MP attributes backends basexx 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 flate floats functions global graphics gzip images interactions interfaces io job lang languages layouts lfs libraries lmx logs lpdf lpeg lua luatex lxml math mathematics md5 metapost mime moduledata modules mp mplib noads mode nodes number objects os package pagebuilders parametersets pdfdecode pdfe pdfscanner physics pngdecode publications regimes resolvers sandbox scripts set sha2 sio socket sorters statistics status storage streams string structures table tex texconditionals te texconstants texifs texisdefined texmodes texsystemmodes thirddata tokens tracers trackers typesetters updaters url userdata utf8 utilities visualizers xcomplex xmath xml zip zlib

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

# global (alias: \_G)

| CONTEXTLMTXMODE     | number   | dir                                    | table      |
|---------------------|----------|--|------------|
| FFISUPPORTED        | function | dircodes                               | data table |
| INITEXMODE          | boolean  | directives                             | table      |
| LUAMAJORVERSION     | number   | document                               | table      |
| LUAMINORVERSION     | number   | documentdata                           | table      |
| LUATEXENGINE        | string   | dofile                                 | function   |
| LUATEXFORMATID      | number   | drivers                                | table      |
| LUATEXFUNCTIONALITY | number   | environment                            | table      |
| LUATEXVERSION       | number   | error                                  | function   |
| LUAVERSION          | number   | experiments                            | table      |
| MP                  | function | ffi                                    | table      |
| anywhere            | function | ffilib                                 | function   |
| arg                 | table    | figures                                | table      |
| assert              | function | file                                   | table      |
| attributes          | table    | fio                                    | table      |
| backends            | table    | flate                                  | table      |
| basexx              | table    | floats                                 | table      |
| bit32               | table    | flushsimplerule                        | function   |
| blobs               | table    | font                                   | table      |
| blockrequire        | function | fonts                                  | table      |
| boolean             | table    | frozen                                 | boolean    |
| buffers             | table    | functions                              | table      |
| builders            | table    | getmetatable                           | function   |
| caches              | table    | global                                 | table      |
| callback            | table    | <pre>grammar_parsed_text_one_nop</pre> | userdata   |
| callbacks           | table    | <pre>grammar_parsed_text_one_yes</pre> | userdata   |
| catcodes            | table    | <pre>grammar_parsed_text_two_nop</pre> | userdata   |
| characters          | table    | <pre>grammar_parsed_text_two_yes</pre> | userdata   |
| checkimage          | function | <pre>grammar_unparsed_text_nop</pre>   | userdata   |
| chemistry           | table    | <pre>grammar_unparsed_text_yes</pre>   | userdata   |
| collectgarbage      | function | graphics                               | table      |
| commands            | table    | gregorian_to_jalali                    | function   |
| containers          | table    | gzip                                   | table      |
| context             | function | images                                 | table      |
| converters          | table    | inspect                                | function   |
| coroutine           | table    | interactions                           | table      |
| createmask          | function | interfaces                             | table      |
| ctxrunner           | table    | io                                     | table      |
| data                | table    | ipairs                                 | function   |
| debug               | table    | jalali_to_gregorian                    | function   |
| dimen               | function | job                                    | table      |

| lang            | table    | print           | function   |
|-----------------|----------|-----------------|------------|
| languages       | table    | publications    | table      |
| layouts         | table    | pushorientation | function   |
| lfs             | table    | rawequal        | function   |
| libraries       | table    | rawget          | function   |
| lmx             | table    | rawlen          | function   |
| load            | function | rawset          | function   |
| loadfile        | function | readarray       | function   |
| loadstring      | function | regimes         | table      |
| logs            | table    | require         | function   |
| lpdf            | table    | required        | function   |
| lpeg            | table    | requireswiglib  | function   |
| lua             | table    | resolvers       | table      |
| luatex          | table    | ruledspace      | function   |
| lxml            | table    | sandbox         | table      |
| math            | table    | scanarray       | function   |
| mathematics     | table    | scanhash        | function   |
| md5             | table    | scripts         | table      |
| metapost        | table    | select          | function   |
| mime            | table    | set             | table      |
| moduledata      | table    | setinspector    | function   |
| modules         | table    | setmetatable    | function   |
| mp              | function | sha2            | table      |
| mplib           | table    | shipbox_ref_h   | number     |
| next            | function | shipbox_ref_v   | number     |
| noads           | table    | sio             | table      |
| node            | table    | socket          | table      |
| nodes           | table    | sorters         | table      |
| number          | table    | statistics      | table      |
| objects         | table    | status          | table      |
| optionalrequire | function | storage         | table      |
| 0S              | table    | streams         | table      |
| package         | table    | string          | table      |
| pagebuilders    | table    | structures      | table      |
| pairs           | function | swiglib         | function   |
| parametersets   | table    | table           | table      |
| pcall           | function | tex             | table      |
| pdf             | table    | texconditionals | data table |
| pdfdecode       | table    | texconfig       | table      |
| pdfe            | table    | texconstants    | data table |
| pdfscanner      | table    | texifs          | data table |
| physics         | table    | texio           | table      |
| pngdecode       | table    | texisdefined    | data table |
| poporientation  | function | texmodes        | data table |
|                 |          |                 |            |

texsystemmodes
thirddata
toboolean
token
tokens
tonumber
tostring
tracers
trackers
type
typesetters
unpack
updaters
url

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

userdata
utf
utf8
utilities
v
visualizers
warn
xcomplex
xmath
xml
xpcall
zip
zlib

table
table
table
string
table
function
table
table
table
table
table

#### attributes (context)

| applyoverloads   | function | N    | main             |           |
|------------------|----------|------|------------------|-----------|
| colorintents     | table    |      | main             |           |
|                  | table    |      | model            |           |
| N attribute      |          |      | models           |           |
| D data           |          |      | mpcolor          |           |
| F enable         |          |      | mpnamedcolor<br> |           |
| F handler        |          |      | mpoptions        |           |
| F register       |          |      | namedcolorattr   | 'ibutes   |
| D registered     | table    |      | none .           |           |
| colors           | table    |      | popset           |           |
| N attribute      |          |      | processcolorco   | omponents |
| F cmyk           |          |      | pushset          |           |
| F cmyktogray     |          |      | register         |           |
| F cmyktorgb      |          |      | registered       |           |
| F colorcomponent | S        |      | registerspotco   | olor      |
| 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 |          |      | sets             |           |
| F definesimplegr | •        |      | spec             |           |
| F definespotcolo |          |      | spot             |           |
| F definetranspar | ency     |      | spotcolorname    |           |
| F enable         |          |      | spotcolorparer   |           |
| F filter         |          |      | spotcolorvalue   | 2         |
| N forced         |          |      | supported        |           |
| F forcedmodel    |          | ·    | toattributes     |           |
| F forcesupport   |          |      | transparencyco   | omponents |
| F formatcolor    |          |      | triggering       |           |
| F formatgray     |          |      | usecolors        |           |
| F getpagecolormo | del      |      | valid            |           |
| F gray           |          |      | value            |           |
| F graytohsv      |          |      | values           |           |
| F handler        |          |      | weightgray       |           |
| F hsvtogray      |          | defi |                  | function  |
| F hsvtorgb       |          | effe |                  | table     |
| F iccprofile     |          |      | attribute        |           |
| F isblack        |          | D    | data             |           |

| F enable         |            | N colordodge              |  |
|------------------|------------|---------------------------|--|
| F handler        |            | N darken                  |  |
| F register       |            | N difference              |  |
| D registered     |            | N exclusion               |  |
| D values         |            | N hardlight               |  |
| handlers         | table      | N hue                     |  |
| list             | data table | N lighten                 |  |
| markasoverload   | function   | N luminosity              |  |
| names            | data table | 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     |            | N none                    |  |
| F set            |            | F register                |  |
| numbers          | data table | D registered              |  |
| ofnode           | function   | B supported               |  |
| private          | function   | F toattribute             |  |
| public           | function   | B triggering              |  |
| restore          | function   | F value                   |  |
| save             | function   | D values                  |  |
| showcurrent      | function   | <b>unsetvalue</b> number  |  |
| states           | table      | <b>viewerlayers</b> table |  |
| F disabletrigger | ing        | N attribute               |  |
| F enabletriggeri | ng         | F cleanup                 |  |
| F finalize       |            | D data                    |  |
| F initialize     |            | F define                  |  |
| F process        |            | F definedlayoutcomponent  |  |
| F selective      |            | F enable                  |  |
| F stacked        |            | F forcesupport            |  |
| F stacker        |            | F handler                 |  |
| system           | function   | B 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      |            | F start                   |  |
|                  |            |                           |  |

B supported

#### backends (context)

F enabletags

closeout function F exportformdata codeinjections table F fieldsurrounding F boxresourcedimensions F flushmergelayer F registerboxresource F getbookmarks F restoreboxresource F getdefaultfieldvalue current strina F getfieldcategory defaults table F getfieldset T codeiniections F getformatoption F getidentityvariable F getpagedimensions F lmtxmode F getinfo F setpagedimensions F getpreviewfigure T nodeinjections F insertrenderingwindow T registrations F mergebookmarks D tables F mergecomments included table F meraefields B context F mergereferences B date F mergeviewerlayers B id F newimage B metadata F prerollreference B pdf F presetsymbol install function F presetsymbollist latelua function F processrendering nodeiniections table F registerdocumentcloseaction noflatelua function F registerdocumentopenaction nothina function F registeredsymbol function openout F registerpagecloseaction pdf table F registerpageopenaction T codeinjections F registersymbol F addbookmarks F scanimgage F analyzenormalsymbol F setfieldcalculationset F analyzesymbol F setfigurealternative F attachmentid F setfigurecolorspace F bitmap F setfiguremask F clonefield F setformat F copyimage F setformsmethod F definefield F setpagetransition F definefieldset F setupcanvas F defineviewerlayer F setupidentity F embedfile F setxmpfile F embedimage F startlaver

F startunicodetoactualtext

F startunicodetoactualtextdirect F negative F stoplayer F overprint F stopunicodetoactualtext F positive F reference F stopunicodetoactualtextdirect F supportedformats F rgbcolor F unicodetoactualtext F spotcolor F useviewerlaver F startlayer F validfield F startstackedlayer F validfieldcategory F stoplayer F validfieldset F stopstackedlayer F wrapimage F transparency S comment F typesetfield T nodeinjections T registrations F addtags F cmykindexcolor F cmykspotcolor F annotation F attachfile F getspotcolorreference F changestackedlayer F grayindexcolor F cmykcolor F grayspotcolor F comment F rgbindexcolor F destination F rgbspotcolor F effect F spotcolorname F graycolor F transparency F injectbitmap T tables F insertmovie D vfspecials

F insertsound F insertswf

F insertu3d

F knockout

registrations table tables table timestamp function writeout function

#### basexx (context)

| decode16  | function | encode16  | function |
|-----------|----------|-----------|----------|
| decode64  | function | encode64  | function |
| decode85  | function | encode85  | function |
| decodeLZW | function | encodeLZW | function |
| decodeRL  | function | encodeRL  | 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          | function |
| getlines       | function | raw              | function |
| gettexbuffer   | function | run              | function |
| loadcontent    | function | samplefile       | function |
| parallel       | table    | undent           | function |

## builders (context)

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

#### 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
functions table

F process\_rule

F start\_page\_number

F stop\_page\_number

known function
list data table
pop function
push function
register function
report function

B append\_to\_vlist\_filter

B build page insert

B buildpage\_filter

B contribute filter

B define\_font

supported table

B find data file

B find\_format\_file

B find log file

B handle\_error\_hook

B hpack\_filter

B hpack\_quality

B hyphenate

B insert\_local\_par

B kerning

B ligaturing

B linebreak filter

B make extensible

B mlist to hlist

B new graf

B open data file

B post linebreak filter

B pre dump

B pre linebreak filter

B pre\_output\_filter

B process\_jobname

B read\_data\_file

B show error hook

B show error message

B show\_lua\_error\_hook

B show\_warning\_message

B show whatsit

B start file

B start\_run

B stop\_file

B stop\_run

B terminal input

B vpack filter

B vpack quality

B wrapup run

#### 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

upper

F toutfpattern textclasses tonumber ucchars uccode uccodes uhash unicodechar

table function data table function data table data table function function

#### 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)

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

#### ctxrunner (context)

load function prepfiles data table
preparedfile function resolve function

#### data (context)

action function depth number height number prerolled string
width number

## dir (context)

| collectpattern | function |
|----------------|----------|
| current        | function |
| expandname     | function |
| found          | function |
| glob           | function |
| globdirs       | function |
| alobfiles      | function |

| globpattern | function |
|-------------|----------|
| ls          | function |
| makedirs    | function |
| mkdirs      | function |
| pop         | function |
| push        | 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

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

T commandline D environments

D modes D modules T ctxfile

D environments

#### documentdata (context)

variable function

#### drivers (context)

| convert         | function | F convert         |  |
|-----------------|----------|-------------------|--|
| converters      | table    | F finalize        |  |
| F engine        |          | F initialize      |  |
| F lmtx          |          | F outputfilename  |  |
| enable          | function | F prepare         |  |
| gethpos         | function | F wrapup          |  |
| getpos          | function | T flushers        |  |
| getvpos         | function | F character       |  |
| helpers         | table    | F rule            |  |
| F tomatrix      |          | F updatefontstate |  |
| install         | function | S name            |  |
| instances       | table    | T lua             |  |
| T default       |          | T actions         |  |
| T actions       |          | F cleanup         |  |
| F convert       |          | F convert         |  |
| F outputfilen   | ame      | F finalize        |  |
| T flushers      |          | F initialize      |  |
| S name          |          | F outputfilename  |  |
| T empty         |          | F prepare         |  |
| T actions       |          | F wrapup          |  |
| F convert       |          | T flushers        |  |
| F prepare       |          | F character       |  |
| T flushers F ru |          | F rule            |  |
| S name          |          | F updatefontstate |  |
| T js            |          | S name            |  |
| T actions       |          | T mps             |  |
| F cleanup       |          | T actions         |  |
| F convert       |          | F cleanup         |  |
| F finalize      |          | F convert         |  |
| F initialize    |          | F finalize        |  |
| F outputfilen   | ame      | F initialize      |  |
| F prepare       |          | F outputfilename  |  |
| F wrapup        |          | F prepare         |  |
| T flushers      |          | F wrapup          |  |
| F character     |          | T flushers        |  |
| F rule          |          | F character       |  |
| F updatefonts   | tate     | F rule            |  |
| S name          |          | F simplerule      |  |
| T json          |          | F updatefontstate |  |
| T actions       |          | S name            |  |
| F cleanup       |          | T none            |  |

T actions F image T flushers F literal S name F poporientation T pdf F pushorientation T actions F restore F cleanup F rule F convert F save F finalize F setmatrix F initialize F simplerule F outputfilename F updatefontstate

F prepare
F wrapup
T flushers
F character

S name

## environment (context)

| argument            | function   | luafile                | function   |
|---------------------|------------|------------------------|------------|
| arguments           | data table | luafilechunk           | function   |
| basicengines        | data table | luatexengine           | string     |
| currentrun          | number     | 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     |
| loadluafile         | function   |                        |            |
|                     |            |                        |            |

#### experiments (context)

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

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 cachepaths data table F totable check function T types checkers data table N jbig2 converters data table N jp2 current function N jpg defaultdepth number N memstream defaultheight number N none defaultsearch hool ean N pdf defaultwidth number N pnq 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 resources data table 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 |
| $\verb"is_rootbased_path"$ | 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)

| getposition       | function |
|-------------------|----------|
| read2dot14        | function |
| readbytes         | function |
| readbytetable     | function |
| readcardinal1     | function |
| readcardinal1le   | function |
| readcardinal2     | function |
| readcardinal2le   | function |
| readcardinal3     | function |
| readcardinal3le   | function |
| readcardinal4     | function |
| readcardinal4le   | function |
| readcardinaltable | function |
| readfixed2        | function |
| readfixed4        | function |
| readinteger1      | function |
| readinteger1le    | function |
| readinteger2      | function |
|                   |          |

| readinteger2le   | function |
|------------------|----------|
| readinteger3     | function |
| readinteger3le   | function |
| readinteger4     | function |
| readinteger4le   | function |
| readintegertable | function |
| readline         | function |
| setposition      | function |
| skipposition     | function |
| writecardinal1   | function |
| writecardinal1le | function |
| writecardinal2   | function |
| writecardinal2le | function |
| writecardinal3   | function |
| writecardinal3le | function |
| writecardinal4   | function |
| writecardinal4le | function |

# flate (context)

| flate_compress   | function | update_adler32 | function |
|------------------|----------|----------------|----------|
| flate_decompress | function | update_crc32   | function |
| gz_compress      | function | zip_compress   | function |
| gz_decompress    | function | zip_decompress | function |

# floats (context)

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

# font (basic tex)

| addcharacte | <b>rs</b> function | id      | function |
|-------------|--------------------|---------|----------|
| current     | function           | max     | function |
| define      | function           | nextid  | function |
| each        | function           | setfont | function |
| aetfont     | function           |         |          |

# fonts (context)

| <b>analyzers</b> 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                   |
| <b>checkers</b> table         | F apply                 |
| F getmissing                  | F patch                 |
| F missing                     | T patches               |
| F placeholder                 | F register              |
| <b>cid</b> 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                 |
| <pre>constructors table</pre> | F patch                 |
| F addcharacters               | T patches               |
| F addcoreunicodes             | F register              |
| B addtounicode                | F report                |
| F aftercopyingcharacters      | F register              |
| F applymanipulators           | F report                |
| F assignmathparameters        | N factor                |
| B autocleanup                 | T features              |
| F beforecopyingcharacters     | 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 |
| F load                     | F devanagari_reorder_reph                           |
| T readers                  | F gpos_context                                      |
| F getinfo                  | F gpos_contextchain                                 |
| F loadfont                 | 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 | Fgvar                         |
| Favar             | 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              |
| Fcolr             | 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 writeinteger2     |
|---------------------|---------------------|
| F readcardinal      | F writeinteger2le   |
| F readcardinal1     | F writeinteger3     |
| F readcardinal1le   | F writeinteger3le   |
| F readcardinal2     | F writeinteger4     |
| F readcardinal2le   | F writeinteger4le   |
| F readcardinal3     | F writestring       |
| F readcardinal3le   | F stripredundant    |
| F readcardinal4     | F svg               |
| F readcardinal4le   | N tableversion      |
| F readcardinaltable | F unifymissing      |
| F readchar          | F unpack            |
| F readfixed2        | F vhea              |
| F readfixed4        | F vmtx              |
| F readinteger       | F vorg              |
| F readinteger1      | F vvar              |
| F readinteger1le    | F woff2otf          |
| F readinteger2      | F registerpalette   |
| F readinteger2le    | F registerplugin    |
| F readinteger3      | F reorderlookups    |
| F readinteger3le    | F scriptandlanguage |
| F readinteger4      | F setdynamics       |
| F readinteger4le    | F setfeatures       |
| F readintegertable  | T statistics        |
| F readsignedbyte    | D usedfeatures      |
| F readstring        | F storepdfdata      |
| F readtag           | T svg               |
| F setposition       | F filterglyph       |
| F size              | F topdf             |
| F skip              | D svgcache          |
| F skiplong          | B svgenabled        |
| F skipposition      | T tables            |
| F skipshort         | D baselines         |
| F writebyte         | D features          |
| F writecardinal1    | D featuretypes      |
| F writecardinal1le  | D languages         |
| F writecardinal2    | D scripts           |
| F writecardinal2le  | N version           |
| F writecardinal3    | T pfb               |
| F writecardinal3le  | F loadvector        |
| F writecardinal4    | T tfm               |
| F writecardinal4le  | D cache             |
| F writeintegerl     | D features          |
| F writeinteger1le   | N maxnestingdepth   |
|                     |                     |

| N maxnestingsize     | T protrusion             |
|----------------------|--------------------------|
| T readers            | S auto                   |
| F loadpk             |                          |
| F loadtfm            | S quad                   |
|                      | S scaledpoints           |
| Floadtfmvf           | S scriptpercentage       |
| Floadvf              | S scriptscriptpercentage |
| F pktopdf            | S size                   |
| F showpk             | S slantfactor            |
| F reencode           | S slantperpoint          |
| F setfeatures        | T spacing                |
| N version            | S extra                  |
| T vf                 | S shrink                 |
| T combinations       | S stretch                |
| F combine            | S width                  |
| 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                 |
|                      |                          |

| S textitalics  |                           | F registersplit   |   |
|--|---------------------------|---|---|
| S virtualized  |                           | F resetnullfont   |   |
| D loadedfonts  |                           | F resolve   |   |
| S namemode   |                           | T resolvers   |   |
| N noffontsloaded   |                           | F file  |   |
| N nofsharedfonts   |                           | F name  |   |
| N nofsharedhashes  |                           | F spec  |   |
| N nofsharedvector  | s                         | definetypeface  | function  |
| N privateoffset  |                           | encodings   | table   |
| D privateslots   |                           | T agl   |   |
| F readanddefine  |                           | D ctxcodes  |   |
| F registerfeature  |                           | D extras  |   |
| F resetfeature   |                           | D names   |   |
| B resolvevirtualt  | 00                        | D synonyms  |   |
| F scale  |                           | D unicodes  |   |
| F scaled   |                           | D cache   |   |
| F setfactor  |                           | F is_known  |   |
| F setfeature   |                           | D known   |   |
| F setmathparamete  | r                         | F load  |   |
| F setname  |                           | F make_unicode_ve   | ctor  |
| B sharefonts   |                           | D math  |   |
| F trytosharefont   |                           | N version   |   |
|  |                           |   |   |
| N version  |                           | enhanceid   | function  |
| N version current  | function                  | enhanceid<br>expansions   | function<br>data table  |
|  | function<br>function      |   |   |
| current  |                           | expansions  | data table  |
| current<br>currentid   | function                  | expansions<br>formats   | data table<br>data table  |
| current<br>currentid<br>definers   | function                  | expansions<br>formats<br>getalternate   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers F addlookup   | function<br>table         | expansions<br>formats<br>getalternate<br>getkern  | data table<br>data table<br>function<br>function                |
| current currentid definers F addlookup F analyze   | function<br>table         | expansions<br>formats<br>getalternate<br>getkern<br>getmultiple   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers F addlookup F analyze F applypostproces   | function<br>table         | expansions<br>formats<br>getalternate<br>getkern<br>getmultiple<br>getsubstitution  | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode  | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript  | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters T alternate   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers F addlookup F analyze F applypostproces F checkedmode F checkedscript F current   | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup  | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern  | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define   | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification  | function<br>table         | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification F internal   | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3   | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecificatio F internal F loadfont   | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3 T multiple  | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification F internal F loadfont F makespecification                                | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3 T multiple F opentype T substitution F opentype         | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification F internal F loadfont F makespecification T methods                      | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3 T multiple F opentype T substitution F opentype Goodies | data table<br>data table<br>function<br>function<br>function    |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification F internal F loadfont F makespecification T methods F install            | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3 T multiple F opentype T substitution F opentype         | data table data table function function function tunction table |
| current currentid definers  F addlookup F analyze F applypostproces F checkedmode F checkedscript F current S defaultlookup F define F getspecification F internal F loadfont F makespecification T methods F install D variants | function<br>table<br>sors | expansions formats getalternate getkern getmultiple getsubstitution getters  T alternate F opentype T kern F opentype F type1 F type3 T multiple F opentype T substitution F opentype Goodies | data table data table function function function tunction table |

| S author  |                      | D emwidths   |  |
|---|----------------------|--|--|
| S comment   |                      | D exheights  |  |
| S copyright   |                      | D extensibles  |  |
| B initialized   |                      | D features   |  |
| T mathematics   |                      | D identifiers  |  |
| T alternates  |                      | D italics  |  |
| T dotless   |                      | D lastmathids  |  |
| S comment   | •                    | D marks  |  |
| S feature   | 2                    | D mathparameters   |  |
| N value   |                      | D modes  |  |
| T kerns   |                      | D originals  |  |
| S name  |                      | D parameters   |  |
| S version   |                      | T processes  |  |
| T schola-math   |                      | D properties   |  |
| S author  |                      | D quads  |  |
| S comment   |                      | D resources  |  |
| S copyright   |                      | T setdynamics  |  |
| B initialized   |                      | T shapes   |  |
| T mathematics   |                      | D spaces   |  |
| T alternates  |                      | D spacings   |  |
| T dotless   |                      | T streams  |  |
| S comment   |                      | D unicodes   |  |
|   |                      |  |  |
| S feature   | 2                    | D variants   |  |
| S feature<br>N value  | 2                    | D variants<br>D xheights   |  |
|   | 2                    |  |  |
| N value   | 9                    | D xheights   |  |
| N value<br>T kerns  | 3                    | D xheights <b>helpers</b> table  |  |
| N value<br>T kerns<br>S name  | <b>.</b>             | D xheights <b>helpers</b> table F addextraprivate  |  |
| N value<br>T kerns<br>S name<br>S version   | 3                    | D xheights <b>helpers</b> table  F addextraprivate  F addprivate   |  |
| N value<br>T kerns<br>S name<br>S version<br>D designsizes  |                      | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands   |  |
| N value T kerns S name S version D designsizes D filenames  |                      | D xheights helpers table F addextraprivate F addprivate F appendcommands F appendcommandtable  |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions  |                      | D xheights helpers table F addextraprivate F addprivate F appendcommands F appendcommandtable F checkflags   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list   |                      | D xheights helpers table F addextraprivate F addprivate F appendcommands F appendcommandtable F checkflags F checkmerge  |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load  |                      | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature  | s                    | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register   | s                    | D xheights helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F registerpostpro   | s                    | D xheights helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F registerpostpro F report  | s                    | D xheights helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F registerpostpro F report T suffixes   | s<br>cessor          | D xheights helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F registerpostpro F report T suffixes handlers  | s<br>cessor<br>table | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph  T extraprivates   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F register F registerpostpro F report T suffixes handlers hashes                                  | s<br>cessor<br>table | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph  T extraprivates  F fontpatternhassize   |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F register F registerpostpro F report T suffixes handlers hashes D characters                     | s<br>cessor<br>table | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph  T extraprivates  F fontpatternhassize  F getcoloredglyphs                                     |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F registerpostpro F report T suffixes handlers hashes D characters D classes                      | s<br>cessor<br>table | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph  T extraprivates  F fontpatternhassize  F getcoloredglyphs  F getdigitwidth                    |  |
| N value T kerns S name S version D designsizes D filenames F getcompositions T list F load F prepare_feature F register F register F registerpostpro F report T suffixes handlers hashes D characters D classes D csnames | s<br>cessor<br>table | D xheights  helpers table  F addextraprivate  F addprivate  F appendcommands  F appendcommandtable  F checkflags  F checkmerge  F checksteps  F collectanchors  D commands  F descriptiontoslot  F dimenfactor  F expandglyph  T extraprivates  F fontpatternhassize  F getcoloredglyphs  F getdigitwidth  F getinstancespec |  |

| F getprivatenode  |           | F paths           |            |
|-------------------|-----------|-------------------|------------|
| F getprivates     |           | F widthline       |            |
| F getprivateslot  |           | F zeroline        |            |
| F hasprivate      |           | mp                | table      |
| F indextoslot     |           | D cache           |            |
| F name            |           | B inline          |            |
| F nametoslot      |           | N version         |            |
| F prependcommand  | S         | names             | data table |
| F prependcommand  | table     | nulldata          | data table |
| F privateslot     |           | privateoffsets    | table      |
| F setdigitwidth   |           | B keepnames       |            |
| F splitfontpatte  | rn        | N mathbase        |            |
| F tochar          |           | N mathextrabase   |            |
| infofont          | function  | N textbase        |            |
| iterators         | table     | N textextrabase   |            |
| F characters      |           | protrusions       | data table |
| F descriptions    |           | readers           | table      |
| F glyphs          |           | F afm             |            |
| loggers           | table     | F check_lua       |            |
| F add_placeholde  | rs        | F check_tfm       |            |
| D category_to_pla | aceholder | F lua             |            |
| F format          |           | F ofm             |            |
| F onetimemessage  |           | F opentype        |            |
| F register        |           | F otf             |            |
| F reportdefinedfo | onts      | F pfb             |            |
| F reportusedfeat  | ures      | 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 tounicode16     |           | F default         |            |
| F tounicode16seq  | uence     | D defaults        |            |
| metapost          | table     | F definefallbackf | amily      |
| F boundingbox     |           | F definefontfamil | У          |
| F boxtomp         |           | F definefontfamil | ypreset    |
| F draw            |           | D extras          |            |
| F fill            |           | F fallback        |            |
| F maxbounds       |           | D fallbacks       |            |
| F output          |           | F features        |            |

| F presetcontext   |  |
|---|--|
| F registercontext   |  |
| F showcontext   |  |
| F splitcontext  |  |
| D synonyms  |  |
| D variants  |  |
| <b>symbols</b> tabl   | e  |
| T emoji   |  |
| F checked   |  |
| F resolved  |  |
|   |  |
| F uselibrary  |  |
| F uselibrary <b>tables</b> tabl   | e  |
| •   | e  |
| <b>tables</b> tabl  | e  |
| <b>tables</b> tabl  | e  |
| tables tabl D data F savefont   | •  |
| tables tabl D data F savefont F saveoriginal  | e  |
| tables tabl D data F savefont F saveoriginal tracers tabl   | e  |
| tables tabl D data F savefont F saveoriginal tracers tabl treatments tabl                                 | e  |
| tables tabl D data F savefont F saveoriginal tracers tabl treatments tabl F applyfixes                    | e  |
| tables tabl  D data F savefont F saveoriginal  tracers tabl treatments tabl F applyfixes D data           | e  |
| tables tabl  D data F savefont F saveoriginal tracers tabl treatments tabl F applyfixes D data S filename | e  |
|   | F registercontext F showcontext F splitcontext D synonyms D variants  symbols tabl T emoji F checked |

F mergecontext

typefaces

table

### functions (context)

**dummy** function

# graphics (context)

| backgrounds table        | F placeholder                |
|--------------------------|------------------------------|
| F fetchmultipar          | F tocontext                  |
| F pair                   | <b>identifiers</b> table     |
| F path                   | F bitmap                     |
| F point                  | F jp2                        |
| <pre>bitmaps table</pre> | F jpg                        |
| F flush                  | F png                        |
| F new                    | <pre>identify function</pre> |

# 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 memstr | eam      |
| serialize | function | N none   |          |
| sizes     | table    | N pdf    |          |
| B art     |          | N png    |          |
| B bleed   |          | N stream |          |
| В сгор    |          | wrap     | function |
| B media   |          |          |          |

#### interactions (context)

attachments data table D functions fields table D preambles F clone F setpreamble F storecode F define 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 code F setopenpage renderings data table D codes soundclips F flushpreambles data table

#### interfaces (context)

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

F define

data table data table data table data table data table data table data table

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            | output        | overloaded function |
|---------------|---------------------|---------------|---------------------|
| bytes         | function            | pathseparator | string              |
| characters    | function            | popen         | overloaded function |
| close         | function            | read          | function            |
| copydata      | function            | readall       | function            |
| exists        | function            | readnumber    | function            |
| fileseparator | string              | readstring    | function            |
| flush         | function            | savedata      | function            |
| input         | overloaded function | size          | function            |
| lines         | overloaded function | stderr        | userdata            |
| loadchunk     | function            | stdin         | userdata            |
| loaddata      | function            | stdout        | userdata            |
| loadlines     | function            | tmpfile       | function            |
| noflines      | function            | type          | function            |
| open          | overloaded function | 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    |          |      | 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       | Fx             |          |
| F markregionbox    | F xy           |          |
| Fn                 | F y            |          |
| 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 |
| has_language      | function | preexhyphenchar  | function |
| hyphenate         | function | prehyphenchar    | function |
| hyphenation       | function | sethjcode        | function |
| hyphenationmin    | function |                  |          |

# languages (context)

| associate              | function   | E                          |            |
|------------------------|------------|----------------------------|------------|
| associated             | data table | F registerpattern          |            |
| association            | function   | F setfeatures installed    | function   |
| counters               | data table | labels                     | table      |
| current                | function   | F define                   | table      |
| data                   | data table |                            |            |
| decimals               | data table | F split<br><b>loadable</b> | function   |
| define                 | function   | loadwords                  | function   |
| explicithyphen         | function   | logger                     | table      |
| flatten                | function   | F report                   | table      |
| frequencies            | table      | nofflattened               | function   |
| F averagecharwidth     | tabte      | numbers                    | data table |
| F getdata              |            | postexhyphenchar           | function   |
| getdata                | function   | posthyphenchar             | function   |
| getnumber              | function   | preexhyphenchar            | function   |
| hjcounts               | table      | prehyphenchar              | function   |
| hyphenate              | function   | registered                 | data table |
| hyphenators            | table      | replacements               | table      |
| T dictionaries         |            | Fadd                       |            |
| 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 F load B enables T methods F found N threshold

### layouts (context)

status table
 F isleftpage

F leftorrightpageaction

#### lfs (extra lua)

attributes overloaded function chdir overloaded function currentdir function

isfound function
isreadabledir function
isreadablefile function
iswriteabledir function

iswriteablefile function

mkdirs function
readlink function

setexecutable function
symlink function

touch overloaded function

### libraries (context)

basiclua data table
basictex data table
builtin data table
extralua data table

extratex data table
functions data table
globals data table

### lmx (context)

| 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 |
| inherited     | table    |
|               |          |

- S color-background-four
  - S color-background-one
  - S color-background-three
  - S color-background-two
  - S title

| ınıtıalıze | 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   | 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               | function   | finalizepage             | function |
| copyboolean             | 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         |          |
| delayedobject           | function   | N NoRotate               |          |

| 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            |            | injectors           | table    |
| N NoToggleToOff       |            | F bitmap            |          |
| N Password            |            | F jp2               |          |
| N PopUp               |            | F jpg               |          |
| N PushButton          |            | F png               |          |
| N Radio               |            | injectxmpinfo       | function |
| N RadiosInUnison      |            | insertxmpinfo       | function |
| N ReadOnly            |            | layerreference      | function |
| N Required            |            | limited             | function |
| N RichText            |            | linearshade         | function |
| N Sort                |            | literal             | function |
| N file                |            | majorversion        | function |
| N fixed               |            | minorversion        | function |
| N nocheck             |            | nametree            | function |
| N protected           |            | nofpages            | function |
| N readonly            |            | null                | function |
| N required            |            | number              | function |
| N sorted              |            | obj                 | function |
| N unavailable         |            | objectcompresslevel | function |
| flushfonts            | function   | pagereference       | function |
| flushobject           | function   | patternstream       | function |
| flushstreamfileobject | function   | pdfcolor            | function |
| flushstreamobject     | function   | pdftimestamp        | function |
| formats               | data table | permitdetail        | function |
| frombytes             | function   | print               | function |
| fromeight             | function   | procset             | function |
| frompdfdoc            | function   | protectresources    | boolean  |

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

# lpeg (basic lua)

| В            | function | firstofsplit          | function   |
|--------------|----------|-----------------------|------------|
| C            | function | frontstripper         | function   |
| Carg         | function | instringchecker       | function   |
| Cb           | function | is_lpeg               | function   |
| Сс           | 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 |                       |            |
|              |          |                       |            |

#### lua (basic tex)

lastbytecode

macros

bytecode table data table bytedata bytedone table collectgarbage function delav function finalize function firstbytecode number function flush flushdelayed function get\_functions table overloaded function getbytecode function **getcurrenttime** function overloaded function **getfunctionstable** getpreciseseconds function getpreciseticks function **getruntime** function getstacktop function getstartupfile function getversion function

number

table

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

mask string messages data table newindex function newtable function numbers data table registercode function registeredcodes function registerfinalizer function registername function setbytecode function setexitcode function startupfile string version string

#### luatex (context)

F disable

F enable

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 function registertempfile F setfilename starttime number F setup synctex table F start F blockfilename F stop F collect F wrapup

wrapup

function

# lxml (context)

| - 442 - 4       | for this a | £1h            | £ +      |
|-----------------|------------|----------------|----------|
| 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 |
| setcommand to text       | 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 function stopunescaped store function strip function stripped function tag function function text tobuffer function tofile function function toparameters toverbatim function verbatim function withindex function xmltexhandler data table

F compare F flush

## math (basic lua)

| abs         | function |
|-------------|----------|
| acos        | function |
| asin        | function |
| atan        | function |
| atan2       | function |
| ceil        | function |
| ceiling     | function |
| cos         | function |
| cosd        | function |
| cosh        | function |
| deg         | function |
| div         | function |
| even        | function |
| exp         | function |
| floor       | function |
| fmod        | function |
| huge        | number   |
| initialseed | number   |
| ldexp       | function |
| log         | function |
| log10       | function |
| max         | function |
| maxinteger  | number   |

| function   |  |
|------------|--|
| number     |  |
| function   |  |
| function   |  |
| function   |  |
| number     |  |
| function   |  |
| function   |  |
| overloaded | function   |
| function   |  |
|            | number function function function number function function overloaded function |

function

ult

## 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            |            | remapalphabets         | function   |
| charactersets          | data table | renderings             | table      |
| checkaccentbaseheight  | function   | D mappings             |            |
| 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 | sum     | function |
|-----|----------|---------|----------|
| dec | function | sumHEXA | function |
| hex | function | sumhexa | function |

#### metapost (context)

checkformat cm codes

function function table

N addto N ampersand

N and

N assignment N atleast N begingroup

N btex N capsule N colon N comma N controls

N curl N cycle N declare N def

N definedmacro N delimiters N endgroup N equals N etex N everyjob N exitif N expandafter

Nif N input N interim N internal N iteration N join

N fi or else

N leftbrace N leftbracket N leftdelimiter

N let

N macrospecial N maketext N message N mode

N ofbinary N outertag N parametertype N plus or minus N primarybinary N primarydef N randomseed N relax N repeat loop N rightbrace N rightbracket N rightdelimiter

N newinternal

N nullary

N numeric

N of

N scantokens N scope N secondarybinary N secondarydef N semicolon N setbounds N shipout N show N skip N slash N special N step N stop N str N string N tag N tension

N runscript

N save

N tertiarydef N thingstoadd N to N unary

N undefinedcs

N tertiarybinary

| N until          |            | getparameters        | function |
|------------------|------------|----------------------|----------|
| N void           |            | getparametersetentry | function |
| N with           |            | getstatistics        | function |
| N within         |            | gettext              | function |
| N write          |            | 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   | presetparameters     | function |
| fonts            | table      | process              | function |
| F define         |            | processplugins       | function |
| T flusher        |            | processspecial       | function |
| F flushfigure    |            | properties           | table    |
| F startfigure    |            | pushformat           | function |
| F stopfigure     |            | pushscriptrunner     | function |
| N instances      |            | pushvariable         | function |
| F process        |            | pushvariables        | function |
| format_number    | function   | quickanddirty        | function |
| format_string    | function   | reducetogray         | boolean  |
| formatnumber     | function   | registerscript       | function |
| getclippath      | function   | reporterror          | function |
| getextensions    | function   | reset                | function |
| getextradata     | function   | resetlastlog         | function |
| getjobdata       | function   | resetplugins         | function |
| getparameter     | function   | run                  | function |
|                  |            |                      |          |

| runscript       | function | N boolean         |
|-----------------|----------|-------------------|
| scanparameters  | function | N cmykcolor       |
| scripterror     | function | N color           |
| scriptindex     | function | N dependent       |
| setextensions   | function | N independent     |
| setoutercolor   | function | N known           |
| settext         | function | N numeric         |
| setvariable     | function | N pair            |
| showlog         | boolean  | N path            |
| simple          | function | N pen             |
| splitprescript  | function | N picture         |
| startgraphic    | function | N protodependent  |
| stopgraphic     | function | N string          |
| svformat        | function | N structured      |
| sxsy            | function | N suffixedmacro   |
| tex             | table    | N tokenlist       |
| F get           |          | N transform       |
| F reset         |          | N unknownboolean  |
| F set           |          | N unknownpath     |
| F setfrombuffer |          | N unknownpen      |
| texerrors       | boolean  | N unknownpicture  |
| texexp          | function | N unknownstring   |
| theclippath     | function | N unsuffixedmacro |
| theparameter    | function | N vacuous         |
| tographic       | function | unload            |

#### mime (extra lua)

b64 function
decode function
decodet table
 F base64
 F quoted-printable

dot function encode function encodet table

F base64

F quoted-printable

eol function
normalize function
qp function

qpwrp function
report function
stuff function
unb64 function
unqp function
wrap function
wrapt table
F base64

F default

F quoted-printable

F text

wrp function

# mp (context)

| 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 | •                          | function |
| CurrentWidth         | function | PageDepth                  | function |
| CutSpace             | function | PageFraction<br>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_save_data           | function |
| dimension         | function             | mf_script_index        | function |
| disposehash       | function             | mf_some_text           | function |
| flush             | function             | mf_start_saving_data   | function |
| format            | function             | mf_stop_saving_data    | function |
| formatted         | function             | mf_tb_dimensions       | function |
| fprint            | function             | mf_tt_dimensions       | function |
| fromhash          | function             | mf_tt_initialize       | function |
| get               | table                | mode                   | function |
| F boolean         |                      | n<br>                  | function |
| F number          |                      | newhash                | function |
| F numeric         |                      | number                 | function |
| F path            |                      | numeric                | function |
| F string          |                      | pair<br>               | function |
| getcount          | function             | pairpoints             | function |
| getdimen          | function<br>function | path                   | function |
| getmacro          |                      | pathpoints             | function |
| gettoks           | function             | points                 | function |
| graphformat       | function             | positionanchor         | function |

| positionbox     | function | F path        |          |
|-----------------|----------|---------------|----------|
| positioncurve   | function | F string      |          |
| positionpage    | function | F symbol      |          |
| positionpath    | function | F token       |          |
| positionpxy     | function | F transform   |          |
| positionregion  | function | set           | table    |
| positionwhd     | function | F path        |          |
| positionxy      | function | setcount      | function |
| prefix          | function | setdimen      | function |
| print           | function | setmacro      | function |
| processingmode  | function | settoks       | function |
| quadruple       | function | size          | function |
| quadruplepoints | function | string        | function |
| quoted          | function | systemmode    | function |
| report          | function | texstr        | function |
| scan            | table    | textextanchor | function |
| F boolean       |          | texvar        | function |
| F cmykcolor     |          | tohash        | function |
| F color         |          | triplet       | function |
| F expression    |          | tripletpoints | function |
| F next          |          | utflen        | function |
| F number        |          | utfsub        | function |
| F numeric       |          | vprint        | function |
|                 |          |               |          |

F pair

# mplib (extra tex)

| codes         | function            | scan_cmykcolor  | function |
|---------------|---------------------|-----------------|----------|
| execute       | function            | scan_color      | function |
| fields        | function            | scan_expression | function |
| finder        | function            | scan_next       | function |
| finders       | table               | scan_number     | function |
| F file        |                     | scan_numeric    | function |
| F mpstemplate |                     | scan_pair       | function |
| finish        | function            | scan_path       | function |
| get_boolean   | function            | scan_string     | function |
| get_number    | function            | scan_symbol     | function |
| get_numeric   | function            | scan_token      | function |
| get_path      | function            | scan_transform  | function |
| get_string    | function            | solve_path      | function |
| new           | overloaded function | statistics      | function |
| pen_info      | function            | types           | function |
| scan boolean  | 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_hlis | t        |
| F kernpairs  |       | Т    | unscript      |          |
| F makeup     |       | Т    | unstack       |          |
| F relocate   |       | proc | essouter      | function |

#### node (basic tex)

F getfam

F getfield

check discretionaries function F getfont check discretionary function F getglue copy function F getglyphdata copy list function F aetheiaht function count F getid function current attr F getkern dimensions function F getlang direct table F getleader F check discretionaries F getlist F check discretionary F getnext F copy F getnucleus F copy\_list F getoffsets F copy only F getorientation F count F getpenalty F current attr F getpost F dimensions F getpre F effective glue F getprev F end of math F getproperty F find attribute F getreplace F find attribute range F getshift F first glyph F getsub F flatten discretionaries F getsubtype F flush components F getsup F getwhd F flush list F flush node F getwidth F free F has attribute F has dimensions F get attribute F has field F get properties table F get\_synctex\_fields F has glyph F getattributelist F hpack F getboth F hyphenating F insert after F getbox F getchar F insert before F getcomponents F is char F getdata F is direct F getdepth F is glyph F getdirection F is node F getdisc F is valid F getexpansion F is zero glue

F kerning

F last node

| F length               | F setshift              |          |
|------------------------|-------------------------|----------|
| F ligaturing           | F setsplit              |          |
| F mlist_to_hlist       | F setsub                |          |
| F naturalwidth         | F setsubtype            |          |
| F new                  | F setsup                |          |
| F prepend_prevdepth    | F setwhd                |          |
| F protect_glyph        | F setwidth              |          |
| F protect_glyphs       | F slide                 |          |
| F protrusion_skippable | F tail                  |          |
| F rangedimensions      | F todirect              |          |
| F remove               | F tonode                |          |
| F set_attribute        | F tostring              |          |
| F set_synctex_fields   | F traverse              |          |
| F setattributelist     | F traverse_char         |          |
| F setboth              | F traverse_glyph        |          |
| F setbox               | F traverse_id           |          |
| F setchar              | F traverse_list         |          |
| F setcomponents        | F unprotect_glyph       |          |
| F setdata              | F unprotect_glyphs      |          |
| F setdepth             | F unset_attribute       |          |
| F setdirection         | F usedlist              |          |
| F setdisc              | F uses_font             |          |
| F setexpansion         | F vpack                 |          |
| F setfam               | F write                 |          |
| F setfield             | effective_glue          | function |
| F setfont              | end_of_math             | function |
| F setglue              | family_font             | function |
| F setglyphdata         | fields                  | function |
| F setheight            | find_attribute          | function |
| F setkern              | first_glyph             | function |
| F setlang              | fix_node_lists          | function |
| F setleader            | flatten_discretionaries | function |
| F setlink              | flush_list              | function |
| F setlist              | flush_node              | function |
| F setnext              | free                    | function |
| F setnucleus           | get_attribute           | function |
| F setoffsets           | get_properties_table    | function |
| F setorientation       | getfield                | function |
| F setpenalty           | getglue                 | function |
| F setpost              | getproperty             | function |
| F setpre               | has_attribute           | function |
| F setprev              | has_field               | function |
| F setproperty          | has_glyph               | function |
| F setreplace           | hpack                   | function |
|                        |                         |          |

| humbonotina          | function | cotaluo          | function |
|----------------------|----------|------------------|----------|
| hyphenating          |          | setglue          |          |
| id                   | function | setproperty      | function |
| insert_after         | function | slide            | function |
| insert_before        | function | subtypes         | function |
| is_node              | function | tail             | function |
| is_zero_glue         | function | tostring         | function |
| kerning              | function | traverse         | function |
| last_node            | function | traverse_char    | function |
| length               | function | traverse_glyph   | function |
| ligaturing           | function | traverse_id      | function |
| make_extensible      | function | traverse_list    | function |
| mlist_to_hlist       | function | type             | function |
| new                  | function | types            | function |
| prepend_prevdepth    | function | unprotect_glyph  | function |
| protect_glyph        | function | unprotect_glyphs | function |
| protect_glyphs       | function | unset_attribute  | function |
| protrusion_skippable | function | usedlist         | function |
| rangedimensions      | function | uses_font        | function |
| remove               | function | values           | function |
| set_attribute        | function | vpack            | function |
| setfield             | 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          |            |
| 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      |
| <pre>insert_list_after</pre> | function   | F get           |            |
| installattributehandler      |            | mathcodes       | data table |
| is_direct                    | function   | maxboxwidth     | function   |

mlist to hlist function F flush list new function F flush node noadcodes data table F free table noadoptions F fullhpack N axis F get synctex fields N exact F getattr N left F getattribute N middle F getattributelist N no axis F getattrlist N right F getboth N set F getbox N unused 1 F getboxglue N unused 2 F getchar nodecodes data table F getcomponents nopts function F getdata table nuts F getdepth F append F getdirection F getdisc F apply F applyvisuals F getdiscretionary F check discretionaries F getexpansion F concat F getfam F copy F getfield F copy list F getfont F getglue F copy no components F copy node F getglyphdata F copy\_only F getheight F getid F copy only glyphs F copy properties F getkern F copyvisual F getlang F count F getlanguage F countall F getleader F current\_attr F getlist F delete F getnext F dimensions F getnucleus F effective glue F getoffsets F end of math F getorientation F find attribute F getpenalty F first glyph F getpost F firstcharacter F getpre F firstcharinbox F getprev F firstglyph F getprop F flatten discretionaries F getreplace F getruledata F flush

F flush components

F getshift

F directliteral F getsub F getsubtype F disc F emptyrule F getsup F getsurround F fence F getvalue F fontkern F fraction F getwhd F getwidth F glue F has attribute F glyph F hlist F has dimensions F has field F italickern F kern F has glyph F latelua F hpack F hyphenating F leader F insert after F leftmarginkern F insert before F leftskip F insert list after F lineskip F is direct F literal F mathchar F is display math F mathtextchar F is node F is nut F negatedglue F is\_zero\_glue F noad F ischar F originliteral F isdone F outlinerule F isglyph F pageliteral F kerning F penalty F last node F radical F leftmarginwidth F rawliteral F length F register F ligaturing F restore F link F rightmarginkern F linked F rightskip F locate Frule F mlist to hlist F save F nestedtracedslide F savepos F new F setmatrix T pool F shrink F stretch F accent F baselineskip F subbox F boundary F submlist F choice F temp F cleanup F textdir F delim F usage F delimiter T userids

N margins.inline

F direction

N splitters.one F setdiscretionary N splitters.two F setexpansion F usernode F setfam F userrule F setfield F vlist F setfont F wordboundary F setglue F prepend F setglyphdata F setheight F processranges F processwords F setkern F protect glyph F setlang F protect glyphs F setlanguage F protrusion skippable F setleader F rangedimensions F setlink F rawprop F setlist F reference F setnext F rehpack F setnucleus F remove F setoffsets F repackhlist F setorientation F replace F setpenalty F rightmarginwidth F setpost T rules F setpre T ruleactions F setprev F box F setprop F draw F setreplace F fill F setruledata F mp F setshift F stroke F setsplit F userrule F setsub F set attribute F setsubtype F set synctex fields F setsup F setattr F setsurround F setunsetattributes E setattribute F setattributelist F setvalue F setattributes F setvisual F setattrlist F setvisuals F setboth F setwhd F setwidth F setbox F slide F setboxglue F setchar F somepenalty F setcomponents F somespace F setdata F splitbox F setdepth F striprange F tail F setdirection

F takeattr

F setdisc

| - · · · ·          |                         |            |
|--------------------|-------------------------|------------|
| F takebox          | F vpack                 |            |
| F takelist         | F write                 | function   |
| F theprop          | packlist                | function   |
| F tonode           | penaltycodes            | data table |
| F tonodes          | plugindata              | table      |
| F tonut            | F finalizer             |            |
| 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 rule                  |            |
| F tovbox           | F save                  |            |
| F tovpack          | F savepos               |            |
| F unprotect_glyph  | F setmatrix             |            |
| F unprotect_glyphs | F special               |            |
| F unset_attribute  | F usage                 |            |
| F unsetattribute   | F vlist                 |            |
| F unsetattributes  | prepend                 | function   |
| F untracedslide    | print                   | function   |
| F use_components   | processors              | table      |
| F usedlist         | F contribute_filter     |            |
| F uses_font        | B enabled               |            |
| F vianodes         | F hpack_filter          |            |
| F vianuts          | F post_linebreak_filter |            |
|                    |                         |            |

| F pre_linebreak_filter |            | setlink              | function   |
|------------------------|------------|----------------------|------------|
| F tracer               |            | setlist              | function   |
| properties             | table      | setnext              | function   |
| T data                 |            | setprev              | function   |
| protect_glyph          | function   | setunsetattributes   | function   |
| protect_glyphs         | function   | shifts               | table      |
| protrusion_skippable   | function   | D data               |            |
| 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                |            |

| r prependaction |          | I HULS  |          |
|-----------------|----------|---|----------|
| F removeaction  |          | F rule  |          |
| F replaceaction |          | F resetproperties   |          |
| F restart       |          | F rule  |          |
| F setaction     |          | F setlist   |          |
| F showactions   |          | F setproperties   |          |
| F table         |          | F start   |          |
| 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<br>F reset<br>F set<br>F setlist<br><b>traverse</b> fu |          |
| tosequence      | function |   |          |
| tostring        | function |   |          |
| totable         | function |   |          |
| totree          | 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   |          |
|                 |          |   |          |

F prependaction

T nuts

| function   | T attributes   |
|------------|--|
| function   | F box  |
| function   | F handler  |
| function   | F markfonts  |
| function   | F register   |
| function   | F setfont  |
| data table | F setlayer   |
| function   | F setruledglyph  |
| function   | F setvisual  |
|            | function function function function function data table function |

vianutsfunctionvpackfunctionvisualizeboxfunctionwhatcodesdata tablevisualizerstablewhatsitcodesdata tableF attributewritefunction

## number (context)

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

# package (basic lua)

| config        | string   | loadlib     | function |
|---------------|----------|-------------|----------|
| cpath         | string   | luapaths    | function |
| extralibpath  | function | path        | string   |
| extralibpaths | function | poplibpath  | function |
| extraluapath  | function | popluapath  | function |
| extraluapaths | function | preload     | table    |
| helpers       | table    | pushlibpath | function |
| libpaths      | function | pushluapath | function |
| loaded        | table    | searchers   | table    |
| loaders       | table    | searchpath  | 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

#### pngdecode (context)

applyfilter function
expand function

interlace function
splitmask function

## publications (context)

| addtexentry       | function   | converttoxml         | function |
|-------------------|------------|----------------------|----------|
| analyze           | function   | currentspecification | table    |
| anywhere          | function   | S author             |          |
| authorcache       | data table | T categories         |          |
| authorcollapsers  | data table | T article            |          |
| authorhashers     | table      | S category           |          |
| F invertedshort   |            | T extra              |          |
| F normal          |            | T fields             |          |
| F normalinverted  |            | S author             |          |
| F normalshort     |            | S editor             |          |
| F sequential      |            | S journal            |          |
| F sequentialshort |            | S keywords           |          |
| F short           |            | 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    | 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            | d-4- 4-61- | S title              |          |
| collected         | data table | S volume             |          |
| components        | table      | S year               |          |
| F author          | function   | 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 T

| 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 showdatasetcompleteness F author F showdatasetfields F keyword

F showdatasetcompleteness
F showdatasetfields
F showentry
F showfields
F showhashedauthors

## regimes (context)

| backmapping | data table | mapping   | data table |
|-------------|------------|-----------|------------|
| cleanup     | function   | pop       | 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             |
|  |                     | formatofsuffix                  |                      |
| cacheversion<br>checkedvariable          | string<br>function  | formatofsuffix formatofvariable | function<br>function |
|  |                     |                                 |                      |
| cleanedpathlist                          | function            | formats                         | data table           |
| cleanpath                                | function            | foundintree                     | function             |
| cleanpathlist                            | function            | foundintrees                    | function             |
| concatinators                            | data table          | generators                      | data table           |
| configbanner                             | string              | get_from_content                | function             |
| 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                 | 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                |
| ${\it expanded path list from variable}$ | 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                               | function            | 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 locateformat function 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 encodecomment F fetchtable F preprocessed F install setdynamic function F processmk setenv function F processmklx 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 function popextrapath function stoptimina 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 function validatedpath function renewcache 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_aft      | er         |
| categorytonumber                | data table        | F nobreakspace_bef      | ore        |
| colors                          | data table        | F space_after           |            |
| decomposehangul                 | function          | F space_before          |            |
| defaults                        | table             | F zerowidthspace_a      | fter       |
| N inter_char_half_shrink_factor |                   | F zerowidthspace_before |            |
| 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 | readinteger1_le  | function |
| readcardinal1le   | function | readinteger2     | function |
| readcardinal2     | function | readinteger2_le  | function |
| readcardinal2le   | function | readinteger3     | function |
| readcardinal3     | function | readinteger3_le  | function |
| readcardinal3le   | function | readinteger4     | function |
| readcardinal4     | function | readinteger4_le  | function |
| readcardinal4le   | function | readintegertable | function |
| readcardinaltable | function |                  |          |

#### socket (extra lua)

S content-location

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

S reporting-mta

| S resent-   | bcc            | protect        | function |
|-------------|----------------|----------------|----------|
| S resent-   | сс             | report         | function |
| S resent-   | date           | select         | function |
| S resent-   | from           | sink           | function |
| S resent-   | message-id     | sinkt          | table    |
| S resent-   | reply-to       | F close-when-d | one      |
| S resent-   | sender         | F default      |          |
| S resent-   | to             | F http-chunked |          |
| S retry-a   | fter           | F keep-open    |          |
| S return-   | path           | skip           | function |
| S sender    |                | sleep          | function |
| S server    |                | source         | function |
| S smtp-re   | mote-recipient | sourcet        | table    |
| S status    |                | F by-length    |          |
| S subject   |                | F default      |          |
| S te        |                | F http-chunked |          |
| S to        |                | F until-closed |          |
| S trailer   |                | tcp            | function |
| S transfe   | r-encoding     | tcp4           | function |
| S upgrade   |                | tcp6           | function |
| S user-ago  | ent            | tp             | table    |
| S vary      |                | N TIMEOUT      |          |
| S via       |                | F connect      |          |
| S warning   |                | try            | function |
| S will-re   | try-until      | udp            | function |
| S www-autl  | henticate      | udp4           | function |
| S x-maile   | r              | udp6           | function |
| F lower     |                | url            | table    |
| F normalize | !              | F absolute     |          |
| http        | table          | F build        |          |
| N TIMEOUT   |                | F build_path   |          |
| S USERAGENT | •              | F escape       |          |
| F genericfo | rm             | F parse        |          |
| F open      |                | F parse_path   |          |
| F request   |                | F unescape     |          |
| newtry      | function       |                |          |
|             |                |                |          |

### sorters (context)

| basicsorter    | function | B pm            |            |
|----------------|----------|-----------------|------------|
| comparers      | table    | В ис            |            |
| F basic        |          | B zc            |            |
| constants      | table    | B zm            |            |
| S defaultdigit | S        | definitions     | data table |
| S defaultlangu | age      | firstofsplit    | function   |
| S defaultmetho | d        | packch          | function   |
| N digitsmaximu | m        | packuc          | function   |
| N digitsoffset |          | replacementlist | function   |
| N ignoredoffse | t        | setlanguage     | function   |
| N replacemento | ffset    | 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
resetmessages function

## storage (context)

| allocate   | function |
|------------|----------|
| data       | table    |
| mark       | function |
| marked     | function |
| max        | number   |
| min        | number   |
| nofmodules | number   |

| noftables       | number     |  |
|-----------------|------------|--|
| register        | function   |  |
| shared          | data table |  |
| storedfunctions | data tabl  |  |
| strip           | boolean    |  |
| tofmodules      | 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 | 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 |       |
| 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       |       | notes 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  |
| references<br>F analyze  | table | D internals<br>F load  |
|  | table |  |
| F analyze<br>F checkedfile<br>F checkedfileorurl   | table | F load<br>F loadpresets<br>F mark  |
| F analyze<br>F checkedfile   | table | F load<br>F loadpresets  |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage  | table | F load F loadpresets F mark S outermethod D pages  |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl   | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter   |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected   | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata   |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter   | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs  |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata   | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data   |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder  | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data F define  |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset   | table | F load F loadpresets F mark S outermethod D pages U prefixsplitter D productdata T programs T data F define F get  |
| F analyze F checkedfile F checkedfileorurl F checkedprogram F checkedralpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define   | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined  | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined D derived                                      | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined D derived F enhance                            | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined D derived F enhance D executers                | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedralpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined D derived F enhance D executers F expandcurrent | table | 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 analyze F checkedfile F checkedfileorurl F checkedprogram F checkedrealpage F checkedurl D collected U componentsplitter F currentmetadata F currentorder D currentset F define D defined D derived F enhance D executers                | table | 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 setandgetattribute               | F filter              |  |
| F setcomponent                     | F filtercollected     |  |
| F setinternalreference             | F finalize            |  |
| F setlinkmethod                    | F findinternal        |  |
| F setnextinternal                  | F flush               |  |
| F setnextorder                     | F get                 |  |
| F setreferencerealpage             | 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                          | <b>sections</b> table |  |
| F special operation                | F autodepth           |  |
| F special operation 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                             | F 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                            | F popblock            |  |
| registers table                    | F prefixedconverted   |  |
| F analyze                          | F pushblock           |  |
| D collected                        | F register            |  |
| F compare                          | D registered          |  |
| F define                           | F reportstructure     |  |

| F save                 |       | F    | resetshown                        |       |
|------------------------|-------|------|-----------------------------------|-------|
| T sectionblockdata     |       |      | resetused                         |       |
| T bodypart             |       |      | sort                              |       |
| S bookmark             |       |      | synonym                           |       |
| F set                  |       |      | tobesaved                         |       |
| F setblock             |       | tags |                                   | table |
| F setchecker           |       | _    | 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 | Т    | 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                |       |      | setcombination                    |       |
| D tobesaved            |       |      | setconstruct                      |       |
| synonyms               | table |      | setfigure                         |       |
| F analyzed             |       |      | setfloat                          |       |
| D collected            |       |      | setformulacontent                 |       |
| F compare              |       |      | sethighlight                      |       |
| F define               |       |      | setitem                           |       |
| F filter<br>F finalize |       |      | setitemgroup<br>setlist           |       |
| F flush                |       |      | setnotation                       |       |
|                        |       |      |                                   |       |
| F isshown<br>F isused  |       |      | setnotationsymbol<br>setparagraph |       |
| F meaning              |       |      | setproperty                       |       |
| F prepare              |       |      | setpublication                    |       |
| F process              |       |      | setregister                       |       |
| F register             |       |      | setsorting                        |       |
| F registershown        |       |      | setsynonym                        |       |
|                        |       |      | ,                                 |       |

F registerused

F settablecell

| F settabulatecell         | F start       |
|---------------------------|---------------|
| F settagdelimitedsymbol   | F stop        |
| F settagsubsentencesymbol | F strip       |
| F setupexport             | D taglist     |
| F setuserproperties       | T usewithcare |
| D specifications          | 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                | getdelcodes          | function            |
|--------------------------|----------------------|----------------------|---------------------|
| badness                  | function             | getdimen             | function            |
| box                      | table                | getglue              | function            |
| boxresources             | table                | getglyphdata         | function            |
| F getbox                 |                      | gethelptext          | function            |
| F getdimensions          |                      | getinteraction       | function            |
| F save                   |                      | getlccode            | function            |
| F use                    |                      | getlist              | function            |
| catcode                  | table                | getlocallevel        | function            |
| chardef                  | function             | getmath              | function            |
| conditionals             | data table           | getmathcode          | function            |
| constants                | data table           | getmathcodes         | function            |
| count                    | table                | getmuglue            | function            |
| cprint                   | function             | getmuskip            | function            |
| ctdcatcodes              | number               | getnest              | function            |
| ctxcatcodes              | number               | getpagestate         | function            |
| definefont               | function             | getsfcode            | function            |
| delcode                  | table                | getskip              | function            |
| dimen                    | table                | gettoks              | function            |
| directives               | data table           | getuccode            | function            |
| enableprimitives         | function             | glue                 | table               |
| error                    | function             | hashtokens           | function            |
| extraprimitives          | function             | ifs                  | data table          |
| fatalerror               | function             | inicatcodes          | number              |
| fontidentifier           | function             | isattribute          | function            |
| fontname                 | function             | isbox                | function            |
| force_synctex_line       | function             | iscount              | overloaded function |
| force_synctex_tag        | function             | isdefined            | function            |
| forcehmode               | function             | isdimen              | overloaded function |
| fprint                   | function             | isglue               | function            |
| get                      | function             | ismuglue             | function            |
| get_synctex_line         | function             | ismuskip             | overloaded function |
| get_synctex_mode         | function             | isskip               | overloaded function |
| get_synctex_tag          | function             | istoken              | function            |
| getattribute             | function             | istoks               | function            |
| getbox                   | function             | lastnodetype         | function            |
| getboxresourcebox        | function             | lccode               | table               |
| getboxresourcedimensions | function             | linebreak            | function            |
| getcatcode               | function<br>function | lists<br>luacatcodes | table<br>number     |
| getcount                 |                      |                      |                     |
| getdelcode               | function             | magicconstants       | table               |

setlinedir function N maxdimen setlist N runnina function setmath function N trueinch mathchardef function setmathcode function mathcode table setmathdir function function modes data table setmuqlue table function mualue setmuskip table function muskip setnest nest table setpardir function nilcatcodes number setsfcode function notcatcodes number setskip function number function settextdir function primitives function settoks function print function setuccode function prtcatcodes number sfcode table resetparagraph function shipout function function romannumeral function show context round function skip table runtoks function function sp saveboxresource function splitbox function function scale function sprint scantoks function systemmodes data table function function set takebox texcatcodes number set synctex line function function table set synctex mode toks set\_synctex\_no\_files function tpacatcodes number function tpbcatcodes number set synctex tag setattribute function tprint function setbox function trackers data table setboxdir function triggerbuildpage function setcatcode function txtcatcodes number function setcount function type setdelcode table function uccode setdimen function uprint function setglue function useboxresource function setglyphdata vrbcatcodes number function setinteraction function write function

function

setlccode

# texconfig (basic tex)

| error_line      | number              | max_in_open                | number            |
|-----------------|---------------------|----------------------------|-------------------|
| expand_depth    | number              | max_print_line             | number            |
| fix_mem_init    | 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)

closeinput function
write function

write\_nl function

## token (basic tex)

| biggest_char   | function | put_next        | function |
|----------------|----------|-----------------|----------|
| command_id     | function | scan_argument   | function |
| commands       | function | scan_char       | function |
| create         | function | scan_code       | function |
| expand         | function | scan_csname     | function |
| future_expand  | function | scan_dimen      | function |
| get_active     | function | scan_float      | function |
| get_cmdname    | function | scan_glue       | function |
| get_command    | function | scan_int        | function |
| get_csname     | function | scan_key        | function |
| get_expandable | function | scan_keyword    | function |
| get_frozen     | function | scan_keyword_cs | function |
| get_id         | function | scan_list       | function |
| get_index      | function | scan_real       | function |
| get_macro      | function | scan_skip       | function |
| get_meaning    | function | scan_string     | function |
| get_mode       | function | scan_token      | function |
| get_next       | function | scan_token_code | function |
| get_next_token | function | scan_tokenlist  | function |
| get_protected  | function | scan_toks       | function |
| get_tok        | function | scan_value      | function |
| gobble_dimen   | function | scan_word       | function |
| gobble_int     | function | set_char        | function |
| is_defined     | function | set_lua         | function |
| is_next_char   | function | set_macro       | function |
| is_token       | function | skip_next       | function |
| new            | function | to_string       | function |
| peek_next_char | function | type            | function |
|                |          |                 |          |

### tokens (context)

| astal                  | ble         | function   |              |               |                        | U loadfou       | ndtypescriptfile |  |
|------------------------|-------------|------------|--------------|---------------|------------------------|-----------------|------------------|--|
| bgrou                  | ир          | userdata   |              |               |                        | U resetct       | resetctxscanner  |  |
| bits                   |             | table      |              |               |                        | U rlap          |                  |  |
| N                      | active      |            |              |               |                        | U scratch       | counter          |  |
| N                      | N alignment |            |              |               | U scratchdimen         |                 |                  |  |
| N                      | begingrou   | р          |              |               |                        | U scratchmuskip |                  |  |
| N                      | character   |            |              |               | U scratchskip          |                 |                  |  |
| N                      | close       |            |              |               | U scratchtoken         |                 |                  |  |
| N                      | comment     |            |              |               | U secondoftwoarguments |                 |                  |  |
| N                      | endgroup    |            |              |               | U setfalsevalue        |                 |                  |  |
| N                      | endofline   | !          |              |               | U setsectionblock      |                 |                  |  |
| N                      | escape      |            |              |               | U setupsystem          |                 |                  |  |
| N                      | ignore      |            |              |               | U startcolumns         |                 |                  |  |
| N                      | invalid     |            |              |               |                        | U startta       | bulate           |  |
| N letter               |             |            | U starttitle |               |                        |                 |                  |  |
| N                      | N mathshift |            |              | U startxtitle |                        |                 |                  |  |
| N                      | open        |            |              |               |                        | U stopcolumns   |                  |  |
| N                      | other       |            |              |               |                        | U stoptab       | stoptabulate     |  |
| N                      | parameter   |            |              |               |                        | U stoptit       | stoptitle        |  |
| N                      | space       |            |              |               |                        | U stopxti       | stopxtitle       |  |
| N                      | subscript   |            |              |               |                        | U texsetu       | texsetup         |  |
| N                      | superscri   | pt         |              |               |                        | U xmlw          | xmlw             |  |
| N                      | whitespac   | е          |              |               | co                     | llectors        | <b>s</b> table   |  |
| <pre>cache table</pre> |             |            | T data       |               |                        |                 |                  |  |
| U                      | NC          |            |              |               |                        | F default       | words            |  |
| U                      | NR          |            |              |               |                        | F dowithw       | ords             |  |
| U                      | bf          |            |              |               |                        | F flush         |                  |  |
| U                      | color       |            |              |               |                        | F install       |                  |  |
| U                      | colordefa   | lc         |              |               |                        | F registe       | r                |  |
| U                      | colordeff   | lc         |              |               |                        | T registe       | red              |  |
| 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                    | nverters        | <b>s</b> table   |  |
| U                      | firstoftw   | oarguments |              |               |                        | S toboole       | an               |  |
| U                      | gobbleone   | argument   |              |               |                        | S todimen       | ı                |  |
|                        | goto        |            |              |               |                        | S toglue        |                  |  |
| U                      | iftrue      |            |              |               |                        | S tonumbe       | er               |  |
| U                      | input       |            |              |               |                        | S tostrin       | g                |  |

| create      | function | F    | integer  |       |
|-------------|----------|------|----------|-------|
| defined     | function |      | ischar   |       |
| egroup      | userdata |      | key      |       |
| getters     | table    |      | keyword  |       |
| F box       | cabic    |      | keywordo |       |
| F count     |          |      | list     | 3     |
| F dimen     |          |      | lxmlid   |       |
| F glue      |          |      | number   |       |
| F macro     |          |      | peek     |       |
| F meaning   |          |      | real     |       |
| F skip      |          |      | scanclos | ۵     |
| F token     |          |      | scanopen |       |
| hbox        | userdata |      | skip     |       |
| isdefined   | function |      | string   |       |
| istoken     | function |      | table    |       |
| letter      | function |      | token    |       |
| letters     | function | -    | tokencod | e     |
| new         | function | F    | tokenlis | t     |
| other       | function |      | tokens   |       |
| pickup      | function | F    | toks     |       |
| presets     | table    | F    | value    |       |
| T 1 string  |          | F    | verbatim |       |
| T 2 strings |          | F    | whd      |       |
| T 3 strings |          | F    | word     |       |
| T 4 strings |          | sett | ers      | table |
| T 5 strings |          | F    | box      |       |
| T 6 strings |          | F    | char     |       |
| T 7 strings |          | F    | count    |       |
| T 8 strings |          | F    | dimen    |       |
| printlist   | function | F    | glue     |       |
| scanners    | table    | F    | lua      |       |
| F argument  |          | F    | macro    |       |
| F array     |          | F    | skip     |       |
| F boolean   |          | shor | tcuts    | table |
| F char      |          | Т    | bits     |       |
| F code      |          |      | N active |       |
| F condition | al       |      | N alignm | ent   |
| F count     |          |      | N beging | roup  |
| F csname    |          |      | N charac | ter   |
| F dimen     |          |      | N close  |       |
| F dimension |          |      | N commen | t     |
| F float     |          |      | N endgro | up    |
| F glue      |          |      | N endofl | ine   |
| F hash      |          |      | N escape |       |
|             |          |      |          |       |

| N ignore          | F ischar        |
|-------------------|-----------------|
| N invalid         | F key           |
| N letter          | F keyword       |
| N mathshift       | F keywordcs     |
| N open            | F list          |
| N other           | F lxmlid        |
| N parameter       | F number        |
| N space           | F peek          |
| N subscript       | F real          |
| N superscript     | F scanclose     |
| N whitespace      | F scanopen      |
| N close           | F skip          |
| F inspect         | F string        |
| N open            | F table         |
| F report          | F token         |
| F scanargument    | F tokencode     |
| F scanarray       | F tokenlist     |
| F scanboolean     | F tokens        |
| F scanclose       | F toks          |
| F scancode        | F value         |
| F scanconditional | F verbatim      |
| F scancsname      | F whd           |
| F scandimen       | F word          |
| F scandimension   | F scannumber    |
| F scanhash        | F scanopen      |
| F scaninteger     | F scanstring    |
| F scankeyword     | F scantable     |
| F scankeywordcs   | F scantokenlist |
| F scanlist        | F scanverbatim  |
| T scanners        | F scanword      |
| F argument        | F toboolean     |
| F array           | F todimen       |
| F boolean         | T tokens        |
| F char            | F astable       |
| F code            | U bgroup        |
| F conditional     | T cache         |
| F count           | U NC            |
| F csname          | U NR            |
| F dimen           | U bf            |
| F dimension       | U color         |
| F float           | U colordefalc   |
| F glue            | U colordefflc   |
| F hash            | U colordefflt   |
| F integer         | U colordefrlt   |
|                   |                 |

U dofinishreference S todimen U dostarttext S toglue U finishjob S tonumber U firstofoneargument S tostrina U firstoftwoarguments F create F defined U gobbleoneargument U aoto U egroup U iftrue T getters U input F box U loadfoundtypescriptfile F count U resetctxscanner F dimen U rlap F alue U scratchcounter F macro U scratchdimen F meaning U scratchmuskip F skip U scratchskip F token U scratchtoken U hbox U secondoftwoarguments F isdefined U setfalsevalue F istoken F letter U setsectionblock U setupsystem F letters 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 scanarray T converters F scanboolean S toboolean F scanclose

F scancode F scantokenlist F scanconditional F scanverbatim F scancsname F scanword F scandimen F toboolean F scandimension F todimen F scanhash F tonumber F scaninteger F tostring F scankeyword U vbox F scankeywordcs U vtop F scanlist F tonumber F scannumber F tostring vbox userdata F scanopen userdata vtop F scanstring

F scantable

#### 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)

| -14              | 4-11- |                  |       |
|------------------|-------|------------------|-------|
| alignments       | table | T handlers       |       |
| F handler        |       | F installhandler |       |
| F set            | +-h1- | 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              |          | F register                          |             |
| F handler              |          | F reset                             |             |
| F keepligature         |          | F split                             |             |
| D mapping              |          | F startapply                        |             |
| F set                  |          | F stopapply                         |             |
| manipulators           | table    | F stripped                          |             |
| F apply                |          | F tostring                          |             |
| F applyspecific        | ation    | rubies                              | table       |
| T methods              | 301011   | F attach                            | cabic       |
| F Word                 |          | F check                             |             |
| F Words                |          | showsuspects                        | function    |
| F abbreviated          | iournal  | spacings                            | table       |
| F expandedjou          |          | F define                            |             |
| F lowercase            |          | F handler                           |             |
| F stripperiod          |          | D mapping                           |             |
| F uppercase            |          | T numbers                           |             |
| T patterns             |          | T frenchpunctu                      | ation       |
| U list                 |          | T characters                        |             |
| U pair                 |          | S name                              |             |
| F splitspecific        | ation    | 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 addanchortoli        | ne       | F construct                         |             |
| F addtoline            |          | F create                            |             |
| F calculatedelt        | a        | F finish_row                        |             |
| F checkline            |          | F flush                             |             |
| F handler              |          | F initialize_cor                    | nstruct     |
| F moveinline           |          | F initialize_ref                    | flow_height |
| F normalize            |          | F initialize_ref                    | flow_width  |
| F set                  |          | F next_row                          |             |
| periodkerns            | table    | F reflow_height                     |             |
| D factors              |          | F reflow_width                      |             |
|                        |          |                                     |             |
| F handler              |          | F set_construct                     |             |
| F handler<br>D mapping |          | F set_construct<br>F set_reflow_hei | ight        |
|                        | table    | <del>-</del>                        | -           |

#### updaters (context)

apply function
register function

# url (context)

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

# utf8 (context)

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

# utilities (context)

| debugger            | table | Fr    | readtag          |       |
|---------------------|-------|-------|------------------|-------|
| F disable           |       | Fs    | setposition      |       |
| F enable            |       | Fs    | size             |       |
| F savestats         |       | Fs    | skip             |       |
| F showstats         |       | Fs    | skiplong         |       |
| F showtraceback     |       | Fs    | skipposition     |       |
| files               | table | Fs    | skipshort        |       |
| F close             |       | F w   | ritebyte         |       |
| F getposition       |       | Fw    | ritecardinal1    |       |
| F getsize           |       | Fw    | ritecardinal1le  |       |
| F look              |       | Fw    | ritecardinal2    |       |
| F open              |       | Fw    | ritecardinal2le  |       |
| F read2dot14        |       | Fw    | ritecardinal3    |       |
| F readbyte          |       | Fw    | ritecardinal3le  |       |
| F readbytes         |       | Fw    | ritecardinal4    |       |
| F readbytetable     |       | Fw    | ritecardinal4le  |       |
| F readcardinal      |       | F w   | riteinteger1     |       |
| F readcardinal1     |       | Fw    | riteinteger1le   |       |
| F readcardinal1le   |       | F w   | riteinteger2     |       |
| F readcardinal2     |       | F w   | riteinteger2le   |       |
| F readcardinal2le   |       | F w   | riteinteger3     |       |
| F readcardinal3     |       | F w   | riteinteger3le   |       |
| F readcardinal3le   |       | F w   | riteinteger4     |       |
| F readcardinal4     |       | F w   | riteinteger4le   |       |
| F readcardinal4le   |       | F w   | ritestring       |       |
| F readcardinaltable | 2     | forma | tters            | table |
| F readchar          |       | F f   | ormatcolumns     |       |
| F readfixed2        |       | F۱    | .ist             |       |
| F readfixed4        |       | Fs    | stripzeros       |       |
| F readinteger       |       | garba | gecollector      | table |
| F readinteger1      |       | Fo    | check            |       |
| F readinteger1le    |       | N c   | riterium         |       |
| F readinteger2      |       | Ве    | enabled          |       |
| F readinteger2le    |       | lua   |                  | table |
| F readinteger3      |       | Ва    | alwaysstripcode  |       |
| F readinteger3le    |       | Fo    | checkmemory      |       |
| F readinteger4      |       | Fo    | compile          |       |
| F readinteger4le    |       | F۱    | oadedluacode     |       |
| F readintegertable  |       | Fι    | oadstring.       |       |
| F readsignedbyte    |       | F۱    | oadstripped.     |       |
| F readstring        |       | N n   | nofstrippedbytes |       |

| N nofstrippedchunks                         | B rightpage                     |
|---|---------------------------------|
| F registerfinalizer                         | B text                          |
| B stripcode                                 | F iterator                      |
| T strippedchunks                            | F keq to hash                   |
| F strippedloadstring                        | F listitem                      |
| T suffixes                                  | F make settings to hash pattern |
| S lua                                       | F mergehashes                   |
| S luc                                       | F options to array              |
| S lui                                       | F options to hash               |
| S luj                                       | T patterns                      |
| S luv                                       | U settings to array             |
| S tma                                       | U settings_to_hash_a            |
| S tmc                                       | U settings_to_hash_b            |
| S tua                                       | U settings to hash c            |
| S tuc                                       | U settings_to_hash_d            |
| packers table                               | U unittotex                     |
| F hashed                                    | F process_stripped_settings     |
| F new                                       | F rfc4180splitter               |
| F pack                                      | F runtime                       |
| F simplehashed                              | F settings to array             |
| F strip                                     | F settings to array obey fences |
| F unpack                                    | F settings to array with repeat |
| N version                                   | F settings to hash              |
| <pre>parsers table</pre>                    | F settings_to_hash_colon_too    |
| F add_settings_to_array                     | F settings_to_hash_strict       |
| F arguments_to_table                        | F settings_to_hash_tolerant     |
| F array_to_string                           | F settings_to_numbers           |
| F csvsplitter                               | F settings_to_set               |
| F getparameters                             | F simple_hash_to_string         |
| F groupedsplitat                            | F splitmethod                   |
| F hash_to_string                            | F splitthousands                |
| T hashes                                    | F stepper                       |
| T settings_to_set                           | F stripped_settings_to_array    |
| T min,max,fit,broad,auto                    | F totime                        |
| B auto                                      | F unittotex                     |
| B broad                                     | F unittoxml                     |
| B fit                                       | <b>randomizer</b> table         |
| B max                                       | F get                           |
| B min                                       | F getnumber                     |
| T text,hidden,paper,page,leftpage,rightpage | F getseed                       |
|   |                                 |
| B hidden                                    | F popseed                       |
| B hidden<br>B leftpage                      | F popseed<br>F pushseed         |
|   |                                 |

| F setseedi       |          | F ope   | n              |
|------------------|----------|---------|----------------|
| report           | function | F ope   | nstring        |
| sequencers       | table    | F rea   | d2dot14        |
| F appendaction   |          | F read  | d2dot4         |
| F appendgroup    |          | F read  | dbyte          |
| F compile        |          | F rea   | dbytes         |
| F disableaction  |          | F rea   | dbytetable     |
| F disablegroup   |          | F rea   | dcardinal      |
| F enableaction   |          | F rea   | dcardinal1     |
| F enablegroup    |          | F rea   | dcardinal2     |
| D functions      |          | F rea   | dcardinal2le   |
| F localize       |          | F read  | dcardinal3     |
| F new            |          | F rea   | dcardinal3le   |
| F nodeprocessor  |          | F read  | dcardinal4     |
| F prependaction  |          | F read  | dcardinal4le   |
| F prependgroup   |          | F read  | dcardinaltable |
| F removeaction   |          | F rea   | dchar          |
| F replaceaction  |          | F rea   | dfixed2        |
| F setkind        |          | F rea   | dfixed4        |
| F tostring       |          | F rea   | dinteger       |
| setters          | table    | F rea   | dinteger1      |
| F disable        |          | F rea   | dinteger2      |
| F enable         |          | F rea   | dinteger2le    |
| F initialize     |          | F rea   | dinteger3      |
| F list           |          | F rea   | dinteger3le    |
| F new            |          | F rea   | dinteger4      |
| F register       |          | F rea   | dinteger4le    |
| F report         |          | F rea   | dintegertable  |
| F reset          |          | F read  | dsignedbyte    |
| F show           |          | F rea   | dstring        |
| stacker          | table    | F set   | position       |
| F new            |          | Fsiz    | е              |
| storage          | table    | F ski   | ρ              |
| F allocate       |          | F ski   | pbytes         |
| F checked        |          | F ski   | plong          |
| F mark           |          |         | pshort         |
| F marked         |          | strings | table          |
| F setinitializer |          | F col   |                |
| F sparse         |          |         | lapsecrlf      |
| streams          | table    |         | matters        |
| F close          |          | Fac     |                |
| F getposition    |          | F ne    |                |
| F getstring      |          |         | collector      |
| F look           |          | F new   | repeater       |

F nice F insertbeforevalue T striplinepatterns F migratetable U collapse F removevalue F replacevalue U prune templates table U prune and collapse U prune and no empty F load U prune and to space F replace U retain F replacer U retain and collapse F resolve U retain and no empty zipfiles table F close F striplines F found F striplong F tabtospace F gunzipfile T tracers F hash tables table F list F accesstable F open F definedtable F unzip F definetable F unzipdir

F zipdir

F encapsulate

F insertaftervalue

# 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   |                 |            |

# xcomplex (context)

| I    | userdata | F pow        |
|------|----------|--------------|
| add  | function | F proj       |
| div  | function | F real       |
| eq   | function | F sin        |
| inde | ex table | F sinh       |
| UI   |          | F sqrt       |
| F    | _add     | F tan        |
| F    | -        | F tanh       |
| F    |          | F topair     |
| Т_   | _index   | F tostring   |
| U    |          | F voigt      |
|      | add      | F voigt_hwhm |
|      | div      | Fmul         |
|      | eq       | Sname        |
| F    | mul      | Fpow         |
| S    | name     | Fsub         |
|      | pow      | Ftostring    |
|      | sub      | Funm         |
| F    | tostring | F abs        |
| F    | unm      | F acos       |
| F    | abs      | F acosh      |
| F    | acos     | F arg        |
| F    | acosh    | F asin       |
| F    | arg      | F asinh      |
|      | asin     | F atan       |
|      | asinh    | F atanh      |
|      | atan     | F conj       |
|      | atanh    | F cos        |
|      | conj     | F cosh       |
|      | COS      | F dawson     |
|      | cosh     | F erf        |
|      | dawson   | F erfc       |
|      | erf      | F erfcx      |
|      | erfc     | F erfi       |
|      | erfcx    | F exp        |
|      | erfi     | Ui           |
|      | exp      | F imag       |
| U    |          | F log        |
|      | imag     | F new        |
|      | log      | F pow        |
| F    | new      | F proj       |

| F real      |          | cos      | function |
|-------------|----------|----------|----------|
| F sin       |          | cosh     | function |
| F sinh      |          | dawson   | function |
| F sqrt      |          | erf      | function |
| F tan       |          | erfc     | function |
| F tanh      |          | erfcx    | function |
| F topair    |          | erfi     | function |
| F tostring  |          | exp      | function |
| F voigt     |          | i        | userdata |
| F voigt_hwh | nm       | imag     | function |
| mul         | function | log      | function |
| name        | string   | new      | function |
| pow         | function | pow      | function |
| sub         | function | proj     | function |
| tostring    | function | real     | function |
| unm         | function | sin      | function |
| abs         | function | sinh     | function |
| acos        | function | sqrt     | function |
| acosh       | function | tan      | function |
| arg         | function | tanh     | function |
| asin        | function | topair   | function |
| asinh       | function | tostring | function |
| atan        | function | voigt    | function |

function

function

atanh conj voigt\_hwhm function

# xmath (context)

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

# xml (context)

| addentitiesdoctype   | function            | E modding                      |            |
|----------------------|---------------------|--------------------------------|------------|
| addspecialcode       | function            | F padding                      |            |
| after                | function            | F stylevalue                   |            |
| all                  | function            | F todimension  defaulthandlers | table      |
| acc<br>applylpath    | function            | D file                         | table      |
| applyselector        | function            |                                |            |
| assign               | function            | D parsedxml<br>D string        |            |
| attribute            | function            | D string D tex                 |            |
| badinclusions        | function            | D tex<br>D texline             |            |
| before               | function            | D textine D texpace            |            |
| body                 | function            | D verbose                      |            |
| builtinentities      | table               | defaultprotocol                | string     |
| B amp                | tubte               | delete                         | function   |
| B apos               |                     | <del>delete element</del>      | function   |
| B gt                 |                     | despecialized                  | function   |
| B lt                 |                     | each                           | function   |
| B quot               |                     | each element                   | function   |
| 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      |
| collect elements     | function            | •<br>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            |          | <pre>inject_element_after</pre>  | function |
| T xml            |          | <pre>inject_element_before</pre> | function |
| F all            |          | injectafter                      | function |
| F att            |          | injectbefore                     | function |
| F attribute      |          | insert                           | function |
| F attributes     |          | insert_element                   | function |
| F cdata          |          | <u>insert_element_after</u>      | function |
|                  |          |                                  |          |

| insert_element_before         | 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            | •                          | function |
| kind                          | function            | remapnamespace<br>remaptag | function |
| last                          | function            | •                          | function |
| lastmatch                     | function            | rename                     | function |
| load                          | function            | renamespace                | userdata |
| lpath                         | function            | reparsedentitylpeg         | function |
| •                             |                     | replace                    |          |
| lpathcached                   | function            | replace_element            | function |
| lpathcalls                    | function            | resetinjectors             | function |
| lshow                         | function            | resolvens                  | function |
| makestandalone                | function            | root                       | function |
| match                         | 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 >                        |          |
| <pre>process_attributes</pre> | 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)

archives table
closearchive function

openarchive function
registeredfiles table

#### zlib (extra lua)

adler32 function
compress function
compressobj function
crc32 function

decompress function
decompressobj function
version function