vpack whatcodes whatsitcodes write

function data table data table function

## number (context)

| basepoints     | function function | tobitstring<br>tocentimeters | function<br>function |
|----------------|-------------------|------------------------------|----------------------|
| bytetodecimal  | function          | tociceros                    | function             |
| compactfloat   | function          | tocontext                    | function             |
| decimaltobyte  | function          | todidots                     | function             |
| dimenfactors   | data table        | todimen                      | function             |
| formatted      | function          | toevenhex                    | function             |
| formattedfloat | function          | toinches                     | function             |
| idiv           | function          | tomillimeters                | function             |
| maxdimen       | number            | tonewciceros                 | function             |
| nopts          | function          | tonewdidots                  | function             |
| percent        | function          | tonumberf                    | function             |
| points         | function          | tonumberg                    | function             |
| pts            | function          | topicas                      | function             |
| signed         | function          | topoints                     | function             |
| sparseexponent | function          | toscaled                     | function             |
| splitdimen     | function          | toscaledpoints               | function             |
| to16dot16      | function          | valid                        | function             |
| tobasepoints   | function          |                              |                      |
|                |                   |                              |                      |

# objects (context)

| data       | table    | page      | function |
|------------|----------|-----------|----------|
| dimensions | function | reference | function |
| found      | function | register  | function |
| n          | number   | restore   | function |

## os (basic lua)

| getenv       | function            | remove      | overloaded function |
|--------------|---------------------|-------------|---------------------|
| setenv       | function            | rename      | overloaded function |
| binsuffix    | string              | resolvers   | table               |
| binsuffixes  | table               | F bits      |                     |
| clock        | function            | resultof    | function            |
| converttime  | function            | runtime     | function            |
| date         | function            | selfdir     | string              |
| difftime     | function            | setenv      | overloaded function |
| env          | data table          | setexitcode | function            |
| exec         | overloaded function | setlocale   | overloaded function |
| execute      | overloaded function | sleep       | function            |
| exit         | overloaded function | spawn       | overloaded function |
| fulltime     | function            | time        | function            |
| getenv       | overloaded function | timezone    | function            |
| gettimeofday | function            | tmpdir      | function            |
| isleapyear   | function            | tmpname     | function            |
| launch       | function            | today       | function            |
| libsuffix    | string              | type        | string              |
| localtime    | function            | uname       | function            |
| name         | string              | uuid        | function            |
| newline      | string              | validdate   | function            |
| nofdays      | function            | weekday     | function            |
| now          | function            | where       | function            |
| pipeto       | function            | which       | function            |
| platform     | string              |             |                     |

# package (basic lua)

| config        | string              |
|---------------|---------------------|
| cpath         | string              |
| extralibpath  | $ \hbox{function} $ |
| extralibpaths | function            |
| extraluapath  | $ \hbox{function} $ |
| extraluapaths | function            |
| helpers       | table               |
| libpaths      | $ \hbox{function} $ |
| loaded        | table               |
| loaders       | table               |
| loadlib       | function            |

| luapaths    | function |
|-------------|----------|
| path        | string   |
| poplibpath  | function |
| popluapath  | function |
| preload     | table    |
| pushlibpath | function |
| pushluapath | function |
| searchers   | table    |
| searchpath  | function |
| seeall      | function |

# pagebuilders (context)

| <pre>columnsets table</pre> | F sethsize              |  |
|-----------------------------|-------------------------|--|
| F add                       | F sethspan              |  |
| F block                     | F setlines              |  |
| F check                     | F setproperties         |  |
| F currentcolumn             | F setstart              |  |
| F define                    | F setvsize              |  |
| F finishflush               | <b>injections</b> table |  |
| F flushareas                | F flushafter            |  |
| F flushcolumn               | F flushbefore           |  |
| F flushrest                 | F save                  |  |
| F goto                      | mixedcolumns table      |  |
| F noto                      | F cleanup               |  |
| F prepareflush              | F finalize              |  |
| F put                       | F getlist               |  |
| F registerarea              | F getrest               |  |
| F reset                     | F getsplit              |  |
| F setarea                   | F setsplit              |  |

## pdf (basic tex)

immediateobj function

# pdfe (extra tex)

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

# pdfscanner (context)

scan function

# physics (context)

units table

F registerunit

D tables

## publications (context)

| addtovontry            | function   | converttoxml         | function |
|------------------------|------------|----------------------|----------|
| addtexentry<br>analyze | function   | currentspecification | table    |
| anywhere               | function   | S author             | table    |
| authorcache            | data table |                      |          |
| authorcollapsers       | data table | T categories         |          |
| authorhashers          | table      | T article            |          |
| F invertedshort        | tabte      | S category           |          |
|                        |            | T extra              |          |
| F normal               |            | T fields             |          |
| F normalinverted       |            | S author             |          |
| F normalshort          |            | S editor             |          |
| F sequential           |            | S journal            |          |
| F sequentialshort      |            | S keywords           |          |
| F short                | data table | S note               |          |
| authormap              | data table | S number             |          |
| authortoregister       | function   | S pages              |          |
| casters                | table      | S title              |          |
| F author               |            | S volume             |          |
| F keyword              |            | S year               |          |
| F pagenumber           |            | T optional           |          |
| F range                | £          | T required           |          |
| checkeddataset<br>     | function   | T sets               |          |
| citevariants           | 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              |          |
| collected              | data table | S volume             |          |
| components             | table      | S year               |          |
| F author               |            | T optional           |          |
| concatstate            | function   | T required           |          |

| 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 | datasets        | table      |
| S subtitle     | detailed        | table      |
| S title        | endnotes_to_btx | function   |
| S year         | enhancer        | 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       | enhancers       | table      |
| S institution  | F details       |            |
| S organization | F order         |            |
| S subtitle     | F suffixes      |            |
| S title        | finder          | function   |
| S year         | firstofrange    | function   |
| T optional     | found           | function   |
| T required     | get             | function   |
| T sets         | getcasted       | function   |
| T authors      | getdetail       | function   |
| T virtual      | getdirect       | function   |
| comment        | getfaster       | function   |
| copyright      | getfield        | function   |
| fields         | getfuzzy        | function   |
| name           | getindex        | function   |
| types          | inspectors      | data table |
| S author       | journals        | table      |
| S editor       | F abbreviated   |            |
| S keywords     | F add           |            |
| S number       | F expanded      |            |
| S page         | F load          |            |
|                |                 |            |

S S

S

Т

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

D privates F showtables D sets F showvariants typesetters table D specials F author D types F string D virtuals function function tags usedataset table usedentries function tracers writers table F showdatasetauthors

F showdatasetautnors
F showdatasetcompleteness
F showdatasetfields
F showentry
F showfields
F showhashedauthors

F author
F keyword
F pagenumber
F range

## regimes (context)

| backmapping | data table | mapping   | data table |
|-------------|------------|-----------|------------|
| cleanup     | function   | рор       | function   |
| disable     | function   | process   | function   |
| enable      | function   | push      | function   |
| fromregime  | function   | toregime  | function   |
| list        | function   | translate | function   |

### resolvers (context)

| allprefixes                    | function            | findpath                | function   |
|--------------------------------|---------------------|-------------------------|------------|
| appendhash                     | function            | findpk                  | function   |
| automount                      | function            | findtexfile             | function   |
| automounted                    | table               | findwildcardfile        | function   |
| booleanvariable                | function            | findwildcardfiles       | function   |
| cacheversion                   | string              | formatofsuffix          | function   |
| checkedvariable                | function            | formatofvariable        | function   |
| cleanedpathlist                | function            | formats                 | data table |
|                                | function            | foundintree             | function   |
| cleanpath                      | function            | foundintrees            | function   |
| cleanpathlist<br>concatinators | data table          |                         | data table |
|                                |                     | generators              | function   |
| configbanner                   | string              | get_from_content        |            |
| configurationfiles             | function            | getenv                  | function   |
| criticalvars                   | data table          | getextrapaths           | function   |
| dangerous                      | data table          | getfilehashes           | function   |
| datastate                      | function            | gethashes               | function   |
| defaultsuffixes                | table               | getownpath              | function   |
| dowithfilesandreport           | function            | getreadfilename<br>     | function   |
| dowithfilesintree              | function            | hashers                 | data table |
| dowithpath                     | function            | homedir                 | string     |
| dowithvariable                 | function            | initialized             | function   |
| env                            | function            | inputstack              | table      |
| executers                      | table               | installinputfilehandler | function   |
| expandbraces                   | function            | installinputlinehandler | function   |
| expandedpathfromlist           | function            | jobpath                 | function   |
| expandedpathlist               | function            | jobs                    | table      |
| expandedpathlistfromvariable   | function            | F currentcomponent      |            |
| expandpath                     | function            | F currentenvironment    |            |
| expandpathfromvariable         | function            | F currentproduct        |            |
| expansion                      | function            | F currentproject        |            |
| extendtexmfvariable            | function            | F justacomponent        |            |
| filtered_from_content          | function            | D processors            |            |
| find_file                      | <del>function</del> | F productcomponent      |            |
| find_files                     | <del>function</del> | F usefile               |            |
| findbinfile                    | function            | joinpath                | function   |
| findctxfile                    | function            | knownvariables          | function   |
| finders                        | data table          | load                    | function   |
| findfile                       | function            | loadbinfile             | function   |
| findfiles                      | function            | loaders                 | data table |
| findgivenfile                  | function            | loadlualib              | function   |
| findgivenfiles                 | function            | loadtexfile             | function   |
| -                              |                     |                         |            |

loadtime function function resolve function locateformat savers data table locators data table scandata function luacnffallback scanfiles function strina luacnfname schemes table string luacnfspec string T cleaners luacnfstate strina F md5 table macros F none F convertfile F strip F decodecomment F cleanname F enablecomment F fetchstring F fetchtable F encodecomment F preprocessed F install setdynamic function F processmk setenv function F processmkli function F processmkvi setmemstream function F version showpath maxreadlevel number simplescanfiles function methodhandler function splitconfigurationpath function openbinfile function splitexpansions function data table splitmethod openers function openfile function splitpath function function opentexfile stackpath function ownpath string starttiming function stoptiming function popextrapath function poppath function suffixes data table prefixes data table suffixmap data table suffixofformat prependhash function function pushextrapath function texdatablob function pushpath function function toppath registerextrapath function unexpandedpath function registerfile function unexpandedpathlist function registerfilehash function unresolve function registerintrees function updaterelations function registermethod function updatescript function registerzipfile function uselibrary function relations data table usertypes data table renew function usezipfile function validatedpath renewcache function function function variable function repath reset function variableofformat function function variableofformatorsuffix function resetextrapaths

wildcardpattern

function

function

function

resetmemstream

resetresolve

### sandbox (context)

| disablelibraries | function | possiblepath      | function |
|------------------|----------|-------------------|----------|
| disablerunners   | function | redefine          | function |
| enable           | function | register          | function |
| filehandlerone   | function | registerbinary    | function |
| filehandlertwo   | function | registerlibrary   | function |
| finalizer        | function | registerroot      | function |
| getrunner        | function | registerrunner    | function |
| initializer      | function | report            | function |
| iohandler        | function | setfilenamelogger | function |
| logcalls         | function | setlogger         | function |
| logfiles         | function | setreporter       | function |
| original         | function | settrace          | function |
| overload         | function | validfilename     | function |

## scripts (context)

| autofontfeature   | table             | hash                | table      |
|---|-------------------|---------------------|------------|
| F disable   |                   | injectors           | data table |
| F enable  |                   | inserters           | table      |
| F handler   |                   | F nobreakspace_afte | er         |
| ${\it categorytonumber}$                                | data table        | F nobreakspace_befo | ore        |
| colors  | data table        | F space_after       |            |
| decomposehangul   | function          | F space_before      |            |
| defaults  | table             | F zerowidthspace_at | fter       |
| N inter_char_half_shrink_factor F zerowidthspace_before |                   | efore               |            |
| N inter_char_half_                                      | stretch_factor    | installdataset      | function   |
| N inter_char_hangu                                      | l_penalty         | installmethod       | function   |
| N inter_char_quart                                      | er_shrink_factor  | numbertocategory    | data table |
| N inter_char_quart                                      | er_stretch_factor | numbertodataset     | data table |
| N inter_char_shrin                                      | k_factor          | numbertohandler     | data table |
| N inter_char_stret                                      | ch_factor         | reset               | function   |
| N inter_word_stret                                      | ch_factor         | set                 | function   |
| handlers  | data table        | splitters           | data table |

### set (context)

contains function
create function
tolist function

tonumber function
totable function

### sha2 (context)

| HASH256   | function | digest512 | function |
|-----------|----------|-----------|----------|
| HASH384   | function | hash256   | function |
| HASH512   | function | hash384   | function |
| digest256 | function | hash512   | function |
| digest384 | function |           |          |

### sio (context)

| read2dot14        | function | readfixed2       | function |
|-------------------|----------|------------------|----------|
| readbytes         | function | readfixed4       | function |
| readbytetable     | function | readinteger1     | function |
| readcardinal1     | function | readinteger2     | function |
| readcardinal2     | function | readinteger3     | function |
| readcardinal3     | function | readinteger4     | function |
| readcardinal4     | function | readintegertable | function |
| readcardinaltable | function |                  |          |

### socket (extra lua)

| BLOCKSIZE              | number                |          | S cc                        |
|------------------------|-----------------------|----------|-----------------------------|
| DATAGRAMSIZE           | number                |          |                             |
| _DATAGRAMS12E<br>DEBUG | boolean               |          | S comments                  |
|                        | number                |          | S connection                |
| _SETSIZE SOCKETINVALID | number                |          | S content-description       |
|                        |                       | function | S content-disposition       |
| bind                   | overloaded overloaded |          | S content-encoding          |
| choose                 |                       | Tunction | S content-id                |
| connect                | function              | £        | S content-language          |
| connect4               | overloaded            |          | S content-length            |
| connect6               | overloaded            | TUNCTION | S content-location          |
| dns                    | table                 |          | S content-md5               |
| F getaddrinfo          |                       |          | S content-range             |
| F gethostname          |                       |          | S content-transfer-encoding |
| F getnameinfo          |                       |          | S content-type              |
| F tohostname           |                       |          | S cookie                    |
| F toip                 |                       |          | S date                      |
| ftp                    | table                 |          | S diagnostic-code           |
| S PASSWORD             |                       |          | S dsn-gateway               |
| N TIMEOUT              |                       |          | S etag                      |
| S USER                 |                       |          | S expect                    |
| F command              |                       |          | S expires                   |
| F genericform          |                       |          | S final-log-id              |
| F get                  |                       |          | S final-recipient           |
| F open                 |                       |          | S from                      |
| F put                  |                       |          | S host                      |
| gettime                | function              |          | S if-match                  |
| headers                | overloaded            | table    | S if-modified-since         |
| T canonic              |                       |          | S if-none-match             |
| S accept               |                       |          | S if-range                  |
| S accept-chars         | et                    |          | S if-unmodified-since       |
| S accept-encod         | ing                   |          | S in-reply-to               |
| S accept-langua        | age                   |          | S keywords                  |
| S accept-range         | S                     |          | S last-attempt-date         |
| S action               |                       |          | S last-modified             |
| S age                  |                       |          | S location                  |
| S allow                |                       |          | S max-forwards              |
| S alternate-re         | cipient               |          | S message-id                |
| S arrival-date         |                       |          | S mime-version              |
| S authorization        | n                     |          | S original-envelope-id      |
| S bcc                  |                       |          | S original-recipient        |
| S cache-contro         | l                     |          | S pragma                    |

| S                    | proxy-authenticate                 | F request                        |            |          |
|----------------------|------------------------------------|----------------------------------|------------|----------|
| S                    | proxy-authorization                | newtry                           | function   |          |
| S                    | range                              | protect                          | function   |          |
| S                    | received                           | report                           | function   |          |
| S                    | received-from-mta                  | select                           | function   |          |
| S                    | references                         | sink                             | overloaded | function |
| S                    | referer                            | sinkt                            | overloaded | table    |
| S                    | remote-mta                         | F close-when-don                 | ie         |          |
| S                    | reply-to                           | F default                        |            |          |
| S                    | reporting-mta                      | F http-chunked                   |            |          |
| S                    | resent-bcc                         | F keep-open                      |            |          |
| S                    | resent-cc                          | skip                             | function   |          |
| S                    | resent-date                        | sleep                            | function   |          |
| S                    | resent-from                        | smtp                             | table      |          |
| S                    | resent-message-id                  | S DOMAIN                         |            |          |
| S                    | resent-reply-to                    | N PORT                           |            |          |
| S                    | resent-sender                      | S SERVER                         |            |          |
| S                    | resent-to                          | N TIMEOUT                        |            |          |
| S                    | retry-after                        | S ZONE                           |            |          |
| S                    | return-path                        | F message                        |            |          |
| S                    | sender                             | F open                           |            |          |
| S                    | server                             | F send                           |            |          |
| S                    | smtp-remote-recipient              | source                           | overloaded |          |
| S                    | status                             | sourcet                          | overloaded | table    |
| S                    | subject                            | F by-length                      |            |          |
| S                    | te                                 | F default                        |            |          |
| S                    | to                                 | F http-chunked                   |            |          |
| S                    | trailer                            | F until-closed                   |            |          |
| S                    | transfer-encoding                  | tcp                              | function   |          |
| S                    | upgrade                            | tcp4                             | function   |          |
|                      | user-agent                         | tcp6                             | function   |          |
|                      | vary                               | tp                               | overloaded | table    |
| S                    | via                                | N TIMEOUT                        |            |          |
|                      | warning                            | F connect                        |            |          |
|                      | will-retry-until                   | try                              | overloaded | function |
|                      | www-authenticate                   | udp                              | function   |          |
|                      | x-mailer                           | udp4                             | function   |          |
| F 1                  |                                    |                                  |            |          |
|                      | ower                               | udp6                             | function   |          |
| F n                  | normalize                          | url                              | overloaded | table    |
| F n                  | ormalize<br>overloaded table       | <b>url</b> F absolute            |            | table    |
| F n<br>http<br>N T   | overloaded table TIMEOUT           | url<br>F absolute<br>F build     |            | table    |
| F n http N T S U     | overloaded table TIMEOUT USERAGENT | url Fabsolute Fbuild Fbuild_path |            | table    |
| F n http N T S U F g | overloaded table TIMEOUT           | url<br>F absolute<br>F build     |            | table    |

 ${\sf F} \ {\sf parse\_path}$ 

F unescape

#### sorters (context)

| basicsorter       | function | B pm            |            |
|-------------------|----------|-----------------|------------|
| comparers         | table    | B uc            |            |
| F basic           |          | B zc            |            |
| constants         | table    | B zm            |            |
| S defaultdigits   |          | definitions     | data table |
| S defaultlanguage | •        | firstofsplit    | function   |
| S defaultmethod   |          | packch          | function   |
| N digitsmaximum   |          | packuc          | function   |
| N digitsoffset    |          | replacementlist | function   |
| N ignoredoffset   |          | setlanguage     | function   |
| N replacementoffs | et       | sort            | function   |
| T validmethods    |          | splitters       | table      |
| B ch              |          | F utf           |            |
| B mc              |          | strip           | function   |
| B mm              |          | tracers         | data table |
| Врс               |          | update          | function   |

### statistics (context)

| benchmarktimer | function | memused       | function |
|----------------|----------|---------------|----------|
| callbacks      | function | register      | function |
| checkfmtstatus | function | resettiming   | function |
| currenttime    | function | runtime       | function |
| elapsed        | function | savefmtstatus | function |
| elapsedindeed  | function | show          | function |
| elapsedseconds | function | starttiming   | function |
| elapsedtime    | function | stoptiming    | function |
| enable         | boolean  | threshold     | number   |
| formatruntime  | function | timed         | function |
| hastiming      | function | tracefunction | function |

### status (basic tex)

list function setexitcode function

resetmessages function

## storage (context)

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

## streams (context)

| collect    | function | push        | function |
|------------|----------|-------------|----------|
| disable    | function | start       | function |
| enable     | function | stop        | function |
| flush      | function | synchronize | function |
| initialize | function |             |          |

# string (basic lua)

| autodouble     | function |                 | 4        |
|----------------|----------|-----------------|----------|
|                |          | quote           | function |
| autosingle     | function | quoted          | function |
| booleanstring  | function | rep             | function |
| byte           | function | replacenewlines | function |
| bytepairs      | function | reverse         | function |
| bytes          | function | split           | function |
| bytetable      | function | splitlines      | function |
| char           | function | splitup         | function |
| characterpairs | function | strip           | function |
| characters     | function | sub             | function |
| checkedsplit   | function | tformat         | function |
| collapsespaces | function | toHEX           | function |
| containsws     | function | toboolean       | function |
| count          | function | tobytes         | function |
| dump           | function | tocontext       | function |
| escapedpattern | function | todec           | function |
| explode        | function | todimen         | function |
| find           | function | tohex           | function |
| format         | function | tonodes         | function |
| formatter      | function | topattern       | function |
| formatters     | function | totable         | function |
| fullstrip      | function | toutf           | function |
| gmatch         | function | tracedchar      | function |
| gsub           | function | tracedchars     | table    |
| is_boolean     | function | unpack          | function |
| is_empty       | function | unquote         | function |
| itself         | function | unquoted        | function |
| len            | function | upper           | function |
| limit          | function | utfcharacter    | function |
| longtostring   | function | utfcharacters   | function |
| lower          | function | utflength       | function |
| match          | function | utfpadd         | function |
| nospaces       | function | utfpadding      | function |
| nspaces        | table    | utfvalue        | function |
| optionalquoted | function | utfvalues       | function |
| pack           | function | valid           | function |
| packsize       | function |                 |          |
| -              |          |                 |          |

### structures (context)

| atlocation       | function | F next               |          |  |
|------------------|----------|----------------------|----------|--|
| blocks           | table    | F prev               |          |  |
| D collected      |          | F previous           |          |  |
| F define         |          | 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           |          |  |
| bookmarks        | 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          |          | currentsectionnumber | function |  |
| S method         |          | descriptions         | table    |  |
| F overload       |          | documents            | table    |  |
| F place          |          | D data               |          |  |
| F register       |          | F initialize         |          |  |
| F setopened      |          | F preset             |          |  |
| F setup          |          | F reset              |          |  |
| counters         | table    | floats               | table    |  |
| F add            |          | formulas             | table    |  |
| F analyze        |          | helpers              | 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 last           |          | F title              |          |  |

| F touserdata     |       | F reordered                |  |
|------------------|-------|----------------------------|--|
| inserts          | table | T result                   |  |
| D data           |       | F savedlistnumber          |  |
| F define         |       | F savedlistprefixednumber  |  |
| F getdata        |       | F savedlisttitle           |  |
| F getlocation    |       | D sectionblocks            |  |
| F getname        |       | F sectionnumber            |  |
| F getnumber      |       | F size                     |  |
| F setlocation    |       | F title                    |  |
| F setup          |       | D tobesaved                |  |
| D stored         |       | F userdata                 |  |
| itemgroups       | table | F uservalue                |  |
| lists            | table | marks table                |  |
| F addto          |       | D data                     |  |
| F analyze        |       | F define                   |  |
| B autoreorder    |       | F exists                   |  |
| D cached         |       | F fetch                    |  |
| D collected      |       | F fetchallmarks            |  |
| F discard        |       | F fetched                  |  |
| F enhance        |       | F fetchonemark             |  |
| T enhancers      |       | F fetchtwomarks            |  |
| F filter         |       | F get                      |  |
| F formulanumber  |       | F number                   |  |
| F getresult      |       | F relate                   |  |
| F groupindex     |       | F reset                    |  |
| F hasnumberdata  |       | F set                      |  |
| F haspagedata    |       | F show                     |  |
| F hastitledata   |       | F synchronize              |  |
| F iscached       |       | F title                    |  |
| D kinds          |       | T tracers                  |  |
| F label          |       | F showtable                |  |
| F location       |       | <b>notes</b> table         |  |
| D names          |       | F check_spacing            |  |
| F number         |       | F checkpagechange          |  |
| D ordered        |       | F define                   |  |
| F page           |       | F doifonsamepageasprevious |  |
| F popnesting     |       | F get                      |  |
| F prefix         |       | F getdeltapage             |  |
| F prefixednumber |       | F getinternal              |  |
| F prefixedpage   |       | F getn                     |  |
| F process        |       | F getstate                 |  |
| D pushed         |       | F hascontent               |  |
| F pushnesting    |       | F internal                 |  |
| F realpage       |       | F internalid               |  |

| F listindex   |       | T data   |
|---|-------|--|
| T numbers   |       | F define   |
| F ordered   |       | F found  |
| F postpone  |       | F get  |
| F resetpostponed  |       | F filter   |
| F restore   |       | F filterdefault  |
| F save  |       | D filters  |
| F setstate  |       | D flaginternals  |
| D states  |       | F from   |
| F store   |       | D functions  |
| pages   | table | F get  |
| F allmarked   |       | F getcurrentmetadata   |
| F analyze   |       | F getcurrentprefixspec   |
| D collected   |       | F getinnermethod   |
| F in_body   |       | F getinternalcachedlistreference   |
| F is_odd  |       | F getinternallistreference   |
| F mark  |       | F getinternalreference   |
| F marked  |       | F getoutermethod   |
| N nofpages  |       | D handlers   |
| F number  |       | F identify   |
| F on_right  |       | F import   |
| F save  |       | F inject   |
| D tobesaved   |       | F injectcurrentset   |
| F toranges  |       | S innermethod  |
| references  | table | D internals  |
|   |       |  |
| F analyze   |       | F load   |
| F checkedfile   |       |  |
| F checkedfile F checkedfileorurl  |       | F load F loadpresets F mark  |
| F checkedfile F checkedfileorurl F checkedprogram   |       | F load<br>F loadpresets  |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage   |       | F load F loadpresets F mark S outermethod D pages  |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl  |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter   |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected  |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata   |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter  |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs  |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata  |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data   |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder   |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data F define  |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset  |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data F define F get  |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define   |       | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data F define F get F realpageofpage   |
| F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined   |       | 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   |
| 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 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 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                             |       | 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 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 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 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 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 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 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                       |

| D runners           |                   | F    | enhance             |       |
|---------------------|-------------------|------|---------------------|-------|
| F set               |                   | F    | extend              |       |
| F setandgetattribut | te                | F    | filter              |       |
| F setcomponent      |                   | F    | filtercollected     |       |
| F setinternalrefere | ence              | F    | finalize            |       |
| F setlinkmethod     |                   | F    | findinternal        |       |
| F setnextinternal   |                   | F    | flush               |       |
| F setnextorder      |                   | F    | get                 |       |
| F setreferencereal  | page              | F    | prepare             |       |
| D specials          |                   | F    | process             |       |
| F splitcomponent    |                   | F    | setmethod           |       |
| F splitprefix       |                   | F    | sort                |       |
| F splitreference    |                   | F    | store               |       |
| F synchronizepage   |                   | D    | tobesaved           |       |
| T testrunners       |                   | F    | unique              |       |
| Finner              |                   | F    | userdata            |       |
| F special           |                   | sect | ions                | table |
| F special operati   | .on               | F    | autodepth           |       |
| F special operati   | on with arguments | F    | cct                 |       |
| T testspecials      |                   | D    | collected           |       |
| F deltapage         |                   | F    | current             |       |
| Fi                  |                   | F    | currentblock        |       |
| F internal          |                   | F    | currentid           |       |
| F page              |                   | F    | currentlevel        |       |
| F realpage          |                   | F    | currentsectionindex |       |
| F section           |                   | F    | depthnumber         |       |
| F userpage          |                   | F    | finddata            |       |
| D tobereferred      |                   | F    | findnumber          |       |
| D tobesaved         |                   | F    | fullnumber          |       |
| D tracedpages       |                   | F    | getcurrentlevel     |       |
| T urls              |                   | F    | getlevel            |       |
| T data              |                   |      | getnumber           |       |
| F define            |                   | F    | internalreference   |       |
| F found             |                   | D    | levelmap            |       |
| F get               |                   | D    | levels              |       |
| F untex             |                   | F    | matchingtilldepth   |       |
| D usedinternals     |                   | F    | numberatdepth       |       |
| D usedviews         |                   | F    | numbers             |       |
| F valid             |                   |      | popblock            |       |
| registers           | table             |      | prefixedconverted   |       |
| F analyze           |                   |      | pushblock           |       |
| D collected         |                   |      | register            |       |
| F compare           |                   | D    | registered          |       |
| F define            |                   | F    | reportstructure     |       |

| F save                |       | F resetshown                |       |
|-----------------------|-------|-----------------------------|-------|
| T sectionblockdata    |       | F resetused                 |       |
| T bodypart            |       | F sort                      |       |
| S bookmark            |       | F synonym                   |       |
| F set                 |       | D tobesaved                 |       |
| F setblock            |       | tags                        | table |
| F setchecker          |       | F current                   |       |
| F setentry            |       | F elementtag                |       |
| F setinitialblock     |       | F finishexport              |       |
| F setlevel            |       | F getextradata              |       |
| F setnumber           |       | F getid                     |       |
| F showstructure       |       | F getmetadata               |       |
| F structuredata       |       | F handler                   |       |
| F title               |       | F initializeexport          |       |
| D tobesaved           |       | D labels                    |       |
| F typesetnumber       |       | F last                      |       |
| F userdata            |       | F lastinchain               |       |
| B verbose             |       | F locatedtag                |       |
| sets                  | table | T patterns                  |       |
| F define              |       | U splitter                  |       |
| F get                 |       | D properties                |       |
| F getall              |       | F registerextradata         |       |
| D setlist             |       | F registermetadata          |       |
| specials              | table | F restart                   |       |
| D collected           |       | F setaspect                 |       |
| F retrieve            |       | F setattributehash          |       |
| F store               |       | F setcombination            |       |
| D tobesaved           | +ahla | F setconstruct              |       |
| synonyms              | table | F setfigure                 |       |
| F analyzed            |       | F setfloat                  |       |
| D collected           |       | F setformulacontent         |       |
| F compare<br>F define |       | F sethighlight<br>F setitem |       |
| F filter              |       | F setitemgroup              |       |
| F finalize            |       | F setlist                   |       |
| F flush               |       | F setnotation               |       |
| Fisshown              |       | F setnotationsymbol         |       |
| F isused              |       | F setproperty               |       |
| F meaning             |       | F setpublication            |       |
| F prepare             |       | F setregister               |       |
| F process             |       | F setsorting                |       |
| F register            |       | F setsynonym                |       |
| F registershown       |       | F settablecell              |       |
| •                     |       |                             |       |

F registerused

F settabulatecell

F settagdelimitedsymbol
F settagsubsentencesymbol
F setupexport

F setuserproperties
D specifications

F start

F stop F strip D taglist

T usewithcare

T images

### table (basic lua)

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

## tex (basic tex)

| attribute                | table      | getdimen            | function            |
|--------------------------|------------|---------------------|---------------------|
| badness                  | function   | getglue             | function            |
| box                      | table      | getglyphdata        | function            |
| boxresources             | table      | getlccode           | function            |
| F getbox                 |            | getlist             | function            |
| F getdimensions          |            | getlocallevel       | function            |
| F save                   |            | getmath             | function            |
| F use                    |            | getmathcode         | function            |
| catcode                  | table      | getmathcodes        | function            |
| conditionals             | data table | getmuglue           | function            |
| constants                | data table | getmuskip           | function            |
| count                    | table      | getnest             | function            |
| cprint                   | function   | getpagestate        | function            |
| ctdcatcodes              | number     | getsfcode           | function            |
| ctxcatcodes              | number     | getskip             | function            |
| definefont               | function   | gettoks             | function            |
| delcode                  | table      | getuccode           | function            |
| dimen                    | table      | glue                | table               |
| directives               | data table | hashtokens          | function            |
| enableprimitives         | function   | ifs                 | data table          |
| error                    | function   | inicatcodes         | number              |
| extraprimitives          | function   | init_rand           | function            |
| finish                   | function   | isattribute         | function            |
| fontidentifier           | function   | isbox               | function            |
| fontname                 | function   | iscount             | overloaded function |
| force_synctex_line       | function   | isdefined           | function            |
| force_synctex_tag        | function   | isdimen             | overloaded function |
| forcehmode               | function   | isglue              | function            |
| fprint                   | function   | ismuglue            | function            |
| get                      | function   | ismuskip            | overloaded function |
| get_synctex_line         | function   | isskip              | overloaded function |
| get_synctex_mode         | function   | istoken             | function            |
| get_synctex_tag          | function   | istoks              | function            |
| getattribute             | function   | lccode              | table               |
| getbox                   | function   | linebreak           | function            |
| getboxresourcebox        | function   | lists               | table               |
| getboxresourcedimensions | function   | lua_math_random     | function            |
| getcatcode               | function   | lua_math_randomseed | function            |
| getcount                 | function   | luacatcodes         | number              |
| getdelcode               | function   | magicconstants      | table               |
| getdelcodes              | function   | N maxdimen          |                     |

N runnina N trueinch mathcode table data table modes muglue table muskip table table nest nilcatcodes number normal rand function notcatcodes number number function primitives function print function prtcatcodes number resetparagraph function romannumeral function round function run function runtoks function saveboxresource function function scale scantoks function function set function set synctex line function set synctex mode set\_synctex\_no\_files function set synctex tag function setattribute function setbox function setcatcode function setcount function setdelcode function setdimen function setglue function setglyphdata function setlccode function

setlist setmath setmathcode setmualue setmuskip setnest setsfcode setskin settoks setuccode sfcode shipout show context skip sp splitbox sprint systemmodes takebox texcatcodes toks tpacatcodes tpbcatcodes tprint trackers triggerbuildpage txtcatcodes type uccode uniform rand uniformdeviate uprint useboxresource vrbcatcodes write

function table function function table function function function data table function number table number number function data table function number function table function function function function number function

## texconfig (basic tex)

| error_line              | number              | max_in_open                | number            |
|-------------------------|---------------------|----------------------------|-------------------|
| expand_depth            | number              | max_print_line             | number            |
| <pre>fix_mem_init</pre> | number              | max_strings                | number            |
| formatname              | string              | nest_size                  | number            |
| function_size           | number              | param_size                 | number            |
| half_error_line         | number              | <pre>properties_size</pre> | number            |
| hash_extra              | number              | save_size                  | number            |
| init                    | overloaded function | shell_escape               | string            |
| kpse_init               | boolean             | stack_size                 | overloaded number |

### texio (basic tex)

### token (basic tex)

| biggest_char          | function |
|-----------------------|----------|
| command_id            | function |
| commands              | function |
| create                | function |
| expand                | function |
| <pre>get_active</pre> | function |
| get_cmdname           | function |
| get_command           | function |
| get_csname            | function |
| get_expandable        | function |
| get_id                | function |
| get_index             | function |
| get_macro             | function |
| get_meaning           | function |
| get_mode              | function |
| get_next              | function |
| get_protected         | function |
| get_tok               | function |
| is_defined            | function |
| is_token              | function |
| new                   | function |

| put_next        | function |
|-----------------|----------|
| scan_argument   | function |
| scan_code       | function |
| scan_csname     | function |
| scan_dimen      | function |
| scan_float      | function |
| scan_glue       | function |
| scan_int        | function |
| scan_keyword    | function |
| scan_keyword_cs | function |
| scan_list       | function |
| scan_real       | function |
| scan_string     | function |
| scan_token      | function |
| scan_toks       | function |
| scan_word       | function |
| set_char        | function |
| set_lua         | function |
| set_macro       | function |
| type            | function |

### tokens (context)

| astal | ble       | function   |  |     | U loadfou | undtypescriptfile |
|-------|-----------|------------|--|-----|-----------|-------------------|
| bgrou | ир        | userdata   |  |     | U resetct | txscanner         |
| bits  |           | table      |  |     | U rlap    |                   |
| N     | active    |            |  |     | U scratch | ncounter          |
| N     | alignment |            |  |     | U scratch | ndimen            |
| N     | begingrou | р          |  |     | U scratch | nmuskip           |
| N     | character |            |  |     | U scratch | nskip             |
| N     | close     |            |  |     | U scratch | ntoken            |
| N     | comment   |            |  |     | U secondo | oftwoarguments    |
| N     | endgroup  |            |  |     | U setfals | sevalue           |
| N     | endofline | !          |  |     | U setsect | tionblock         |
| N     | escape    |            |  |     | U setupsy | /stem             |
| N     | ignore    |            |  |     | U startco | olumns            |
| N     | invalid   |            |  |     | U startta | abulate           |
| N     | letter    |            |  |     | U startti | itle              |
| N     | mathshift |            |  |     | U startxt | title             |
| N     | open      |            |  |     | U stopcol | Lumns             |
| N     | other     |            |  |     | U stoptab | oulate            |
| N     | parameter |            |  |     | U stoptit | tle               |
| N     | space     |            |  |     | U stopxti | itle              |
| N     | subscript |            |  |     | U texsetu | ıb                |
| N     | superscri | pt         |  |     | U xmlw    |                   |
| N     | whitespac | е          |  | co  | llector   | <b>s</b> table    |
| cache | е         | table      |  |     | T data    |                   |
| U     | NC        |            |  |     | F default | twords            |
| U     | NR        |            |  |     | F dowith  | vords             |
| U     | bf        |            |  |     | F flush   |                   |
| U     | color     |            |  |     | F install | L                 |
| U     | colordefa | lc         |  |     | F registe | er                |
| U     | colordeff | lc         |  |     | T registe | ered              |
| U     | colordeff | lt         |  |     | F show    |                   |
| U     | colordefr | lt         |  |     | F test    |                   |
| U     | dofinishr | eference   |  | COI | mmands    | data table        |
| U     | dostartte | xt         |  |     | mpile     | function          |
| U     | finishjob | 1          |  | COI | nstant    | function          |
| U     | firstofon | eargument  |  | COI | nverter   | <b>s</b> table    |
|       |           | oarguments |  |     | S toboole |                   |
|       | gobbleone | argument   |  |     | S todimer | 1                 |
|       | goto      |            |  |     | S toglue  |                   |
| U     | iftrue    |            |  |     | S tonumbe | er                |
| U     | input     |            |  |     | S tostri  | ng                |

|             | function |                       |       |  |
|-------------|----------|-----------------------|-------|--|
| create      | function | F list                |       |  |
| defined     | function | F lxmlid              |       |  |
| egroup      | userdata | F number              |       |  |
| getters     | table    | F real                |       |  |
| F box       |          | F scanclose           |       |  |
| F count     |          | F scanopen            |       |  |
| F dimen     |          | F skip                |       |  |
| F glue      |          | F string              |       |  |
| F macro     |          | F table               |       |  |
| F meaning   |          | F token               |       |  |
| F skip      |          | F tokens              |       |  |
| F token     |          | F toks                |       |  |
| hbox        | userdata | F verbatim            |       |  |
| isdefined   | function | F whd                 |       |  |
| istoken     | function | F word                |       |  |
| letter      | function |                       | table |  |
| letters     | function | F box                 |       |  |
| new         | function | F char                |       |  |
| other       | function | F count               |       |  |
| pickup      | function | F dimen               |       |  |
| presets     | table    | F glue                |       |  |
| T 1 string  |          | F lua                 |       |  |
| T 2 strings |          | F macro               |       |  |
| T 3 strings |          | F skip                |       |  |
| T 4 strings |          | shortcuts             | table |  |
| T 5 strings |          | T bits                |       |  |
| T 6 strings |          | N active              |       |  |
| T 7 strings |          | N alignmen            | t     |  |
| T 8 strings |          | N begingro            | up    |  |
| printlist   | function | N characte            | r     |  |
| scanners    | table    | N close               |       |  |
| F argument  |          | N comment             |       |  |
| F boolean   |          | N endgroup            |       |  |
| F code      |          | N endoflin            | е     |  |
| F condition | al       | N escape              |       |  |
| F count     |          | N ignore              |       |  |
| F csname    |          | N invalid             |       |  |
| F dimen     |          | N letter              |       |  |
| F dimension |          | N mathshif            | t     |  |
| F float     |          | N open                |       |  |
| F glue      |          | N other               |       |  |
| F integer   |          | N paramete            | r     |  |
| F keyword   |          |                       |       |  |
| i keyword   |          | N space               |       |  |
| F keywordcs |          | N space<br>N subscrip | t     |  |

| N superscript     | F verbatim                |
|-------------------|---------------------------|
| N whitespace      | F whd                     |
| N close           | F word                    |
| F inspect         | F scannumber              |
| N open            | F scanopen                |
| F report          | F scanstring              |
| F scanargument    | F scantable               |
| F scanboolean     | F scanverbatim            |
| F scanclose       | F scanword                |
| F scancode        | F toboolean               |
| F scanconditional | F todimen                 |
| F scancsname      | T tokens                  |
| F scandimen       | F astable                 |
| F scandimension   | U bgroup                  |
| F scaninteger     | T cache                   |
| F scankeyword     | U NC                      |
| F scankeywordcs   | U NR                      |
| F scanlist        | U bf                      |
| T scanners        | U color                   |
| F argument        | U colordefalc             |
| F boolean         | U colordefflc             |
| F code            | U colordefflt             |
| F conditional     | U colordefrlt             |
| F count           | U dofinishreference       |
| F csname          | U dostarttext             |
| F dimen           | U finishjob               |
| F dimension       | U firstofoneargument      |
| F float           | U firstoftwoarguments     |
| F glue            | U gobbleoneargument       |
| F integer         | U goto                    |
| F keyword         | U iftrue                  |
| F keywordcs       | U input                   |
| F list            | U loadfoundtypescriptfile |
| F lxmlid          | U resetctxscanner         |
| F number          | U rlap                    |
| F real            | U scratchcounter          |
| F scanclose       | U scratchdimen            |
| F scanopen        | U scratchmuskip           |
| F skip            | U scratchskip             |
| F string          | U scratchtoken            |
| F table           | U secondoftwoarguments    |
| F token           | U setfalsevalue           |
| F tokens          | U setsectionblock         |
| F toks            | U setupsystem             |
|                   |                           |

| U startcolumns  | F new             |
|-----------------|-------------------|
| U starttabulate | F other           |
| U starttitle    | F pickup          |
| U startxtitle   | T presets         |
| U stopcolumns   | F printlist       |
| U stoptabulate  | T setters         |
| U stoptitle     | F box             |
| U stopxtitle    | F char            |
| U texsetup      | F count           |
| U xmlw          | F dimen           |
| T collectors    | F glue            |
| F defaultwords  | F lua             |
| F dowithwords   | F macro           |
| F flush         | F skip            |
| F install       | T shortcuts       |
| F register      | N close           |
| F show          | F inspect         |
| F test          | N open            |
| D commands      | F report          |
| F compile       | F scanargument    |
| F constant      | F scanboolean     |
| T converters    | F scanclose       |
| S toboolean     | F scancode        |
| S todimen       | F scanconditional |
| S toglue        | F scancsname      |
| S tonumber      | F scandimen       |
| S tostring      | F scandimension   |
| F create        | F scaninteger     |
| F defined       | F scankeyword     |
| U egroup        | F scankeywordcs   |
| T getters       | F scanlist        |
| F box           | F scannumber      |
| F count         | F scanopen        |
| F dimen         | F scanstring      |
| F glue          | F scantable       |
| F macro         | F scanverbatim    |
| F meaning       | F scanword        |
| F skip          | F toboolean       |
| F token         | F todimen         |
| U hbox          | F tonumber        |
| F isdefined     | F tostring        |
| F istoken       | U vbox            |
| F letter        | U vtop            |
| F letters       | F tonumber        |
|                 |                   |

F tostring vtop userdata

**vbox** userdata

#### tracers (context)

count function
cs function
dimen function
knownlist function
lists table

T context
T internals

T scratch

name function

primitive function
printerror function
printwarning function
showlines function
strings table

S undefined

toks function
type function

## trackers (context)

| data           | data table | name     | string   |
|----------------|------------|----------|----------|
| default        | function   | register | function |
| disable        | function   | report   | function |
| done           | table      | reset    | function |
| dumphashtofile | function   | savehash | function |
| enable         | function   | show     | function |
| list           | function   | value    | function |

# typesetters (context)

| alignments       | table | T handlers       |       |
|------------------|-------|------------------|-------|
| F handler        |       | F installhandler |       |
| F set            |       | F processmath    |       |
| breakpoints      | table | F set            |       |
| F define         |       | F setcolor       |       |
| F handler        |       | F setmath        |       |
| D mapping        |       | F tomode         |       |
| T methods        |       | firstlines       | table |
| T numbers        |       | T actions        |       |
| F set            |       | F default        |       |
| F setreplacement |       | F line           |       |
| cases            | table | F word           |       |
| T actions        |       | F handler        |       |
| F handler        |       | F set            |       |
| F register       |       | fontkerns        | table |
| F set            |       | F handler        |       |
| characteralign   | table | initials         | table |
| F handler        |       | T actions        |       |
| F resetcharacter | align | F default        |       |
| F setcharacteral | ign   | F addanchortolin | е     |
| characters       | table | F addtoline      |       |
| F handler        |       | F calculatedelta |       |
| T methods        |       | F checkline      |       |
| F replacenbsp    |       | F handler        |       |
| F replacenbspace | s     | F moveinline     |       |
| checkers         | table | F normalize      |       |
| F handler        |       | F set            |       |
| F reset          |       | injectors        | table |
| F set            |       | F check          |       |
| cleaners         | table | T list           |       |
| F handler        |       | F mark           |       |
| F set            |       | F reset          |       |
| digits           | table | F set            |       |
| T actions        |       | F show           |       |
| F handler        |       | italics          | table |
| F set            |       | F enablemath     |       |
| directions       | table | F enabletext     |       |
| F getfences      |       | F forcevariant   |       |
| F getglobal      |       | F handler        |       |
| F getmethod      |       | F reset          |       |
| F handler        |       | F set            |       |
|                  |       |                  |       |

| kerns                         | table    | F apply                     |             |
|-------------------------------|----------|-----------------------------|-------------|
| D factors                     | cubic    | F register                  |             |
| F handler                     |          | F reset                     |             |
| F keepligature                |          | F split                     |             |
| , -                           |          | F startapply                |             |
| D mapping<br>F set            |          | F startappty<br>F stopapply |             |
| manipulators                  | table    | F stripped                  |             |
| •                             | table    | F tostring                  |             |
| F apply                       | ****     | rubies                      | table       |
| F applyspecifica<br>T methods | 111011   | F attach                    | table       |
| F Word                        |          | F attach                    |             |
|                               |          |                             | function    |
| F Words                       |          | showsuspects                | table       |
| F abbreviatedj                |          | spacings                    | table       |
| F expandedjour                | nal      | F define                    |             |
| F lowercase                   |          | F handler                   |             |
| F stripperiod                 |          | D mapping                   |             |
| F uppercase                   |          | T numbers                   |             |
| T patterns                    |          | T frenchpunct               |             |
| U list                        |          | T characters                | 5           |
| U pair                        |          | S name                      |             |
| F splitspecifica              |          | N number                    |             |
| margins                       | table    | F reset                     |             |
| F finalhandler                |          | F set                       |             |
| F globalhandler               |          | F setup                     |             |
| F localhandler                |          | wrappers                    | table       |
| F save                        |          | F handler                   |             |
| marksuspects                  | function | xtables                     | table       |
| paragraphs                    | table    | F cleanup                   |             |
| F addanchortolin              | ne       | F construct                 |             |
| F addtoline                   |          | F create                    |             |
| F calculatedelta              |          | F finish_row                |             |
| F checkline                   |          | F flush                     |             |
| F handler                     |          | F initialize_co             |             |
| F moveinline                  |          | F initialize_re             |             |
| F normalize                   |          | F initialize_re             | eflow_width |
| F set                         |          | F next_row                  |             |
| periodkerns                   | table    | F reflow_height             |             |
| D factors                     |          | F reflow_width              |             |
| F handler                     |          | F set_construct             |             |
| D mapping                     |          | F set_reflow_he             | eight       |
| F set                         |          | F set_reflow_wi             | .dth        |
| processors                    | table    |                             |             |

## updaters (context)

apply function
register function

## url (context)

| addscheme | function | hashed      | function |
|-----------|----------|-------------|----------|
| barepath  | function | hasscheme   | function |
| construct | function | query       | function |
| decode    | function | split       | function |
| encode    | function | toquery     | function |
| escape    | function | unescape    | function |
| filename  | function | unescapeget | function |

# utf8 (context)

| char        | function | codes  | function |
|-------------|----------|--------|----------|
| charpattern | string   | len    | function |
| codepoint   | function | offset | function |

## utilities (context)

| debugger  | table                                 |                                 | size  |       |
|---|---------------------------------------|---------------------------------|---|-------|
| F disable   |                                       |                                 | skip  |       |
| F enable  |                                       | F                               | skiplong  |       |
| F savestats   |                                       | F                               | skipposition  |       |
| F showstats   |                                       | F                               | skipshort   |       |
| F showtraceback   |                                       | F                               | writebyte   |       |
| files   | table                                 | F                               | writecardinal2  |       |
| F close   |                                       | F                               | writecardinal2le  |       |
| F getposition   |                                       | F                               | writecardinal4  |       |
| F getsize   |                                       | F                               | writecardinal4le  |       |
| F look  |                                       | F                               | writestring   |       |
| F open  |                                       | form                            | atters  | table |
| F read2dot14  |                                       | F                               | formatcolumns   |       |
| F readbyte  |                                       | F                               | list  |       |
| F readbytes   |                                       | F                               | stripzeros  |       |
| F readbytetable   |                                       | garb                            | agecollector  | table |
| F readcardinal  |                                       | F                               | check   |       |
| F readcardinal1   |                                       | N                               | criterium   |       |
| F readcardinal2   |                                       | В                               | enabled   |       |
| F readcardinal2le   |                                       | lua                             |   | table |
| F readcardinal3   |                                       | В                               | alwaysstripcode   |       |
| F readcardinal3le   |                                       | F                               | checkmemory   |       |
| F readcardinal4   |                                       | F                               | compile   |       |
| F readcardinal4le   |                                       |                                 | 1 4 - 41 4 -  |       |
| 1 Teddedidinatite   |                                       | F                               | loadedluacode   |       |
| F readcardinaltable   | 9                                     |                                 | loadstring  |       |
|   | 9                                     | F                               |   |       |
| F readcardinaltable   | 9                                     | F<br>F                          | loadstring  |       |
| F readcardinaltable   | e e e e e e e e e e e e e e e e e e e | F<br>F<br>N                     | loadstring<br>loadstripped  |       |
| F readcardinaltable<br>F readchar<br>F readfixed2   | 2                                     | F<br>F<br>N                     | loadstring<br>loadstripped<br>nofstrippedbytes  |       |
| F readcardinaltable F readchar F readfixed2 F readfixed4  | 2                                     | F<br>F<br>N<br>N<br>F           | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks   |       |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger  | 2                                     | F<br>N<br>N<br>F<br>B           | loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer  |       |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1   | <u>a</u>                              | F<br>F<br>N<br>F<br>B           | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode   | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2  | 2                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks   | 9     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger2le   | a                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks<br>strippedloadstrin  | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger2 F readinteger3  | 2                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks<br>strippedloadstrin<br>suffixes                            | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger2le F readinteger3 F readinteger3le   |                                       | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks<br>strippedloadstrin<br>suffixes<br>S lua                   | g     |
| F readcardinaltable F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger2le F readinteger3 F readinteger3le F readinteger4   |                                       | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks<br>strippedloadstrin<br>suffixes<br>S lua<br>S luc          | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger3 F readinteger3le F readinteger4 F readinteger4  | a                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring<br>loadstripped<br>nofstrippedbytes<br>nofstrippedchunks<br>registerfinalizer<br>stripcode<br>strippedchunks<br>strippedloadstrin<br>suffixes<br>S lua<br>S luc<br>S lui | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger3 F readinteger3 F readinteger4 F readinteger4 F readinteger4   | 2                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring loadstripped nofstrippedbytes nofstrippedchunks registerfinalizer stripcode strippedchunks strippedchunks strippedloadstrin suffixes S lua S luc S lui S luj             | g     |
| F readcardinaltable F readchar F readfixed2 F readfixed4 F readinteger F readinteger1 F readinteger2 F readinteger3 F readinteger3le F readinteger4 F readinteger4 F readinteger4 F readinteger4le F readintegertable F readingenedbyte | 2                                     | F<br>F<br>N<br>N<br>F<br>B<br>T | loadstring loadstripped nofstrippedbytes nofstrippedchunks registerfinalizer stripcode strippedchunks strippedloadstrin suffixes S lua S luc S lui S luj S luy                      | g     |

| S t     | ис   | B latin-modern-condensed-designsize   |
|---------|--|---|
| packers | . <u></u>  | B latin-modern-light-condensed  |
| F has   | -  | B modern-condensed  |
| F new   |  | B modern-light-condensed  |
| F pac   |  | T modern-light,latin-modern-light-designsize,latin-mo                                     |
|         | nplehashed   | B latin-modern-light  |
| Fstr    |  | B latin-modern-light-designsize   |
| F unp   |  | B modern-light  |
| N ver   |  | T modern-mono, modern-base-mono   |
| parsers | s table  | B modern-base-mono  |
| F add   | I_settings_to_array                                | B modern-mono   |
|         | guments_to_table                                   | T modern-variable, latin-modern-variable-designsize, la                                   |
|         | ray_to_string                                      | B latin-modern-variable   |
|         | vsplitter  | B latin-modern-variable-designsize  |
| F get   | parameters   | B modern-variable   |
| F gro   | pupedsplitat                                       | T modernvariable, modern-variable   |
|         | sh_to_string                                       | B modern-variable   |
| T has   | shes   | B modernvariable  |
| T s     | ettings_to_set                                     | T modernvariablelight,modern-variable-light   |
| Т       | min,max,fit,broad,auto                             | B modern-variable-light   |
|         | B auto   | B modernvariablelight   |
|         | B broad  | T serif,sans,mono   |
|         | B fit  | B mono  |
|         | B max  | B sans  |
|         | B min  | B serif   |
| Т       | modern,latin-modern                                | T text,hidden,paper,page,leftpage,rightpage   |
|         | B latin-modern                                     | B hidden  |
|         | B modern   | B leftpage  |
| Т       | modern, latin-modern, modern-variable, latin-moder | n-variable,modelepangecondensed,latin-modern-condensed                                    |
|         | B latin-modern                                     | B paper   |
|         | B latin-modern-condensed                           | B rightpage   |
|         | B latin-modern-variable                            | B text  |
|         | B modern   | F iterator  |
|         | B modern-condensed                                 | F keq_to_hash   |
|         | B modern-variable                                  | F listitem  |
| Т       | modern,latin-modern-designsize,latin-modern        | F make_settings_to_hash_pattern   |
|         | B latin-modern                                     | F mergehashes   |
|         | B latin-modern-designsize                          | F options_to_array  |
|         | B modern   | F options_to_hash   |
| T       | modern, modern-base                                | T patterns  |
|         | B modern   | U settings_to_array   |
|         | B modern-base                                      | U settings_to_hash_a  |
| Т       | modern-condensed, latin-modern-condensed-designs   | ize,latin Um <b>odetrhingos<u>n</u>dæn_shæds/m_d</b> udern-light-condensed,latin-modern-l |
|         | B latin-modern-condensed                           | U settings_to_hash_c  |

| U settings_to_ha   | ach d             | F prependaction  |       |
|--|-------------------|--|-------|
| U unittotex  | u311_u            | F prependaction  |       |
| F process_strippe  | d settings        | F removeaction   |       |
| F rfc4180splitter  | _                 | F replaceaction  |       |
| F runtime  |                   | F setkind  |       |
| F settings_to_arr  | av                | F tostring   |       |
| F settings_to_arr  |                   | setters  | table |
| F settings_to_arr  |                   | F disable  | cabic |
| F settings to has  |                   | F enable   |       |
| F settings_to_has  |                   | F initialize   |       |
| F settings_to_has  |                   | Flist  |       |
| F settings_to_has  | _                 | F new  |       |
| F settings_to_num  | _                 | F register   |       |
| F settings_to_set  |                   | F report   |       |
| F simple_hash_to_  |                   | F reset  |       |
| F splitmethod  | ,5 t. 1.1.g       | F show   |       |
| F splitthousands   |                   | stacker  | table |
| F stepper  |                   | F new  |       |
| F stripped_settin  | gs to array       | storage  | table |
| F totime   |                   | F allocate   |       |
| F unittotex  |                   | F checked  |       |
| F unittoxml  |                   | F mark   |       |
| randomizer   | table             | F marked   |       |
| F get  |                   | F setinitializer   |       |
| F getnumber  |                   | F sparse   |       |
| i ge ciidiibei   |                   |  |       |
| F getseed  |                   | streams  | table |
| -  |                   | ·  | table |
| F getseed  |                   | streams  | table |
| F getseed<br>F popseed   |                   | streams<br>F close   | table |
| F getseed<br>F popseed<br>F pushseed   |                   | streams  F close  F getposition  | table |
| F getseed<br>F popseed<br>F pushseed<br>F reuseseed  |                   | streams F close F getposition F getstring  | table |
| F getseed F popseed F pushseed F reuseseed F setseed   | function          | streams  F close  F getposition  F getstring  F look   | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi  | function<br>table | streams  F close  F getposition  F getstring  F look  F open   | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report   |                   | streams  F close F getposition F getstring F look F open F openstring  | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers  |                   | F close F getposition F getstring F look F open F openstring F read2dot14  | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction   |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4  | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup   |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte   | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup F compile   |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte F readbytes   | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup F compile F disableaction                               |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte F readbytes F readbytetable                           | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup F compile F disableaction F disablegroup                |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte F readbytes F readbytetable F readcardinal            | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup F compile F disableaction F disablegroup F enableaction |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte F readbyte F readbytes F readcardinal F readcardinal  | table |
| F getseed F popseed F pushseed F reuseseed F setseed F setseedi report sequencers F appendaction F appendgroup F compile F disableaction F disablegroup F enablegroup  |                   | F close F getposition F getstring F look F open F openstring F read2dot14 F read2dot4 F readbyte F readbyte F readbytes F readcardinal F readcardinal2 | table |

F readcardinal4

F nodeprocessor

F readcardinal4le F nice F readcardinaltable T striplinepatterns U collapse F readchar F readfixed2 U prune F readfixed4 U prune and collapse F readinteger U prune and no empty F readinteger1 U prune and to space F readinteger2 U retain F readinteger2le U retain and collapse F readinteger3 U retain and no empty F readinteger3le F striplines F readinteger4 F striplong F readinteger4le F tabtospace F readintegertable T tracers tables table F readsignedbyte F readstring F accesstable F setposition F definedtable F definetable F size F encapsulate F skip F skipbytes F insertaftervalue F skiplong F insertbeforevalue F skipshort F migratetable strings table F removevalue F collapse F replacevalue F collapsecrlf templates table F load T formatters F add F replace F new F replacer F newcollector F resolve

F newrepeater

# vf (context)

| char   | function | pdf     | function |
|--------|----------|---------|----------|
| down   | function | рор     | function |
| fontid | function | push    | function |
| image  | function | right   | function |
| node   | function | rule    | function |
| nop    | function | special | function |
|        |          |         |          |

## visualizers (context)

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

## xml (context)

| addentitiesdoctype          | function            | F padding                 |                     |
|-----------------------------|---------------------|---------------------------|---------------------|
| addspecialcode              | function            | F stylevalue              |                     |
| after                       | function            | F todimension             |                     |
| all                         | function            | defaulthandlers           | table               |
| applylpath                  | function            | D file                    |                     |
| applyselector               | function            | D parsedxml               |                     |
| assign                      | function            | D string                  |                     |
| attribute                   | function            | D tex                     |                     |
| badinclusions               | function            | D texline                 |                     |
| before                      | function            | D texspace                |                     |
| body                        | function            | D verbose                 |                     |
| builtinentities             | table               | defaultprotocol           | string              |
| B amp                       |                     | delete                    | function            |
| B apos                      |                     | <del>delete_element</del> | <del>function</del> |
| B gt                        |                     | despecialized             | function            |
| B lt                        |                     | each                      | function            |
| B quot                      |                     | <del>each_element</del>   | <del>function</del> |
| cdata                       | function            | elements                  | function            |
| cdatatotext                 | function            | elementtocdata            | function            |
| checkbom                    | function            | empty                     | function            |
| checkerror                  | function            | entities                  | data table          |
| checknamespace              | function            | erase                     | function            |
| checkns                     | function            | errorhandler              | function            |
| cleansed                    | function            | escaped                   | function            |
| collect                     | function            | expressions               | table               |
| <pre>collect_elements</pre> | <del>function</del> | F boolean                 |                     |
| collect_tags                | function            | F child                   |                     |
| collect_texts               | <del>function</del> | F contains                |                     |
| collected                   | function            | F count                   |                     |
| collecttexts                | function            | F error                   |                     |
| content                     | function            | F find                    |                     |
| convert                     | function            | F hasclass                |                     |
| сору                        | function            | F idstring                |                     |
| count                       | function            | F lower                   |                     |
| cprint                      | function            | F name                    |                     |
| CSS                         | table               | F number                  |                     |
| F applyselector             |                     | F oneof                   |                     |
| F colorspecification        |                     | F print                   |                     |
| F dimension                 |                     | F quit                    |                     |
| F fontspecification         |                     | F tag                     |                     |
| F mappedstylevalue          |                     | F text                    |                     |
|                             |                     |                           |                     |

| F undefined      |          | F chainattribute                 |          |
|------------------|----------|----------------------------------|----------|
| F upper          |          | F count                          |          |
| fillin           | function | F default                        |          |
| filter           | function | F elements                       |          |
| finalizers       | table    | F empty                          |          |
| F paragraphs     |          | F first                          |          |
| T tex            |          | F function                       |          |
| F all            |          | F index                          |          |
| F attribute      |          | F last                           |          |
| F chainattribute |          | F lowerall                       |          |
| F chainpath      |          | F match                          |          |
| F command        |          | F name                           |          |
| F concat         |          | F position                       |          |
| F concatrange    |          | F reverse                        |          |
| F context        |          | F table                          |          |
| F count          |          | F tag                            |          |
| F ctxtext        |          | F tags                           |          |
| F default        |          | F text                           |          |
| F first          |          | F texts                          |          |
| F function       |          | F upperall                       |          |
| F index          |          | first                            | function |
| F last           |          | found                            | function |
| F lettered       |          | functions                        | table    |
| F lower          |          | F classes                        |          |
| F lowerall       |          | F hasclass                       |          |
| F match          |          | getbuffer                        | function |
| F name           |          | gethandlers                      | function |
| F param          |          | gethandlersfunction              | function |
| F parameter      |          | helpers                          | table    |
| F position       |          | F recursetext                    | _        |
| F reverse        |          | include                          | function |
| F stripped       |          | inclusion                        | function |
| F tag            |          | inclusions                       | function |
| F tags           |          | index                            | function |
| F text           |          | inheritedconvert                 | function |
| F upper          |          | inject                           | function |
| F upperall       |          | inject_element                   | function |
| F xml            |          | <u>inject_element_after</u>      | function |
| T xml            |          | <pre>inject_element_before</pre> | function |
| Fall             |          | injectafter                      | function |
| Fatt             |          | injectbefore                     | function |
| F attribute      |          | insert                           | function |
| F attributes     |          | insert_element                   | function |
| F cdata          |          | insert_element_after             | function |

| <pre>insert_element_before</pre> | function             | registerns                  | function             |
|----------------------------------|----------------------|-----------------------------|----------------------|
| insertafter                      | function             | reindex                     | function             |
| insertbefore                     | function             | remap name                  | function             |
| insertcdata                      | function             | remap_namespace             | function             |
| insertcomment                    | function             | remap_tag                   | function             |
| inspect                          | function             | remap_tag remapname         | function             |
| is_valid                         | function             | remaphamespace              | function             |
| kind                             | function             | remaphamespace              | function             |
| last                             | function             | rename                      | function             |
| lastmatch                        | function             | renamespace                 | function             |
| load                             | function             | reparsedentitylpeg          | userdata             |
| lpath                            | function             | replace                     | function             |
| •                                | function             | •                           | function             |
| lpathcached                      |                      | replace_element             |                      |
| lpathcalls<br>lshow              | function<br>function | resetinjectors<br>resolvens | function<br>function |
| makestandalone                   |                      | resolvens                   |                      |
| makestandalone<br>match          | function             |                             | function             |
|                                  | function             | save                        | function             |
| name                             | function             | selection                   | function             |
| newhandlers                      | function             | separate                    | function             |
| nodesettostring                  | function             | serialize                   | function             |
| originalload                     | function             | serializetotext             | function             |
| package                          | function             | setcdata                    | function             |
| parent                           | function             | setcomment                  | function             |
| parsedentitylpeg                 | userdata             | sethandlersfunction         | function             |
| pihandlers                       | table                | setinjectors                | function             |
| F injector                       |                      | setproperty                 | function             |
| F tex                            |                      | settings                    | function             |
| placeholders                     | table                | specialcodes                | table                |
| F unknown_any_entity             |                      | S "                         |                      |
| F unknown_dec_entity             |                      | S #                         |                      |
| F unknown_hex_entity             |                      | S \$                        |                      |
| popmatch                         | function             | S %                         |                      |
| position                         | function             | S &                         |                      |
| privatecodes                     | table                | S '                         |                      |
| privatetoken                     | function             | S <                         |                      |
| process                          | function             | S >                         |                      |
| process_attributes               | function             | S \                         |                      |
| <del>process_elements</del>      | <del>function</del>  | S {                         |                      |
| processattributes                | function             | S                           |                      |
| profiled                         | table                | S }                         |                      |
| pure                             | function             | S ~                         |                      |
| pushmatch                        | function             | specialhandler              | table                |
| raw                              | function             | sprint                      | function             |
| registerentity                   | function             | string                      | function             |
|                                  |                      |                             |                      |

| strip              | function            | toxml               | function |
|--------------------|---------------------|---------------------|----------|
| strip_whitespace   | <del>function</del> | tprint              | function |
| stripelement       | function            | traverse            | function |
| stripleadingspaces | function            | unescaped           | function |
| table              | function            | unescapedentitylpeg | userdata |
| text               | function            | unprivatized        | function |
| textonly           | function            | unspecialized       | function |
| texttocdata        | function            | withelement         | function |
| tocdata            | function            | withelements        | function |
| toelement          | function            | wrap                | function |
| tostring           | function            | xmlns               | table    |
| totable            | function            |                     |          |

#### zip (extra lua)

archivestableopenarchivefunctionclosefunctionopenfilefunctionclosearchivefunctionregisteredfilestableopenoverloaded functiontypefunction

#### zlib (extra lua)

adler32 function
compress function
compressobj function
crc32 function

decompress
decompressobj function
version function