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

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

## global (alias: \_G)

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

| layouts         | table    | rawlen          | function   |
|-----------------|----------|-----------------|------------|
| lfs             | table    | rawset          | function   |
| libraries       | table    | regimes         | table      |
| lmx             | table    | require         | function   |
| load            | function | requireswiglib  | function   |
| loadfile        | function | resolvers       | table      |
| loadstring      | function | ruledspace      | function   |
| logs            | table    | sandbox         | table      |
| lpdf            | table    | scripts         | table      |
| lpeg            | table    | select          | function   |
| ltn12           | table    | set             | table      |
| lua             | table    | setinspector    | function   |
| luatex          | table    | setmetatable    | function   |
| lxml            | table    | sio             | table      |
| math            | table    | socket          | table      |
| mathematics     | table    | sorters         | table      |
| md5             | table    | statistics      | table      |
| metapost        | table    | status          | table      |
| mime            | table    | storage         | table      |
| module          | function | streams         | table      |
| moduledata      | table    | string          | table      |
| modules         | table    | structures      | table      |
| mp              | function | swiglib         | function   |
| mplib           | table    | table           | table      |
| next            | function | tex             | table      |
| noads           | table    | texconditionals | data table |
| node            | table    | texconfig       | table      |
| nodes           | table    | texconstants    | data table |
| number          | table    | texifs          | data table |
| objects         | table    | texio           | table      |
| optionalrequire | function | texisdefined    | function   |
| os              | table    | texmodes        | data table |
| package         | table    | texsystemmodes  | data table |
| pagebuilders    | table    | thirddata       | table      |
| pairs           | function | toboolean       | function   |
| parametersets   | table    | token           | table      |
| pcall           | function | tokens          | table      |
| pdf             | table    | tonumber        | function   |
| pdfscanner      | table    | tostring        | function   |
| physics         | table    | tracers         | table      |
| print           | function | trackers        | table      |
| publications    | table    | type            | function   |
| rawequal        | function | typesetters     | table      |

table

function unicode

rawget

| unpack    | function | vf          | table    |
|-----------|----------|-------------|----------|
| url       | table    | visualizers | table    |
| userdata  | table    | xml         | table    |
| utf       | table    | xpcall      | function |
| utf8      | table    | zip         | table    |
| utilities | table    | zlib        | table    |
| V         | number   |             |          |

## attributes (context)

| applyoverloads   | function  | ς    | model          |          |
|------------------|-----------|------|----------------|----------|
| colorintents     | table     |      | models         |          |
| N attribute      |           |      | mpcolor        |          |
| D data           |           |      | mpnamedcolor   |          |
| F enable         |           |      | mpoptions      |          |
| F handler        |           |      | namedcolorattr | ibutes   |
| F register       |           |      | none           |          |
| D registered     |           | F    | popset         |          |
| colors           | table     |      | processcolorco | mponents |
| N attribute      |           |      | pushset        |          |
| F cmyk           |           | F    | register       |          |
| F cmyktogray     |           | D    | registered     |          |
| F cmyktorgb      |           | F    | registerspotco | lor      |
| F colorcomponent | S         | F    | rgb            |          |
| D counts         |           | F    | rgbtocmyk      |          |
| B couple         |           | F    | rgbtogray      |          |
| F currentmodel   |           | F    | rgbtohsv       |          |
| F currentnamedmo | del       | N    | selector       |          |
| D data           |           | F    | setlist        |          |
| N default        |           | F    | setmodel       |          |
| F defineintermed | iatecolor | F    | setpagecolormo | del      |
| F definemultiton | ecolor    | D    | sets           |          |
| F defineprocesso | olor      | F    | spec           |          |
| F definesimplegr | ay        | F    | spot           |          |
| F definespotcolo | r         | F    | spotcolorname  |          |
| F definetranspar | ency      | F    | spotcolorparen | t        |
| F enable         |           | F    | spotcolorvalue |          |
| F filter         |           | В    | supported      |          |
| F forcedmodel    |           | F    | toattributes   |          |
| F forcesupport   |           | F    | transparencyco | mponents |
| F formatcolor    |           | В    | triggering     |          |
| F formatgray     |           | F    | usecolors      |          |
| F getpagecolormo | del       | D    | valid          |          |
| F gray           |           | F    | value          |          |
| F graytohsv      |           | D    | values         |          |
| F handler        |           |      | weightgray     |          |
| F hsvtogray      |           | defi |                | function |
| F hsvtorgb       |           | effe |                | table    |
| F iccprofile     |           |      | attribute      |          |
| F isblack        |           |      | data           |          |
| N main           |           | F    | enable         |          |

| F handler  |                                |   | N darken  |                 |
|--|--------------------------------|---|---|-----------------|
| F register   |                                |   | N difference  |                 |
| D registered   |                                |   | N exclusion   |                 |
| D values   |                                |   | N hardlight   |                 |
| handlers   | table                          |   | -   |                 |
| list   | data table                     |   | N hue   |                 |
|  |                                |   | N lighten   |                 |
| markasoverload   |                                |   | 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                       | В   | supported   |                 |
| private  | function                       | F   | toattribute   |                 |
| public   | function                       | В   | triggering  |                 |
| restore  | function                       | F   | value   |                 |
| save   | function                       | D   | values  |                 |
|  |                                |   |   |                 |
| showcurrent  | function                       | unse  | tvalue  | number          |
|  | function<br>table              |   | tvalue<br>erlayers  | number<br>table |
| showcurrent  | table                          | view  | _   |                 |
| showcurrent<br>states  | table                          | view<br>N                                   | erlayers  |                 |
| showcurrent<br>states<br>F disabletrigger  | table                          | <b>vie</b> w<br>N<br>F                      | erlayers<br>attribute   |                 |
| showcurrent<br>states<br>F disabletrigger<br>F enabletriggeri  | table                          | <b>view</b><br>N<br>F<br>D                  | erlayers<br>attribute<br>cleanup  |                 |
| <pre>showcurrent states    F disabletrigger    F enabletriggeri    F finalize</pre>  | table                          | <b>view</b><br>N<br>F<br>D                  | erlayers<br>attribute<br>cleanup<br>data  | table           |
| <pre>showcurrent states   F disabletrigger   F enabletriggeri   F finalize   F initialize</pre>  | table                          | view<br>N<br>F<br>D<br>F                    | erlayers<br>attribute<br>cleanup<br>data<br>define  | table           |
| showcurrent states F disabletrigger F enabletriggeri F finalize F initialize F process   | table                          | view<br>N<br>F<br>D<br>F<br>F               | erlayers attribute cleanup data define definedlayoutc   | table           |
| showcurrent states F disabletrigger F enabletriggeri F finalize F initialize F process F selective   | table                          | view N F D F F                              | erlayers attribute cleanup data define definedlayoutce enable   | table           |
| showcurrent states F disabletriggeri F enabletriggeri F finalize F initialize F process F selective F stacked  | table                          | view N F D F F F F                          | erlayers attribute cleanup data define definedlayoutce enable forcesupport  | table           |
| showcurrent states  F disabletriggeri F enabletriggeri F finalize F initialize F process F selective F stacked F stacker   | table<br>ing<br>ng             | View  N F D F F F F F F F F                 | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler  | table           |
| showcurrent states  F disabletriggeri F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system  | table ing ng                   | View  N F D F F F D D                       | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder   | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads   | table ing ng function function | View  N F D F F F F F F F F F               | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise  | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies  | table ing ng function function | View  N F D F F F F F D D D                 | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register   | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute  | table ing ng function function | View  N F D F F F F D F F F F F F F F F F F | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered  | table           |
| showcurrent states  F disabletriggeri F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data  | table ing ng function function | View  N F D F F F D F F F F F F F F F F F F | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin  | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data F enable  | table ing ng function function | View  N F D F F F F F F F F F F F F F F F F | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin resolve_end  | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data F enable F forcesupport                           | table ing ng function function | View  N F D F F F F F F F F F F F F F F F F | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin resolve_end resolve_reset                                  | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data F enable F forcesupport F handler                 | table ing ng function function | View  N F D F F F F F F F D F F D F F F F F | erlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin resolve_end resolve_reset resolve_step                     | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data F enable F forcesupport F handler T names         | table ing ng function function | View  N F D F F F F F D F D F F F F F F F F | derlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin resolve_end resolve_reset resolve_step scopes             | table           |
| showcurrent states  F disabletrigger F enabletriggeri F finalize F initialize F process F selective F stacked F stacker system tooverloads transparencies N attribute D data F enable F forcesupport F handler T names N color | table ing ng function function | View  N F D F F F F D F F F F F F F F F F F | derlayers attribute cleanup data define definedlayoutce enable forcesupport handler hasorder listwise register registered resolve_begin resolve_end resolve_reset resolve_step scopes setfeatures | table           |

- B supported
- D values

#### backends (context)

F fieldsurrounding

codeinjections table F getbookmarks F boxresourcedimensions F getdefaultfieldvalue F getfieldcategory F registerboxresource F restoreboxresource F aetfieldset current strina F getformatoption defaults table F gethnos T codeiniections F getmatrix F gethpos F getoutputfilename F getmatrix F getpos F getpos F getpreviewfigure F aetypos F aetypos F hasmatrix F hasmatrix T nodeinjections F insertrenderingwindow T registrations F mergebookmarks D tables F mergereferences included table F mergeviewerlayers B context F prerollreference B date F presetsymbol B id F presetsymbollist B metadata F processrendering B pdf F registerdocumentcloseaction install function F registerdocumentopenaction nodeinjections table F registeredsymbol F restore F registerpagecloseaction F save F registerpageopenaction F transform F registersymbol function nothing F setfieldcalculationset pdf table F setfigurealternative T codeiniections F setfigurecolorspace F addbookmarks F setfiguremask F analyzenormalsymbol F setformat F analyzesymbol F setformsmethod F attachmentid F setpagetransition F clonefield F setupcanvas F definefield F setupidentity F definefieldset F setxmpfile F defineviewerlaver F startlaver F embedfile F startunicodetoactualtext F enabletags F startunicodetoactualtextdirect F exportformdata F stoplayer

F stopunicodetoactualtext

F stopunicodetoactualtextdirect
F supportedformats

F useviewerlayer F validfield

F validfieldcategory

F unicodetoactualtext

F validfieldset

S comment

 ${\sf T}\ {\sf nodeinjections}$ 

F addtags
F annotation
F attachfile

F changestackedlayer

F cmykcolor
F comment
F destination
F effect
F graycolor

F injectbitmap
F insertmovie
F insertsound

F insertswf

F knockout
F negative

F overprint

F positive F reference

F rgbcolor
F spotcolor
F startlayer

F startstackedlayer

F stoplayer

F stopstackedlayer
F transparency
F typesetfield
T registrations

F cmykindexcolor F cmykspotcolor

F getspotcolorreference

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

T tables
D vfspecials

registrations table
tables table
timestamp function

## bit32 (basic lua)

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

## blobs (context)

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

## boolean (context)

tocontext function
tonumber function

#### buffers (context)

| append         | function |
|----------------|----------|
| assign         | function |
| collectcontent | function |
| erase          | function |
| exists         | function |
| getcontent     | function |
| getlines       | function |
| loadcontent    | function |
| parallel       | table    |

F define

F hassomecontent

F next
F place
F reset
F save

prepend function
raw function
run function
undent function

## builders (context)

| kernel    | table           | T registered           |
|-----------|-----------------|------------------------|
| F hypher  | nation          | F reset                |
| F kernir  | ng              | F set                  |
| F ligatu  | ıring           | F split                |
| F mlist_  | _to_hlist       | F start                |
| T origin  | nals            | F stop                 |
| F hyph    | enate           | F tag                  |
| F kern    | ing             | <b>profiling</b> table |
| F liga    | turing          | F add                  |
| paragraph | <b>is</b> table | F distance             |
| T constr  | ructors         | F fixedprofile         |
| N attr    | ibute           | F get                  |
| F defi    | ne              | F list                 |
| F disa    | ble             | F pagehandler          |
| F enab    | le              | F profilebox           |
| F hand    | ler             | F set                  |
| T meth    | ods             | <b>vspacing</b> table  |
| F bas     | sic             | F analyze              |
| F de      | fault           | D categories           |
| F hpa     | ack             | F collapsevbox         |
| F one     | eline           | T data                 |
| D name    | S               | D map                  |
| D numb    | ers             | D skip                 |
| F set     |                 | D snapmethods          |
| F star    | t               | F definesnapmethod     |
| F stop    |                 | B fixed                |
| T expans  | sion            | F pagehandler          |
| F trac    | е               | F resetprevdepth       |
| F keepto  | ogether         | F setmap               |
| F regist  | tertogether     | F setskip              |
| T soluti  | ions            | F snapbox              |
| T spli    | tters           | F tocategories         |
| F de      | fine            | F tocategory           |
| F op      | timize          | F vboxhandler          |

## caches (context)

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

#### callback (basic tex)

find function
list function

register overloaded function

## callbacks (context)

| freeze    | function         | В | insert_local_par      |
|-----------|------------------|---|-----------------------|
| known     | function         | В | kerning               |
| list      | data table       | В | ligaturing            |
| рор       | function         | В | linebreak_filter      |
| push      | function         | В | mlist_to_hlist        |
| register  | function         | В | open_read_file        |
| report    | function         | В | post_linebreak_filter |
| supported | table            | В | pre_dump              |
| B append  | _to_vlist_filter | В | pre_linebreak_filter  |
| B build_p | page_insert      | В | pre_output_filter     |
| B buildpa | nge_filter       | В | process_input_buffer  |
| B call_e  | lit              | В | process_jobname       |
| B contrib | oute_filter      | В | process_output_buffer |
| B define  | _font            | В | process_rule          |
| B find_c: | dmap_file        | В | read_cidmap_file      |
| B find_da | ata_file         | В | read_data_file        |
| B find_e  | nc_file          | В | read_enc_file         |
| B find_fo | ont_file         | В | read_font_file        |
| B find_fo | ormat_file       | В | read_map_file         |
| B find_i  | nage_file        | В | read_opentype_file    |
| B find_ma | p_file           | В | read_pk_file          |
| B find_o  | entype_file      | В | read_truetype_file    |
| B find_o  | rtput_file       | В | read_typel_file       |
| B find_pl | _file            | В | read_vf_file          |
| B find_re | ead_file         | В | show_error_hook       |
| B find_t  | ruetype_file     | В | show_error_message    |
| B find_ty | /pel_file        | В | show_lua_error_hook   |
| B find_v  | _file            | В | show_warning_message  |
| B find_w  | rite_file        | В | start_file            |
| B finish  | _pdffile         | В | start_page_number     |
| B finish  | _pdfpage         | В | start_run             |
| B finish  | _synctex         | В | stop_file             |
| B glyph_r | not_found        | В | stop_page_number      |
| B glyph_s | stream_provider  | В | stop_run              |
| B hpack_  | filter           |   | vpack_filter          |
| B hpack_d | quality          | В | vpack_quality         |
| B hyphena | ite              | В | wrapup_run            |

#### catcodes (context)

names data table
numbers data table

register function

#### characters (context)

| activeoffset   | number     | is spacing           | data table |
|----------------|------------|----------------------|------------|
| adobename      | function   | lcchars              | data table |
| bidi           | data table | lccode               | function   |
| blockrange     | function   | lccodes              | data table |
| blocks         | data table | lettered             | function   |
| casemap        | table      | lhash                | data table |
| categories     | data table | linebreaks           | data table |
| category       | function   | lower                | function   |
| categorytags   | data table | mathlists            | data table |
| classifiers    | table      | mirrors              | table      |
| collapsed      | data table | otfscripts           | data table |
| contextname    | function   | private              | table      |
| csletters      | data table | ranges               | data table |
| data           | data table | registerentities     | function   |
| decomposed     | data table | remap hangul syllabe | function   |
| description    | function   | setactivecatcodes    | function   |
| descriptions   | data table | setlettercatcodes    | function   |
| detailtags     | data table | shape                | function   |
| directions     | table      | shaped               | function   |
| emoji          | table      | shash                | data table |
| F compact      |            | shchars              | data table |
| F known        |            | shcodes              | data table |
| F resolve      |            | showstring           | function   |
| emojized       | function   | specialchars         | data table |
| enccodes       | data table | specials             | data table |
| entities       | data table | splits               | table      |
| fallbacks      | data table | T char               |            |
| filters        | data table | T compat             |            |
| fractions      | table      | subscripts           | table      |
| fromnumber     | function   | superscripts         | table      |
| fschars        | data table | synonyms             | data table |
| fscodes        | data table | tex                  | table      |
| getrange       | function   | D accentmapping      |            |
| graphemes      | data table | D commandmapping     |            |
| hangul         | data table | F defineaccents      |            |
| initialize     | function   | F safechar           |            |
| is_character   | data table | F toutf              |            |
| is_command     | data table | F toutfpattern       |            |
| is_letter      | data table | textclasses          | table      |
| is_mark        | data table | tonumber             | function   |
| is_punctuation | data table | ucchars              | data table |

uccodefunctionuccodesdata tableuhashdata table

unicodechar upper function function

#### chemistry (context)

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

moleculefunctionmoleculeparseruserdatastartfunctionstopfunctionstructuresnumberundefinefunction

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

| verbose     | table    | word  | function |
|-------------|----------|-------|----------|
| D data      |          | words | function |
| F translate |          | year  | function |
| weekday     | function |       |          |

## coroutine (basic lua)

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

#### ctxrunner (context)

load function prepfiles data table
preparedfile function resolve function

## debug (basic lua)

| debug        | function | sethook      | function |
|--------------|----------|--------------|----------|
| gethook      | function | setlocal     | function |
| getinfo      | function | setmetatable | function |
| getlocal     | function | setupvalue   | function |
| getmetatable | function | setuservalue | function |
| getregistry  | function | traceback    | function |
| getupvalue   | function | upvalueid    | function |
| getuservalue | function | upvaluejoin  | function |

#### dir (context)

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

function

function function function function

## directives (context)

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

#### document (context)

arguments files **functions** getargument getfilename options

data table table table function function table

D modes D modules

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

## environment (context)

| argument            | function   | luafile                | function   |
|---------------------|------------|------------------------|------------|
| arguments           | data table | luafilechunk           | function   |
| basicengines        | data table | luatexengine           | string     |
| currentrun          | number     | luatexfuncitonality    | number     |
| default_texmfcnf    | string     | luatexversion          | number     |
| definefilefallback  | function   | maxnofruns             | number     |
| definefilesynonym   | function   | originalarguments      | data table |
| engineflags         | data table | outputfilename         | string     |
| filename            | string     | 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   |
| loadexamodes        | function   | validengines           | data table |
| loadluafile         | function   | version                | string     |
|                     |            |                        |            |

#### epdf (extra tex)

AttributeOwner\_Type function
Attribute\_Type function
Object\_Type function
StructElement\_Type function

open
openMemStream
type

overloaded function
function
function

#### experiments (context)

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

register function report function show function value function

#### figures (context)

applvratio function function badname bases data table bitmapimage function boxnumber number data table cachepaths check function checkers data table converters data table current function defaultdepth number defaultheight number defaultsearch hool ean defaultwidth number done function function dummv existers data table exists function formats data table found data table function get aetinfo function getrealpage function function quess hash function identifiers data table identify function table images

F boxes
F check
F checksize
F clone
F copy
F immediatewrite

F immediatewrite
F immediatewriteobject

F keys F new F node rion F ofindex
rion F package
table F print
rion F scan
r F serialize
table F tonode
rion F totable
table F types
table F write

function includers data table initialize function data table loaded data table localpaths magics data table mergegoodies function nofmissing number nofprocessed number order data table paths data table data table patterns pop function preferguality boolean programs data table function push registerpattern function registerresource function function registersuffix data table resources function scale function set function setlookups setmemstream function setorder function setpaths function suffixes data table

data table

used

#### file (basic lua)

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

function

function

function

function

function function function

function function

function function

function function

function function function

function

function

function

## fio (extra lua)

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

### floats (context)

| analysemethod              | function | nofstacked | function |
|----------------------------|----------|------------|----------|
| ${\tt checked page float}$ | function | pop        | function |
| collect                    | function | push       | function |
| consult                    | function | resave     | function |
| flush                      | function | save       | function |
| getvariable                | function | stacked    | function |
| hasstacked                 | function |            |          |

### font (basic tex)

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

# fonts (context)

| -                 |           |                         |
|-------------------|-----------|-------------------------|
| analyzers         | table     | F currentfonthasfeature |
| D features        |           | D designsizes           |
| D initializers    |           | D dontembed             |
| D methods         |           | F enhanceparameters     |
| F setstate        |           | T enhancers             |
| D states          |           | T afm                   |
| B useunicodemarks |           | F apply                 |
| checkers          | table     | F patch                 |
| F getmissing      |           | T patches               |
| F missing         |           | F register              |
| F placeholder     |           | F report                |
| cid               | table     | F register              |
| F getmap          |           | F report                |
| F loadfile        |           | T otf                   |
| collections       | table     | F addfeature            |
| F checkenabled    |           | F apply                 |
| F clonevector     |           | F enhance               |
| F define          |           | F patch                 |
| T definitions     |           | T patches               |
| F found           |           | F register              |
| F prepare         |           | F report                |
| F process         |           | F register              |
| F registermain    |           | F report                |
| F report          |           | T tfm                   |
| F reset           |           | F apply                 |
| T vectors         |           | F patch                 |
| constructors      | table     | T patches               |
| F addcharacters   |           | F register              |
| F addcoreunicodes | S         | F report                |
| F aftercopyingch  | aracters  | F register              |
| F applymanipulato | ors       | F report                |
| F assignmathpara  | neters    | N factor                |
| B autocleanup     |           | T features              |
| F beforecopyingch | haracters | D afm                   |
| D cache           |           | D otf                   |
| B cacheintex      |           | D tfm                   |
| F calculatescale  |           | F finalize              |
| F checkedfeatures | S         | F getfeatureaction      |
| F checkedfilename | e         | F getprivate            |
| F cleanuptable    |           | T handlers              |
| F collectprocesso | ors       | T afm                   |

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

F cff2 F getfactors F cffcheck F getscales F checkhash F gotodatatable F cmap F normalizedaxis F colr T normalizedaxishash F readvariationdata F compact F cpal F reportskippedtable F ebdt F setvariabledata F eblc F hhea F ebsc F hmtx F hvar F expand F kern F extend F fvar F loadfont F gdef F loadshapes F getcomponents F loca F getinfo F math F glyf F maxp F mvar F gpos 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 stat F pair F single T streamreader F gsub F close T qsubhandlers F getposition F alternate F getsize F chainedcontext F look F context F open F extension F read2dot14 F readbyte F ligature F multiple F readbytes F reversechainedcontextsingle F readbytetable F single F readcardinal F gvar F readcardinal1 F head F readcardinal2 T helpers F readcardinal2le F axistofactors F readcardinal3 F cleanname F readcardinal3le F getaxisscale F readcardinal4

| F readcardinal4le | T statistics         |
|-------------------|----------------------|
| F readchar        | D usedfeatures       |
| F readfixed2      | F storepdfdata       |
| F readfixed4      | T svg                |
| F readinteger     | F filterglyph        |
| F readintegerl    | F topdf              |
| F readinteger2    | D svgcache           |
| F readinteger2le  | B svgenabled         |
| F readinteger3    | T tables             |
| F readinteger3le  | D baselines          |
| F readinteger4    | D features           |
| F readinteger4le  | D featuretypes       |
| F readsignedbyte  | D languages          |
| F readstring      | D scripts            |
| F readtag         | N version            |
| F setposition     | T pfb                |
| F size            | F loadvector         |
| F skip            | T tfm                |
| F skiplong        | F addtounicode       |
| F skipposition    | D features           |
| F skipshort       | N maxnestingdepth    |
| F writebyte       | N maxnestingsize     |
| F writecardinal2  | F reencode           |
| F writecardinal4  | F setfeatures        |
| F writestring     | N version            |
| F svg             | T vf                 |
| N tableversion    | T combinations       |
| F unifymissing    | F combine            |
| F unpack          | T combiner           |
| F vhea            | D commands           |
| F vmtx            | D helpers            |
| F vorg            | D math               |
| F vvar            | D predefined         |
| F woff2otf        | N version            |
| registerpalette   | D whatever           |
| registerplugin    | F hashfeatures       |
| reorderlookups    | F hashinstance       |
| sbix              | T hashmethods        |
| F topdf           | F normal             |
| sbixcache         | F virtual            |
| sbixenabled       | F initializefeatures |
| scriptandlanguage | T keys               |
| setdynamics       | T characters         |
| setfeatures       | T descriptions       |
|                   |                      |

F

Т

D

F F

| T. a. a. a. a. a.        | S                  |          |
|--------------------------|--------------------|----------|
| T parameters             | S name             |          |
| S ascender               | S noglyphnames     | 5        |
| S descender              | S nostackmath      |          |
| S designsize             | S psname           |          |
| T expansion              | S textitalics      |          |
| S auto                   | S virtualized      |          |
| S shrink                 | D loadedfonts      |          |
| S step                   | S namemode         |          |
| S stretch                | N noffontsloaded   |          |
| S extendfactor           | N nofsharedfonts   |          |
| S factor                 | N nofsharedhashes  |          |
| S hfactor                | N nofsharedvector  | `S       |
| S mathsize               | N privateoffset    |          |
| T protrusion             | D privateslots     |          |
| S auto                   | F readanddefine    |          |
| S quad                   | F registerfeature  |          |
| S scaledpoints           | F resetfeature     |          |
| S scriptpercentage       | B resolvevirtualt  | :00      |
| S scriptscriptpercentage | F scale            |          |
| S size                   | F scaled           |          |
| S slantfactor            | F setfactor        |          |
| S slantperpoint          | F setfeature       |          |
| T spacing                | F setname          |          |
| S extra                  | B sharefonts       |          |
| S shrink                 | F trytosharefont   |          |
| S stretch                | N version          |          |
| S width                  | current            | function |
| S units                  | currentid          | function |
| S vfactor                | definers           | table    |
| S xheight                | F addlookup        |          |
| T properties             | F analyze          |          |
| S autoitalicamount       | F applypostproces  | sors     |
| S cidinfo                | F checkedmode      |          |
| S embedding              | F checkedscript    |          |
| S encodingbytes          | F current          |          |
| S filename               | S defaultlookup    |          |
| S finalized              | F define           |          |
| S fontname               | F getspecification | on       |
| S format                 | F internal         |          |
| S fullname               | F loadfont         |          |
| S hasitalics             | F makespecificati  | .on      |
| S hasmath                | T methods          |          |
| S mathitalics            | F install          |          |
| S mode                   | D variants         |          |
|                          |                    |          |

| F read            |            | T data                 |         |
|-------------------|------------|------------------------|---------|
| F register        |            | T dejavu-math          |         |
| F registered      |            | S author               |         |
| F registersplit   |            | S comment              |         |
| F resetnullfont   |            | S copyright            |         |
| F resolve         |            | B initialized          |         |
| T resolvers       |            | T mathematics          |         |
| F file            |            | T alternate            | S       |
| F name            |            | T dotless              |         |
| F spec            |            | S commen               | t       |
| definetypeface    | function   | S featur               | е       |
| encodings         | table      | N value                |         |
| T agl             |            | T kerns                |         |
| D ctxcodes        |            | S name                 |         |
| D extras          |            | S version              |         |
| D names           |            | D designsizes          |         |
| D synonyms        |            | D filenames            |         |
| D unicodes        |            | F getcomposition       | S       |
| D cache           |            | T list                 |         |
| F is_known        |            | F load                 |         |
| D known           |            | F prepare_featur       | es      |
| F load            |            | F register             |         |
| F make_unicode_ve | ctor       | F registerpostpr       | ocessor |
| D math            |            | F report               |         |
| N version         |            | T suffixes             |         |
| enhanceid         | function   | handlers               | table   |
| expansions        | data table | hashes                 | table   |
| formats           | data table | D characters           |         |
| getalternate      | function   | D classes              |         |
| getkern           | function   | D csnames              |         |
| getmultiple       | function   | D descriptions         |         |
| getsubstitution   | function   | D dynamics             |         |
| getters           | table      | D emwidths             |         |
| T alternate       |            | D exheights            |         |
| F opentype        |            | D extensibles          |         |
| T kern            |            | D features             |         |
| F opentype        |            | D identifiers          |         |
| F type1           |            | D italics              |         |
| T multiple        |            | D lastmathids          |         |
| F opentype        |            | D marks                |         |
|                   |            |                        |         |
| T substitution    |            | D modes                |         |
| F opentype        |            | D modes<br>D originals |         |
|                   | table      | D modes                |         |

| D properties      |           |   | F format       |            |
|-------------------|-----------|---|----------------|------------|
| D quads           |           |   | F onetimemessa | age        |
| D resources       |           |   | F register     |            |
| T setdynamics     |           |   | F reportdefine | edfonts    |
| T shapes          |           |   | F reportusedfe |            |
| D spaces          |           | п | nappings       | table      |
| D spacings        |           |   | F addtounicode |            |
| T streams         |           |   | F fromunicode  |            |
| D unicodes        |           |   | F loadfile     |            |
| D variants        |           |   | F loadline     |            |
| D xheights        |           |   | F makenamepars | ser        |
| helpers           | table     |   | D overloads    |            |
| F addextraprivate | e         |   | F reset        |            |
| F addprivate      |           |   | F tounicode    |            |
| F checkflags      |           |   | F tounicode16  |            |
| F checkmerge      |           |   | F tounicode16s | sequence   |
| F checksteps      |           | n | netapost       | table      |
| F descriptiontos  | lot       |   | F boundingbox  |            |
| F dimenfactor     |           |   | F boxtomp      |            |
| F expandglyph     |           |   | F draw         |            |
| F fontpatternhas  | size      |   | F fill         |            |
| F getcoloredglyp  | hs        |   | F maxbounds    |            |
| F getdigitwidth   |           |   | F output       |            |
| F getinstancespe  | С         |   | F paths        |            |
| F getparameters   |           |   | F widthline    |            |
| F getprivatechar  | ornode    |   | F zeroline     |            |
| F getprivatenode  |           | n | np             | table      |
| F getprivates     |           |   | D cache        |            |
| F getprivateslot  |           |   | B inline       |            |
| F hasprivate      |           |   | N version      |            |
| F indextoslot     |           | r | names          | data table |
| F name            |           | r | nulldata       | data table |
| F nametoslot      |           | ı | rotrusions     | data table |
| F setdigitwidth   |           | ı | readers        | table      |
| F splitfontpatte  | rn        |   | F afm          |            |
| F tochar          |           |   | F check_lua    |            |
| infofont          | function  |   | F check_tfm    |            |
| iterators         | table     |   | F lua          |            |
| F characters      |           |   | F ofm          |            |
| F descriptions    |           |   | F opentype     |            |
| F glyphs          |           |   | F otf          |            |
| loggers           | table     |   | F pfb          |            |
| F add_placeholde  | rs        |   | D sequence     |            |
| D category_to_pla | aceholder |   | F tfm          |            |

| F    | ttc              |          | spec | ifiers          | table |
|------|------------------|----------|------|-----------------|-------|
| F    | ttf              |          | D    | contextmerged   |       |
| F    | woff             |          | F    | contextnumber   |       |
| rese | rveid            | function | D    | contextnumbers  |       |
| sele | ct               | table    | D    | contextsetups   |       |
| D    | alternatives     |          | F    | contexttostring |       |
| F    | bodyfont         |          | F    | definecontext   |       |
| D    | data             |          | F    | mergecontext    |       |
| F    | default          |          | F    | presetcontext   |       |
| D    | defaults         |          | F    | registercontext |       |
| F    | definefallbackfa | mily     | F    | showcontext     |       |
| F    | definefontfamily |          | F    | splitcontext    |       |
| F    | definefontfamily | preset   | D    | synonyms        |       |
| D    | extras           |          | D    | variants        |       |
| F    | fallback         |          | symb | ools            | table |
| D    | fallbacks        |          | Т    | emoji           |       |
| F    | features         |          |      | F checked       |       |
| F    | filefallback     |          |      | F resolved      |       |
| F    | fontdata         |          | F    | uselibrary      |       |
| F    | fontfallback     |          | tabl | Les             | table |
| F    | fontsynonym      |          | D    | data            |       |
| F    | goodies          |          | F    | savefont        |       |
| F    | mathfallback     |          | F    | saveoriginal    |       |
| D    | methods          |          | trac | cers            | table |
| D    | presets          |          | trea | atments         | table |
| F    | registerfallback |          | F    | applyfixes      |       |
| F    | registerfiles    |          | D    | data            |       |
| F    | registerfontalte | rnative  | S    | filename        |       |
| F    | registerfontfami | ly       | F    | ignoredfile     |       |
| F    | textfallback     |          | F    | report          |       |
| F    | typeface         |          | F    | trace           |       |
|      |                  |          |      |                 |       |

F typescript F userdata typefaces table

### functions (context)

**dummy** function

# graphics (context)

#### backgrounds table

F fetchmultipar

F pair

F path

F point

# gzip (extra lua)

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

# img (basic tex)

| boxes                | function | ofindex   | function |
|----------------------|----------|-----------|----------|
| check                | function | package   | function |
| checksize            | function | print     | function |
| clone                | function | scan      | function |
| сору                 | function | serialize | function |
| immediatewrite       | function | tonode    | function |
| immediatewriteobject | function | totable   | function |
| keys                 | function | types     | function |
| new                  | function | write     | function |
| node                 | function |           |          |

#### interactions (context)

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

#### interfaces (context)

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

F define

F list

writestatus

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

function

#### io (basic lua)

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

loadchunk function
loaddata function
loadlines function
noflines function

open overloaded function
output overloaded function

pathseparator string

function

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

write

# job (context)

| comment           | function | F check         |       |
|-------------------|----------|-----------------|-------|
| datasets          | table    | D collected     |       |
| D collected       |          | F count         |       |
| F extend          |          | F define        |       |
| F getdata         |          | F find          |       |
| F setdata         |          | F first         |       |
| D tobesaved       |          | F get           |       |
| disablesave       | function | F getcollected  |       |
| embedded          | table    | F getdata       |       |
| D collected       |          | F getfield      |       |
| D tobesaved       |          | F gettobesaved  |       |
| fileobjreferences | table    | F inlist        |       |
| D collected       |          | F last          |       |
| D tobesaved       |          | F list          |       |
| files             | table    | F save          |       |
| D collected       |          | F savetagged    |       |
| F context         |          | D tobesaved     |       |
| B forcerun        |          | positions       | table |
| F run             |          | F b_column      |       |
| D tobesaved       |          | F b_region      |       |
| getrandomseed     | function | Fc              |       |
| initialize        | function | D collected     |       |
| load              | function | F column        |       |
| loadother         | function | F copy          |       |
| objects           | table    | F depth         |       |
| D collected       |          | F e_column      |       |
| F get             |          | F e_region      |       |
| F number          |          | F enhance       |       |
| F page            |          | F extra         |       |
| F save            |          | T free          |       |
| F set             |          | F get           |       |
| D tobesaved       |          | F getreserved   |       |
| pack              | boolean  | F gettobesaved  |       |
| packversion       | number   | F hangafter     |       |
| pagestates        | table    | F hangindent    |       |
| D collected       |          | F height        |       |
| F extend          |          | F hsize         |       |
| F realpage        |          | F leftskip      |       |
| F setstate        |          | F lowerleft     |       |
| D tobesaved       |          | F lowerright    |       |
| passes            | table    | F markregionbox |       |

| Fη   |             | F xy           |          |
|------|-------------|----------------|----------|
| F on | nsamepage   | Fy             |          |
| F ov | verlapping  | register       | function |
| Fр   |             | save           | function |
| T pa | age         | structure      | table    |
| F pa | aragraph    | D collected    |          |
| F pa | arindent    | T components   |          |
| F po | osition     | T tobesaved    |          |
| Fr   |             | T branches     |          |
| F re | egion       | S name         |          |
| F re | eplace      | S type         |          |
| F ri | ightskip    | variables      | table    |
| F se | et          | D checksums    |          |
| F se | etall       | D collected    |          |
| F se | etregionbox | F getchecksum  |          |
| D to | bbesaved    | F makechecksum |          |
| F up | pperleft    | F restore      |          |
| F up | pperright   | F save         |          |
| S us | sed         | F setchecksum  |          |
|      |             |                |          |

D tobesaved

number

version

F whd

F x

F width

# lang (basic tex)

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

# languages (context)

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

T enablers
B enables
F found

N threshold

T methods

F load

### layouts (context)

status table
 F isleftpage

F leftorrightpageaction

#### lfs (extra lua)

lock dir

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

overloaded function

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

### libraries (context)

| basiclua | data table |
|----------|------------|
| basictex | data table |
| builtin  | data table |
| extralua | data table |

extratex data table
functions data table
globals data table

#### lmx (context)

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

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

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

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

- S color-background-blue
- S color-background-body
- S color-background-green
- S color-background-main
- S color-background-purple
- S color-background-yellow
- S title-default

# logs (context)

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

# lpdf (context)

| action                   | function   | docstring              | function |
|--------------------------|------------|------------------------|----------|
| adddocumentcolorspace    | function   | epdf                   | table    |
| adddocumentextgstate     | function   | F contenttotext        |          |
| adddocumentpattern       | function   | F expand               |          |
| adddocumentshade         | function   | F expanded             |          |
| addtocatalog             | function   | F getpagecontent       |          |
| addtoinfo                | function   | F getstructure         |          |
| addtonames               | function   | F load                 |          |
| addtopageattributes      | function   | F unload               |          |
| addtopageresources       | function   | escaped                | function |
| addtopagesattributes     | function   | finalizedocument       | function |
| addxmpinfo               | function   | finalizepage           | function |
| annotationspecification  | function   | finishtransparencycode | function |
| array                    | function   | flags                  | table    |
| boolean                  | function   | T annotations          |          |
| border                   | function   | N AutoView             |          |
| checkedkey               | function   | N Hidden               |          |
| checkedvalue             | function   | N Invisible            |          |
| circularshade            | function   | N Locked               |          |
| cmykcode                 | function   | N LockedContents       |          |
| collectedresources       | function   | N NoRotate             |          |
| color                    | function   | N NoView               |          |
| colorspace               | function   | N NoZoom               |          |
| colorspaceconstants      | data table | N Print                |          |
| colorspec                | function   | N Printable            |          |
| colorvalue               | function   | N ReadOnly             |          |
| colorvalues              | function   | N ToggleNoView         |          |
| compresslevel            | function   | N auto                 |          |
| constant                 | function   | N hidden               |          |
| copyarray<br>            | function   | N printable            |          |
| copyboolean              | function   | T widgets              |          |
| copyconstant             | function   | N Comb                 |          |
| copydictionary           | function   | N CommitOnSelChange    |          |
| copyfloat                | function   | N DoNotScroll          |          |
| copyinteger              | function   | N DoNotSpellCheck      |          |
| copynumber               | function   | N Edit                 |          |
| copystring               | function   | N FileSelect           |          |
| copyunicode              | function   | N MultiLine            |          |
| delayedobject            | function   | N NoExport             |          |
| destinationspecification | function   | N NoToggleToOff        |          |
| dictionary               | function   | N Password             |          |

| N PopUp               |            | number                    | function |
|-----------------------|------------|---------------------------|----------|
| N PushButton          |            | objectcompresslevel       | function |
| N Radio               |            | pagereference             | function |
| N RadiosInUnison      |            | patternstream             | function |
| N ReadOnly            |            | pdfcolor                  | function |
| N Required            |            | pdftimestamp              | function |
| N RichText            |            | permitdetail              | function |
| N Sort                |            | protectresources          | boolean  |
| N file                |            | rectangle                 | function |
| N fixed               |            | reference                 | function |
| N nocheck             |            | registerannotation        | function |
| N protected           |            | registerdestination       | function |
| N readonly            |            | registerdocumentfinalizer | function |
| N required            |            | registerpagefinalizer     | function |
| N sorted              |            | registerpattern           | function |
| N unavailable         |            | reserveobject             | function |
| flushobject           | function   | rgbcode                   | function |
| flushstreamfileobject | function   | rotationcm                | function |
| flushstreamobject     | function   | setcompression            | function |
| formats               | data table | setdates                  | function |
| frompdfdoc            | function   | settime                   | function |
| fromsixteen           | function   | settrailerid              | function |
| getcompression        | function   | setversion                | function |
| gethpos               | function   | shareobject               | function |
| getmatrix             | function   | shareobjectreference      | function |
| getpos                | function   | spotcode                  | function |
| getversion            | function   | stream                    | function |
| getvpos               | function   | string                    | function |
| graycode              | function   | timestamp                 | function |
| hasmatrix             | function   | toeight                   | function |
| id                    | function   | topdfdoc                  | function |
| injectxmpinfo         | function   | tosixteen                 | function |
| insertxmpinfo         | function   | transform                 | function |
| layerreference        | function   | transparency              | function |
| limited               | function   | transparencycode          | function |
| linearshade           | function   | transparencygroups        | table    |
| majorversion          | function   | B none                    |          |
| minorversion          | function   | transparencyvalue         | function |
| nametree              | function   | unicode                   | function |
| null                  | function   | verbose                   | function |

# lpeg (basic lua)

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

### ltn12 (extra lua)

| BLOCKSIZE | number | F    | simplify |       |
|-----------|--------|------|----------|-------|
| filter    | table  | F    | table    |       |
| F chain   |        | sour | ce       | table |
| F cycle   |        | F    | cat      |       |
| pump      | table  | F    | chain    |       |
| F all     |        | F    | empty    |       |
| F step    |        | F    | error    |       |
| sink      | table  | F    | file     |       |
| F chain   |        | F    | rewind   |       |
| F error   |        | F    | simplify |       |
| F file    |        | F    | string   |       |
| F null    |        |      |          |       |

# lua (basic tex)

| bytecode                       | table      | F reset           |            |
|--------------------------------|------------|-------------------|------------|
| bytedata                       | data table | F resolvestring   |            |
| bytedone                       | table      | F resolving       |            |
| B page-cst                     |            | mask              | string     |
| collectgarbage                 | function   | messages          | data table |
| delay                          | function   | name              | table      |
| finalize                       | function   | newtable          | function   |
| firstbytecode                  | number     | numbers           | data table |
| flush                          | function   | registercode      | function   |
| flushdelayed                   | function   | registeredcodes   | function   |
| <pre>get_functions_table</pre> | function   | registerfinalizer | function   |
| getbytecode                    | function   | registername      | function   |
| getluaname                     | function   | setbytecode       | function   |
| lastbytecode                   | number     | setluaname        | function   |
| macros                         | table      | startupfile       | string     |
| B enabled                      |            | version           | string     |
|                                |            |                   |            |

#### luatex (context)

F collect

F disable

cleanuptempfiles function F enable currentfile function F finish registerdumpactions function F pause registerpageactions function F registerdisabler registerstartactions function F registerenabler registerstopactions function F resetfilename registertempfile function F resume starttime number F setfilename synctex table F setup F blockfilename F start

F stop

F wrapup

# lxml (context)

| - 442 - 4       | for the co | £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<br>function |
| chainattribute  | function   | id                           |                      |
| 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   | <pre>position function</pre> |                      |
| element         | function   | pure function                |                      |
| elements        | function   | <b>pushmatch</b> funct       |                      |
| entities        | data table | r <b>aw</b> func             |                      |
| filter          | function   | <b>rawroot</b> fu            |                      |
| filterlist      | function   | rawtex                       | function             |
| first           | function   | refatt                       | function             |

| register                 | function | F compare               |            |  |
|--------------------------|----------|-------------------------|------------|--|
| registerentity           | function | F flush                 |            |  |
| removesetup              | function | F reset                 |            |  |
| resetcdata               | function | F show                  |            |  |
| resetsetups              | function | F sort                  |            |  |
| resolvedentity           | function | <b>splitid</b> function |            |  |
| root                     | function | startraw                | function   |  |
| save                     | function | startunescaped          | function   |  |
| serialize                | function | stopraw                 | function   |  |
| setaction                | function | stopunescaped           | function   |  |
| setatt                   | function | store                   | function   |  |
| setattribute             | function | strip                   | function   |  |
| setcdata                 | function | stripped                | function   |  |
| ${\tt setcommandtonone}$ | function | tag                     | function   |  |
| ${\tt setcommandtotext}$ | function | text                    | function   |  |
| setpar                   | function | tobuffer                | function   |  |
| setparam                 | function | tofile                  | function   |  |
| setparameter             | function | toparameters            | function   |  |
| setsetup                 | function | toverbatim              | function   |  |
| snippet                  | function | verbatim                | function   |  |
| sorters                  | table    | withindex               | function   |  |
| F add                    |          | xmltexhandler           | data table |  |

### math (basic lua)

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

## mathematics (context)

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

#### md5 (extra lua)

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

hex function
sum function
sumHEXA overloaded function
sumhexa overloaded function

# metapost (context)

| analyzeplugins   | function   | getstatistics          | function |
|------------------|------------|------------------------|----------|
| checkformat      | function   | gettext                | function |
| checktexts       | function   | graphic                | function |
| collapse         | boolean    | graphic_base_pass      | function |
| colorinitializer | function   | initializescriptrunner | function |
| comment          | function   | instance               | function |
| convert          | function   | intermediate           | table    |
| defaultformat    | string     | T actions              |          |
| defaultinstance  | string     | F makempy              |          |
| defaultmethod    | string     | lastlog                | string   |
| directrun        | function   | load                   | function |
| escaped          | function   | makempy                | table    |
| exectime         | table      | N nofconverted         |          |
| extensiondata    | data table | F processgraphics      |          |
| filterclippath   | function   | F registerfile         |          |
| flush            | function   | maketext               | function |
| flushers         | table      | metafun                | table    |
| T pdf            |            | F interpolate          |          |
| F comment        |            | F topath               |          |
| F flushfigure    |            | method                 | number   |
| F startfigure    |            | mptopdf                | table    |
| F stopfigure     |            | F convertmpstopdf      |          |
| F textfigure     |            | N nofconverted         |          |
| flushliteral     | function   | n                      | number   |
| flushnormalpath  | function   | nvformat               | function |
| flushreset       | function   | optimize               | boolean  |
| fonts            | table      | parse                  | function |
| F define         |            | pdfliterals            | function |
| T flusher        |            | pluginactions          | function |
| F flushfigure    |            | popvariable            | function |
| F startfigure    |            | popvariables           | function |
| F stopfigure     |            | process                | function |
| N instances      |            | processplugins         | function |
| F process        |            | processspecial         | function |
| format           | function   | properties             | table    |
| format_number    | function   | pushvariable           | function |
| format_string    | function   | pushvariables          | function |
| formatnumber     | function   | quickanddirty          | function |
| getclippath      | function   | reducetogray           | boolean  |
| getextensions    | function   | reporterror            | function |
| getjobdata       | function   | reset                  | function |
|                  |            |                        |          |

| resetlastlog  | function |
|---------------|----------|
| resetplugins  | function |
| runscript     | function |
| scripterror   | function |
| setextensions | function |
| setoutercolor | function |
| settext       | function |
| setvariable   | function |
| showlog       | boolean  |
| simple        | function |
| startgraphic  | function |
| stopgraphic   | function |
| svformat      | function |
| tex           | table    |

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

F get F reset F set

## mime (extra lua)

| b64<br>decode<br>decodet | function<br>function<br>table | qp<br>qpwrp<br>stuff | function<br>function<br>function |
|--------------------------|-------------------------------|----------------------|----------------------------------|
| F base64                 |                               | unb64                | function                         |
| F quoted-                | printable                     | unqp                 | function                         |
| dot                      | function                      | wrap                 | function                         |
| encode                   | function                      | wrapt                | table                            |
| encodet                  | table                         | F base64             |                                  |
| F base64                 |                               | F defaul             | t                                |
| F quoted-                | printable                     | F quoted             | printable                        |
| eol                      | function                      | F text               |                                  |
| normalize                | function                      | wrp                  | function                         |

# mp (context)

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

| datasets           | table    | positionbox       | function |
|--------------------|----------|-------------------|----------|
| F load             |          | positioncurve     | function |
| defaultcolormodel  | function | positionpage      | function |
| dimension          | function | positionpath      | function |
| disposehash        | function | positionpxy       | function |
| disposestore       | function | positionregion    | function |
| finish_saving_data | function | positionwhd       | function |
| format             | function | positionxy        | function |
| formatted          | function | prefix            | function |
| fprint             | function | print             | function |
| fromstore          | function | processingmode    | function |
| get                | table    | quadruple         | function |
| F boolean          |          | quoted            | function |
| F number           |          | report            | function |
| F numeric          |          | save_data         | function |
| F string           |          | setcount          | function |
| get_outline_text   | function | setdimen          | function |
| getcount           | function | settoks           | function |
| getdimen           | function | size              | function |
| gettoks            | function | start_saving_data | function |
| graphformat        | function | stop_saving_data  | function |
| inhash             | function | systemmode        | function |
| integer            | function | tb_dimensions     | function |
| isarray            | function | texstr            | function |
| mode               | function | texvar            | function |
| n                  | function | tohash            | function |
| newhash            | function | tostore           | function |
| newstore           | function | triplet           | function |
| numeric            | function | tt_dimensions     | function |
| pair               | function | tt_initialize     | function |
| path               | function | vprint            | function |

positionanchor function

#### mplib (extra tex)

fields function
finder function
finders table

F file
F mpstemplate

get\_boolean function
get\_number function

get\_numeric function
get\_string function

new overloaded function

pen\_info function
preprocessed function
version function

## noads (context)

F relocate

| handlers     | table | F render     |                   |
|--------------|-------|--------------|-------------------|
| F align      |       | F resize     |                   |
| F alternates |       | F showtree   |                   |
| F autofences |       | F tags       |                   |
| F classes    |       | F unscript   |                   |
| F collapse   |       | F variants   |                   |
| F domains    |       | process      | function          |
| F families   |       | processneste | <b>d</b> function |
| F fixscripts |       | processors   | table             |
| F italics    |       | F mlist_to_h | ist               |
| F kernpairs  |       | T unscript   |                   |
| F makeup     |       | processouter | function          |

#### node (basic tex)

check discretionaries function F getid check discretionary function F getkern copy function F getlang copy list function F getleader function count F aetlist function current attr F getnext dimensions function F getnucleus direct table F aetoffsets F check discretionaries F getpenalty F check discretionary F getprev F copy F getproperty F copy list F getshift F getsub F count F current attr F getsubtype F dimensions F aetsup F effective glue F aetwhd F end\_of\_math F getwidth F find attribute F has attribute F has field F first glyph F flatten discretionaries F has glyph F flush list F hpack F flush node F insert\_after F insert before F flush properties table F is char F free F get attribute F is direct F get\_properties\_table F is glyph F get\_synctex\_fields F is node F getattributelist F is\_zero\_glue F aetboth F kernina F getbox F last node F getchar F length F ligaturing F getcomponents F getdepth F new F getdir F protect\_glyph F getdirection F protect\_glyphs F getdisc F protrusion\_skippable F getfam F rangedimensions F getfield F remove F getfont F set\_attribute F getglue F set properties mode F getheight F set\_synctex\_fields

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

| length               | function | subtype          | function |
|----------------------|----------|------------------|----------|
| ligaturing           | function | subtypes         | function |
| mlist_to_hlist       | function | tail             | function |
| new                  | function | tostring         | function |
| next                 | function | traverse         | function |
| prev                 | function | traverse_char    | function |
| protect_glyph        | function | traverse_id      | function |
| protect_glyphs       | function | type             | function |
| protrusion_skippable | function | types            | function |
| rangedimensions      | function | unprotect_glyph  | function |
| remove               | function | unprotect_glyphs | function |
| set_attribute        | function | unset_attribute  | function |
| set_properties_mode  | function | usedlist         | function |
| setfield             | function | uses_font        | function |
| setglue              | function | vpack            | function |
| setproperty          | function | whatsits         | function |
| setwhd               | function | write            | function |
| slide                | 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                          |            | flush                  | function   |
| F reset                          |            | flush_list             | function   |
| F restore                        |            | flush_node             | function   |
| F save                           |            | free                   | function   |
| builders                         | table      | fullhpack              | function   |
| F buildpage_filter               |            | getattr                | function   |
| F vpack_filter                   |            | getattribute           | function   |
| <pre>check_discretionaries</pre> | function   | getbox                 | function   |
| codes                            | data table | getchar                | function   |
| concat                           | function   | getdisc                | function   |
| сору                             | function   | getfield               | function   |
| copy_list                        | function   | getfont                | function   |
| copy_node                        | function   | getglue                | function   |
| count                            | function   | getid                  | function   |
| countall                         | function   | getleader              | function   |
| current_attr                     | function   | getlist                | function   |
| delete                           | function   | getnext                | function   |
| destinations                     | table      | getprev                | function   |
| N attribute                      |            | getsubtype             | function   |
| T done                           |            | getwhd<br>             | function   |
| F handler                        |            | gluecodes              | data table |
| T stack                          |            | glyphcodes             | data table |
| dimensionfields                  | data table | glyphdir_is_equal      | data table |
| dimensions                       | function   | glyphdir_is_opposite   | data table |
| dir_is_pop                       | data table | glyphdir_is_orthogonal | data table |
| dir_negation                     | data table | handlers               | table      |
| dircodes                         | data table | F accessibility        |            |
| directioncodes                   | data table | F alignbackgrounds     |            |
| discodes                         | data table | F backgrounds          |            |
| discretionarycodes               | data table | F characters           |            |

| F checkforleaks  |  | is_glyph  | function   |
|--|--|---|--|
| F checkglyphs  |  | is_mirrored   | data table   |
| F cleanupbox   |  | is_node   | function   |
| F cleanuppage  |  | is_nut  | function   |
| F export   |  | is_rotated  | data table   |
| F finalize   |  | is_zero_glue  | function   |
| F flatten  |  | ischar  | function   |
| F flattenline  |  | isglyph   | function   |
| F migrate  |  | kerncodes   | data table   |
| F protectglyphs  |  | kerning   | function   |
| F stripping  |  | keys  | table  |
| F textbackgrounds  |  | T whatsit   |  |
| F unprotectglyphs  |  | last_node   | function   |
| has_attribute  | function                                     | leadercodes   | data table   |
| has_field  | function                                     | leftmarginwidth   | function   |
| has_glyph  | function                                     | length  | function   |
| hpack  | function                                     | ligaturing  | function   |
| idstostring  | function                                     | linefillers   | table  |
| ignorablefields  | data table                                   | D data  |  |
| injections   | table  | F define  |  |
| F copy   |  | F enable  |  |
| F getligaindex   |  | F handler   |  |
| F getthreshold   |  | lines   | table  |
| F handler  |  | T boxed   |  |
|  |  |   |  |
| F installgetspaceboth  |  | F register  |  |
| F installgetspaceboth<br>F installnewkern  |  | F register<br>F setup   |  |
|  |  |   |  |
| F installnewkern   |  | F setup   |  |
| F installnewkern F isspace   |  | F setup<br>F stage_one  |  |
| F installnewkern F isspace F keepcounts  |  | F setup<br>F stage_one<br>F stage_two   |  |
| F installnewkern F isspace F keepcounts F reset  |  | F setup<br>F stage_one<br>F stage_two<br>D data   |  |
| F installnewkern F isspace F keepcounts F reset F resetcounts  |  | F setup F stage_one F stage_two D data F finalize F number N scratchbox   |  |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive   |  | F setup F stage_one F stage_two D data F finalize F number  | function   |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern   |  | F setup F stage_one F stage_two D data F finalize F number N scratchbox   | function<br>function   |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex  |  | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list  |  |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark  |  | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields   | function   |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns  |  | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list  | function<br>function   |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after   | function                                     | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields   | function<br>function<br>data table<br>data table<br>function                             |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after insert_before   | function                                     | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields listcodes listtoutf load                                    | function function data table data table function function                                |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after insert_list_after   | function<br>function                         | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields listcodes listtoutf load locate                             | function function data table data table function function function                       |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after insert_list_after installattributehandler                       | function<br>function<br>function             | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields listcodes listtoutf load locate margincodes                 | function function data table data table function function function data table            |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after insert_before insert_list_after installattributehandler is_char | function<br>function<br>function<br>function | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields listcodes listtoutf load locate margincodes marginkerncodes | function function data table data table function function function data table data table |
| F installnewkern F isspace F keepcounts F reset F resetcounts F setcursive F setkern F setligaindex F setmark F setmove F setposition F setspacekerns insert_after insert_list_after installattributehandler                       | function<br>function<br>function             | F setup F stage_one F stage_two D data F finalize F number N scratchbox link linked list listablefields listcodes listtoutf load locate margincodes                 | function function data table data table function function function data table            |

mathcodes data table F flush list maxboxwidth function F flush node mlist to hlist function F free function new F fullhpack noadcodes data table F get components noadoptions table F get synctex fields N axis F getattr F getattribute N exact N left F getattributelist N middle F getattrlist N no axis F aetboth N right F aetbox N set F getboxglue N unused 1 F getchar N unused 2 F getcomponents nodecodes data table F getdepth function nopts F getdir nuts table F getdirection F getdisc F append F apply F getdiscretionary F applyvisuals F getfam F check discretionaries F aetfield F concat F getfont F getglue F copy F copy list F getheight F copy\_no\_components F getid F copy\_node F getkern F copy only glyphs F getlang F copy properties F getlanguage F copyvisual F getleader F count F getlist F count components F getnext F countall F getnucleus F current attr F getoffsets F delete F getpenalty F dimensions F getprev F effective\_glue F getprop F end\_of\_math F getshift F find\_attribute F getsub F first\_glyph F getsubtype F firstcharacter F getsup F firstcharinbox F getsurround F firstglyph F getwhd F flush F getwidth

F hlist F has attribute F has field F italickern F has\_glyph F kern F latelua F hpack F insert after F lateluafunction F insert before F leader F insert\_list\_after F leftmarginkern F leftskip F is char F is\_direct F lineskip F is\_display\_math F mathchar F mathtextchar F is glyph F is node F negatedglue F is\_nut F noad F pdfannotation F is zero glue Fischar F pdfdestination F isglyph F pdfdirectliteral F kerning F pdfliteral F pdforiginliteral F last node F leftmarginwidth F pdfpageliteral F pdfrawliteral F length F ligaturing F pdfrestore F link F pdfsave F linked F pdfsetmatrix F locate F penalty F mlist to hlist F radical F nestedtracedslide F register F new F rightmarginkern T pool F rightskip F accent F rule F baselineskip F shrink F boundary F special F choice F stretch F cleanup F subbox F delim F submlist F temp F delimiter F textdir F direction F disc F usage F userattributes F emptyrule F fence T userids F fontkern N margins.inline F fraction N property F glue N splitters.one F gluespec N splitters.two F glyph F userlist

F userlua F setkern F usernumber F setlang F userrule F setlanguage F userstring F setleader F usertokens F setlink F setlist F vlist F wordboundary F setnext F prepend F setnucleus F setoffsets F protect\_glyph F protect\_glyphs F setpenalty F protrusion skippable F setprev F rangedimensions F setprop F rawprop F setshift F reference F setsplit F rehpack F setsub F remove F setsubtype F repackhlist F setsup F setsurround F replace F rightmarginwidth F setunsetattributes F setvisual T rules F userrule F setvisuals F set attribute F setwhd F set\_components F setwidth F set\_synctex\_fields F slide F setattr F somepenalty F setattribute F somespace F setattributelist F splitbox F setattributes F tail F setattrlist F take components F setboth F takeattr F setbox F takebox F setboxglue F takelist F setchar F theprop F setcomponents F tonode F tonodes F setdepth F setdir F tonut F setdirection F tosequence F setdisc F tostring F setdiscretionary F tracedslide F setfam F traverse F setfield F traverse\_char F setfont F traverse\_id F setglue T typesetters

F tohbox

F setheight

| F tohpack  |                   | F lineskip  |  |
|--|-------------------|---|--|
| F tonodes  |                   | F pdfdirectliteral  |  |
| F tovbox   |                   | F pdforiginliteral  |  |
| F tovpack  |                   | F pdfrestore  |  |
| F unprotect_glyph  |                   | F pdfsave   |  |
| F unprotect_glyphs   |                   | F pdfsetmatrix  |  |
| F unset_attribute  |                   | F register  |  |
| F unsetattribute   |                   | F rule  |  |
| F unsetattributes  |                   | F special   |  |
| F untracedslide  |                   | F usage   |  |
| F use_components   |                   | F usernumber  |  |
| F usedlist   |                   | F vlist   |  |
| F uses_font  |                   | prepend   | function   |
| F vianodes   |                   | print   | function   |
| F vianuts  |                   | processors  | table  |
| F vpack  |                   | F contribute_filter   |  |
| F write  |                   | B enabled   |  |
| packlist   | function          | F hpack_filter  |  |
| pardir_is_equal  | data table        | F post_linebreak_filter   |  |
| pardir_is_opposite   | data table        | F pre_linebreak_filter  |  |
| pardir_is_parallel   | data table        | F tracer  |  |
| partextdir_is_equal  | data table        | processranges   | function   |
| penaltycodes   | data table        | processwords  | function   |
| plugindata   | table             | properties  | table  |
| F finalizer  |                   | T actions   |  |
|  |                   |   |  |
| F initializer  |                   | F delayed   |  |
| F initializer<br>S name  |                   | F delayed<br>F fdelayed   |  |
|  |                   |   |  |
| S name   |                   | F fdelayed  |  |
| S name<br>T namespace  |                   | F fdelayed<br>F immediate   |  |
| S name<br>T namespace<br>N attribute   |                   | F fdelayed<br>F immediate<br>F attach   |  |
| S name<br>T namespace<br>N attribute<br>D data   |                   | F fdelayed<br>F immediate<br>F attach<br>T data   | function   |
| S name T namespace N attribute D data F enable   |                   | F fdelayed<br>F immediate<br>F attach<br>T data<br>F delayed  | function<br>function   |
| S name T namespace N attribute D data F enable F handler   |                   | F fdelayed F immediate F attach T data F delayed  protect_glyph   |  |
| S name T namespace N attribute D data F enable F handler F register  |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs   | function   |
| S name T namespace N attribute D data F enable F handler F register D registered   |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable  | function<br>function   |
| S name T namespace N attribute D data F enable F handler F register D registered D values  | function          | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts  | function<br>function<br>function                                       |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor  | function<br>table | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes   | function<br>function<br>function<br>data table                         |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor points   |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions   | function<br>function<br>function<br>data table<br>function             |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor points pool                                    |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions reference   | function<br>function<br>function<br>data table<br>function<br>function |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor  points  pool F baselineskip                   |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions reference references                              | function<br>function<br>function<br>data table<br>function<br>function |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor points pool F baselineskip F cleanup           |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions reference references N attribute                  | function<br>function<br>function<br>data table<br>function<br>function |
| S name T namespace N attribute D data F enable F handler F register D registered D values F processor points pool F baselineskip F cleanup F glyph   |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions reference references N attribute T done           | function<br>function<br>function<br>data table<br>function<br>function |
| T namespace N attribute D data F enable F handler F register D registered D values F processor points pool  F baselineskip F cleanup F glyph F hlist |                   | F fdelayed F immediate F attach T data F delayed protect_glyph protect_glyphs protrusion_skippable pts radicalcodes rangedimensions reference references N attribute T done F handler | function<br>function<br>function<br>data table<br>function<br>function |

| remove             | function   | showlist             | function   |
|--------------------|------------|----------------------|------------|
| repackhlist        | function   | showsimplelist       | function   |
| replace            | function   | skipcodes            | data table |
| report             | function   | slide                | function   |
| rightmarginwidth   | function   | snapshots            | table      |
| rulecodes          | data table | F getparameters      |            |
| rules              | table      | F getsamples         |            |
| D data             |            | F resetsamples       |            |
| F define           |            | F takesample         |            |
| F enable           |            | somepenalty          | function   |
| F handler          |            | somespace            | function   |
| T ruleactions      |            | splitbox             | function   |
| F box              |            | stripdiscretionaries | function   |
| F draw             |            | stripping            | table      |
| F fill             |            | T glyphs             |            |
| F mp               |            | F set                |            |
| F stroke           |            | striprange           | function   |
| F userrule         |            | tail                 | function   |
| save               | function   | takeattr             | function   |
| serialize          | function   | takebox              | function   |
| serializebox       | function   | tasks                | table      |
| set_attribute      | function   | F actions            |            |
| setattr            | function   | F appendaction       |            |
| setattribute       | function   | F disableaction      |            |
| setattributes      | function   | F disablegroup       |            |
| setboth            | function   | F enableaction       |            |
| setbox             | function   | F enablegroup        |            |
| setboxtonaturalwd  | function   | F freeze             |            |
| setfield           | function   | F freezegroup        |            |
| setglue            | function   | F new                |            |
| setlink            | function   | F prependaction      |            |
| setlist            | function   | F removeaction       |            |
| setnext            | function   | F replaceaction      |            |
| setprev            | function   | F restart            |            |
| setunsetattributes | function   | F setaction          |            |
| setwhd             | function   | F showactions        |            |
| shifts             | table      | F table              |            |
| D data             |            | textdir_is_equal     | data table |
| F define           |            | textdir_is_is        | data table |
| F enable           |            | textdir_is_opposite  | data table |
| F handler          |            | textdir_is_parallel  | data table |
| show               | function   | tobasepoints         | function   |
| showboxes          | function   | tocentimeters        | function   |
| showcodes          | function   | tociceros            | function   |

| todidots              | function | F features       |            |
|-----------------------|----------|------------------|------------|
| todimen               | function | F font           |            |
| toinches              | function | F glyphs         |            |
| tomillimeters         | function | F message        |            |
| tonewciceros          | function | F messages       |            |
| tonewdidots           | function | F nofsteps       |            |
| tonode                | function | F register       |            |
| tonodes               | function | F reset          |            |
| tonut                 | function | F start          |            |
| topicas               | function | F stop           |            |
| topoints              | function | F stop           |            |
| toscaledpoints        | function | T transparencies |            |
| tosequence            | function | F reset          |            |
| tostring              | function | F set            |            |
| totable               | function | F setlist        |            |
| totree                | function | traverse         | function   |
| toutf                 | function | traverse_char    | function   |
| tracers               | table    | traverse_id      | function   |
| T characters          |          | typesetters      | table      |
| F collect             |          | F hbox           |            |
| F equal               |          | F hpack          |            |
| F start               |          | F tohbox         |            |
| F string              |          | F tohpack        |            |
| F unicodes            |          | F tonodes        |            |
| T colors              |          | F tovbox         |            |
| F reset               |          | F tovpack        |            |
| F set                 |          | F vpack          |            |
| F setlist             |          | unprotect_glyph  | function   |
| F fontchar            |          | unprotect_glyphs | function   |
| T frequencies         |          | unset_attribute  | function   |
| F register            |          | unsetattribute   | function   |
| T pool                |          | unsetattributes  | function   |
| T nodes               |          | usedlist         | function   |
| F rule                |          | usercodes        | data table |
| T nuts                |          | vianodes         | function   |
| F rule                |          | vianuts          | function   |
| F resetproperties     |          | visualizebox     | function   |
| F rule                |          | visualizers      | table      |
| F setlist             |          | F attribute      |            |
| F setproperties       |          | T attributes     |            |
| F start               |          | F box            |            |
|                       |          | E 1 12           |            |
| T steppers            |          | F handler        |            |
| T steppers<br>F check |          | F markfonts      |            |

F setlayer
F setruledglyph
F setvisual

whatcodes whatsitcodes write data table
data table
function

vpack function

## number (context)

|                | function   | tocentimeters  | function |
|----------------|------------|----------------|----------|
| basepoints     | function   | tociceros      | function |
| bytetodecimal  | function   | tocontext      | function |
| compactfloat   | function   | todidots       | function |
| decimaltobyte  | function   | todimen        | function |
| dimenfactors   | data table | toevenhex      | function |
| formatted      | function   | toinches       | function |
| formattedfloat | 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 |
| tobasepoints   | function   | valid          | function |
| tobitstring    | function   |                |          |

# objects (context)

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

## os (basic lua)

platform string

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

# package (basic lua)

| config        | string   |
|---------------|----------|
| cpath         | string   |
| extralibpath  | function |
| extralibpaths | function |
| extraluapath  | function |
| extraluapaths | function |
| helpers       | table    |
| libpaths      | function |
| loaded        | table    |
| loaders       | table    |
| loadlib       | function |

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

# pagebuilders (context)

| columnsets table | C                         |
|------------------|---------------------------|
| Columnsels table | 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           | <b>mixedcolumns</b> 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)

| disablecommand          | function | hasmatrix               | function            |
|-------------------------|----------|-------------------------|---------------------|
| fontname                | function | immediateobj            | function            |
| fontobinum              | function | mapfile                 | function            |
| fontsize                | function | mapline                 | function            |
| getcatalog              | function | maxobinum               | function            |
| getcompresslevel        | function | newcolorstack           | function            |
| getcreationdate         | function | obj                     | function            |
| getdecimaldigits        | function | objtype                 | function            |
| getdestmargin           | function | pageref                 | function            |
| getgentounicode         | function | print                   | function            |
| gethpos                 | function | refobi                  | function            |
| getignoreunknownimages  | function | registerannot           | overloaded function |
| getimageresolution      | function | reserveobj              | function            |
| getinclusionerrorlevel  | function | setcatalog              | overloaded function |
| getinfo                 | function | setcompresslevel        | function            |
| getlastannot            | function | setdecimaldigits        | function            |
| getlastlink             | function | setdestmargin           | function            |
| getlastobi              | function | setfontattributes       | function            |
| getlinkmargin           | function | setgentounicode         | function            |
| getmajorversion         | function | setignoreunknownimages  | function            |
| getmatrix               | function | setimageresolution      | function            |
| getminorversion         | function | setinclusionerrorlevel  | function            |
| getnames                | function | setinfo                 | overloaded function |
| getobjcompresslevel     | function | setlinkmargin           | function            |
| getomitcidset           | function | setmajorversion         | function            |
| getorigin               | function | setminorversion         | function            |
| getpageattributes       | function | setnames                | overloaded function |
| getpageresources        | function | setobjcompresslevel     | function            |
| getpagesattributes      | function | setomitcidset           | function            |
| getpkresolution         | function | setorigin               | function            |
| getpos                  | function | setpageattributes       | overloaded function |
| getretval               | function | setpageresources        | overloaded function |
| getsuppressoptionalinfo | function | setpagesattributes      | overloaded function |
| getthreadmargin         | function | setpkresolution         | function            |
| gettrailer              | function | setsuppressoptionalinfo | function            |
| gettrailerid            | function | setthreadmargin         | function            |
| getversion              | function | settrailer              | overloaded function |
| getvpos                 | function | settrailerid            | overloaded function |
| getxformattributes      | function | setxformattributes      | function            |
| getxformmargin          | function | setxformmargin          | function            |
| getxformresources       | function |                         |                     |

setxformresources function xformname

function

# pdfscanner (context)

scan function

# physics (context)

units table

F registerunit

D tables

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

S

| 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          |          | refman_to_btx       | function |
| F dataset          |          | resolvedname        | function |
| F force            |          | save                | function |
| F global           |          | search              | function |
| F local            |          | setcategory         | function |
| F nofregistered    |          | setspecification    | function |
| F prepareentries   |          | singularorplural    | function |
| F register         |          | sortedentries       | function |
| F sameasprevious   |          | sortmethods         | table    |
| T sorters          |          | T authoryear        |          |
| F cite             |          | T sequence          |          |
| F dataset          |          | specifications      | table    |
| F default          |          | T default           |          |
| F index            |          | S author            |          |
| F list             |          | S comment           |          |
| F reference        |          | S copyright         |          |
| F short            |          | S name              |          |
| F used             |          | S version           |          |
| F uservariable     |          | D virtual           |          |
| listvariants       | table    | splitauthor         | function |
| F default          |          | splitoneauthor<br>  | function |
| F index            |          | statistics          | table    |
| F num              |          | N nofbytes          |          |
| F short            |          | N nofdatasets       |          |
| F tag              |          | N nofdefinitions    |          |
| load               | function | N nofshortcuts      |          |
| loadbibdata        | function | tables              | table    |
| loaddefinitionfile | function | D implicits         |          |
| loaders            | table    | D origins           |          |
| F bbl              |          | D privates          |          |
| F bib              |          | D sets              |          |
| F buffer           |          | D specials          |          |
| F endnote          |          | D types             |          |
| F json             |          | D virtuals          | £        |
| F lua              |          | tags                | function |

tracers table F author
F showdatasetauthors F string
F showdatasetcompleteness usedataset
F showdatasetfields usedentric
F showentry writers

F showhashedauthors
F showtables
F showvariants

table

F showfields

typesetters

usedatasetfunctionusedentriesfunctionwriterstable

F author

F keyword

F range

F pagenumber

## regimes (context)

| cleanup    | function |
|------------|----------|
| disable    | function |
| enable     | function |
| fromregime | function |
| рор        | function |

process function
push function
toregime function
translate function

## resolvers (context)

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

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

function

resolve

#### 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

F disable

F enable

F handler

N inter\_char\_half\_shrink\_factor

N inter\_char\_half\_stretch\_factor  $\,$ 

N inter\_char\_hangul\_penalty

N inter\_char\_quarter\_shrink\_factor

N inter\_char\_quarter\_stretch\_factor

N inter\_char\_shrink\_factor

N inter\_char\_stretch\_factor

N inter\_word\_stretch\_factor

handlers data table table hash iniectors data table installdataset function installmethod function numbertocategory data table numbertodataset data table numbertohandler data table reset function function set data table splitters

#### set (context)

contains function
create function
tolist function

tonumber function
totable function

# sio (context)

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

# socket (extra lua)

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

| S proxy-auth                | enticate    | protect                    | function |
|-----------------------------|-------------|----------------------------|----------|
| S proxy-author              |             | select                     | function |
| S range                     | 0112811011  | sink                       | function |
| S received                  |             | sinkt                      | table    |
| S received                  | rom mta     | F close-when-              |          |
| S references                |             | F default                  | Jone     |
| S references                |             |                            | 1        |
| S remote-mta                |             | F http-chunke              | J        |
|                             |             | F keep-open<br><b>skip</b> | function |
| S reply-to                  |             | sleep                      | function |
| S reporting-                |             |                            | table    |
| S resent-bcc<br>S resent-cc |             | smtp                       | table    |
|                             |             | S DOMAIN                   |          |
| S resent-date               |             | N PORT                     |          |
| S resent-from               |             | S SERVER                   |          |
| S resent-mes                |             | N TIMEOUT                  |          |
| S resent-rep                |             | S ZONE                     |          |
| S resent-send               | der         | F message                  |          |
| S resent-to                 |             | F open                     |          |
| S retry-afte                |             | F send                     | £        |
| S return-patl               | h           | source                     | function |
| S sender                    |             | sourcet                    | table    |
| S server                    |             | F by-length                |          |
| S smtp-remote               | e-recipient | F default                  |          |
| S status                    |             | F http-chunke              |          |
| S subject                   |             | F until-close              |          |
| S te                        |             | tcp                        | function |
| S to                        |             | tcp4                       | function |
| S trailer                   |             | tcp6                       | function |
| S transfer-e                | ncoding     | tp                         | table    |
| S upgrade                   |             | N TIMEOUT                  |          |
| S user-agent                |             | F connect                  |          |
| S vary                      |             | try                        | function |
| S via                       |             | udp                        | function |
| S warning                   |             | udp4                       | function |
| S will-retry                |             | udp6                       | function |
| S www-authen                | ticate      | url                        | table    |
| S x-mailer                  |             | F absolute                 |          |
| http                        | table       | F build                    |          |
| N TIMEOUT                   |             | F build_path               |          |
| S USERAGENT                 |             | F escape                   |          |
| F genericform               |             | F parse                    |          |
| F open                      |             | F parse_path               |          |
| F request                   |             | F unescape                 |          |
| newtry                      | function    |                            |          |

#### sorters (context)

basicsorter function
comparers table
 F basic
constants table
 S defaultdigits
 S defaultlanguage
 S defaultmethod
 N digitsmaximum

N ignoredoffset
N replacementoffset
T validmethods

N digitsoffset

B ch
B mc
B mm

B pm B uc B zc B zm

definitions data table firstofsplit function packch function packuc function setlanguage sort function table

F utf

strip function
tracers data table
update function

#### statistics (context)

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

#### status (basic tex)

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 table |
| 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 |
| count          | function | toboolean       | function |
| dump           | function | tobytes         | function |
| escapedpattern | function | tocontext       | function |
| explode        | function | todec           | function |
| find           | function | todimen         | function |
| format         | function | tohex           | function |
| formatter      | function | tonodes         | function |
| formatters     | function | topattern       | function |
| fullstrip      | function | totable         | function |
| gmatch         | function | toutf           | function |
| gsub           | function | tracedchar      | function |
| is_boolean     | function | tracedchars     | table    |
| is_empty       | function | unpack          | function |
| itself         | function | unquote         | function |
| len            | function | unquoted        | function |
| limit          | function | upper           | function |
| longtostring   | function | utfcharacter    | function |
| lower          | function | utfcharacters   | function |
| match          | function | utflength       | function |
| nospaces       | function | utfpadd         | function |
| nspaces        | table    | utfpadding      | function |
| optionalquoted | function | utfvalue        | function |
| pack           | function | utfvalues       | function |
| packsize       | function | valid           | function |
|                |          |                 |          |

#### structures (context)

|                  | _        |                      |          |
|------------------|----------|----------------------|----------|
| atlocation       | function | F previous           |          |
| blocks           | table    | F raw                |          |
| D collected      |          | F record             |          |
| F define         |          | F reset              |          |
| F print          |          | F restart            |          |
| F save           |          | F restore            |          |
| F select         |          | F save               |          |
| F setstate       |          | F set                |          |
| D states         |          | F setlevel           |          |
| D tobesaved      |          | F setoffset          |          |
| bookmarks        | table    | F setown             |          |
| T extras         |          | F setstate           |          |
| F get            |          | F setvalue           |          |
| F mergesections  |          | T specials           |          |
| F register       |          | F userpage           |          |
| F reset          |          | F subs               |          |
| F tosections     |          | D tobesaved          |          |
| F finalize       |          | F value              |          |
| F flatten        |          | F way                |          |
| F installhandler |          | currentsectionnumber | function |
| F merge          |          | descriptions         | table    |
| S method         |          | documents            | table    |
| F overload       |          | D data               |          |
| F place          |          | F initialize         |          |
| F register       |          | 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 next           |          | F touserdata         |          |
| F prev           |          | inserts              | table    |

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

|    | F ordered           |       | F filterdefault                  |
|----|---------------------|-------|----------------------------------|
|    | F postpone          |       | D filters                        |
|    | F resetpostponed    |       | D flaginternals                  |
|    | F restore           |       | F from                           |
|    | F save              |       | D functions                      |
|    | F setstate          |       | F get                            |
|    | D states            |       | F getcurrentmetadata             |
|    | F store             |       | F getcurrentprefixspec           |
| pa | ges                 | table | F getinnermethod                 |
|    | F analyze           |       | F getinternalcachedlistreference |
|    | D collected         |       | F getinternallistreference       |
|    | F in_body           |       | F getinternalreference           |
|    | F is_odd            |       | F getoutermethod                 |
|    | N nofpages          |       | D handlers                       |
|    | F number            |       | F identify                       |
|    | F on_right          |       | F import                         |
|    | F save              |       | F inject                         |
|    | D tobesaved         |       | F injectcurrentset               |
| re | ferences            | table | S innermethod                    |
|    | F analyze           |       | D internals                      |
|    | F checkedfile       |       | F load                           |
|    | F checkedfileorurl  |       | F loadpresets                    |
|    | F checkedprogram    |       | F mark                           |
|    | F checkedrealpage   |       | S outermethod                    |
|    | F checkedurl        |       | D pages                          |
|    | D collected         |       | U prefixsplitter                 |
|    | U componentsplitter |       | D productdata                    |
|    | F currentmetadata   |       | T programs                       |
|    | F currentorder      |       | T data                           |
|    | D currentset        |       | F define                         |
|    | F define            |       | F get                            |
|    | D defined           |       | F realpageofpage                 |
|    | D derived           |       | U referencesplitter              |
|    | F enableinteraction |       | D referred                       |
|    | F enhance           |       | F referredpage                   |
|    | D executers         |       | F registerfinalizer              |
|    | F expandcurrent     |       | F registerinitializer            |
|    | F export            |       | F registerpage                   |
|    | T files             |       | F reset                          |
|    | T data              |       | D runners                        |
|    | F define            |       | F set                            |
|    | F found             |       | F setandgetattribute             |
|    | F get               |       | F setcomponent                   |
|    | F filter            |       | F setinternalreference           |
|    |                     |       |                                  |

| 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              |
| F inner                            | 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 load                |
| D usedinternals                    | F matchingtilldepth   |
| D usedviews                        | F numberatdepth       |
| F valid                            | F numbers             |
| <b>registers</b> table             | F popblock            |
| F analyze                          | F prefixedconverted   |
| D collected                        | F pushblock           |
| F compare                          | F register            |
| F define                           | D registered          |
| F enhance                          | F reportstructure     |
| F extend                           | F save                |
| F filter                           | T sectionblockdata    |
| F filtercollected                  | T bodypart            |
| F finalize                         | S bookmark            |

| F set             |       | tags                     | table |
|-------------------|-------|--------------------------|-------|
| F setblock        |       | F elementtag             |       |
| F setchecker      |       | F finishexport           |       |
| F setentry        |       | F getid                  |       |
| F setinitialblock |       | F getmetadata            |       |
| F setlevel        |       | F handler                |       |
| F setnumber       |       | F initializeexport       |       |
| F structuredata   |       | D labels                 |       |
| F title           |       | F last                   |       |
| D tobesaved       |       | F lastinchain            |       |
| F typesetnumber   |       | F locatedtag             |       |
| F userdata        |       | T patterns               |       |
| B verbose         |       | U splitter               |       |
| sets              | table | D properties             |       |
| F define          |       | F registermetadata       |       |
| F get             |       | F restart                |       |
| F getall          |       | F setaspect              |       |
| D setlist         |       | F setattributehash       |       |
| specials          | table | F setcombination         |       |
| D collected       |       | F setconstruct           |       |
| F retrieve        |       | F setfigure              |       |
| F store           |       | F sethighlight           |       |
| D tobesaved       |       | F setitem                |       |
| synonyms          | table | F setitemgroup           |       |
| F analyzed        |       | F setlist                |       |
| D collected       |       | F setnotation            |       |
| F compare         |       | F setnotationsymbol      |       |
| F define          |       | F setproperty            |       |
| F filter          |       | F setregister            |       |
| F finalize        |       | F setsorting             |       |
| F flush           |       | F setsynonym             |       |
| F isshown         |       | F settablecell           |       |
| F isused          |       | F settabulatecell        |       |
| F meaning         |       | F settagdelimitedsymbol  |       |
| F prepare         |       | F settagsubsentencesymbo | ıl    |
| F process         |       | F setupexport            |       |
| F register        |       | F setuserproperties      |       |
| F registershown   |       | D specifications         |       |
| F registerused    |       | F start                  |       |
| F resetshown      |       | F stop                   |       |
| F resetused       |       | F strip                  |       |
| F sort            |       | D taglist                |       |
| F synonym         |       | T usewithcare            |       |
| D tobesaved       |       | T images                 |       |

#### table (basic lua)

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

# tex (basic tex)

| attribute                | table      | getmuglue           | function            |
|--------------------------|------------|---------------------|---------------------|
| badness                  | function   | getmuskip           | function            |
| box                      | table      | getnest             | function            |
| catcode                  | table      | getsfcode           | function            |
| conditionals             | data table | getskip             | function            |
| constants                | data table | gettoks             | function            |
| count                    | table      | getuccode           | function            |
| cprint                   | function   | glue                | table               |
| ctdcatcodes              | number     | hashtokens          | function            |
| ctxcatcodes              | number     | ifs                 | data table          |
| definefont               | function   | inicatcodes         | number              |
| delcode                  | table      | init_rand           | function            |
| dimen                    | table      | isattribute         | function            |
| directives               | data table | isbox               | function            |
| enableprimitives         | function   | iscount             | overloaded function |
| error                    | function   | isdefined           | function            |
| extraprimitives          | function   | isdimen             | overloaded function |
| finish                   | function   | ismuskip            | overloaded function |
| fontidentifier           | function   | isskip              | overloaded function |
| fontname                 | function   | istoken             | function            |
| force_synctex_line       | function   | istoks              | function            |
| force_synctex_tag        | function   | lccode              | table               |
| fprint                   | function   | linebreak           | function            |
| get                      | function   | lists               | table               |
| get_synctex_line         | function   | lua_math_random     | function            |
| get_synctex_mode         | function   | lua_math_randomseed | function            |
| get_synctex_tag          | function   | luacatcodes         | number              |
| getattribute             | function   | mathcode            | table               |
| getbox                   | function   | modes               | data table          |
| getboxresourcedimensions | function   | muglue              | table               |
| getcatcode               | function   | muskip              | table               |
| getcount                 | function   | nest                | table               |
| getdelcode               | function   | nilcatcodes         | number              |
| getdelcodes              | function   | normal_rand         | function            |
| getdimen                 | function   | notcatcodes         | number              |
| getglue                  | function   | number              | function            |
| getlccode                | function   | primitives          | function            |
| getlist                  | function   | print               | function            |
| getmath                  | function   | prtcatcodes         | number              |
| getmathcode              | function   | resetparagraph      | function            |
| getmathcodes             | function   | romannumeral        | function            |

| round                | function | setuccode        | function   |
|----------------------|----------|------------------|------------|
| run                  | function | sfcode           | table      |
| saveboxresource      | function | shipout          | function   |
| scale                | function | show_context     | function   |
| scantoks             | function | skip             | table      |
| set                  | function | sp               | function   |
| set_synctex_line     | function | splitbox         | function   |
| set_synctex_mode     | function | sprint           | function   |
| set_synctex_no_files | function | systemmodes      | data table |
| set_synctex_tag      | function | takebox          | function   |
| setattribute         | function | texcatcodes      | number     |
| setbox               | function | toks             | table      |
| setcatcode           | function | tpacatcodes      | number     |
| setcount             | function | tpbcatcodes      | number     |
| setdelcode           | function | tprint           | function   |
| setdimen             | function | trackers         | data table |
| setglue              | function | triggerbuildpage | function   |
| setlccode            | function | txtcatcodes      | number     |
| setlist              | function | type             | function   |
| setmath              | function | uccode           | table      |
| setmathcode          | function | uniform_rand     | function   |
| setmuglue            | function | uniformdeviate   | function   |
| setmuskip            | function | uprint           | function   |
| setnest              | function | useboxresource   | function   |
| setsfcode            | function | vrbcatcodes      | number     |
| setskip              | function | write            | function   |
| settoks              | function |                  |            |

#### texconfig (basic tex)

error\_line number
expand\_depth number
formatname string
half\_error\_line number
hash\_extra number

kpse\_init boolean
max\_in\_open number

max\_print\_line number
max\_strings number
nest\_size number
param\_size number
save\_size number
shell escape string

#### texio (basic tex)

closeinput function setescape function write function write\_nl function

#### token (basic tex)

| create         | function | put_next        | function |
|----------------|----------|-----------------|----------|
| get_active     | function | scan_code       | function |
| get_cmdname    | function | scan_csname     | function |
| get_command    | function | scan_dimen      | function |
| get_csname     | function | scan_glue       | function |
| get_expandable | function | scan_int        | function |
| get_id         | function | scan_keyword    | function |
| get_index      | function | scan_keyword_cs | function |
| get_macro      | function | scan_string     | function |
| get_meaning    | function | scan_token      | function |
| get_mode       | function | scan_toks       | function |
| get_next       | function | scan_word       | function |
| get_protected  | function | set_char        | function |
| get_tok        | function | set_macro       | function |
| is_token       | function | type            | function |

#### tokens (context)

| astable    | function      | defined     | function |
|------------|---------------|-------------|----------|
| bgroup     | userdata      | egroup      | userdata |
| bits       | table         | getters     | table    |
| N active   |               | F box       |          |
| N alignme  | nt            | F count     |          |
| N begingr  | oup           | F dimen     |          |
| N charact  | er            | F glue      |          |
| N close    |               | F macro     |          |
| N comment  |               | F meaning   |          |
| N endgrou  | р             | F skip      |          |
| N endofli  | ne            | F token     |          |
| N escape   |               | hbox        | userdata |
| N ignore   |               | istoken     | function |
| N invalid  | l             | letter      | function |
| N letter   |               | letters     | function |
| N mathshi  | ft            | other       | function |
| N open     |               | pickup      | function |
| N other    |               | printlist   | function |
| N paramet  | er            | scanners    | table    |
| N space    |               | F boolean   |          |
| N subscri  | pt            | F code      |          |
| N superso  | ript          | F condition | nal      |
| N whitesp  | ace           | F count     |          |
| collectors | s table       | F csname    |          |
| T data     |               | F dimen     |          |
| F default  | words         | F dimensio  | n        |
| F dowithw  | ords          | F glue      |          |
| F flush    |               | F integer   |          |
| F install  |               | F keyword   |          |
| F registe  | r             | F keywordd  | S        |
| T registe  | red           | F list      |          |
| F show     |               | F lxmlid    |          |
| F test     |               | F number    |          |
| compile    | function      | F scanclos  | e        |
| constant   | function      | F scanoper  |          |
| converters | <b>t</b> able | F skip      |          |
| S toboole  | an            | F string    |          |
| S todimen  | ı             | F token     |          |
| S toglue   |               | F tokens    |          |
| S tonumbe  | r             | F toks      |          |
| S tostrin  | g             | F word      |          |

| scantable   | function | F scankeywordcs |    |
|-------------|----------|-----------------|----|
| setters     | table    | F scanlist      |    |
| F box       |          | T scanners      |    |
| F char      |          | F boolean       |    |
| F count     |          | F code          |    |
| F dimen     |          | F conditional   |    |
| F glue      |          | F count         |    |
| F macro     |          | F csname        |    |
| F skip      |          | F dimen         |    |
| shortcuts   | table    | F dimension     |    |
| T bits      |          | F glue          |    |
| N active    |          | F integer       |    |
| N alignme   | ent      | F keyword       |    |
| N begingr   | oup      | F keywordcs     |    |
| N charact   | rer      | F list          |    |
| N close     |          | F lxmlid        |    |
| N comment   |          | F number        |    |
| N endgrou   | р        | F scanclose     |    |
| N endofli   | ne       | F scanopen      |    |
| N escape    |          | F skip          |    |
| N ignore    |          | F string        |    |
| N invalid   | l        | F token         |    |
| N letter    |          | F tokens        |    |
| N mathshi   | ft       | F toks          |    |
| N open      |          | F word          |    |
| N other     |          | F scannumber    |    |
| N paramet   | er       | F scanopen      |    |
| N space     |          | F scanstring    |    |
| N subscri   | pt       | F scanword      |    |
| N superso   | ript     | F toboolean     |    |
| N whitesp   | pace     | F todimen       |    |
| N close     |          | T tokens        |    |
| F inspect   |          | F astable       |    |
| N open      |          | U bgroup        |    |
| F report    |          | T collectors    |    |
| F scanboole |          | F defaultwor    |    |
| F scanclose | 2        | F dowithword    | ls |
| F scancode  |          | F flush         |    |
| F scancond: |          | F install       |    |
| F scancsnar |          | F register      |    |
| F scandimer |          | F show          |    |
| F scandimer |          | F test          |    |
| F scaninte  |          | F compile       |    |
| F scankeywo | JI U     | F constant      |    |

F skip T converters S toboolean T shortcuts S todimen N close S toglue F inspect S tonumber N open S tostring F report F defined F scanboolean U egroup F scanclose F scancode T getters F box F scanconditional F count F scancsname F dimen F scandimen F glue F scandimension F scaninteger F macro F meaning F scankeyword F skip F scankeywordcs F token F scanlist U hbox F scannumber F istoken F scanopen F letter F scanstring F letters F scanword F other F toboolean F pickup F todimen F printlist F tonumber F scantable F tostring T setters U vbox F box U vtop F char F tonumber F count F tostring userdata vbox

F dimen

F glue F macro vtop

userdata

#### tracers (context)

count function
cs function
dimen function
knownlist function
lists table

T context
T internals
T scratch

name function

primitive function
printerror function
printwarning function
showlines function
strings table

S undefined

toks function
type function

#### trackers (context)

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

# 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          | 4-61- |
| T methods        |       | firstlines        | table |
| T numbers        |       | T actions         |       |
| F set            |       | F default         |       |
| F setreplacement |       | Fline             |       |
| 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 | ·     | F default         |       |
| F setcharacteral | ign   | F addanchortoline |       |
| 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    | processors      | table        |
|-----------------|----------|-----------------|--------------|
| D factors       |          | F apply         |              |
| F handler       |          | F register      |              |
| F keepligature  |          | F reset         |              |
| B keeptogether  |          | 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       |          | F attach        |              |
| F Word          |          | F check         |              |
| F Words         |          | showsuspects    | function     |
| F abbreviated   | journal  | spacings        | table        |
| F expandedjou   | rnal     | F define        |              |
| F lowercase     |          | F handler       |              |
| F stripperiod   |          | D mapping       |              |
| F uppercase     |          | T numbers       |              |
| T patterns      |          | T frenchpunct   | uation       |
| U list          |          | T character     | S            |
| 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_co | onstruct     |
| F moveinline    |          | F initialize_re | eflow_height |
| F normalize     |          | F initialize_re | eflow_width  |
| F set           |          | F next_row      |              |
| periodkerns     | table    | F reflow_height | t            |
| D factors       |          | F reflow_width  |              |
| F handler       |          | F set_construct | t            |
| D mapping       |          | F set_reflow_he | eight        |
| F set           |          | F set_reflow_w  | idth         |

#### unicode (extra lua)

| scii            | table | F len         |          |
|-----------------|-------|---------------|----------|
| F byte          |       | F lower       |          |
| F char          |       | F match       |          |
| F dump          |       | F rep         |          |
| F find          |       | F reverse     |          |
| F format        |       | F sub         |          |
| F gfind         |       | F upper       |          |
| F gmatch        |       | toutf32string | function |
| F gsub          |       | utf8          | table    |
| F len           |       | F byte        |          |
| F lower         |       | F char        |          |
| F match         |       | F characters  |          |
| F rep           |       | F chrlen      |          |
| F reverse       |       | F count       |          |
| F sub           |       | F dump        |          |
| F upper         |       | F filetype    |          |
| <b>yrapheme</b> | table | F find        |          |
| F byte          |       | F format      |          |
| F char          |       | F gfind       |          |
| F dump          |       | F gmatch      |          |
| F find          |       | F gsub        |          |
| F format        |       | F is_valid    |          |
| F gfind         |       | Flen          |          |
| F gmatch        |       | F length      |          |
| F gsub          |       | F lower       |          |
| F len           |       | F magic       |          |
| F lower         |       | F match       |          |
| F match         |       | F remapper    |          |
| F rep           |       | F rep         |          |
| F reverse       |       | F replacer    |          |
| F sub           |       | F reverse     |          |
| F upper         |       | F split       |          |
| atin1           | table | F splitlines  |          |
| F byte          |       | F sub         |          |
| F char          |       | F subtituter  |          |
| F dump          |       | F tocodes     |          |
| F find          |       | F toeight     |          |
| F format        |       | F toentities  |          |
| F gfind         |       | F tostring    |          |
| F gmatch        |       | F totable     |          |
| F gsub          |       | F upper       |          |
|                 |       |               |          |

| F | ustring            |
|---|--------------------|
| F | utf16_to_utf8_be   |
| F | utf16_to_utf8_be_t |
| F | utf16_to_utf8_le   |
| F | utf16_to_utf8_le_t |
| F | utf16_to_utf8_t    |
| F | utf32_to_utf8_be   |
| F | utf32_to_utf8_be_t |
| F | utf32 to utf8 le   |

| F | utf32_to_utf8_le_t |
|---|--------------------|
| F | utf32_to_utf8_t    |
| F | utf8_to_utf16      |
| F | utf8_to_utf16_be   |
| F | utf8_to_utf16_le   |
| F | utf8_to_utf8_t     |
| F | values             |
| F | xstring            |
|   |                    |

#### url (context)

| addscheme | function |
|-----------|----------|
| barepath  | function |
| construct | function |
| escape    | function |
| filename  | function |
| hashed    | function |

hasscheme function
query function
split function
toquery function
unescapeget function

# utf8 (context)

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

#### utilities (context)

| debugger          | table | Fs    | kiplong                  |
|-------------------|-------|-------|--------------------------|
| F disable         |       |       | kipposition              |
| F enable          |       |       | kipshort                 |
| F savestats       |       | F w   | ritebyte                 |
| F showstats       |       |       | ritecardinal2            |
| F showtraceback   |       |       | ritecardinal4            |
| files             | table |       | ritestring               |
| F close           |       | forma | <b>tters</b> table       |
| F getposition     |       | F fo  | ormatcolumns             |
| F getsize         |       | F l:  | ist                      |
| F look            |       | F s   | tripzeros                |
| F open            |       | garba | <b>gecollector</b> table |
| F read2dot14      |       | F cl  | heck                     |
| F readbyte        |       | N c   | riterium                 |
| F readbytes       |       |       | nabled                   |
| F readbytetable   |       | lua   | table                    |
| F readcardinal    |       | B a   | lwaysstripcode           |
| F readcardinal1   |       | F cl  | heckmemory               |
| F readcardinal2   |       | F c   | ompile                   |
| F readcardinal2le |       | Fl    | oadedluacode             |
| F readcardinal3   |       | Fl    | oadstring                |
| F readcardinal3le |       | Flo   | oadstripped              |
| F readcardinal4   |       | N ne  | ofstrippedbytes          |
| F readcardinal4le |       | N ne  | ofstrippedchunks         |
| F readchar        |       | Fre   | egisterfinalizer         |
| F readfixed2      |       | B s   | tripcode                 |
| F readfixed4      |       | T s   | trippedchunks            |
| F readinteger     |       | F s   | trippedloadstring        |
| F readinteger1    |       | T s   | uffixes                  |
| F readinteger2    |       | S     | lua                      |
| F readinteger2le  |       | S     | luc                      |
| F readinteger3    |       | S     | lui                      |
| F readinteger3le  |       | S     | luj                      |
| F readinteger4    |       | S     | luv                      |
| F readinteger4le  |       | S     | tma                      |
| F readsignedbyte  |       | S     | tmc                      |
| F readstring      |       | S     | tua                      |
| F readtag         |       | S     | tuc                      |
| F setposition     |       | packe | <b>rs</b> table          |
| F size            |       | F h   | ashed                    |
| F skip            |       | Fn    | ew                       |

| F pack  | T modern-light,latin-modern-light-designsize,latin-mod   |
|---|--|
| F simplehashed                                  | B latin-modern-light   |
| F strip   | B latin-modern-light-designsize  |
| F unpack  | B modern-light   |
| N version                                       | T modern-mono,modern-base-mono   |
| <b>parsers</b> table                            | B modern-base-mono   |
| F add_settings_to_array                         | B modern-mono  |
| F arguments_to_table                            | T modern-variable,latin-modern-variable-designsize,la  |
| F array_to_string                               | B latin-modern-variable  |
| F csvsplitter                                   | B latin-modern-variable-designsize   |
| F getparameters                                 | B modern-variable  |
| F groupedsplitat                                | T modernvariable,modern-variable   |
| F hash_to_string                                | B modern-variable  |
| T hashes  | B modernvariable   |
| T settings_to_set                               | T modernvariablelight,modern-variable-light  |
| T min,max,fit,broad,auto                        | B modern-variable-light  |
| B auto  | B modernvariablelight  |
| B broad   | T serif,sans,mono  |
| B fit   | B mono   |
| B max   | B sans   |
| B min   | B serif  |
| T modern,latin-modern                           | T text,hidden,paper,page,leftpage,rightpage  |
| B latin-modern                                  | B hidden   |
| B modern  | B leftpage   |
| T modern,latin-modern,modern-variable,latin-mo  | odern-variable,mo&depangecondensed,latin-modern-condensed  |
| B latin-modern                                  | B paper  |
| B latin-modern-condensed                        | B rightpage  |
| B latin-modern-variable                         | B text   |
| B modern  | F iterator   |
| B modern-condensed                              | F keq_to_hash  |
| B modern-variable                               | F listitem   |
| T modern, latin-modern-designsize, latin-modern | F make_settings_to_hash_pattern  |
| B latin-modern                                  | F mergehashes  |
| B latin-modern-designsize                       | F options_to_array   |
| B modern  | F options_to_hash  |
| T modern, modern-base                           | T patterns   |
| B modern  | U settings_to_array  |
| B modern-base                                   | U settings_to_hash_a   |
| T modern-condensed,latin-modern-condensed-desi  | ignsize,latinUmo <del>xdetrbingos<u>n</u>dæn_shæds</del> /m_dodern-light-condensed,latin-modern-li |
| B latin-modern-condensed                        | U settings_to_hash_c   |
| B latin-modern-condensed-designsize             | U unittotex  |
| B latin-modern-light-condensed                  | F process_stripped_settings  |
| B modern-condensed                              | F rfc4180splitter  |
| B modern-light-condensed                        | F runtime  |
|   |  |

| F settings_to_arra | v          | F disable        |       |
|--------------------|------------|------------------|-------|
| F settings_to_arra |            | F enable         |       |
| F settings to arra |            | F initialize     |       |
| F settings_to_hash |            | Flist            |       |
| F settings_to_hash |            | F new            |       |
| F settings_to_hash | _          | F register       |       |
| F settings_to_numb | _          | F report         |       |
| F settings_to_set  |            | F reset          |       |
| F simple_hash_to_s | trina      | F show           |       |
| F splitmethod      | 3          | stacker          | table |
| F splitthousands   |            | F new            |       |
| F stepper          |            | storage          | table |
| F stripped_setting | s to array | F allocate       |       |
| F unittotex        |            | F checked        |       |
| F unittoxml        |            | F mark           |       |
| randomizer         | table      | F marked         |       |
| F get              |            | F setinitialize  | •     |
| F getnumber        |            | F sparse         |       |
| F getseed          |            | streams          | table |
| F popseed          |            | F close          |       |
| F pushseed         |            | F getposition    |       |
| F reuseseed        |            | F look           |       |
| F setseed          |            | F open           |       |
| F setseedi         |            | F read2dot14     |       |
| report             | function   | F read2dot4      |       |
| sequencers         | table      | F readbyte       |       |
| F appendaction     |            | F readbytes      |       |
| F appendgroup      |            | F readbytetable  |       |
| F compile          |            | F readcardinal   |       |
| F disableaction    |            | F readcardinal1  |       |
| F disablegroup     |            | F readcardinal2  |       |
| F enableaction     |            | F readcardinal2  | .E    |
| F enablegroup      |            | F readcardinal3  |       |
| D functions        |            | F readcardinal3  | Le    |
| F localize         |            | F readcardinal4  |       |
| F new              |            | F readchar       |       |
| F nodeprocessor    |            | F readfixed2     |       |
| F prependaction    |            | F readfixed4     |       |
| F prependgroup     |            | F readinteger    |       |
| F removeaction     |            | F readinteger1   |       |
| F replaceaction    |            | F readinteger2   |       |
| F setkind          |            | F readinteger2le | 2     |
| F tostring         |            | F readinteger3   |       |
| setters            | table      | F readinteger3le | 9     |

| F | readinteger4   |
|---|----------------|
| F | readinteger4le |
| F | readsignedbyte |
| F | readstring     |
| F | setposition    |
| F | size           |
| F | skip           |
| F | skipbytes      |
| F | skiplong       |
| F | skipshort      |
|   |                |

# F skiplong F skipshort strings table F collapsecrlf T formatters F add F new F newcollector F newrepeater F nice T striplinepatterns

U prune and collapse
U prune and no empty

U collapse

U retain
U retain and collapse
U retain and no empty
F striplines
F striplong
F tabtospace
T tracers

tables table

F accesstable
F definedtable
F definetable
F encapsulate
F insertaftervalue
F insertbeforevalue
F migratetable
F removevalue
F replacevalue

templates table

F load
F replace
F replacer
F resolve

#### vf (context)

| char   | function |
|--------|----------|
| down   | function |
| fontid | function |
| image  | function |
| node   | function |
| nop    | function |

pop function
push function
right function
rule function
special function

#### visualizers (context)

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

# xml (context)

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

| finalizers       | table | F first                          |                 |
|------------------|-------|----------------------------------|-----------------|
| F paragraphs     |       | F function                       |                 |
| T tex            |       | F index                          |                 |
| F all            |       | F last                           |                 |
| F attribute      |       | F lowerall                       |                 |
| F chainattribute |       | F match                          |                 |
| F chainpath      |       | F name                           |                 |
| F command        |       | F position                       |                 |
| F concat         |       | F reverse                        |                 |
| F concatrange    |       | F table                          |                 |
| F context        |       | F tag                            |                 |
| F count          |       | F tags                           |                 |
| F ctxtext        |       | F text                           |                 |
| F default        |       | F texts                          |                 |
| F first          |       | F upperall                       |                 |
| F function       |       | first                            | function        |
| F index          |       | found                            | function        |
| F last           |       | functions                        | table           |
| F lettered       |       | getbuffer                        | function        |
| F lower          |       | gethandlers                      | function        |
| F lowerall       |       | gethandlersfunction              | function        |
| F match          |       | helpers                          | table           |
| F name           |       | F recursetext                    |                 |
| F param          |       | include                          | function        |
| F parameter      |       | inclusion                        | function        |
| F position       |       | inclusions                       | function        |
| F reverse        |       | index                            | function        |
| F stripped       |       | inheritedconvert                 | function        |
| F tag            |       | inject                           | function        |
| F tags           |       | <pre>inject_element</pre>        | <b>function</b> |
| F text           |       | <pre>inject_element_after</pre>  | <b>function</b> |
| F upper          |       | <pre>inject_element_before</pre> | function        |
| F upperall       |       | injectafter                      | function        |
| T xml            |       | injectbefore                     | function        |
| F all            |       | insert                           | function        |
| F att            |       | insert_element                   | function        |
| F attribute      |       | <pre>insert_element_after</pre>  | function        |
| F attributes     |       | <pre>insert_element_before</pre> | function        |
| F cdata          |       | insertafter                      | function        |
| F chainattribute |       | insertbefore                     | function        |
| F count          |       | insertcdata                      | function        |
| F default        |       | insertcomment                    | function        |
| F elements       |       | inspect                          | function        |
| F empty          |       | is_valid                         | function        |

| kind                          | function            | renamespace         | function            |
|-------------------------------|---------------------|---------------------|---------------------|
| last                          | function            | reparsedentitylpeg  | userdata            |
| lastmatch                     | function            | replace             | function            |
| load                          | function            | replace_element     | <del>function</del> |
| lpath                         | function            | resetinjectors      | function            |
| lpathcached                   | function            | resolvens           | function            |
| lpathcalls                    | function            | root                | function            |
| lshow                         | function            | save                | function            |
| makestandalone                | function            | selection           | function            |
| match                         | function            | separate            | function            |
| name                          | function            | serialize           | function            |
| newhandlers                   | function            | serializetotext     | function            |
| nodesettostring               | function            | setcdata            | function            |
| originalload                  | function            | setcomment          | function            |
| package                       | function            | sethandlersfunction | function            |
| parent                        | function            | setinjectors        | function            |
| parsedentitylpeg              | userdata            | setproperty         | function            |
| pihandlers                    | table               | settings            | function            |
| F injector                    |                     | specialcodes        | table               |
| F tex                         |                     | S "                 |                     |
| placeholders                  | table               | S #                 |                     |
| 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                   |                     |
| process_elements              | <del>function</del> | S }                 |                     |
| processattributes             | function            | S ~                 |                     |
| profiled                      | table               | specialhandler      | table               |
| pushmatch                     | function            | sprint              | function            |
| raw                           | function            | string              | function            |
| registerentity                | function            | strip               | function            |
| registerns                    | function            | strip_whitespace    | function            |
| reindex                       | function            | stripelement        | function            |
| remap_name                    | function            | stripleadingspaces  | function            |
| remap_namespace               | function            | table               | function            |
| <del>remap_tag</del>          | function            | text                | function            |
| remapname                     | function            | textonly            | function            |
| remapnamespace                | function            | texttocdata         | function            |
| remaptag                      | function            | tocdata             | function            |

| toelement | function | unescapedentitylpeg | userdata |
|-----------|----------|---------------------|----------|
| tostring  | function | unprivatized        | function |
| totable   | function | unspecialized       | function |
| toxml     | function | withelement         | function |
| tprint    | function | withelements        | function |
| traverse  | function | wrap                | function |
| unescaped | function | xmlns               | table    |

#### zip (extra lua)

archivestableopenarchivefunctionclosefunctionopenfilefunctionclosearchivefunctionregisteredfilestableopenoverloaded functiontypefunction

#### zlib (extra lua)

adler32 function
compress function
compressobj function
crc32 function

decompress function
decompressobj function
version function