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

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

# global (alias: \_G)

| CONTEXTLMTXMODE     | number   | directives       | table    |
|---------------------|----------|------------------|----------|
| FFISUPPORTED        | boolean  | document         | table    |
| INITEXMODE          | boolean  | documentdata     | table    |
| LUAMAJORVERSION     | number   | dofile           | function |
| LUAMINORVERSION     | number   | drivers          | table    |
| LUATEXENGINE        | string   | environment      | table    |
| LUATEXFORMATID      | number   | error            | function |
| LUATEXFUNCTIONALITY |          | experiments      | table    |
| LUATEXVERSION       | number   | figures          | table    |
| LUAVERSION          | number   | file             | table    |
| MP                  | function | fio              | table    |
|                     | table    | floats           | table    |
| arg<br>assert       | function | flushfontchar    | function |
| attributes          | table    | flushsimplerule  | function |
| backends            | table    | flushspecialrule | function |
| basexx              | table    | font             | table    |
| bit32               | table    | fonts            | table    |
| blobs               | table    | functions        | table    |
| blockrequire        | function | getmetatable     | function |
| boolean             | table    | getrpos          | function |
| buffers             | table    | getscriptstatus  | function |
| builders            | table    | global           | table    |
| caches              | table    | graphics         | table    |
| callback            | table    | grid_to_mp       | function |
| callbacks           | table    | gzip             | table    |
| catcodes            | table    | images           | table    |
| characters          | table    | inspect          | function |
| checkimage          | function | interactions     | table    |
| chemistry           | table    | interfaces       | table    |
| collectgarbage      | function | io               | table    |
| commands            | table    | ipairs           | function |
| containers          | table    | job              | table    |
| context             | function | language         | table    |
| converters          | table    | languages        | table    |
| coroutine           | table    | layouts          | table    |
| createmask          | function | lfs              | table    |
| ctxrunner           | table    | libraries        | table    |
| data                | table    | lmx              | table    |
| debug               | table    | load             | function |
| dimen               | function | loadfile         | function |
| dir                 | table    | loadstring       | function |
|                     |          | - 3              |          |

| 1               | +ahla          |                     | £                    |
|-----------------|----------------|---------------------|----------------------|
| logs            | table<br>table | require<br>required | function<br>function |
| lpdf            | table          | required            | table                |
| lpeg            |                |                     |                      |
| lua             | table          | ruledspace          | function             |
| luatex          | table          | sandbox             | table                |
| lxml            | table          | scanarray           | function             |
| math            | table          | scanhash            | function             |
| mathematics     | table          | scripts             | table                |
| md5             | table          | select              | function             |
| metapost        | table          | set                 | table                |
| mime            | table          | setinspector        | function             |
| moduledata      | table          | setmetatable        | function             |
| modules         | table          | sha2                | table                |
| mp              | function       | shipbox_ref_h       | number               |
| mplib           | table          | shipbox_ref_v       | number               |
| next            | function       | sio                 | table                |
| noads           | table          | socket              | table                |
| node            | table          | sorters             | table                |
| nodes           | table          | statistics          | table                |
| number          | table          | status              | table                |
| objects         | table          | storage             | table                |
| optional        | table          | streams             | table                |
| optionalrequire | function       | string              | table                |
| os              | table          | structures          | table                |
| package         | table          | table               | table                |
| pagebuilders    | table          | tex                 | table                |
| pairs           | function       | texconditionals     | data table           |
| parametersets   | table          | texconfig           | table                |
| pcall           | function       | texconstants        | data table           |
| pdf             | table          | texifs              | data table           |
| pdfdecode       | table          | texio               | table                |
| pdfe            | table          | texisdefined        | data table           |
| physics         | table          | texmodes            | data table           |
| pngdecode       | table          | texsystemmodes      | data table           |
| poporientation  | function       | thirddata           | table                |
| print           | function       | toboolean           | function             |
| publications    | table          | todecimal           | function             |
| pushorientation | function       | token               | table                |
| rawequal        | function       | tokens              | table                |
| rawget          | function       | tonumber            | function             |
| rawlen          | function       | tostring            | function             |
| rawset          | function       | tracers             | table                |
| readarray       | function       | trackers            | table                |
| regimes         | table          | type                | function             |
| -               |                |                     |                      |

| typesetters | table    | warn     | function |
|-------------|----------|----------|----------|
| unpack      | function | xcomplex | table    |
| updaters    | table    | xdecimal | table    |
| url         | table    | xmath    | table    |
| userdata    | table    | xml      | table    |
| utf         | table    | xpcall   | function |
| utf8        | table    | xzip     | table    |
| utilities   | table    | zip      | table    |
| visualizers | table    | zlib     | table    |

## attributes (context)

F inbetween

| applyoverloads function       | F justone                |
|-------------------------------|--------------------------|
| <pre>colorintents table</pre> | F hsvtogray              |
| N attribute                   | F hsvtorgb               |
| D data                        | F hwbtorgb               |
| F enable                      | F iccprofile             |
| F handler                     | F isblack                |
| F register                    | N main                   |
| D registered                  | S model                  |
| colors table                  | D models                 |
| N attribute                   | F mpcolor                |
| F cmyk                        | F mpnamedcolor           |
| F cmyktogray                  | F mpoptions              |
| F cmyktorgb                   | F namedcolorattributes   |
| F colorcomponents             | N none                   |
| D counts                      | F popset                 |
| B couple                      | F processcolorcomponents |
| F currentmodel                | F pushset                |
| F currentnamedmodel           | F register               |
| D data                        | D registered             |
| N default                     | F registerspotcolor      |
| F defineintermediatecolor     | F rgb                    |
| F definemultitonecolor        | F rgbtocmyk              |
| F defineprocesscolor          | F rgbtogray              |
| F defineprocesscolordirect    | F rgbtohsv               |
| F definesimplegray            | N selector               |
| F definespotcolor             | F setlist                |
| F definetransparency          | F setmodel               |
| F enable                      | F setpagecolormodel      |
| F filter                      | D sets                   |
| N forced                      | F spec                   |
| F forcedmodel                 | F spot                   |
| F forcesupport                | F spotcolorname          |
| F formatcolor                 | F spotcolorparent        |
| F formatgray                  | F spotcolorvalue         |
| F getpagecolormodel           | B supported              |
| F gray                        | F toattributes           |
| F graytohsv                   | F transparencycomponents |
| F handler                     | B triggering             |
| T helpers                     | F usecolors              |
| F complement                  | D valid                  |

F value

| D values               |            | F    | enable        |           |
|------------------------|------------|------|---------------|-----------|
| B weightgray           |            | F    | forcesupport  |           |
| define                 | function   | F    | handler       |           |
| effects                | table      | Т    | names         |           |
| N attribute            |            |      | N color       |           |
| D data                 |            |      | N colorburn   |           |
| F enable               |            |      | N colordodge  |           |
| F handler              |            |      | N darken      |           |
| F register             |            |      | N difference  |           |
| D registered           |            |      | N exclusion   |           |
| D values               |            |      | N hardlight   |           |
| handlers               | table      |      | N hue         |           |
| list                   | data table |      | N lighten     |           |
| ${\tt markasoverload}$ | function   |      | N luminosity  |           |
| names                  | data table |      | N multiply    |           |
| negatives              | table      |      | N none        |           |
| N attribute            |            |      | N normal      |           |
| D data                 |            |      | N overlay     |           |
| F enable               |            |      | N saturation  |           |
| F handler              |            |      | N screen      |           |
| F register             |            |      | N softlight   |           |
| D registered           |            | N    | none          |           |
| F set                  |            | F    | register      |           |
| numbers                | data table | D    | registered    |           |
| ofnode                 | function   | В    | supported     |           |
| private                | function   | F    | toattribute   |           |
| public                 | function   | В    | triggering    |           |
| restore                | function   | F    | value         |           |
| save                   | function   | D    | values        |           |
| showcurrent            | function   |      | etvalue       | number    |
| states                 | table      | view | verlayers     | table     |
| F disabletrigge        | ring       | N    | attribute     |           |
| F enabletrigger        | ing        | F    | cleanup       |           |
| F finalize             |            | D    | data          |           |
| F initialize           |            | F    | define        |           |
| F process              |            | F    | definedlayout | component |
| F selective            |            | F    | enable        |           |
| F stacked              |            | F    | forcesupport  |           |
| F stacker              |            | F    | handler       |           |
| system                 | function   | В    | hasorder      |           |
| tooverloads            | function   | D    | listwise      |           |
| transparencies         | table      | F    | register      |           |
| N attribute            |            | D    | registered    |           |
| D data                 |            | F    | resolve_begin |           |
|                        |            |      |               |           |

F resolve\_end
F resolve\_reset
F resolve\_step
D scopes

F setfeatures

F start
F stop
B supported
D values

#### backends (context)

closeout function F embedimage codeinjections table F enabletags F boxresourcedimensions F exportformdata F registerboxresource F fieldsurrounding F restoreboxresource F flushmergelaver current string F getbookmarks defaults table F getdefaultfieldvalue T codeinjections F getfieldcategory F getpagedimensions F getfieldset F getpageorigin F getformatoption F lmtxmode F getidentityvariable F setpagedimensions F getinfo F setpageorigin F getpreviewfigure T nodeinjections F insertrenderingwindow T registrations F maptag D tables F mergebookmarks getcallbackstate function F mergecomments included table F mergefields B context F mergereferences B date F mergeviewerlayers B id F newimage R metadata F prerollreference R ndf F presetsymbol install function F presetsymbollist latelua function F processrendering nodeinjections table F registerdocumentcloseaction function nothing F registerdocumentopenaction function openout F registeredsymbol pdf table F registerpagecloseaction T codeinjections F registerpageopenaction F addbookmarks F registersymbol F analyzenormalsymbol F scanimgage F analyzesymbol F setattachmentsupport F attachmentid F setfieldcalculationset F bitmap F setfigurealternative F clonefield F setfigurecolorspace F copyimage F setfiguremask F definefield F setformat F definefieldset F setformsmethod F defineviewerlayer F setpagetransition F embedfile

F settaggingsupport

F insertu3d F setupcanvas F setupidentity F knockout F setxmpfile F negative F startlayer F overprint F startunicodetoactualtext F positive F startunicodetoactualtextdirect F reference F stoplaver F rabcolor F stopunicodetoactualtext F spotcolor F stopunicodetoactualtextdirect F startlayer

F supportedformats
F unicodetoactualtext
F useviewerlayer
F validfield
F validfieldset
F validfieldset
F stopstackedlayer
F transparency
F typesetfield
F tregistrations

F wrapimage F cmykindexcolor
S comment F cmykspotcolor
T nodeinjections F getspotcolorreference

F addtags F grayindexcolor
F annotation F grayspotcolor
F attachfile F rgbindexcolor

F changestackedlayer F rgbspotcolor
F cmykcolor F spotcolorname
F comment F transparency

F destination T tables
F effect D vfspecials

F graycolor registrations table
F injectbitmap tables table
F insertmovie timestamp function
F insertsound writeout function

#### basexx (extra lua)

| decode16          | function |
|-------------------|----------|
| decode64          | function |
| decode85          | function |
| ${\tt decodeLZW}$ | function |
| decodeRL          | function |

encode16 function
encode64 function
encode85 function
encodeLZW function
encodeRL function

# bit32 (basic lua)

| arshift | function | extract | $ \hbox{function} $ |
|---------|----------|---------|---------------------|
| band    | function | lrotate | $ \hbox{function} $ |
| bnot    | function | lshift  | $ \hbox{function} $ |
| bor     | function | replace | $ \hbox{function} $ |
| btest   | function | rrotate | $ \hbox{function} $ |
| bxor    | function | rshift  | $ \hbox{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 |
| get            | function |
| getcontent     | function |
| getlines       | function |
| gettexbuffer   | function |
| loadcontent    | function |
| parallel       | table    |

| F define       |          |
|----------------|----------|
| F hassomeconte | ent      |
| F next         |          |
| F place        |          |
| F reset        |          |
| F save         |          |
| prepend        | function |
| raw            | function |
| run            | function |
| samplefile     | function |
| undent         | function |

# builders (context)

| kernel       table       profiling       table         F hyphenating       F add       F add         F hyphenation       F distance       F fixedprofile         F kerning       F fixedprofile       F fixedprofile         F ligaturing       F get       F get         F mlist_to_hlist       F list       Pagehandler         T constructors       F profilebox       F set         N attribute       F set       F profilebox         F define       Vspacing       table         F define       Vspacing       table         F define       Vspacing       table         F define       Vspacing       table         F define       P coclapseries       table         F define       F checkstrutdepth       F collapsevbox       T data         F basic       D map       D skip       D skip       D skip         F default       D skip       D skip       D skip       D skip       D skip       D skip       F definesnapmethods       F definesnapmethods       F definesnapmethods       F forcepageflush       F forcepageflush       F set       F forcepageflush       F set petenofpreviouslines       F forcepageflush       F forcestrutdepth       F injectdisable       F injec  | chacksidaflast  | function | F 4                   |
|--|-----------------|----------|-----------------------|
| F hyphenation F hyphenation F kerning F ligaturing F ligaturing F ligaturing F mist_to_hlist F list  paragraphs F define F define F handler F basic F default F handle D namp F define D skip F hist F set F define F rorepageflush F rorepageflush F start F start F stop F strace F injectdisable F registered F registered F poptiane F poptimize F reset F define F start F poptimize F reset F start F reset F stonticategory F stocked F synchronizepage F strocked F start F set F forcatcupchol F start F poptimize F setskip F reset F start F spenotractions F start F spenotractions F start F spenotractions F spenotractions F start F spenotractions F start F spenotractions F spenotractions F start F sta |                 |          | F tag                 |
| F hyphenation F kerning F ligaturing F ligaturing F mist_to_hlist  F mist_to_hlist F paragraphs F mist_to_hlist F pagehandler F constructors F profilebox F set F define F disable F checkstrutdepth F handler F collapsevbox T methods F basic F default F hpack F oneline D names B fixed D names B fixed D numbers F set F start F start F stop F trace F keeptogether F registertogether F set F define F pushatsame F pushatsame F pettocategories F set F foreset F picet F pagebox F set F forieser F pageoverflow F setskip F registered F set F forieser F starb F solutions F set F stoputions F specoverflow F specoverflow F set F stoputions F set F foriese F starb F set F set F solutions F specoverflow F specoverflow F set F starb F starb F set F starb F set F starb F starb F set F starb F starb F set F starb F starb F starb F set F starb F star |                 | table    |                       |
| F kerning F ligaturing F ligaturing F mist_to_hlist  paragraphs table F pagehandler  T constructors N attribute F define F define F desable F enable F enable F collapsevbox T methods F basic F default F handler F oneline F noneline F noneline F set F set F set F forcespageflush F set F set F forcespageflush F start F set F forcestrutdepth F start F set F forcestrutdepth F forcespageflush F start F set F forcestrutdepth F start F start F set F forcestrutdepth F start F stop F inject F sinject F sinject F spagehandler F solutions F set F poptimize F setskip F reset F set F snapbox F set F snapbox F set F snapbox F set F snapbox F set F spocategories F stocategories F tocategories F tocategories F tocategories F tocategories F tocategory   |                 |          |                       |
| F ligaturing F milst_to_hlist  Paragraphs table F pagehandler T constructors N attribute F define F define F disable F enable F enable F handler F handler F collapsevbox T methods F basic F default F hack F oneline F neline F set F set F defineshopether F set F forcespageflush F start F start F start F stop F stop F stop F stop F stop F spechandler F solutions F pagehandler F pagehandler F pagehandler F collapsevbox T data D map D skip D snapmethods F definesnapmethod B fixed D numbers F forcepageflush F stop F inject F start F getnofpreviouslines F stop F inject F stop F inject F superiouslines F stop F spechandler F solutions F pagehandler F solutions F pageoverflow F pagebandler F solutions F spitters F popatsame F pushatsame F optimize F setmap F reset F setskip F reset F snapbox F set F snapbox F set F stocategories F stocategory   |                 |          |                       |
| F mist to hist  paragraphs table  T constructors  N attribute  F define  F define  F disable  F enable  F handler  F handler  F basic  F default  F hack  F oneline  D names  D names  D names  D names  F set  F forcepageflush  F start  F start  F start  F start  F stop  T expansion  F trace  F keeptogether  F solutions  F define  F define  F pageoverflow  T splitters  F optimize  F reset  F set  F setmap  F reset  F setmap  F reset  F start  F setmap  F reset  F setmap  F reset  F stoncategories  F stoncategories  F setskip  F reset  F stoncategories  F stoncategories  F stoncategories  F stoncategories  F setmap  F reset  F soncategories  F soncategories  F stoncategories  F stoncategories  F stoncategory   | -               |          | ·                     |
| paragraphs table  T constructors  N attribute  F define  F define  F define  F checkstrutdepth  F handler  F basic  F default  F hack  F oneline  D names  D names  D names  D names  F set  F forcepageflush  F start  F start  F start  F start  F stop  F trace  F keeptogether  F registertogether  F optimize  F optimize  F optimize  F set  F set  F set  F reset  F set  F set  F set  F set  F set  F popatsame  F set  F spushatsame  F soptimize  F set  F set  F set  F set  F setskip  F reset  F spushcronizepage  F split  F start  F tocategories  F sonapbox  F set  F sonapbox  F set  F sonapbox  F set  F sonappox  |                 | +        | •                     |
| T constructors  N attribute F set  F define Vspacing table  F disable D categories F enable F checkstrutdepth F handler F collapsevbox T methods T data F basic D map F default D skip F hpack D snapmethods F oneline F oneline F set F forcepageflush F start F start F start F getnofpreviouslines F stop F trace F injectdisable F registertogether F solutions T splitters F define F pagehandler F popatsame F optimize F set F reset F start F setskip F reset F start F setskip F reset F starphox F stephorizepage F split F start F stoategory   |                 |          |                       |
| R attribute F define Vspacing Table F disable D categories F enable F enable F checkstrutdepth F handler F collapsevbox T methods T data F basic D map F default D skip F hpack D snapmethods F oneline F definesnapmethod D names B fixed D numbers F set F forcepageflush F start F start F stop F trace F injectdisable F trace F injectdisable F registertogether F solutions T splitters F define F pageoverflow T registered F reset F start F setmap F reset F start F stoacategories F story F stephonizepage F split F reset F start F tocategories F tocategory  |                 | tabte    |                       |
| F define F disable F disable F enable F enable F handler F handler F basic F default F hack F oneline F oneline F set F start F start F start F start F starc F trace  |                 |          | ,                     |
| F disable F enable F enable F enable F handler F handler F collapsevbox  T methods F basic D map F default D skip F hpack D snapmethods F oneline F define F forcestrutdepth F start F trace F trace F registertogether F solutions F define F define F pushatsame F optimize F reset F set F sonapbox F set F reset F sonapbox F set F setskip F reset F setskip F reset F snapbox F set F sonaportic for start for succession of the |                 |          |                       |
| F enable F handler F handler F collapsevbox T methods F basic D map F default D skip F hpack F oneline F oneline F definesnapmethod D names B fixed D numbers F set F forcepageflush F start F getnofpreviouslines F stop F inject T expansion F trace F injectdisable F trace F injectskip F registertogether F solutions F solutions F define F pageoverflow T splitters F define F optimize F registered F setskip F reset F snapbox F snapbox F set F snapbox F stoategories F start F tocategory  |                 |          | , <del>,</del>        |
| F handler  T methods  T data  F basic  D map  F default  D skip  F hpack  D snapmethods  F oneline  F definesnapmethod  D names  B fixed  D numbers  F forcepageflush  F set  F forcestrutdepth  F start  F getnofpreviouslines  F stop  F inject  T expansion  F trace  F injectdisable  F trace  F injectskip  F registertogether  F solutions  T splitters  F define  F optimize  T registered  F reset  F snapbox  F set  F snapbox  F stortocategory  |                 |          |                       |
| T methods F basic D map F default D skip D snapmethods F oneline F definesnapmethod D names B fixed D numbers F set F forcepageflush F start F getnofpreviouslines F stop F inject T expansion F trace F injectdisable F trace F injectdisable F trace F injectskip F registertogether F solutions T solutions T splitters F define F optimize T registered F reset F set psynchronizepage F split F start F tocategory  |                 |          | ·                     |
| F basic F default F default D skip D snapmethods F oneline F definesnapmethod D names B fixed D numbers F set F forcepageflush F set F forcestrutdepth F start F getnofpreviouslines F stop F inject T expansion F trace F injectdisable F trace F injectdisable F trace F injectskip F registertogether F solutions F solutions F pageoverflow T splitters F define F optimize F registered F reset F set psetskip F reset F setskip F reset F setskip F setskip F setskip F reset F setskip F reset F sonapbox F set psynchronizepage F split F tocategory   |                 |          | ·                     |
| F default F hpack D snapmethods F oneline F oneline F definesnapmethod D names B fixed D numbers F forcepageflush F set F forcestrutdepth F start F getnofpreviouslines F stop F inject T expansion F trace F injectdisable F trace F injectskip F registertogether F solutions F solutions F pagehandler T solutions F pageoverflow T splitters F define F popatsame F optimize F registered F setmap F reset F setskip F tocategories F start  |                 |          |                       |
| F hpack F oneline F oneline F oneline F oneline F definesnapmethod  D names B fixed  D numbers F set F forcepageflush F set F forcestrutdepth F start F getnofpreviouslines F stop F inject  T expansion F trace F injectdisable F trace F injectskip F registertogether F solutions F solutions F pageoverflow T splitters F define F optimize F optimize F reset F set pshabsame F setskip F reset F synchronizepage F split F tocategory  |                 |          | ·                     |
| F oneline  D names  B fixed  D numbers  F set  F forcepageflush  F set  F forcestrutdepth  F start  F getnofpreviouslines  F stop  T expansion  F trace  F injectdisable  F trace  F injectpenalty  F keeptogether  F registertogether  F solutions  T splitters  F define  F optimize  F optimize  T registered  F reset  F set  F set  F setskip  F reset  F setskip  F reset  F setskip  F reset  F split  F tocategories  F tocategory   |                 |          | ·                     |
| D names D numbers F set F forcepageflush F set F forcestrutdepth F start F getnofpreviouslines F stop F inject T expansion F trace F injectpenalty F keeptogether F registertogether F registertogether F solutions F pageoverflow T splitters F define F optimize F optimize F registered F reset F set F set F sinject F pagehandler F pagehandler F pageoverflow F pageoverflow F pageoverflow F splitters F popatsame F optimize F setmap F registered F setskip F reset F snapbox F set F snapbox F set F snapbox F set F stocategories F start F tocategory  | ·               |          | ·                     |
| F set F forcestrutdepth F start F start F getnofpreviouslines F stop F inject T expansion F injectdisable F trace F injectpenalty F keeptogether F registertogether F registertogether F solutions F pageoverflow T solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F reset F snapbox F set F start F tocategory   |                 |          | '                     |
| F set F forcestrutdepth F start F start F getnofpreviouslines F stop F inject T expansion F injectdisable F trace F injectpenalty F keeptogether F registertogether F registertogether F solutions F pageoverflow T solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F reset F snapbox F set F start F tocategory   | D numbers       |          | F forcepageflush      |
| F start F getnofpreviouslines F stop F inject  T expansion F injectdisable F trace F injectpenalty F keeptogether F injectskip F registertogether F pagehandler  T solutions F pageoverflow  T splitters F popatsame F define F pushatsame F optimize F setmap  T registered F setskip F reset F snapbox F set F set F synchronizepage F split F tocategory  | F set           |          |                       |
| T expansion F injectdisable F trace F injectpenalty F keeptogether F injectskip F registertogether F pagehandler T solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategory  | F start         |          | F getnofpreviouslines |
| F trace F injectpenalty F keeptogether F injectskip F registertogether F pagehandler T solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategory  | F stop          |          | F inject              |
| F keeptogether F registertogether F registertogether F solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F reset F reset F samp F setskip F reset F synchronizepage F split F start F tocategory   | T expansion     |          | F injectdisable       |
| F registertogether T solutions F pageoverflow T splitters F popatsame F define F optimize F optimize F registered F reset F reset F set F set F set F synchronizepage F split F start F tocategory   | F trace         |          | F injectpenalty       |
| T solutions F pageoverflow T splitters F popatsame F define F pushatsame F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory  | F keeptogether  |          | F injectskip          |
| T splitters F popatsame F define F pushatsame F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory   | F registertoget | her      | F pagehandler         |
| F define F pushatsame F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory   | T solutions     |          | F pageoverflow        |
| F optimize F setmap T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory   | T splitters     |          | F popatsame           |
| T registered F setskip F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory   | F define        |          | F pushatsame          |
| F reset F snapbox F set F synchronizepage F split F tocategories F start F tocategory  | F optimize      |          | F setmap              |
| F set F synchronizepage F split F tocategories F start F tocategory  | T registered    | I        | F setskip             |
| F split F tocategories F start F tocategory  | F reset         |          | F snapbox             |
| F start F tocategory   | F set           |          | F synchronizepage     |
|  | F split         |          | F tocategories        |
| F stop F vboxhandler   | F start         |          | F tocategory          |
|  | F stop          |          | F vboxhandler         |

# caches (context)

| base                 | string   | loadcontent          | function |
|----------------------|----------|----------------------|----------|
| collapsecontent      | function | loaddata             | function |
| configfiles          | function | more                 | string   |
| contentstate         | function | savecontent          | function |
| defaults             | table    | savedata             | function |
| getfirstreadablefile | function | setfirstwritablefile | function |
| getreadablepaths     | function | setluanames          | function |
| getwritablepath      | function | treehash             | function |
| hashed               | function | usedpaths            | function |
| is writable          | function |                      |          |

#### callback (basic tex)

find function
known function
list function

register overloaded function
usage function

#### callbacks (context)

freeze function functions table F process rule F start page number F stop\_page\_number known function list data table pop function function push register function function report supported table B append to vlist filter

B begin\_paragraph
B build\_page\_insert
B buildpage\_filter
B contribute\_filter
B define\_font

B find\_format\_file
B find\_log\_file
B handle\_overload
B hpack\_filter
B hpack\_quality
B hyphenate
B insert par

B intercept\_lua\_error
B intercept\_tex\_error

B kerning
B ligaturing
B linebreak\_filter
B make\_extensible
B mlist\_to\_hlist
B open\_data\_file

B post\_linebreak\_filter

 ${\tt B} \ {\tt pre\_dump}$ 

B pre\_linebreak\_filter
B pre\_output\_filter
B process\_jobname
B show\_error\_message
B show\_lua\_call
B show\_warning\_message
B show\_whatsit
B start\_file
B start\_run

B stop\_run
B trace\_memory
B vpack\_filter
B vpack\_quality
B wrapup run

B stop\_file

#### catcodes (context)

names data table
numbers data table

register function

#### characters (context)

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

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

T char T compat

subscripts
superscripts
synonyms
tex
table
table
table

D accentmapping
D commandmapping
F defineaccents
F safechar
F toutf

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

#### chemistry (context)

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

method string
molecule function
moleculeparser userdata
start function
stop function
undefine string

#### containers (context)

| ${\tt cleanname}$ | function |  |
|-------------------|----------|--|
| content           | function |  |
| define            | function |  |
| is usable         | function |  |

is\_valid function
read function
usecache boolean
write function

## converters (context)

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

uchexnumbers upper verbose function function table

F translate weekday word

words

function
function

# coroutine (basic lua)

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

#### ctxrunner (context)

load function
preparedfile function

prepfiles data table
resolve function

#### data (context)

action function depth number height number prerolled string
width number

## debug (basic lua)

getinfo function
sethook function

traceback function

# dir (context)

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

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

## directives (context)

| data    | data table | name     | string              |
|---------|------------|----------|---------------------|
| default | function   | register | $ \hbox{function} $ |
| disable | function   | report   | $ \hbox{function} $ |
| done    | table      | reset    | $ \hbox{function} $ |
| enable  | function   | show     | $ \hbox{function} $ |
| list    | function   | value    | $ \hbox{function} $ |

#### document (context)

arguments data table files functions getargument getfilename options

table table function function table

T commandline

D environments D modes D modules T ctxfile D environments D modes D modules

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

## documentdata (context)

variable function

# drivers (context)

| convert      | function | T json            |
|--------------|----------|-------------------|
| converters   | table    | T actions         |
| F engine     |          | F cleanup         |
| F lmtx       |          | F convert         |
| enable       | function | F finalize        |
| gethpos      | function | F initialize      |
| getpos       | function | F outputfilename  |
| getrpos      | function | F prepare         |
| getvpos      | function | F wrapup          |
| helpers      | table    | T flushers        |
| F tomatrix   |          | F character       |
| install      | function | F rule            |
| instances    | table    | F simplerule      |
| T default    |          | F specialrule     |
| T actions    |          | F updatefontstate |
| F convert    |          | S name            |
| F outputfile | ename    | T lua             |
| T flushers   |          | T actions         |
| S name       |          | F cleanup         |
| T empty      |          | F convert         |
| T actions    |          | F finalize        |
| F convert    |          | F initialize      |
| F prepare    |          | F outputfilename  |
| T flushers   |          | F prepare         |
| S name       |          | F wrapup          |
| T js         |          | T flushers        |
| T actions    |          | F character       |
| F cleanup    |          | F rule            |
| F convert    |          | F simplerule      |
| F finalize   |          | F specialrule     |
| F initialize | e        | F updatefontstate |
| F outputfile | ename    | S name            |
| F prepare    |          | T mps             |
| F wrapup     |          | T actions         |
| T flushers   |          | F cleanup         |
| F character  |          | F convert         |
| F rule       |          | F finalize        |
| F simplerule | e        | F initialize      |
| F specialru  | le       | F outputfilename  |
| F updatefont | tstate   | F prepare         |
| S name       |          | F wrapup          |

T flushers
F character
F rule
F simplerule
F specialrule
F updatefontstate
S name

S name
T none
T actions
T flushers
S name
T pdf
T actions

actions
F cleanup
F convert
F finalize
F initialize
F outputfilename

F prepare F wrapup T flushers
F character
F fontchar
F group
F image
F literal

F poporientation F pushorientation

F restore
F rule
F save
F setmatrix
F simplerule
F specialrule
F updatefontstate

S name

lmtxversion number
outputfilename function
report function

## environment (context)

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

### experiments (context)

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

register function report function reset function show function value function

# figures (context)

B art

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

setmemstream

function

setorderfunctionsuffixesdata tablesetpathsfunctionuseddata table

# file (basic lua)

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

# fio (extra lua)

| getposition               | $ \hbox{function} $ |
|---------------------------|---------------------|
| read2dot14                | $ \hbox{function} $ |
| readbytes                 | $ \hbox{function} $ |
| readbytetable             | $ \hbox{function} $ |
| readcardinal1             | $ \hbox{function} $ |
| readcardinal1le           | $ \hbox{function} $ |
| readcardinal2             | $ \hbox{function} $ |
| readcardinal2le           | $ \hbox{function} $ |
| readcardinal3             | $ \hbox{function} $ |
| readcardinal3le           | $ \hbox{function} $ |
| readcardinal4             | $ \hbox{function} $ |
| readcardinal4le           | $ \hbox{function} $ |
| ${\bf readcardinaltable}$ | $ \hbox{function} $ |
| readfixed2                | $ \hbox{function} $ |
| readfixed4                | $ \hbox{function} $ |
| readinteger1              | $ \hbox{function} $ |
| readinteger1le            | $ \hbox{function} $ |
| readinteger2              | $ \hbox{function} $ |

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

# floats (context)

| analysemethod    | function | nofstacked | $ \hbox{function} $ |
|------------------|----------|------------|---------------------|
| checkedpagefloat | function | pop        | function            |
| collect          | function | push       | function            |
| consult          | function | resave     | function            |
| flush            | function | save       | function            |
| getvariable      | function | stacked    | function            |
| hasstacked       | function |            |                     |

# font (basic tex)

| addcharacters | function |
|---------------|----------|
| current       | function |
| define        | function |
| each          | function |
| getfont       | function |
| getfontdimen  | function |

| id           | function |
|--------------|----------|
| max          | function |
| nextid       | function |
| setfont      | function |
| setfontdimen | function |

# fonts (context)

|                      | +ahla     |                         |
|----------------------|-----------|-------------------------|
| analyzers            | table     | F collectprocessors     |
| D features           |           | F currentfonthasfeature |
| D initializers       |           | D designsizes           |
| D methods            |           | D dontembed             |
| F setstate           |           | F enhanceparameters     |
| D states             |           | T enhancers             |
| B useunicodemarks    |           | T afm                   |
| checkers             | table     | F apply                 |
| F getmissing         |           | F patch                 |
| F missing            |           | T patches               |
| F placeholder        | table     | F register              |
| cid                  | table     | F report                |
| F getmap             |           | F register              |
| F loadfile           | table     | F report                |
| collections          | table     | T otf                   |
| F checkenabled       |           | F addfeature            |
| F clonevector        |           | F apply                 |
| F define             |           | F enhance               |
| T definitions        |           | F patch                 |
| F found              |           | T patches               |
| F prepare            |           | F register              |
| F process            |           | F report                |
| F registermain       |           | F register              |
| F report             |           | F report                |
| F reset<br>T vectors |           | T tfm<br>F apply        |
| constructors         | table     | F patch                 |
| F addcharacters      | tabte     | T patches               |
| F addcoreunicodes    | -         | F register              |
| B addtounicode       |           | F report                |
| F aftercopyingcha    | aracters  | F register              |
| F applymanipulato    |           | F report                |
| F assignmathparar    |           | 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         | B fixprotrusion         |
| F checkedfilename    |           | F getfeatureaction      |
| F cleanuptable       |           | F getmathparameter      |

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

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

| F readbytetable     | F writeinteger2     |
|---------------------|---------------------|
| F readcardinal      | F writeinteger2le   |
| F readcardinal1     | F writeinteger3     |
| F readcardinal1le   | F writeinteger3le   |
| F readcardinal2     | F writeinteger4     |
| F readcardinal2le   | F writeinteger4le   |
| F readcardinal3     | F writestring       |
| F readcardinal3le   | F stripredundant    |
| F readcardinal4     | F svg               |
| F readcardinal4le   | N tableversion      |
| F readcardinaltable | F unifymissing      |
| F readchar          | F unpack            |
| F readfixed2        | F vhea              |
| F readfixed4        | F vmtx              |
| F readinteger       | F vorg              |
| F readinteger1      | F vvar              |
| F readinteger1le    | F woff2otf          |
| F readinteger2      | F registerpalette   |
| F readinteger2le    | F registerplugin    |
| F readinteger3      | F reorderlookups    |
| F readinteger3le    | F scriptandlanguage |
| F readinteger4      | F setdynamics       |
| F readinteger4le    | F setfeatures       |
| F readintegertable  | T statistics        |
| F readsignedbyte    | D usedfeatures      |
| F readstring        | D svgcache          |
| F readtag           | B svgenabled        |
| F setposition       | T tables            |
| F size              | D baselines         |
| F skip              | D features          |
| F skiplong          | D featuretypes      |
| F skipposition      | D languages         |
| F skipshort         | D scripts           |
| F writebyte         | N version           |
| F writecardinal1    | T pfb               |
| F writecardinal1le  | F loadvector        |
| F writecardinal2    | T tfm               |
| F writecardinal2le  | D cache             |
| F writecardinal3    | D features          |
| F writecardinal3le  | N maxnestingdepth   |
| F writecardinal4    | N maxnestingsize    |
| F writecardinal4le  | T readers           |
| F writeinteger1     | F loadpk            |
| F writeintegerlle   | F loadtfm           |
|                     |                     |

| r landsons   | 6  |
|--|--|
| F loadtfmvf  | S scriptpercentage   |
| Floadvf  | S scriptscriptpercentage   |
| F pktopdf  | S size   |
| F showpk   | S slantfactor  |
| F reencode   | S slantperpoint  |
| F setfeatures  | T spacing  |
| N version  | S extra  |
| T vf   | S shrink   |
| T combinations   | S stretch  |
| F combine  | S width  |
| T combiner   | S units  |
| D commands   | S vfactor  |
| D helpers  | S width  |
| D math   | S xheight  |
| D predefined   | T properties   |
| N version  | S autoitalicamount   |
| D whatever   | S cidinfo  |
| F hashfeatures   | T effect   |
| F hashinstance   | S ddelta   |
| T hashmethods  | S effect   |
| F normal   | S factor   |
| F virtual  | S hdelta   |
|  | C 1-4  |
| F initializefeatures   | S hfactor  |
| F initializefeatures<br>T keys   | S vfactor  |
|  |  |
| T keys   | S vfactor  |
| T keys<br>T characters   | S vfactor<br>S wdelta  |
| T keys T characters T descriptions   | S vfactor<br>S wdelta<br>S width   |
| T keys T characters T descriptions T parameters  | S vfactor S wdelta S width S embedding   |
| T keys T characters T descriptions T parameters S ascender   | S vfactor S wdelta S width S embedding S encodingbytes   |
| T keys T characters T descriptions T parameters S ascender S descender   | S vfactor S wdelta S width S embedding S encodingbytes S filename  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize  | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion  | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname   |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto   | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink  | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname   |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step   | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch   | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor  | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor   | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode   |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor   | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode S name  |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor S hfactor S mathsize                            | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode S name S nostackmath                                      |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor S hfactor S mathsize S mode                     | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode S name S nostackmath S psname                             |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor S hfactor S mathsize S mode T protrusion S auto | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode S name S nostackmath S psname S textitalics S virtualized |
| T keys T characters T descriptions T parameters S ascender S descender S designsize T expansion S auto S shrink S step S stretch S extendfactor S factor S hfactor S mathsize S mode T protrusion        | S vfactor S wdelta S width S embedding S encodingbytes S filename S finalized S fontname S format S fullname S hasitalics S hasmath S mathitalics S mode S name S nostackmath S psname S textitalics               |

| N noffontsloaded                |          | F name                       |            |
|---------------------------------|----------|------------------------------|------------|
| N nofsharedfonts                |          | F spec                       |            |
| N nofsharedhashes               | ;        | definetypeface               | function   |
| N nofsharedvector               | `s       | dropins                      | table      |
| N privateoffset                 |          | F clone                      |            |
| D privateslots                  |          | F nextid                     |            |
| F readanddefine                 |          | F provide                    |            |
| F registerfeature               | <u> </u> | F registerglyph              |            |
| F resetfeature                  |          | F registerglyphs             |            |
| B resolvevirtual                | 00       | F swap                       |            |
| F scale                         |          | encodings                    | table      |
| F scaled                        |          | T agl                        |            |
| F setfactor                     |          | D ctxcodes                   |            |
| F setfeature                    |          | D extras                     |            |
| F setmathparamete               | er       | D names                      |            |
| F setname                       |          | D synonyms                   |            |
| B sharefonts                    |          | D unicodes                   |            |
| F trytosharefont                |          | D cache                      |            |
| N version                       |          | F is_known                   |            |
| current                         | function | D known                      |            |
| currentid                       | function | F load                       |            |
| definers                        | table    | F make_unicode_ve            | ctor       |
| F addlookup                     |          | D math                       |            |
| F analyze                       |          | N version                    |            |
| F applypostproces               | sors     | enhanceid                    | function   |
| F checkedmode                   |          | expansions                   | data table |
| F checkedscript                 |          | formats                      | data table |
| S defaultlookup                 |          | getalternate                 | function   |
| F define                        |          | getindices<br>               | function   |
| F getspecification              | on       | getkern                      | function   |
| Finternal                       |          | getmultiple                  | function   |
| F loadfont                      |          | getsubstitution              |            |
| F makespecificati               | .on      | getters                      | table      |
| T methods                       |          | T alternate                  |            |
| F install                       |          | F opentype                   |            |
| D variants                      |          | T kern                       |            |
| F read                          |          | F opentype                   |            |
| F register<br>F registered      |          | F type1<br>F type3           |            |
| •                               |          | •                            |            |
| F registersplit F resetnullfont |          | T multiple<br>F opentype     |            |
| F resethulitont F resolve       |          | r opentype<br>T substitution |            |
| T resolvers                     |          | F opentype                   |            |
| F file                          |          | goodies                      | table      |
| L ITTE                          |          | goodtes                      | table      |

| D colorschemes         | 5         | D parameters                          |
|------------------------|-----------|---------------------------------------|
| T data                 |           | T processes                           |
| T dejavu-mat           | h         | D properties                          |
| S author               |           | D quads                               |
| S comment              |           | D resources                           |
| S copyrigh             | t         | T setdynamics                         |
| B initiali             | zed       | T shapes                              |
| T mathemat             | ics       | D spaces                              |
| T alterna              | ates      | D spacings                            |
| T dotle                | ss        | T streams                             |
| S com                  | ment      | D unicodes                            |
| S fea                  | ture      | D variants                            |
| N val                  | ue        | D xheights                            |
| T kerns                |           | <b>helpers</b> table                  |
| S name                 |           | F addextraprivate                     |
| S version              |           | F addprivate                          |
| D designsizes          |           | F appendcommands                      |
| D filenames            |           | F appendcommandtable                  |
| F getcompositi         | ions      | F checkflags                          |
| T list                 |           | F checkmerge                          |
| F load                 |           | F checksteps                          |
| F prepare_feat         | ures      | F collectanchors                      |
| F register             |           | D commands                            |
| F registerpost         | processor | F descriptiontoslot                   |
| F report               |           | F dimenfactor                         |
| T suffixes             |           | F expandglyph                         |
| handlers               | table     | T extraprivates                       |
| hashes                 | table     | F fontpatternhassize                  |
| D characters           |           | F getcoloredglyphs                    |
| D classes              |           | F getdigitwidth                       |
| D csnames              |           | F getinstancespec                     |
| D descriptions         | ;         | F getparameters                       |
| D dynamics             |           | F getprivatecharornode                |
| D emwidths             |           | F getprivatenode                      |
| D exheights            |           | F getprivates                         |
| D extensibles          |           | F getprivateslot                      |
| D features             |           | F hasprivate                          |
| D identifiers          |           | F indextoslot                         |
| D italics              |           | F name                                |
| D lastmathids          |           | F nametoslot                          |
| D marks                | are       | F newprivateslot<br>F prependcommands |
| D mathparamete D modes | :13       | , ,                                   |
|                        |           | F prependcommandtable                 |
| D originals            |           | F privateslot                         |

F setdigitwidth B keepnames F splitfontpattern N mathbase F tochar N mathextrabase infofont function N textbase iterators table N textextrabase protrusions data table F characters table readers F descriptions F glyphs F afm loggers table F check lua F add placeholders F check tfm D category to placeholder F lua F format F ofm F onetimemessage F opentype F register F otf F reportdefinedfonts F pfb F reportusedfeatures D sequence mappings F tfm F addtounicode F ttc F fromunicode16 F ttf F woff F loadfile reserveid function F loadline select table F makenameparser D overloads D alternatives F reset F bodyfont F tounicode D data F default F tounicode16 F tounicode16sequence D defaults table metapost F definefallbackfamily F boundingbox F definefontfamily F boxtomp F definefontfamilypreset F draw D extras F fill F fallback F maxbounds D fallbacks F features F output F filefallback F paths F widthline F fontdata F fontfallback F zeroline table mp F fontsynonym D cache F goodies B inline F mathfallback N version D methods names data table D presets nulldata data table F registerfallback privateoffsets table F registerfiles

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

typefaces

table

D synonyms

## functions (context)

dummy function

### graphics (context)

backgrounds table

F fetchmultipar

F pair

F path

F point

bitmaps table

F flush

F new

F placeholder

F tocontext

identifiers table

F bitmap

F jp2

F jpg

F png

identify function

# gzip (extra lua)

| compress   | function | load   | function |
|------------|----------|--------|----------|
| compressed | function | save   | function |
| decompress | function | suffix | function |

### images (context)

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

## interactions (context)

| atta            | achments    | data <sup>-</sup> | table |  |    | D   | functions              |         |       |
|-----------------|-------------|-------------------|-------|--|----|-----|------------------------|---------|-------|
| fie             | lds         | table             |       |  |    | D   | preambles              |         |       |
| F               | F clone     |                   |       |  |    | F   | setpreamb <sup>1</sup> | le      |       |
| F               | F define    |                   |       |  |    | F   | storecode              |         |       |
| F               | F defineset |                   |       |  |    | F   | storepream             | mble    |       |
| F               | Finsert     |                   |       |  |    | F   | usepreamb <sup>1</sup> | lenow   |       |
| gen             | eral        | table             |       |  |    | F   | usescript              | 5       |       |
| F               | F getidenti | ty                |       |  | li | .nk | edlists                | data    | table |
| F               | F setupiden | tity              |       |  | pa | ge  | S                      | table   | 9     |
| help            | р           | table             |       |  |    | F   | setpagetra             | ansitio | n     |
| F               | F collect   |                   |       |  |    | F   | setupcanva             | as      |       |
| F               | F reference |                   |       |  | re | fe  | rences                 | table   | 9     |
| F               | F register  |                   |       |  |    | F   | setclosed              | ocument |       |
| java            | ascripts    | table             |       |  |    | F   | setclosepa             | age     |       |
| F addtopreamble |             | F setopendocument |       |  |    |     |                        |         |       |
| F               | F code      |                   |       |  |    | F   | setopenpa              | ge      |       |
|                 | ) codes     |                   |       |  | re | nde | erings                 | data    | table |
| F               | F flushprea | mbles             |       |  | so | un  | dclips                 | data    | table |

## interfaces (context)

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

#### io (basic lua)

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

input overloaded function overloaded function lines

loadchunk function loaddata function loadlines function newreader function noflines function

open overloaded function output overloaded function

pathseparator string

overloaded function popen

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

# job (context)

|                   | for this a |                |       |
|-------------------|------------|----------------|-------|
| comment           | function   | D tobesaved    | 4-61- |
| datasets          | table      | parwrappers    | table |
| D collected       |            | D collected    |       |
| F extend          |            | D tobesaved    | +-bl- |
| F getdata         |            | passes         | table |
| F setdata         |            | F check        |       |
| D tobesaved       |            | D collected    |       |
| disablesave       | function   | F count        |       |
| embedded          | table      | F define       |       |
| D collected       |            | F find         |       |
| D tobesaved       |            | F first        |       |
| fileobjreferences | table      | F get          |       |
| D collected       |            | F getcollected |       |
| D tobesaved       |            | F getdata      |       |
| files             | table      | F getfield     |       |
| D collected       |            | F gettobesaved |       |
| F context         |            | F inlist       |       |
| B forcerun        |            | F last         |       |
| F run             |            | F list         |       |
| D tobesaved       |            | F save         |       |
| getrandomseed     | function   | F savetagged   |       |
| initialize        | function   | D tobesaved    |       |
| load              | function   | positions      | table |
| loadother         | function   | F b_column     |       |
| objects           | table      | F b_region     |       |
| D collected       |            | Fc             |       |
| F get             |            | D collected    |       |
| F number          |            | F column       |       |
| F page            |            | F columnofpos  |       |
| F save            |            | F copy         |       |
| F set             |            | F depth        |       |
| D tobesaved       |            | F e_column     |       |
| pack              | boolean    | F e_region     |       |
| packversion       | number     | F enhance      |       |
| pagestates        | table      | F extra        |       |
| D collected       |            | F get          |       |
| F countervalue    |            | F getfree      |       |
| F extend          |            | F gethpos      |       |
| F realpage        |            | F getpos       |       |
| F realpageorder   |            | F getreserved  |       |
|                   |            | i getreserveu  |       |
| F setstate        |            | F getrpos      |       |

| F gettobesaved     | D tobesaved    |          |
|--------------------|----------------|----------|
| F getvpos          | F upperleft    |          |
| F hangafter        | F upperright   |          |
| F hangindent       | F used         |          |
| F height           | F whd          |          |
| F hsize            | F width        |          |
| F leftskip         | F x            |          |
| F lowerleft        | F xy           |          |
| F lowerright       | F y            |          |
| F markregionbox    | register       | function |
| Fn                 | save           | function |
| F onsamepage       | structure      | table    |
| F overlapping      | D collected    |          |
| F p                | T components   |          |
| F page             | T tobesaved    |          |
| T pagedata         | T branches     |          |
| F paragraph        | S name         |          |
| F parindent        | S type         |          |
| F position         | variables      | table    |
| Fr                 | D checksums    |          |
| F region           | D collected    |          |
| F registerhandlers | F getchecksum  |          |
| F replace          | F makechecksum |          |
| F rightskip        | F restore      |          |
| F set              | F save         |          |
| F setall           | F setchecksum  |          |
| F setregionbox     | D tobesaved    |          |
|                    |                |          |

F setspec F settobesaved version

number

# language (basic tex)

| clean                      | function |
|----------------------------|----------|
| ${\tt clear\_hyphenation}$ | function |
| clear_patterns             | function |
| current                    | function |
| gethjcode                  | function |
| has_language               | function |
| hyphenate                  | function |
| hyphenation                | function |
| hyphenationmin             | function |

| id               | function |
|------------------|----------|
| new              | function |
| patterns         | function |
| postexhyphenchar | function |
| posthyphenchar   | function |
| preexhyphenchar  | function |
| prehyphenchar    | function |
| sethjcode        | function |

# languages (context)

| associate              | function   | F registerpattern        |            |
|------------------------|------------|--------------------------|------------|
| associated             | data table | F setfeatures            |            |
| association            | function   | installed                | function   |
| counters               | data table | labels                   | table      |
| current                | function   | F define                 |            |
| data                   | data table | F split                  |            |
| decimals               | data table | loadable                 | function   |
| define                 | function   | loadwords                | function   |
| explicithyphen         | function   | logger                   | table      |
| flatten                | function   | F report                 |            |
| frequencies            | table      | nofflattened             | function   |
| F averagecharwidth     |            | numbers                  | data table |
| F getdata              |            | postexhyphenchar         | function   |
| getdata                | function   | posthyphenchar           | function   |
| getnumber              | function   | preexhyphenchar          | function   |
| hjcounts               | table      | prehyphenchar            | 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          |            | transliteration          | table      |
| F popmethod            |            | F define                 |            |
| F pushmethod           |            | F handler                |            |
| F setmethod            |            | F set                    |            |
| F setup                |            | unload                   | function   |
| F showhyphenationtrace |            | urls                     | table      |
| T traditional          |            | D characters             |            |
| F definefeatures       |            | N lefthyphenmin          |            |
| F gettrace             |            | D mapping                |            |
| F hyphenate            |            | B packslashes            |            |
| F injecthyphens        |            | N righthyphenmin         |            |
| F installmethod        |            | F setcharacters          |            |
| F lasttrace            |            | version                  | number     |
| F loadpatterns         |            | visualizediscretionaries |            |
| F registerexception    |            | words                    | table      |

| F | check    | В | enables   |
|---|----------|---|-----------|
| Т | data     | F | found     |
| F | disable  | F | load      |
| F | enable   | Т | methods   |
| Т | enablers | N | threshold |

## layouts (context)

status table
 F isleftpage

F leftorrightpageaction

#### lfs (extra lua)

attributes overloaded function chdir overloaded function

currentdir function

isfound function
isreadabledir function
isreadablefile function
iswriteabledir function

iswriteablefile function

**mkdir** overloaded function

mkdirs function
modification
readlink function

setexecutable function
symlink function

touch overloaded function

### libraries (context)

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

extratex data table
functions data table
globals data table

#### lmx (context)

color function function convert convertfile function convertstring function einject function eprint function escape function finalized function finject function **fprint** function aet function getvariables function function htmfile h+ml 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 function make new function overloaderror function popupfile function function print pν function function report reset function result function set function function show showerror function stripcss function tν function function type function urlescape 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 | setformatters     | function |
|----------------------|----------|-------------------|----------|
| categories           | function | setlogfile        | function |
| direct               | function | setmessenger      | function |
| disable              | function | setprocessor      | function |
| enable               | function | settarget         | function |
| finalactions         | function | settimedlog       | function |
| flush                | function | settranslations   | function |
| loggingerrors        | function | show              | function |
| messenger            | function | start_page_number | function |
| new                  | function | start_run         | function |
| newline              | function | starterrorlogging | function |
| poptarget            | function | startfilelogging  | function |
| private              | table    | status            | function |
| F enablepagetiming   |          | stop_page_number  | function |
| F getpagetiming      |          | stoperrorlogging  | function |
| pushtarget           | function | stopfilelogging   | function |
| registerfinalactions | function | subdirect         | function |
| report               | function | subreport         | function |
| reporter             | function | texerrormessage   | function |
| setformats           | function | writer            | function |

# lpdf (context)

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

| N NoView                 |              | frompdfdoc             | function             |
|--------------------------|--------------|------------------------|----------------------|
| N NoZoom                 |              | fromsixteen            | function             |
| N Print                  |              | getcatalog             | function             |
| N Printable              |              | getcompression         | function             |
| N ReadOnly               |              | getfontname            | function             |
| N ToggleNoView           |              | getfontobjnumber       | function             |
| N auto                   |              | getinfo                | function             |
| N hidden                 |              | getmapentry            | function             |
| N printable              |              | getmetadata            | function             |
| T widgets                |              | getnofpages            | function             |
| N Comb                   |              | getpageproperties      | function             |
| N CommitOnSelChange      |              | getpagetags            | function             |
| N DoNotScroll            |              | getversion             | function             |
| N DoNotSpellCheck        |              | getxformname           | function             |
| N Edit                   |              | graycode               | function             |
| N FileSelect             |              | id                     | function             |
| N MultiLine              |              | immediateobj           | function             |
| N NoExport               |              | includechar            | function             |
| N NoToggleToOff          |              | includecharlist        | function             |
| N Password               |              | includefont            | function             |
| N PopUp                  |              | includeimage           | function             |
| N PushButton             |              | injectors              | table                |
| N Radio                  |              | F bitmap               |                      |
| N RadiosInUnison         |              | F jp2                  |                      |
| N ReadOnly               |              | F jpg                  |                      |
| N Required               |              | F png                  |                      |
| N RichText               |              | injectxmpinfo          | function             |
| N Sort                   |              | insertxmpinfo          | function             |
| N file                   |              | layerreference         | function             |
| N fixed                  |              | limited                | function             |
| N nocheck                |              | linearshade<br>literal | function<br>function |
| N protected              |              | majorversion           | function             |
| N readonly<br>N required |              | makenametree           | function             |
| N required N sorted      |              | minorversion           | function             |
| N unavailable            |              | nofpages               | function             |
| flushfonts               | function     | null                   | function             |
| flushgroup               | function     | number                 | function             |
| flushobject              | function     | obj                    | function             |
| flushstreamfileobject    | function     | objectcompresslevel    | function             |
| flushstreamobject        | function     | pagereference          | function             |
| formats                  | data table   | patternstream          | function             |
| frombytes                | function     | pdfcolor               | function             |
| fromeight                | function     | pdftimestamp           | function             |
|                          | . 4110 (2011 | Par cames comp         | . and citoff         |

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

# lpeg (basic lua)

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

# lua (basic tex)

| bytecode                       | table               | lastbytecode      | number     |
|--------------------------------|---------------------|-------------------|------------|
| bytedata                       | data table          | macros            | table      |
| bytedone                       | table               | B enabled         | tubte      |
| •                              |                     |                   |            |
| callbytecode                   | function            | F loaded          |            |
| collectgarbage                 | function            | F required        |            |
| delay                          | function            | F reset           |            |
| finalize                       | function            | F resolvestring   |            |
| firstbytecode                  | number              | F resolving       |            |
| flush                          | function            | F showdefinitions |            |
| flushdelayed                   | function            | messages          | data table |
| <pre>get_functions_table</pre> | function            | newindex          | function   |
| getbytecode                    | function            | newtable          | function   |
| getcurrenttime                 | function            | numbers           | data table |
| getfunctionstable              | overloaded function | registercode      | function   |
| gethashchars                   | function            | registeredcodes   | function   |
| getpreciseseconds              | function            | registerfinalizer | function   |
| getpreciseticks                | function            | registername      | function   |
| getruntime                     | function            | setbytecode       | function   |
| getstacktop                    | function            | setexitcode       | function   |
| getstartupfile                 | function            | startupfile       | string     |
| getversion                     | function            | version           | string     |

#### luatex (context)

F disable

F enable

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

wrapup

function

## lxml (context)

| addindex   | function   | first   | function  |
|--|--|---|---|
| all  | function   | flush   | function  |
| applyfunction  | function   | flushlinewise   | function  |
| applyselectors   | function   | flushsetups   | function  |
| att  | function   | flushspacewise  | function  |
| attribute  | function   | <del>get_id</del>   | <del>function</del>   |
| badinclusions  | function   | getid   | function  |
| chainattribute   | function   | getindex  | function  |
| checkindex   | function   | id  | function  |
| collected  | function   | idsplitter  | userdata  |
| command  | function   | include   | function  |
| concat   | function   | inclusion   | function  |
| concatrange  | function   | inclusions  | function  |
| content  | function   | index   | function  |
| context  | function   | inlineverbatim  | function  |
| convert  | function   | installsetup  | function  |
| count  | function   | last  | function  |
| delete   | function   | lastatt   | function  |
| depth  | function   | lastmatch   | function  |
| direct   | function   | lastpar   | function  |
| directives   | table  | load  | function  |
|  | cubic  | codd  | Tunction  |
| F after  | cubic  | loadbuffer  | function  |
|  | tubte  |   |   |
| F after  | cubic  | loadbuffer  | function  |
| F after<br>F before  | Capte  | loadbuffer<br>loaddata  | function<br>function<br>table<br>function   |
| F after<br>F before<br>F handle  |  | loadbuffer<br>loaddata<br>loaded  | function<br>function<br>table   |
| F after F before F handle F load F setup  displayverbatim  | function   | loadbuffer<br>loaddata<br>loaded<br>main  | function<br>function<br>table<br>function   |
| F after F before F handle F load F setup displayverbatim doif  |  | loadbuffer<br>loaddata<br>loaded<br>main<br>match   | function<br>function<br>table<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse   | function<br>function<br>function   | loadbuffer<br>loaddata<br>loaded<br>main<br>match<br>name   | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif  | function<br>function<br>function<br>function   | loadbuffer<br>loaddata<br>loaded<br>main<br>match<br>name<br>namespace  | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse   | function function function function function function  | loadbuffer<br>loaddata<br>loaded<br>main<br>match<br>name<br>namespace<br>nonspace  | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty   | function<br>function<br>function<br>function   | loadbuffer loaddata loaded main match name namespace nonspace par   | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot  | function function function function function function  | loadbuffer loaddata loaded main match name namespace nonspace par param   | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty  | function function function function function function function   | loadbuffer loaddata loaded main match name namespace nonspace par param parameter   | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot  | function function function function function function function function  | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path                                      | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot doifnotempty                                   | function function function function function function function function function   | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path popmatch                             | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function   |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot doifnotempty doifnotext                        | function   | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path popmatch pos                         | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function                                     |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot doifnotempty doifnottext element elements      | function                            | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path popmatch pos position                | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function                         |
| F after F before F handle F load F setup  displayverbatim  doif  doifelse  doifelseempty  doifenpty  doifnot  doifnotempty  doifnottext  element elements entities | function                   | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path popmatch pos position pure           | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function             |
| F after F before F handle F load F setup displayverbatim doif doifelse doifelseempty doifelsetext doifempty doifnot doifnotempty doifnottext element elements      | function | loadbuffer loaddata loaded main match name namespace nonspace par param parameter path popmatch pos position pure pushmatch | function<br>function<br>table<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function<br>function |

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

## math (basic lua)

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

| min            | function           |                     |
|----------------|--------------------|---------------------|
| mininteger     | number             |                     |
| mod            | function           |                     |
| modf           | function           |                     |
| odd            | function           |                     |
| pi             | number             |                     |
| pow            | function           |                     |
| rad            | function           |                     |
| random         | ${\tt overloaded}$ | $ \hbox{function} $ |
| randomseed     | function           |                     |
| round          | function           |                     |
| setrandomseedi | function           |                     |
| sin            | function           |                     |
| sind           | function           |                     |
| sinh           | function           |                     |
| sqrt           | function           |                     |
| tan            | function           |                     |
| tand           | function           |                     |
| tanh           | function           |                     |
| tointeger      | function           |                     |
| type           | function           |                     |
|                |                    |                     |

function

ult

## mathematics (context)

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

### md5 (extra lua)

HEXfunctionsumfunctiondecfunctionsumHEXAfunctionhexfunctionsumhexafunction

#### metapost (context)

checkformat function function cm codes table N addto N ampersand N and N assignment N atleast N begingroup N btex N capsule N colon N comma N controls N curl N cycle N declare N def N definedmacro N delimiters N endgroup N equals N etex N everyjob N exitif N expandafter N fi or else Nif N input N interim N internal N iteration N join N leftbrace N leftbracket N leftdelimiter N let

N macrospecial

N maketext

N message

N mode

N newinternal N nullary N numeric N of N ofbinary N outertag N parametertype N plus or minus N primarybinary N primarydef N randomseed N relax N repeat loop N rightbrace N rightbracket N rightdelimiter N runscript N save N scantokens N scope N secondarybinary N secondarydef N semicolon N setbounds N shipout N show N skip N slash N special N step N stop N str N string N tag N tension N tertiarybinary N tertiarydef N thingstoadd N to N unary N undefinedcs

| N until          |            | getparameter        | function |
|------------------|------------|---------------------|----------|
| N void           |            | getparameterset     | function |
| N with           |            | getstatistics       | function |
| N within         |            | gettext             | function |
| N write          |            | graphic             | function |
| colorinitializer | function   | graphic_base_pass   | function |
| comment          | function   | includesvgbuffer    | function |
| convert          | function   | includesvgfile      | function |
| currentmpx       | function   | installplugin       | function |
| currentmpxstatus | function   | isobject            | function |
| defaultformat    | string     | lastlog             | string   |
| defaultinstance  | string     | load                | function |
| defaultmethod    | string     | maketext            | function |
| directrun        | function   | metafun             | table    |
| escaped          | function   | F interpolate       |          |
| exectime         | table      | F topath            |          |
| extensiondata    | data table | mptopdf             | table    |
| filterclippath   | function   | F convertmpstopdf   |          |
| flush            | function   | N nofconverted      |          |
| flushers         | table      | n                   | number   |
| T pdf            |            | nofruns             | number   |
| F comment        |            | nofscriptruns       | function |
| F flushfigure    |            | nvformat            | function |
| F startfigure    |            | pdfliterals         | function |
| F stopfigure     |            | pluginactions       | function |
| F textfigure     |            | popformat           | function |
| flushliteral     | function   | popscriptrunner     | function |
| flushnormalpath  | function   | popvariable         | function |
| flushreset       | function   | popvariables        | function |
| fonts            | table      | preparetextextsdata | function |
| F define         |            | process             | function |
| T flusher        |            | processing          | function |
| F flushfigure    |            | processplugins      | function |
| F startfigure    |            | processspecial      | function |
| F stopfigure     |            | properties          | table    |
| N instances      |            | pushformat          | function |
| F process        |            | pushscriptrunner    | function |
| format_number    | function   | pushvariable        | function |
| format_string    | function   | pushvariables       | function |
| formatnumber     | function   | reducetogray        | boolean  |
| getclippath      | function   | registerscript      | function |
| getextensions    | function   | remappedtext        | function |
| getextradata     | function   | remaptext           | function |
| getjobdata       | function   | reporterror         | function |
|                  |            |                     |          |

| reportsvgfonts   | function | F setfrombuffer   |          |
|------------------|----------|-------------------|----------|
| reset            | function | texerrors         | boolean  |
| resetlastlog     | function | texexp            | function |
| resetplugins     | function | theclippath       | function |
| run              | function | tographic         | function |
| runscript        | function | totable           | function |
| scanparameters   | function | types             | table    |
| scripterror      | function | N boolean         |          |
| scriptindex      | function | N cmykcolor       |          |
| setextensions    | function | N color           |          |
| setoutercolor    | function | N dependent       |          |
| setparameterset  | function | N independent     |          |
| settext          | function | N known           |          |
| setvariable      | function | N numeric         |          |
| showlog          | boolean  | N pair            |          |
| showsvgpage      | function | N path            |          |
| simple           | function | N pen             |          |
| splitprescript   | function | N picture         |          |
| startgraphic     | function | N protodependent  |          |
| startsvghashing  | function | N string          |          |
| stopgraphic      | function | N structured      |          |
| stopsvghashing   | function | N suffixedmacro   |          |
| svformat         | function | N tokenlist       |          |
| svgcolorremapper | function | N transform       |          |
| svgglyphtomp     | function | N unknownboolean  |          |
| svgshapestomp    | function | N unknownpath     |          |
| svgshapestopdf   | function | N unknownpen      |          |
| svgsplitcolor    | function | N unknownpicture  |          |
| svgtomp          | function | N unknownstring   |          |
| svgtopdf         | function | N unsuffixedmacro |          |
| sxsy             | function | N vacuous         |          |
| tex              | table    | typesvgpage       | function |
| F get            |          | unload            | function |
| F reset          |          | untagvariable     | function |
| F set            |          | variables         | table    |
|                  |          |                   |          |

#### mime (extra lua)

b64 function qpwrp function decode function function report decodet table stuff function unb64 function F base64 unqp function F quoted-printable function function wrap function table encode wrapt encodet table F base64 F base64 F default F quoted-printable F quoted-printable eol function F text normalize function function wrp function qр

# mp (context)

| get count                  | function | color       | function   |
|----------------------------|----------|-------------|------------|
| _get_count_<br>_get_dimen_ | function | dataset     | function   |
| _get_macro_                | function | datasets    | function   |
|                            | function | F load      | Tullection |
| _get_toks_<br>_set_count_  | function | dimension   | function   |
| _set_count_<br>set dimen   | function | direct      | function   |
| set macro                  | function | direct1     | function   |
| set toks                   | function | direct2     | function   |
| _set_toks_<br>autoinject   | function | direct3     | function   |
| aux                        | table    | direct4     | function   |
| F boolean                  | tabte    | disposehash | function   |
| F color                    |          | draw        | function   |
| F direct                   |          | fill        | function   |
| F direct1                  |          | flatten     | function   |
| F direct2                  |          | flush       | function   |
| F direct3                  |          | format      | function   |
| F direct4                  |          | formatted   | function   |
| F draw                     |          | fprint      | function   |
| F fill                     |          | fromhash    | function   |
| F flush                    |          | get         | table      |
| F fprint                   |          | getcount    | function   |
| Finteger                   |          | getdimen    | function   |
| F number                   |          | getmacro    | function   |
| F numeric                  |          | gettoks     | function   |
| F pair                     |          | graphformat | function   |
| F pairpoints               |          | inhash      | function   |
| F path                     |          | inject      | function   |
| F pathpoints               |          | F boolean   |            |
| F points                   |          | F cmykcolor |            |
| F print                    |          | F color     |            |
| F quadruple                |          | F integer   |            |
| F quadruplepoints          |          | F number    |            |
| F quoted                   |          | F numeric   |            |
| F size                     |          | F pair      |            |
| F string                   |          | F path      |            |
| F transform                |          | F string    |            |
| F triplet                  |          | F transform |            |
| F tripletpoints            |          | F whatever  |            |
| F vprint                   |          | integer     | function   |
| boolean                    | function | isarray     | function   |
| cleaned                    | function | isobject    | function   |

| <pre>lmt_color_functions</pre>           | table             | mf_blob_raw_content    | function |
|--|-------------------|------------------------|----------|
| F shade                                  |                   | mf_blob_raw_dimensions | function |
| F step                                   |                   | mf_blob_raw_reset      | function |
| lmt_contours_bitmap_get                  | function          | mf_blob_raw_toutf      | function |
| <pre>lmt_contours_bitmap_set</pre>       | function          | mf_blob_raw_wipe       | function |
| lmt_contours_cleanup                     | function          | mf_blob_size           | function |
| lmt_contours_color                       | function          | mf_blob_width          | function |
| lmt_contours_edge_get_band               | function          | mf_external_figure     | function |
| lmt_contours_edge_get_cell               | function          | mf_finish_saving_data  | function |
| lmt_contours_edge_paths                  | function          | mf_formatted_text      | function |
| <b>lmt_contours_edge_set</b>             | function          | mf_get_outline_text    | function |
| <pre>lmt_contours_edge_set_by_band</pre> | <b>I</b> function | mf_graphic_text        | function |
| <pre>lmt_contours_edge_set_by_cell</pre> | . function        | mf_inject_blob         | function |
| lmt_contours_format                      | function          | mf_made_text           | function |
| <pre>lmt_contours_function</pre>         | function          | mf_map_move            | function |
| lmt_contours_maxmean                     | function          | mf_map_text            | function |
| lmt_contours_maxz                        | function          | mf_named_color         | function |
| lmt_contours_minmean                     | function          | mf_outline_text        | function |
| lmt_contours_minz                        | function          | mf_save_data           | function |
| <pre>lmt_contours_nofvalues</pre>        | function          | mf_script_index        | function |
| lmt_contours_nx                          | function          | mf_some_text           | function |
| lmt_contours_ny                          | function          | mf_start_saving_data   | function |
| <b>lmt_contours_range</b>                | function          | mf_stop_saving_data    | function |
| <pre>lmt_contours_shade_paths</pre>      | function          | mf_tb_dimensions       | function |
| <pre>lmt_contours_shade_set</pre>        | function          | mf_tt_dimensions       | function |
| <pre>lmt_contours_shape_paths</pre>      | function          | mf_tt_initialize       | function |
| lmt_contours_start                       | function          | mode                   | function |
| lmt_contours_stop                        | function          | n                      | function |
| lmt_contours_value                       | function          | newhash                | function |
| lmt_contours_xrange                      | function          | number                 | function |
| lmt_contours_yrange                      | function          | numeric                | function |
| <pre>lmt_do_remaptext</pre>              | function          | pair<br>               | function |
| lmt_function_x                           | function          | pairpoints             | function |
| lmt_mesh_set                             | function          | path                   | function |
| <pre>lmt_mesh_update</pre>               | function          | pathpoints             | function |
| lmt_poisson_generate                     | function          | points                 | function |
| lmt_register_glyph                       | function          | positionanchor         | function |
| lmt_register_glyphs                      | function          | positionbox            | function |
| lmt_surface_do                           | function          | positioncurve          | function |
| lmt_svg_include                          | function          | positionpage<br>       | function |
| mf_blob_add                              | function          | positionpath<br>       | function |
| mf_blob_dimensions                       | function          | positionpxy            | function |
| mf_blob_index                            | function          | positionregion         | function |
| mf_blob_new                              | function          | positionwhd            | function |

| positionxy      | function | F token       |          |
|-----------------|----------|---------------|----------|
| prefix          | function | F transform   |          |
| print           | function | set           | table    |
| processingmode  | function | setcount      | function |
| quadruple       | function | setdimen      | function |
| quadruplepoints | function | setmacro      | function |
| quoted          | function | settoks       | function |
| report          | function | size          | function |
| scan            | table    | solve         | function |
| F boolean       |          | string        | function |
| F cmykcolor     |          | systemmode    | function |
| F color         |          | texstr        | function |
| F expression    |          | textextanchor | function |
| F integer       |          | texvar        | function |
| F next          |          | tohash        | function |
| F number        |          | transform     | function |
| F numeric       |          | triplet       | function |
| F pair          |          | tripletpoints | function |
| F path          |          | utflen        | function |
| F pen           |          | utfsub        | function |

F string F symbol vprint

function

### mplib (extra tex)

execute

function

| finder                      | function |
|-----------------------------|----------|
| finders                     | table    |
| F file                      |          |
| F mpstemplate               |          |
| finish                      | function |
| getcallbackstate            | function |
| getcodes                    | function |
| getfields                   | function |
| getstates                   | function |
| getstatistics               | function |
| getstatus                   | function |
| gettype                     | function |
| gettypes                    | function |
| inject_boolean              | function |
| <pre>inject_cmykcolor</pre> | function |
| inject_color                | function |
| inject_integer              | function |
| inject_number               | function |
| inject_numeric              | function |
| inject_pair                 | function |
| inject_path                 | function |
| inject_string               | function |
|                             |          |

| inject_transform | function   |          |
|------------------|------------|----------|
| inject_whatever  | function   |          |
| new              | overloaded | function |
| pen_info         | function   |          |
| realtimelogging  | boolean    |          |
| scan_boolean     | function   |          |
| scan_cmykcolor   | function   |          |
| scan_color       | function   |          |
| scan_expression  | function   |          |
| scan_integer     | function   |          |
| scan_next        | function   |          |
| scan_number      | function   |          |
| scan_numeric     | function   |          |
| scan_pair        | function   |          |
| scan_path        | function   |          |
| scan_pen         | function   |          |
| scan_string      | function   |          |
| scan_symbol      | function   |          |
| scan_token       | function   |          |
| scan_transform   | function   |          |
| solve_path       | function   |          |
| version          | function   |          |

## noads (context)

| handlers     | table | F resize       |                     |
|--------------|-------|----------------|---------------------|
| F align      |       | F showtree     |                     |
| F alternates |       | F tags         |                     |
| F autofences |       | F unscript     |                     |
| F classes    |       | F unstack      |                     |
| F collapse   |       | F variants     |                     |
| F domains    |       | process        | function            |
| F families   |       | processnested  | $ \hbox{function} $ |
| F fixscripts |       | processors     | table               |
| F italics    |       | F mlist_to_hli | st                  |
| F kernpairs  |       | T unscript     |                     |
| F makeup     |       | T unstack      |                     |
| F relocate   |       | processouter   | function            |
| F render     |       |                |                     |

#### node (basic tex)

F getfam

check discretionaries function F getfield check discretionary function F getfont copy function F getglue copy list function F getglyphdata function count F getalvphdimensions current attributes function F getheight dimensions function F getid direct table F getindex F check discretionaries F getkern F check discretionary F getkerndimension F copy F getlanguage F copy list F getleader F copy only F getlist F count F getnext F current attributes F getnormalizedline F dimensions F getnucleus F effective glue F getoffsets F end of math F getoptions F getorientation F exchange F find attribute F getparstate F find attribute range F getpenalty F find node F getpost F first glyph F getpre F flatten discretionaries F getprev F flush list F getproperty F flush node F getreplace F getscript F getshift F get attribute F get attributes F getstate F get\_properties\_table F getsub F get synctex fields F getsubpre F getattributelist F getsubtype F getboth F getsup F getbox F getsuppre F getchar F gettotal F getdata F aetwhd F getdepth F getwidth F getdirection F has attribute F getdisc F has dimensions F getexpansion F has field

F has glyph

F has\_glyph\_option F setheight F setindex F hpack F hyphenating F setkern F ignore math skip F setlanguage F insert after F setleader F insert before F setlink F is\_char F setlist F setnext F is direct F is glyph F setnucleus F is node F setoffsets F is valid F setoptions F is zero glue F setorientation F kerning F setpenalty F last node F setpost F length F setpre F ligaturing F setprev F make extensible F setproperty F migrate F setreplace F mlist to hlist F setscript F naturalwidth F setshift F new F setsplit F protect\_glyph F setstate F setsub F protect glyphs F setsubpre F protrusion skippable F rangedimensions F setsubtype F remove F setsup F reverse F setsuppre F set attribute F settotal F set attributes F setwhd F set synctex fields F setwidth F setattributelist F slide F sethoth F start of par F setbox F tail F todirect F setchar F setdata F tonode F setdepth F tostring F setdirection F tovaliddirect F setdisc F traverse F setexpansion F traverse char F setfam F traverse content F setfield F traverse glyph F setfont F traverse id F traverse list F setglue

F setglyphdata

F type

| F unprotect_glyph       |          | last_node                | function            |
|-------------------------|----------|--------------------------|---------------------|
| F unprotect_glyphs      |          | length                   | $ \hbox{function} $ |
| F unset_attribute       |          | ligaturing               | function            |
| F usedlist              |          | make_extensible          | $ \hbox{function} $ |
| F uses_font             |          | mlist_to_hlist           | function            |
| F vertical_break        |          | new                      | function            |
| F vpack                 |          | optimize_unset_attribute | function            |
| F write                 |          | protect_glyph            | function            |
| effective_glue          | function | protect_glyphs           | function            |
| end_of_math             | function | protrusion_skippable     | function            |
| family_font             | function | rangedimensions          | function            |
| fields                  | function | remove                   | function            |
| find_attribute          | function | set_attribute            | function            |
| first_glyph             | function | set_glue                 | function            |
| flatten_discretionaries | function | setfield                 | function            |
| flush_list              | function | setproperty              | function            |
| flush_node              | function | slide                    | function            |
| free                    | function | subtypes                 | function            |
| get_attribute           | function | tail                     | function            |
| get_glue                | function | tostring                 | function            |
| get_properties_table    | function | traverse                 | function            |
| getfield                | function | traverse_char            | function            |
| getproperty             | function | traverse_glyph           | function            |
| has_attribute           | function | traverse_id              | function            |
| has_field               | function | traverse_list            | function            |
| has_glyph               | function | type                     | function            |
| hpack                   | function | types                    | function            |
| hyphenating             | function | unprotect_glyph          | function            |
| id                      | function | unprotect_glyphs         | function            |
| insert_after            | function | unset_attribute          | function            |
| insert_before           | function | usedlist                 | function            |
| instock                 | function | uses_font                | function            |
| inuse                   | function | values                   | function            |
| is_node                 | function | vpack                    | function            |
| is_zero_glue            | function | write                    | function            |
| kerning                 | function |                          |                     |
|                         |          |                          |                     |

# nodes (context)

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

| F cleanupbox           |          | is_zero_glue    | function   |
|------------------------|----------|-----------------|------------|
| F cleanuppage          |          | kerncodes       | data table |
| F export               |          | kerning         | function   |
| F finalizebox          |          | keys            | table      |
| F flatten              |          | T whatsit       |            |
| F flattenline          |          | last_node       | function   |
| F migrate              |          | leftmarginwidth | function   |
| F protectglyphs        |          | length          | function   |
| F stripping            |          | ligaturing      | function   |
| F textbackgrounds      |          | linefillers     | table      |
| F unprotectglyphs      |          | D data          |            |
| has_attribute          | function | F define        |            |
| has_field              | function | F enable        |            |
| has_glyph              | function | F filler        |            |
| hpack                  | function | F handler       |            |
| hyphenating            | function | lines           | table      |
| idsandsubtypes         | function | T boxed         |            |
| idstostring            | function | F register      |            |
| injections             | table    | F setup         |            |
| F copy                 |          | F stage_one     |            |
| F getligaindex         |          | F stage_two     |            |
| F getthreshold         |          | D data          |            |
| F handler              |          | F finalize      |            |
| F installgetspaceboth  |          | F number        |            |
| F installnewkern       |          | N scratchbox    |            |
| F isspace              |          | link            | function   |
| F keepcounts           |          | linked          | function   |
| F reset                |          | list            | function   |
| F resetcounts          |          | listcodes       | data table |
| F setcursive           |          | listtoutf       | function   |
| F setkern              |          | literalvalues   | data table |
| F setligaindex         |          | load            | function   |
| F setmark              |          | locate          | function   |
| F setmove              |          | markers         | table      |
| F setposition          |          | F get           |            |
| F setspacekerns        |          | mathcodes       | data table |
| insert_after           | function | maxboxwidth     | function   |
| insert_before          | function | migrations      | table      |
| insert_list_after      | function | F setinserts    |            |
| installattributehandle | function | F setmarks      |            |
| is_direct              | function | mlist_to_hlist  | function   |
| is_display_math        | function | new             | function   |
| is_node                | function | noadcodes       | data table |
| is_nut                 | function | noadoptions     | table      |
|                        |          |                 |            |

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

F getprop

F flush node

F getreplace T pool F getruledata F accent F getscript F baselineskip F getshift F boundary F getstate F choice F cleanup F getsub F getsubpre F delim F getsubtype F delimiter F direction F getsup F directliteral F getsuppre F disc F getsurround F getsynctexfields F emptyrule F gettotal F fence F getvalue F fontkern F fraction F getwhd F getwidth F glue F has attribute F gluespec F has dimensions F glyph F has field F hlist F has glyph F indentskip F hpack F italickern F hyphenating F kern F insert after F latelua F insert before F leader F insert list after F lefthangskip F is\_display\_math F leftmarginkern F is node F leftskip F is nut F lineskip F is zero glue F literal F mathchar F ischar F mathtextchar F isdone F isglyph F negatedglue F kerning F noad F originliteral F last node F outlinerule F leftmarginwidth F length F pageliteral F penalty F ligaturing F radical F link F linked F rawliteral F locate F register F migrate F restore F mlist to hlist F righthangskip F nestedtracedslide F rightmarginkern F new F rightskip

F rule F setattr F save F setattribute F savepos F setattributelist F setmatrix F setattributes F shrink F setattrlist F stock F setattrs F stretch F setboth F subbox F setbox F submlist F setboxglue F temp F setchar F usage F setcomponents T userids F setdata N margins.inline F setdepth F setdirection N splitters.one N splitters.two F setdisc F usernode F setdiscretionary F userrule F setexpansion F vlist F setfam F setfield F wordboundary F setfont F prepend F processranges F setalue F processwords F setglyphdata F protect glyph F setheight F protect glyphs F setkern F protrusion\_skippable F setlang F rangedimensions F setlanguage F setleader F rawprop F reference F setlink F rehpack F setlist F remove F setnext F repackhlist F setnucleus F replace F setoffsets F reverse F setoptions F rightmarginwidth F setorientation T rules F setparproperty T ruleactions F setpenalty F box F setpost F draw F setpre F fill F setprev F mp F setprop F stroke F setreplace F userrule F setruledata F set attribute F setscript

F setshift

F set components

| F setsplit           | F glue             |            |
|----------------------|--------------------|------------|
| F setstate           | F glyph            |            |
| F setsub             | F hlist            |            |
| F setsubpre          | F list             |            |
| F setsubtype         | F next             |            |
| F setsup             | F node             |            |
| F setsuppre          | F vlist            |            |
| F setsurround        | F whatsit          |            |
| F setsynctexfields   | T typesetters      |            |
| F setunsetattributes | F tohbox           |            |
| F setvalue           | F tohpack          |            |
| F setvisual          | F tonodes          |            |
| F setvisuals         | F tovbox           |            |
| F setwhd             | F tovpack          |            |
| F setwidth           | F unprotect_glyph  |            |
| F slide              | F unprotect_glyphs |            |
| F somepenalty        | F unset_attribute  |            |
| F somespace          | F unsetattribute   |            |
| F splitbox           | F unsetattributes  |            |
| F start_of_par       | F untracedslide    |            |
| F striprange         | F usedlist         |            |
| F tail               | F uses_font        |            |
| F takeattr           | F vianodes         |            |
| F takebox            | F vianuts          |            |
| F takelist           | F vpack            |            |
| F theprop            | F write            |            |
| F tonode             | packlist           | function   |
| F tonodes            | parcodes           | data table |
| F tonut              | penaltycodes       | data table |
| F tosequence         | plugindata         | table      |
| F tostring           | F finalizer        |            |
| F tracedslide        | F initializer      |            |
| F traverse           | S name             |            |
| F traverse_char      | T namespace        |            |
| F traverse_content   | N attribute        |            |
| F traverse_glyph     | D data             |            |
| F traverse_id        | F enable           |            |
| F traverse_list      | F handler          |            |
| T traversers         | F register         |            |
| F boundary           | D registered       |            |
| F char               | D values           |            |
| F content            | F processor        |            |
| F dir                | points             | function   |
| F disc               | pool               | table      |
|                      |                    |            |

| F baselineskip                     |            | repackhlist        | function   |
|------------------------------------|------------|--------------------|------------|
| F cleanup                          |            | replace            | function   |
| F directliteral                    |            | report             | function   |
| F glyph                            |            | rightmarginwidth   | function   |
| F hlist                            |            | rulecodes          | data table |
| F latelua                          |            | rules              | table      |
| F lineskip                         |            | D data             |            |
| F literal                          |            | F define           |            |
| F originliteral                    |            | F enable           |            |
| F register                         |            | F handler          |            |
| F restore                          |            | F userrule         |            |
| F rule                             |            | save               | function   |
| F save                             |            | serialize          | function   |
| F savepos                          |            | serializebox       | function   |
| F setmatrix                        |            | set_attribute      | function   |
| F special                          |            | setattr            | function   |
| F stock                            |            | setattribute       | function   |
| F usage                            |            | setattributes      | function   |
| F vlist                            |            | setboth            | function   |
| prepend                            | function   | setbox             | function   |
| print                              | function   | setboxtonaturalwd  | function   |
| processors                         | table      | setchar            | function   |
| F contribute_filter                |            | setfield           | function   |
| B enabled                          |            | setfont            | function   |
| F hpack_filter                     |            | setleader          | function   |
| <pre>F post_linebreak_filter</pre> |            | setlink            | function   |
| F pre_linebreak_filter             |            | setlist            | function   |
| F tracer                           |            | setnext            | function   |
| properties                         | table      | setprev            | function   |
| T data                             |            | setunsetattributes | function   |
| protect_glyph                      | function   | shifts             | table      |
| protect_glyphs                     | function   | D data             |            |
| protrusion_skippable               | function   | F define           |            |
| pts                                | function   | F enable           |            |
| radicalcodes                       | data table | F handler          |            |
| rangedimensions                    | function   | show               | function   |
| reference                          | function   | showboxes          | function   |
| references                         | table      | showlist           | function   |
| N attribute                        |            | showsimplelist     | function   |
| T done                             |            | skipcodes          | data table |
| F handler                          |            | slide              | function   |
| T stack                            |            | snapshots          | table      |
| rehpack                            | function   | F getsamples       |            |
| remove                             | function   | F resetsamples     |            |
|                                    |            |                    |            |

| F takesample         |            | tostring          | function |
|----------------------|------------|-------------------|----------|
| somepenalty          | function   | totable           | function |
| somespace            | function   | totree            | function |
| splitbox             | function   | toutf             | function |
| start_of_par         | function   | tracers           | table    |
| stripdiscretionaries | function   | T colors          |          |
| stripping            | table      | F reset           |          |
| T glyphs             |            | F set             |          |
| F set                |            | F setlist         |          |
| subtypes             | data table | F directions      |          |
| tail                 | function   | F fontchar        |          |
| takeattr             | function   | T frequencies     |          |
| takebox              | function   | F register        |          |
| tasks                | table      | T pool            |          |
| F actions            |            | T nodes           |          |
| F appendaction       |            | F rule            |          |
| F disableaction      |            | T nuts            |          |
| F disablegroup       |            | F rule            |          |
| F enableaction       |            | F resetproperties |          |
| F enablegroup        |            | F rule            |          |
| F freeze             |            | F setlist         |          |
| F freezegroup        |            | F setproperties   |          |
| F new                |            | F start           |          |
| F prependaction      |            | T steppers        |          |
| F removeaction       |            | F check           |          |
| F replaceaction      |            | F codes           |          |
| F restart            |            | F features        |          |
| F setaction          |            | F font            |          |
| F showactions        |            | F glyphs          |          |
| F table              |            | F message         |          |
| tobasepoints         | function   | F messages        |          |
| tocentimeters        | function   | F nofsteps        |          |
| tociceros            | function   | F register        |          |
| todidots             | function   | F reset           |          |
| todimen              | function   | F start           |          |
| toinches             | function   | F stop            |          |
| tomillimeters        | function   | F stop            |          |
| tonode               | function   | T transparencies  |          |
| tonodes              | function   | F reset           |          |
| tonut                | function   | F set             |          |
| topicas              | function   | F setlist         |          |
| topoints             | function   | traverse          | function |
| toscaledpoints       | function   | traverse_char     | function |
| tosequence           | function   | traverse_glyph    | function |
|                      |            |                   |          |

| traverse_id<br>traverse_list<br>traversers | function<br>function<br>table | usedlist<br>usercodes<br>uses_font | function<br>data table<br>function |
|--|-------------------------------|------------------------------------|------------------------------------|
| F char                                     |                               | vianodes                           | function                           |
| F glyph                                    |                               | vianuts                            | function                           |
| F list                                     |                               | visualizebox                       | function                           |
| F node                                     |                               | visualizers                        | table                              |
| typesetters                                | table                         | F attribute                        |                                    |
| F hbox                                     |                               | T attributes                       |                                    |
| F hpack                                    |                               | F box                              |                                    |
| F tohbox                                   |                               | F handler                          |                                    |
| F tohpack                                  |                               | F markfonts                        |                                    |
| F tonodes                                  |                               | F register                         |                                    |
| F tovbox                                   |                               | F setfont                          |                                    |
| F tovpack                                  |                               | F setlayer                         |                                    |
| F vpack                                    |                               | F setruledglyph                    |                                    |
| unprotect_glyph                            | function                      | F setvisual                        |                                    |
| unprotect_glyphs                           | function                      | vpack                              | function                           |
| unset_attribute                            | function                      | whatcodes                          | data table                         |
| unsetattribute                             | function                      | whatsitcodes                       | data table                         |

write

function

unsetattributes function

# number (context)

|                         | function   |  |
|-------------------------|------------|--|
| basepoints              | function   |  |
| bytetodecimal           | function   |  |
| compactfloat            | function   |  |
| decimaltobyte           | function   |  |
| dimenfactors            | data table |  |
| formatted               | function   |  |
| $for {\tt mattedfloat}$ | function   |  |
| idiv                    | function   |  |
| maxdimen                | number     |  |
| nopts                   | function   |  |
| percent                 | function   |  |
| points                  | function   |  |
| pts                     | function   |  |
| signed                  | function   |  |
| ${\tt sparse exponent}$ | function   |  |
| splitdimen              | function   |  |
| to16dot16               | function   |  |

| tobasepoints            | function |
|-------------------------|----------|
| tobitstring             | function |
| tocentimeters           | function |
| tociceros               | function |
| tocontext               | function |
| todidots                | function |
| todimen                 | function |
| toevenhex               | function |
| toinches                | function |
| tomillimeters           | function |
| tonumberf               | function |
| tonumberg               | function |
| topicas                 | function |
| topoints                | function |
| toscaled                | function |
| ${\tt toscaled points}$ | function |
| valid                   | function |
|                         |          |

### objects (context)

data table
dimensions function
found function
n number

page function
reference function
register function
restore function

# optional (context)

| curl            | table | F reset        |       |
|-----------------|-------|----------------|-------|
| F escape        |       | F setclosefile |       |
| F fetch         |       | F setconsole   |       |
| F getversion    |       | F setfindfile  |       |
| F initialize    |       | F setopenfile  |       |
| F unescape      |       | F setreadfile  |       |
| ghostscript     | table | F setseekfile  |       |
| F execute       |       | mysql          | table |
| F initialize    |       | F close        |       |
| graphicsmagick  | table | F execute      |       |
| F execute       |       | F getmessage   |       |
| F initialize    |       | F initialize   |       |
| kpse            | table | F open         |       |
| F expand_brace  | 5     | postgress      | table |
| F expand_path   |       | F close        |       |
| F expand_var    |       | F execute      |       |
| F find_file     |       | F getmessage   |       |
| F find_files    |       | F initialize   |       |
| F get_file_type | 25    | F open         |       |
| F initialize    |       | sqlite         | table |
| F readable_file | 2     | F close        |       |
| F set_program_  | name  | F execute      |       |
| F var_value     |       | F getmessage   |       |
| loaded          | table | F initialize   |       |
| mujs            | table | F open         |       |
| F dofile        |       | zint           | table |
| F execute       |       | F execute      |       |
| F initialize    |       | F initialize   |       |

## os (basic lua)

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

# package (basic lua)

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

### pagebuilders (context)

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

```
F sethsize
   F sethspan
   F setlines
   F setproperties
   F setstart
   F setvsize
injections table
   F flushafter
   F flushbefore
   F save
mixedcolumns table
   F cleanup
   F finalize
   F getlist
   F getrest
   F getsplit
```

F setsplit

pdf (basic tex)

 $\textbf{immediateobj} \ \texttt{function}$ 

# pdfe (extra tex)

| arraytotable              | function   |
|---------------------------|------------|
| close                     | function   |
| closestream               | function   |
| dictionarytotable         | function   |
| encryptioncodes           | data table |
| getarray                  | function   |
| getboolean                | function   |
| getbox                    | function   |
| getcatalog                | function   |
| getdictionary             | function   |
| getfromarray              | function   |
| ${\tt getfromdictionary}$ | function   |
| getfromreference          | function   |
| getfromstream             | function   |
| getinfo                   | function   |
| getinteger                | function   |
| getmemoryusage            | function   |
| getname                   | function   |
| getnofobjects             | function   |
| getnofpages               | function   |
|                           |            |

| function   |
|------------|
| function   |
| data table |
| function   |
|            |

# physics (context)

units table

D tables

F registerunit

### pngdecode (extra tex)

applyfilter function
expand function
interlace function

splitmask function
tocmyk function

# publications (context)

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

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

S S

S T

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

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

F range

F showfields

F showhashedauthors

# regimes (context)

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

# resolvers (context)

| allprefixes                  | function   | findtexfile             | function   |
|------------------------------|------------|-------------------------|------------|
| appendhash                   | function   | findwildcardfile        | function   |
| automount                    | function   | findwildcardfiles       | function   |
| booleanvariable              | function   | formatofsuffix          | function   |
| cacheversion                 | string     | formatofvariable        | 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                 | string     | getenv                  | function   |
| configurationfiles           | function   | getextrapaths           | function   |
| dangerous                    | data table | getfilehashes           | function   |
| datastate                    | function   | gethashes               | function   |
| defaultsuffixes              | table      | getownpath              | function   |
| dirstatus                    | function   | getreadfilename         | function   |
| dowithfilesandreport         | function   | hashers                 | data table |
| dowithfilesintree            | function   | homedir                 | string     |
| dowithpath                   | function   | initialized             | function   |
| dowithvariable               | 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                    | function   | F usefile               |            |
| find_files                   | function   | joinpath                | function   |
| findbinfile                  | function   | knownvariables          | function   |
| findctxfile                  | function   | libraries               | table      |
| finders                      | data table | F optionalloaded        |            |
| findfile                     | function   | F validoptional         |            |
| findfiles                    | function   | load                    | function   |
| findgivenfile                | function   | loadbinfile             | function   |
| findgivenfiles               | function   | loaders                 | data table |
| findlib                      | function   | loadlualib              | function   |
| findpath                     | function   | loadtexfile             | function   |

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

variable

variableofformat

function

function

function

function

function

repath

reset

resetextrapaths

variableofformatorsuffix function wildcardpattern

function

# 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

colors

data table decomposehangul function

defaults table

> N inter char half shrink factor N inter char half stretch factor

N inter\_char\_hangul\_penalty

N inter\_char\_quarter\_shrink\_factor

N inter\_char\_quarter\_stretch\_factor

N inter char shrink factor

N inter char stretch factor

N inter\_word\_stretch\_factor

getdata getinjector function function

getsplitter getstatus

function function handlers

hash table

injectors data table

data table

inserters table

F nobreakspace after

F nobreakspace before

F space after

F space before

F zerowidthspace after

F zerowidthspace before

installdataset function installmethod function

numbertodataset data table numbertohandler data table

reset function function set function setstatus

data table splitters

### set (context)

contains function
create function
tolist function

tonumber function
totable function

# sha2 (extra lua)

| HASH256   | function | hash256 | function |
|-----------|----------|---------|----------|
| HASH384   | function | hash384 | function |
| HASH512   | function | hash512 | function |
| HEX256    | function | hex256  | function |
| HEX384    | function | hex384  | function |
| HEX512    | function | hex512  | function |
| digest256 | function | sum256  | function |
| digest384 | function | sum384  | function |
| digest512 | function | sum512  | function |

### sio (extra lua)

| read2dot14        | function | readfixed2       | function |
|-------------------|----------|------------------|----------|
| readbytes         | function | readfixed4       | function |
| readbytetable     | function | readinteger1     | function |
| readcardinal1     | function | readinteger1le   | function |
| readcardinal1le   | function | readinteger2     | function |
| readcardinal2     | function | readinteger2le   | function |
| readcardinal2le   | function | readinteger3     | function |
| readcardinal3     | function | readinteger3le   | function |
| readcardinal3le   | function | readinteger4     | function |
| readcardinal4     | function | readinteger4le   | function |
| readcardinal4le   | function | readintegertable | function |
| readcardinaltable | function |                  |          |

#### socket (extra lua)

S content-location

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

S reporting-mta

| S resent-b  | осс            | protect        | function |
|-------------|----------------|----------------|----------|
| S resent-o  | cc             | report         | function |
| S resent-d  | late           | select         | function |
| S resent-f  | rom            | sink           | function |
| S resent-m  | nessage-id     | sinkt          | table    |
| S resent-r  | reply-to       | F close-when-d | one      |
| S resent-s  | sender         | F default      |          |
| S resent-t  | :0             | F http-chunked |          |
| S retry-af  | ter            | F keep-open    |          |
| S return-p  | path           | skip           | function |
| S sender    |                | sleep          | function |
| S server    |                | source         | function |
| S smtp-rem  | note-recipient | sourcet        | table    |
| S status    |                | F by-length    |          |
| S subject   |                | F default      |          |
| S te        |                | F http-chunked |          |
| S to        |                | F until-closed |          |
| S trailer   |                | tcp            | function |
| S transfer  | encoding       | tcp4           | function |
| S upgrade   |                | tcp6           | function |
| S user-age  | ent            | tp             | table    |
| S vary      |                | N TIMEOUT      |          |
| S via       |                | F connect      |          |
| S warning   |                | try            | function |
| S will-ret  | ry-until       | udp            | function |
| S www-auth  | nenticate      | udp4           | function |
| S x-mailer  | -              | udp6           | function |
| F lower     |                | url            | table    |
| F normalize |                | F absolute     |          |
| http        | table          | F build        |          |
| N TIMEOUT   |                | F build_path   |          |
| S USERAGENT |                | F escape       |          |
| F genericfo | rm             | F parse        |          |
| F open      |                | F parse_path   |          |
| F request   |                | F unescape     |          |
| newtry      | function       |                |          |
|             |                |                |          |

### sorters (context)

|                   | _        |                 |            |
|-------------------|----------|-----------------|------------|
| basicsorter       | function | B pm            |            |
| comparers         | table    | B uc            |            |
| F basic           |          | B zc            |            |
| constants         | table    | B zm            |            |
| S defaultdigits   |          | definitions     | data table |
| S defaultlanguage | 2        | firstofsplit    | function   |
| S defaultmethod   |          | packch          | function   |
| N digitsmaximum   |          | packuc          | function   |
| N digitsoffset    |          | replacementlist | function   |
| N ignoredoffset   |          | setlanguage     | function   |
| N replacementoffs | set      | sort            | function   |
| T validmethods    |          | splitters       | table      |
| B ch              |          | F utf           |            |
| B mc              |          | strip           | function   |
| B mm              |          | tracers         | data table |
| В рс              |          | update          | function   |

# statistics (context)

| ${\tt benchmarktimer}$ | function |
|------------------------|----------|
| ${\tt checkfmtstatus}$ | function |
| currenttime            | function |
| elapsed                | function |
| elapsedindeed          | function |
| elapsedseconds         | function |
| elapsedtime            | function |
| enable                 | boolean  |
| formatruntime          | function |
| hastiming              | function |
| memused                | function |
| register               | function |

| resettiming   | function |
|---------------|----------|
| runtime       | function |
| savefmtstatus | function |
| show          | function |
| showmemory    | function |
| showusage     | function |
| starttiming   | function |
| stoptiming    | function |
| threshold     | number   |
| timed         | function |
| tracefunction | function |

# status (basic tex)

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

### storage (context)

| allocate   | function |
|------------|----------|
| data       | table    |
| mark       | function |
| marked     | function |
| max        | number   |
| min        | number   |
| nofmodules | 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             | nspaces           | table    |
|----------------|----------------------|-------------------|----------|
| autosingle     | function             | optionalquoted    | function |
| booleanstring  | function             | pack              | function |
| byte           | function             | packsize          | function |
| bytepairs      | function             | quote             | function |
| bytes          | function             | quoted            | function |
| bytetable      | function             | rep               | function |
| char           | function             | replacenewlines   | function |
| characterpairs | function             | reverse           | function |
| characters     | function             | split             | function |
| checkedsplit   | function             | splitlines        | function |
| collapsespaces | function             | splitup           | function |
| containsws     | function             | strip             | function |
| count          | function             | sub               | function |
| dawson         | function             | tformat           | function |
| dump           | function             | toHEX             | function |
| erf            | function             | toboolean         | function |
| erfc           | function             | tobytes           | function |
| erfcx          | function             | tocontext         | function |
| erfi           | function             | todec             | function |
| escapedpattern | function             | todimen           | function |
| escapedquotes  | function             | tohex             | function |
| explode        | function             | tonodes           | function |
| f6             | function             | topattern         | function |
| find           | function             | totable           | function |
| format         | function             | tounicode16       | function |
| formatter      | function             | toutf             | function |
| formatters     | function             | toutf32           | function |
| fullstrip      | function             | toutf8            | function |
| gmatch         | function             | tracedchar        | function |
| gsub           | function             | tracedchars       | table    |
| is_boolean     | function             | unpack            | function |
| is_empty       | function             | unquote<br>       | function |
| itself         | function             | unquoted          | function |
| len            | function             | upper             | function |
| limit          | function             | utfcharacter      | function |
| linetable      | function             | utfcharacters     | function |
| longtostring   | function             | utfcharactertable |          |
| lower          | function<br>function | utflength         | function |
| match          |                      | utfpadd           | function |
| nospaces       | function             | utfpadding        | function |

| utfvalue      | function | valid      | function |
|---------------|----------|------------|----------|
| utfvalues     | function | voigt      | function |
| utfvaluetable | function | voigt_hwhm | function |

### structures (context)

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

| F touserdata     |       | F reordere | ed                |
|------------------|-------|------------|-------------------|
| inserts          | table | T result   |                   |
| D data           |       | F savedlis | stnumber          |
| F define         |       | F savedlis | stprefixednumber  |
| F getdata        |       | F savedlis | sttitle           |
| F getlocation    |       | D section  | olocks            |
| F getname        |       | F sectionr | number            |
| F getnumber      |       | F size     |                   |
| F setlocation    |       | F title    |                   |
| F setup          |       | D tobesave | ed                |
| D stored         |       | F userdata | a                 |
| itemgroups       | table | F uservalı | ıe                |
| lists            | table | marks      | table             |
| F addto          |       | D data     |                   |
| F analyze        |       | F define   |                   |
| B autoreorder    |       | F exists   |                   |
| D cached         |       | F fetch    |                   |
| D collected      |       | F fetchall | Lmarks            |
| F discard        |       | F fetched  |                   |
| F enhance        |       | F fetchone | emark             |
| T enhancers      |       | F fetchtwo | omarks            |
| 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 synchron | nize              |
| F iscached       |       | F title    |                   |
| D kinds          |       | T tracers  |                   |
| F label          |       | F showta   | ble               |
| F location       |       | notes      | table             |
| D names          |       | F check_sp | oacing            |
| F number         |       | F checkpag | gechange          |
| D ordered        |       | F define   |                   |
| F page           |       | F doifonsa | amepageasprevious |
| F popnesting     |       | F get      |                   |
| F prefix         |       | F getdelta | apage             |
| F prefixednumber |       | F getinter | rnal              |
| F prefixedpage   |       | F getn     |                   |
| F process        |       | F getstate | 2                 |
| D pushed         |       | F hasconte | ent               |
| F pushnesting    |       | F internal | L                 |
| F realpage       |       | F internal | lid               |
|                  |       |            |                   |

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

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

| F reportstructure  | F      | registerused      |
|--------------------|--------|-------------------|
| F save             |        | resetshown        |
| T sectionblockdata |        | resetused         |
| T bodypart         |        | sort              |
| S bookmark         |        | synonym           |
| F set              |        | tobesaved         |
| F setblock         | tags   |                   |
| F setchecker       | •      | current           |
| F setentry         |        | elementtag        |
| F setinitialblock  |        | finishexport      |
| F setlevel         |        | getextradata      |
| F setnumber        |        | getid             |
| F showstructure    |        | getmetadata       |
| F structuredata    |        | gettablecell      |
| F title            |        | gettabulatecell   |
| D tobesaved        | F      | handler           |
| F typesetnumber    | F      | initializeexport  |
| F userdata         | D      | labels            |
| B verbose          | F      | last              |
| sets t             | able F | lastinchain       |
| F define           | F      | locatedtag        |
| F get              | т      | patterns          |
| F getall           |        | U splitter        |
| D setlist          | D      | properties        |
| <b>specials</b> t  | able F | registerextradata |
| D collected        | F      | registermetadata  |
| F retrieve         | F      | restart           |
| F store            | F      | setaspect         |
| D tobesaved        | F      | setattributehash  |
| synonyms t         | able F | setcombination    |
| F analyzed         | F      | setconstruct      |
| D collected        | F      | setfigure         |
| F compare          | F      | setfloat          |
| F define           | F      | setformulacontent |
| F filter           | F      | sethighlight      |
| F finalize         | F      | setitem           |
| F flush            | F      | setitemgroup      |
| F isshown          | F      | setlist           |
| F isused           | F      | setnotation       |
| F meaning          | F      | setnotationsymbol |
| F prepare          |        | setparagraph      |
| F process          | F      | setproperty       |
| F accesses         | F      | setpublication    |
| F register         |        |                   |

F setsorting
F setsynonym
F settablecell
F settabulatecell
F settagdelimitedsymbol
F settagsubsentencesymbol
F setupexport

F setuserproperties

D specifications
F start
F stop
F strip
D taglist
T usewithcare
T images

# table (basic lua)

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

# tex (basic tex)

| attribute                | table      | getcount             | function             |
|--------------------------|------------|----------------------|----------------------|
| badness                  | function   | getdelcode           | function             |
| box                      | table      | getdelcodes          | function             |
| boxresources             | table      | getdimen             | function             |
| F getbox                 |            | getdimensionvalue    | function             |
| F getdimensions          |            | geterrorvalues       | function             |
| F save                   |            | getflagvalues        | function             |
| F use                    |            | getfontoffamily      | function             |
| catcode                  | table      | getfrozenparvalues   | function             |
| chardef                  | function   | getglue              | function             |
| conditionals             | data table | getglyphdata         | function             |
| constants                | data table | getglyphoptionvalues | function             |
| count                    | table      | getglyphscript       | function             |
| cprint                   | function   | getglyphstate        | function             |
| ctdcatcodes              | number     | getgroupvalues       | function             |
| ctxcatcodes              | number     | gethelptext          | function             |
| definefont               | function   | gethyphenationvalues | function             |
| delcode                  | table      | getintegervalue      | function             |
| dimen                    | table      | getinteraction       | function             |
| dimensiondef             | function   | getiovalues          | function             |
| directives               | data table | getlargestusedmark   | function             |
| enableprimitives         | function   | getlccode            | function             |
| error                    | function   | getlinedir           | function             |
| experiments              | data table | getlist              | function             |
| extraprimitives          | function   | getlocallevel        | function             |
| fatalerror               | function   | getmark              | function             |
| flagcodes                | data table | getmath              | function             |
| fontidentifier           | function   | getmathcode          | function             |
| fontname                 | function   | getmathcodes         | function             |
| forcehmode               | function   | getmathdir           | function             |
| forcesynctexline         | function   | getmodevalues        | function             |
| forcesynctextag          | function   | getmuglue            | function             |
| fprint                   | function   | getmuskip<br>        | function             |
| frozenparcodes           | data table | getnest              | function             |
| get                      | function   | getnormalizevalues   | function             |
| getattribute             | function   | getoutputactive      | function             |
| getbox                   | function   | getpagestate         | function             |
| getboxdir                | function   | getpardir            | function             |
| getboxresourcebox        | function   | getsfcode            | function<br>function |
| getboxresourcedimensions |            | getskip              |                      |
| getcatcode               | function   | getsynctexline       | function             |

| getsynctexmode   | function            | muskip            | table      |
|------------------|---------------------|-------------------|------------|
| getsynctextag    | function            | nest              | table      |
| gettextdir       | function            | nilcatcodes       | number     |
| gettoks          | function            | normalizecodes    | data table |
| getuccode        | function            | notcatcodes       | number     |
| glue             | table               | number            | function   |
| glyphoptioncodes | data table          | poplocal          | function   |
| groupcodes       | data table          | primitives        | function   |
| hashtokens       | function            | print             | function   |
| hyphenationcodes | data table          | prtcatcodes       | number     |
| ifs              | data table          | pushlocal         | function   |
| inicatcodes      | number              | quitlocal         | function   |
| integerdef       | function            | quittoks          | function   |
| isattribute      | function            | resetparagraph    | function   |
| isbox            | function            | romannumeral      | function   |
| iscount          | overloaded function | round             | function   |
| isdefined        | function            | runlocal          | function   |
| isdimen          | overloaded function | runtoks           | function   |
| isglue           | function            | saveboxresource   | function   |
| ismuglue         | function            | scale             | function   |
| ismuskip         | overloaded function | scantoks          | function   |
| isprintable      | function            | set               | function   |
| isskip           | overloaded function | setattribute      | function   |
| istoken          | function            | setbox            | function   |
| istoks           | function            | setboxdir         | function   |
| lastnodetype     | function            | setcatcode        | function   |
| lccode           | table               | setcount          | function   |
| linebreak        | function            | setdelcode        | function   |
| lists            | table               | setdimen          | function   |
| luacatcodes      | number              | setdimensionvalue | function   |
| magicconstants   | table               | setglue           | function   |
| N maxdimen       |                     | setglyphdata      | function   |
| N running        |                     | setglyphscript    | function   |
| N trueinch       |                     | setglyphstate     | function   |
| mathchardef      | function            | setintegervalue   | function   |
| mathcode         | table               | setinteraction    | function   |
| modelevels       | table               | setlccode         | function   |
| N horizontal     |                     | setlinedir        | function   |
| N math           |                     | setlist           | function   |
| N unset          |                     | setmath           | function   |
| N vertical       |                     | setmathcode       | function   |
| modes            | data table          | setmathdir        | function   |
| mprint           | function            | setmuglue         | function   |
| muglue           | table               | setmuskip         | function   |
|                  |                     |                   |            |

setnest function setpardir function setsfcode function setskip function setsynctexline function setsynctexmode function setsynctextag function settextdir function settoks function setuccode function sfcode table shipout function showcontext function skip table sp function **splitbox** function sprint function data table systemmodes

takebox texcatcodes toks tonumber toscaled tpacatcodes tpbcatcodes tprint trackers triggerbuildpage txtcatcodes tvpe uccode uprint useboxresource vrbcatcodes write

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

# texconfig (basic tex)

| buffer_size     | number             |          | max_pool                   | number |
|-----------------|--------------------|----------|----------------------------|--------|
| error_line      | number             |          | max_print_line             | number |
| expand_depth    | number             |          | max_strings                | number |
| firstline       | string             |          | nest_size                  | number |
| formatname      | string             |          | node_size                  | number |
| function_size   | number             |          | param_size                 | number |
| half_error_line | number             |          | <pre>properties_size</pre> | number |
| hash_extra      | number             |          | save_size                  | number |
| init            | ${\tt overloaded}$ | function | shell_escape               | string |
| kpse_init       | boolean            |          | stack_size                 | number |
| max_in_open     | number             |          | token_size                 | number |

# texio (basic tex)

closeinput function
terminal function

write function
write\_nl function

# token (basic tex)

| accessors                 | table    | get_tok                       | function |
|---------------------------|----------|-------------------------------|----------|
| F active                  |          | get_tolerant                  | function |
| F cmd                     |          | getcommandid                  | function |
| F cmdchrcs                |          | getcommandvalues              | function |
| F cmdname                 |          | getfunctionvalues             | function |
| F command                 |          | getprimitives                 | function |
| F csname                  |          | gobble                        | function |
| F expandable              |          | gobble_dimen                  | function |
| F frozen                  |          | gobble_integer                | function |
| F index                   |          | is_defined                    | function |
| F name                    |          | is_next_char                  | function |
| F protected               |          | is_token                      | function |
| F range                   |          | new                           | function |
| create                    | function | peek_next                     | function |
| expand                    | function | peek_next_char                | function |
| expand_macro              | function | <pre>peek_next_expanded</pre> | function |
| future_expand             | function | pop_macro                     | function |
| get_active                | function | push_macro                    | function |
| get_cmdchrcs              | function | put_back                      | function |
| <pre>get_cmdname</pre>    | function | put_next                      | function |
| get_command               | function | save_lua                      | function |
| <pre>get_csname</pre>     | function | scan_argument                 | function |
| get_cstoken               | function | scan_box                      | function |
| get_dimension             | function | scan_cardinal                 | function |
| get_expandable            | function | scan_char                     | function |
| get_fields                | function | scan_cmdchr                   | function |
| get_flags                 | function | scan_cmdchr_expanded          | function |
| get_frozen                | function | scan_code                     | function |
| get_id                    | function | scan_csname                   | function |
| get_immutable             | function | scan_delimited                | function |
| get_index                 | function | scan_dimen                    | function |
| get_instance              | function | scan_dimen_argument           | function |
| get_integer               | function | scan_float                    | function |
| get_macro                 | function | scan_glue                     | function |
| get_meaning               | function | scan_integer                  | function |
| get_noaligned             | function | scan_integer_argument         | function |
| <pre>get_parameters</pre> | function | scan_key                      | function |
| <pre>get_permanent</pre>  | function | scan_keyword                  | function |
| get_primitive             | function | scan_keyword_cs               | function |
| get_protected             | function | scan_letters                  | function |
| get_range                 | function | scan_luacardinal              | function |
|                           |          |                               |          |

| scan luainteger    | function | scan value         | function |
|--------------------|----------|--------------------|----------|
| scan_luanumber     | function | scan_word          | function |
| scan_next          | function | serialize          | function |
| scan_next_char     | function | set_char           | function |
| scan next expanded | function | set dimension      | function |
| scan real          | function | set integer        | function |
| scan skip          | function | set lua            | function |
| scan string        | function | set macro          | function |
| scan_token         | function | skip next          | function |
| scan token code    | function | skip next expanded | function |
| scan tokenlist     | function | type               | function |
| scan toks          | function | undefine macro     | function |

#### tokens (context)

| astal | ble      | function        |   | U resetc | txscanner         |
|-------|----------|-----------------|---|----------|-------------------|
| bits  |          | table           |   | U rlap   |                   |
| N     | active   |                 |   | U second | oftwoarguments    |
| N     | alignmen | it              |   | U setfal | sevalue           |
| N     | begingro | oup             |   | U setsec | tionblock         |
| N     | characte | er              |   | U setups | ystem             |
| N     | close    |                 |   | U startc | olumns            |
| N     | comment  |                 |   | U startt | abulate           |
| N     | endgroup | )               |   | U startt | itle              |
| N     | endoflin | ie              |   | U startx | title             |
| N     | escape   |                 |   | U stopco | lumns             |
| N     | ignore   |                 |   | U stopta | bulate            |
| N     | invalid  |                 |   | U stopti | tle               |
| N     | letter   |                 |   | U stopxt | itle              |
| N     | mathshif | t               |   | U texset | up                |
| N     | open     |                 |   | U xmlw   |                   |
| N     | other    |                 | С | ommands  | data table        |
| N     | paramete | er              | С | ompile   | function          |
| N     | space    |                 |   | onstant  | function          |
| N     | subscrip | t               | С | onverter | <b>s</b> table    |
| N     | superscr | ript            |   | S tobool | ean               |
|       | whitespa |                 |   | S todime | n                 |
| cache | е        | table           |   | S toglue |                   |
| U     | NC       |                 |   | S tonumb | er                |
| U     | NR       |                 |   | S tostri | 3                 |
| U     | bf       |                 | _ | reate    | function          |
| U     | color    |                 | - | efined   | function          |
| U     | colordef | alc             |   | lags     | function          |
|       | colordef |                 | _ | -        | <b>r</b> function |
| U     | colordef | flt             | g | etters   | table             |
|       | colordef |                 |   | F box    |                   |
| U     | dofinish | reference       |   | F count  |                   |
| U     | dostartt | ext             |   | F cstoke | n                 |
| U     | finishjo | b               |   | F dimen  |                   |
| U     | firstofo | neargument      |   | F glue   |                   |
|       |          | woarguments     |   | F macro  |                   |
| U     | gobbleor | eargument       |   | F meanin | g                 |
|       | goto     |                 |   | F skip   |                   |
| U     | iftrue   |                 | _ | F token  |                   |
| U     | input    |                 | _ | sdefined |                   |
| U     | loadfour | dtypescriptfile | i | stoken   | function          |

| now         | function             | r    | integerouseus   |
|-------------|----------------------|------|-----------------|
| new         |                      |      | integerargument |
| pickup      | function<br>function |      | ischar          |
| popmacro    | table                |      | key             |
| presets     |                      |      | keyword         |
| T 1 argum   |                      |      | keywordcs       |
| T 1 string  |                      |      | letters         |
| T 2 argum   |                      |      | list            |
| T 2 string  |                      |      | luacardinal     |
| T 3 argum   |                      |      | luainteger      |
| T 3 string  |                      |      | luanumber       |
| T 4 argum   |                      |      | lxmlid          |
| T 4 string  |                      |      | next            |
| T 5 string  |                      |      | nextexpanded    |
| T 6 string  |                      |      | number          |
| T 7 string  |                      |      | optional .      |
| T 8 string  | -                    |      | peek            |
|             | function             |      | peekchar        |
| scanners    | table                |      | peekexpanded    |
| F argumen   |                      |      | real            |
| F argumen   | tasis                |      | scanclose       |
| F array     |                      |      | scanopen        |
| F boolean   |                      |      | skip            |
| F box       |                      |      | skipexpanded    |
| F bracket   |                      |      | string          |
| F bracket   |                      |      | table           |
| F cardina   | l                    |      | token           |
| F char      |                      |      | tokencode       |
| F cmdchr    |                      |      | tokenlist       |
| F cmdchre   | xpanded              |      | tokens          |
| F code      |                      |      | toks            |
| F condition | onal                 |      | value           |
| F count     |                      | ·    | vbox            |
| F csname    |                      |      | verbatim        |
| F delimit   | ed                   |      | vtop            |
| F dimen     |                      |      | whd             |
| F dimenar   |                      |      | word            |
| F dimensi   | on                   |      | nteger function |
| F float     |                      | sett |                 |
| F glue      |                      |      | box             |
| F gluespe   |                      |      | char            |
| F glueval   | ues                  |      | count           |
| F hash      |                      |      | dimen           |
| F hbox      |                      |      | glue            |
| F integer   |                      | F    | lua             |

F macro F scanglue F skip F scangluespec shortcuts table F scangluevalues T hits F scanhash N active F scanhbox F scaninteger N alignment N begingroup F scanintegerargument N character F scankeyword N close F scankeywordcs N comment F scanletters F scanlist N endgroup N endofline T scanners N escape F argument N ignore F argumentasis N invalid F array N letter F boolean N mathshift F box N open F bracketed N other F bracketedasis F cardinal N parameter N space F char N subscript F cmdchr N superscript F cmdchrexpanded N whitespace F code N close F conditional F inspect F count F csname N open F delimited F report F dimen F scanargument F scanargumentasis F dimenargument F scanarray F dimension F scanboolean F float F scanbox F glue F scanbracketed F gluespec F scanbracketedasis F gluevalues F scancardinal F hash F scanclose F hbox F scancode F integer F scanconditional F integerargument F scancsname F ischar F scandelimited F key F scandimen F keyword F scandimenargument F keywordcs F scandimension F letters

| F list         | F astable                 |
|----------------|---------------------------|
| F luacardinal  | T cache                   |
| F luainteger   | U NC                      |
| F luanumber    | U NR                      |
| F lxmlid       | U bf                      |
| F next         | U color                   |
| F nextexpanded | U colordefalc             |
| F number       | U colordefflc             |
| F optional     | U colordefflt             |
| F peek         | U colordefrlt             |
| F peekchar     | U dofinishreference       |
| F peekexpanded | U dostarttext             |
| F real         | U finishjob               |
| F scanclose    | U firstofoneargument      |
| F scanopen     | U firstoftwoarguments     |
| F skip         | U gobbleoneargument       |
| F skipexpanded | U goto                    |
| F string       | U iftrue                  |
| F table        | U input                   |
| F token        | U loadfoundtypescriptfile |
| F tokencode    | U resetctxscanner         |
| F tokenlist    | U rlap                    |
| F tokens       | U secondoftwoarguments    |
| F toks         | U setfalsevalue           |
| F value        | U setsectionblock         |
| F vbox         | U setupsystem             |
| F verbatim     | U startcolumns            |
| F vtop         | U starttabulate           |
| F whd          | U starttitle              |
| F word         | U startxtitle             |
| scannumber     | U stopcolumns             |
| scanopen       | U stoptabulate            |
| scanoptional   | U stoptitle               |
| scanstring     | U stopxtitle              |
| scantable      | U texsetup                |
| scantokenlist  | U xmlw                    |
| scantoks       | D commands                |
| scanvbox       | F compile                 |
| scanverbatim   | F constant                |
| scanvtop       | T converters              |
| scanword       | S toboolean               |
| toboolean      | S todimen                 |
| todimen        | S toglue                  |
| tokens         | S tonumber                |
|                |                           |

F

Т

S tostring F scanbracketed F create F scanbracketedasis F defined F scancardinal F scanclose F flags F getinteger F scancode F scanconditional T getters F box F scancsname F count E scandelimited F scandimen F cstoken F dimen F scandimenargument F glue F scandimension F scanalue F macro F meaning F scangluespec F skip F scangluevalues F token F scanhash F isdefined F scanhbox F istoken F scaninteger F new F scanintegerargument F pickup F scankeyword F popmacro F scankeywordcs T presets F scanletters F pushmacro F scanlist F setinteger F scannumber T setters F scanopen F box F scanoptional F char F scanstring F count F scantable F scantokenlist F dimen F glue F scantoks F lua F scanvbox F scanverbatim F macro F skip F scanvtop T shortcuts F scanword N close F toboolean F todimen F inspect N open F tonumber F tostring F report F scanargument D values F scanargumentasis F tonumber F scanarray F tostrina F scanboolean values data table

F scanbox

#### tracers (context)

printerror function
printwarning function

showlines function

# trackers (context)

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

# typesetters (context)

| alignments     | table   | T handlers        |       |
|----------------|---------|-------------------|-------|
| F handler      |         | F installhandle   | r     |
| F set          |         | F processmath     |       |
| breakpoints    | table   | F set             |       |
| F define       |         | F setcolor        |       |
| F handler      |         | F setmath         |       |
| D mapping      |         | F tomode          |       |
| T methods      |         | firstlines        | table |
| T numbers      |         | T actions         |       |
| F set          |         | F default         |       |
| F setreplaceme | nt      | F line            |       |
| cases          | table   | F word            |       |
| T actions      |         | F handler         |       |
| F handler      |         | F set             |       |
| F register     |         | fontkerns         | table |
| F set          |         | F handler         |       |
| characteralign | ı table | initials          | table |
| F handler      |         | T actions         |       |
| F resetcharact | eralign | F default         |       |
| F setcharacter | align   | F addanchortoline |       |
| characters     | table   | F addtoline       |       |
| F handler      |         | F calculatedelt   | a     |
| T methods      |         | F checkline       |       |
| F replacenbsp  |         | F handler         |       |
| F replacenbspa | ces     | F moveinline      |       |
| checkers       | table   | F normalize       |       |
| F handler      |         | F set             |       |
| F reset        |         | injectors         | table |
| F set          |         | F check           |       |
| cleaners       | table   | T list            |       |
| F handler      |         | F mark            |       |
| F set          |         | F reset           |       |
| digits         | table   | F set             |       |
| T actions      |         | F show            |       |
| F handler      |         | italics           | table |
| F set          |         | F enablemath      |       |
| directions     | table   | F enabletext      |       |
| F getfences    |         | F forcevariant    |       |
| F getglobal    |         | F handler         |       |
| F getmethod    |         | F reset           |       |
| F handler      |         | F set             |       |

| kerns           | table    | F apply        |              |
|-----------------|----------|----------------|--------------|
| D factors       |          | F register     |              |
| F handler       |          | F reset        |              |
| F keepligature  |          | F split        |              |
| D mapping       |          | F startapply   |              |
| F set           |          | F stopapply    |              |
| manipulators    | table    | F stripped     |              |
| F apply         |          | F tostring     |              |
| F applyspecific | cation   | 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  | tuation      |
| U list          |          | T character    | `S           |
| U pair          |          | S name         |              |
| F splitspecific | cation   | 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_c | onstruct     |
| F moveinline    |          | F initialize_r | eflow_height |
| F normalize     |          | F initialize_r | eflow_width  |
| F set           |          | F next_row     |              |
| periodkerns     | table    | F reflow_heigh | t            |
| D factors       |          | F reflow_width |              |
| F handler       |          | F set_construc | t            |
| D mapping       |          | F set_reflow_h | eight        |
| F set           |          | F set_reflow_w | idth         |
| processors      | table    |                |              |
|                 |          |                |              |

#### updaters (context)

apply function
register function

# url (context)

| addscheme | function | hashed      | $ \hbox{function} $ |
|-----------|----------|-------------|---------------------|
| barepath  | function | hasscheme   | $ \hbox{function} $ |
| construct | function | query       | $ \hbox{function} $ |
| decode    | function | split       | function            |
| encode    | function | toquery     | $ \hbox{function} $ |
| escape    | function | unescape    | function            |
| filename  | function | unescapeget | $ \hbox{function} $ |

# utf8 (basic lua)

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

# utilities (context)

| debugger          | table | F readtag                     |
|-------------------|-------|-------------------------------|
| F disable         |       | F setposition                 |
| F enable          |       | F size                        |
| F savestats       |       | F skip                        |
| F showstats       |       | F skiplong                    |
| F showtraceback   |       | F skipposition                |
| files             | table | F skipshort                   |
| F close           |       | F writebyte                   |
| F getposition     |       | F writecardinal1              |
| F getsize         |       | F writecardinal1le            |
| F look            |       | F writecardinal2              |
| F open            |       | F writecardinal2le            |
| F read2dot14      |       | F writecardinal3              |
| F readbyte        |       | F writecardinal3le            |
| F readbytes       |       | F writecardinal4              |
| F readbytetable   |       | F writecardinal4le            |
| F readcardinal    |       | F writeinteger1               |
| F readcardinal1   |       | F writeinteger1le             |
| F readcardinal1le |       | F writeinteger2               |
| F readcardinal2   |       | F writeinteger2le             |
| F readcardinal2le |       | F writeinteger3               |
| F readcardinal3   |       | F writeinteger3le             |
| F readcardinal3le |       | F writeinteger4               |
| F readcardinal4   |       | F writeinteger4le             |
| F readcardinal4le |       | F writestring                 |
| F readcardinaltab | le    | <b>formatters</b> table       |
| F readchar        |       | F formatcolumns               |
| F readfixed2      |       | F list                        |
| F readfixed4      |       | F stripzeros                  |
| F readinteger     |       | <b>garbagecollector</b> table |
| F readinteger1    |       | F check                       |
| F readinteger1le  |       | N criterium                   |
| F readinteger2    |       | B enabled                     |
| F readinteger2le  |       | <b>ghostscript</b> table      |
| F readinteger3    |       | F convert                     |
| F readinteger3le  |       | F statistics                  |
| F readinteger4    |       | graphicmagick table           |
| F readinteger4le  | •     | F convert<br>F statistics     |
| F readintegertabl | e     |                               |
| F readsignedbyte  |       | 3 1, 11 13                    |
| F readstring      |       | F convert                     |

| F statistics                                | B leftpage                      |
|---|---------------------------------|
| <b>lua</b> table                            | B page                          |
| B alwaysstripcode                           | B paper                         |
| F checkmemory                               | B rightpage                     |
| F compile                                   | B text                          |
| F loadedluacode                             | F iterator                      |
| F loadstring                                | F keq_to_hash                   |
| F loadstripped                              | F listitem                      |
| N nofstrippedbytes                          | F make_settings_to_hash_pattern |
| N nofstrippedchunks                         | F mergehashes                   |
| F registerfinalizer                         | F options_to_array              |
| B stripcode                                 | F options_to_hash               |
| T strippedchunks                            | T patterns                      |
| F strippedloadstring                        | U settings_to_array             |
| T suffixes                                  | U settings_to_hash_a            |
| S lua                                       | U settings_to_hash_b            |
| S luc                                       | U settings_to_hash_c            |
| S lui                                       | U settings_to_hash_d            |
| S luj                                       | U unittotex                     |
| S luv                                       | F process_stripped_settings     |
| S tma                                       | F rfc4180splitter               |
| S tmc                                       | F runtime                       |
| S tua                                       | F settings_to_array             |
| S tuc                                       | F settings_to_array_obey_fences |
| <b>packers</b> table                        | F settings_to_array_with_repeat |
| F hashed                                    | F settings_to_hash              |
| F new                                       | F settings_to_hash_colon_too    |
| F pack                                      | F settings_to_hash_strict       |
| F simplehashed                              | F settings_to_hash_tolerant     |
| F strip                                     | F settings_to_numbers           |
| F unpack                                    | F settings_to_set               |
| N version  parsers table                    | F simple_hash_to_string         |
| F   | F splitmethod                   |
| F add_settings_to_array                     | F splitthousands                |
| F arguments_to_table                        | F stepper                       |
| F array_to_string                           | F stripped_settings_to_array    |
| F csvsplitter F getparameters               | F totime<br>F unittotex         |
| F groupedsplitat                            | F unittoxel                     |
| F hash to string                            | randomizer table                |
| T hashes                                    | F get                           |
| T settings to set                           | F getnumber                     |
| T text,hidden,paper,page,leftpage,rightpage | F getseed                       |
| B hidden                                    | F popseed                       |
| 5 11244011                                  | . 6060000                       |

| F pushseed       |       | F close              |
|------------------|-------|----------------------|
| F reuseseed      |       | F getposition        |
| F setseed        |       | F getsize            |
| F setseedi       |       | F getstring          |
| randomizers      | table | F look               |
| F poisson        |       | F open               |
| sequencers       | table | F openstring         |
| F appendaction   |       | F read2dot14         |
| F appendgroup    |       | F read2dot4          |
| F compile        |       | F readbyte           |
| F disableaction  |       | F readbytes          |
| F disablegroup   |       | F readbytetable      |
| F enableaction   |       | F readcardinal       |
| F enablegroup    |       | F readcardinal1      |
| D functions      |       | F readcardinal2      |
| F localize       |       | F readcardinal2le    |
| F new            |       | F readcardinal3      |
| F nodeprocessor  |       | F readcardinal3le    |
| F prependaction  |       | F readcardinal4      |
| F prependgroup   |       | F readcardinal4le    |
| F removeaction   |       | F readcardinaltable  |
| F replaceaction  |       | F readchar           |
| F setkind        |       | F readfixed2         |
| F tostring       |       | F readfixed4         |
| setters          | table | F readinteger        |
| F disable        |       | F readinteger1       |
| F enable         |       | F readinteger2       |
| F initialize     |       | F readinteger2le     |
| F list           |       | F readinteger3       |
| F new            |       | F readinteger3le     |
| F register       |       | F readinteger4       |
| F report         |       | F readinteger4le     |
| F reset          |       | F readintegertable   |
| F show           |       | F readsignedbyte     |
| stacker          | table | F readstring         |
| F new            |       | F setposition        |
| storage          | table | F size               |
| F allocate       |       | F skip               |
| F checked        |       | F skipbytes          |
| F mark           |       | F skiplong           |
| F marked         |       | F skipshort          |
| F setinitializer | S     | <b>strings</b> table |
| F sparse         |       | F collapse           |
| streams          | table | F collapsecrlf       |

| Т  | formatters               |       | F    | definetable       |     |
|----|--------------------------|-------|------|-------------------|-----|
|    | F add                    |       | F    | encapsulate       |     |
|    | F new                    |       | F    | insertaftervalue  |     |
| F  | newcollector             |       | F    | insertbeforevalue |     |
| F  | newrepeater              |       | F    | migratetable      |     |
| F  | nice                     |       | F    | removevalue       |     |
| Т  | striplinepatterr         | IS    | F    | replacevalue      |     |
|    | U collapse               |       | temp | <b>lates</b> ta   | ble |
|    | U prune                  |       | F    | load              |     |
|    | U prune and coll         | apse  | F    | replace           |     |
|    | U prune and no e         | mpty  | F    | replacer          |     |
|    | U prune and to ${\sf s}$ | pace  | F    | resolve           |     |
|    | U retain                 |       | zipf | <b>iles</b> ta    | ble |
|    | U retain and col         | lapse | F    | close             |     |
|    | U retain and no          | empty | F    | found             |     |
| F  | striplines               |       | F    | gunzipfile        |     |
| F  | striplong                |       | F    | hash              |     |
| F  | tabtospace               |       | F    | list              |     |
| Т  | tracers                  |       | F    | open              |     |
| bΊ | .es                      | table | F    | unzip             |     |
| F  | accesstable              |       | F    | unzipdir          |     |
|    |                          |       |      |                   |     |

F definedtable

F zipdir

# visualizers (context)

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

# xcomplex (extra lua)

| I   | function |    | F sqrt            |
|-----|----------|----|-------------------|
| add |          |    | F tan             |
| div | function |    | F tanh            |
| eq  | function |    | F topair          |
| ind |          |    | F tostring        |
| FΙ  |          |    | mul               |
| _   | _add     |    | name              |
| F_  | _div     |    | pow               |
| F_  | _eq      |    | sub               |
| т_  | _index   | F  | tostring          |
|     | I        | F  | unm               |
| F   | add      | F  | abs               |
|     | div      | F  | acos              |
| F   | eq       | F  | acosh             |
| F   | mul      | F  | arg               |
|     | name     | F  | asin              |
|     | pow      | F  | asinh             |
|     | sub      | F  | atan              |
| F   | tostring | F  | atanh             |
| F   | unm      | F  | conj              |
| F   | abs      | F  | cos               |
| F   | acos     | F  | cosh              |
| F   | acosh    | F  | exp               |
| F   | arg      | F  | i                 |
| F   | asin     | F  | imag              |
| F   | asinh    | F  | log               |
| F   | atan     | F  | new               |
| F   | atanh    | F  | pow               |
| F   | conj     | F  | proj              |
| F   | COS      | F  | real              |
| F   | cosh     | F  | sin               |
| F   | exp      | F  | sinh              |
| F   | i        | F  | sqrt              |
| F   | imag     | F  | tan               |
| F   | log      | F  | tanh              |
| F   | new      | F  | topair            |
| F   | pow      | F  | tostring          |
| F   | proj     | mu |                   |
| F   | real     | na | <b>me</b> string  |
| F   | sin      | po | w function        |
| F   | sinh     | su | <b>b</b> function |
|     |          |    |                   |

| tostring | function | i        | function |
|----------|----------|----------|----------|
| unm      | function | imag     | function |
| abs      | function | log      | function |
| acos     | function | new      | function |
| acosh    | function | pow      | function |
| arg      | function | proj     | function |
| asin     | function | real     | function |
| asinh    | function | sin      | function |
| atan     | function | sinh     | function |
| atanh    | function | sqrt     | function |
| conj     | function | tan      | function |
| cos      | function | tanh     | function |
| cosh     | function | topair   | function |
| exp      | function | tostring | function |

# xdecimal (extra lua)

| add        | function |   | F min          |
|------------|----------|---|----------------|
| band       | function |   | F minus        |
| bor        | function | 1 | F new          |
| _bxor      | function | 1 | F plus         |
| div        | function | I | F pow          |
| eq         | function | 1 | F rotate       |
| index      | table    | I | F setprecision |
| Fadd       |          | I | F shift        |
| Fband      |          | I | F sqrt         |
| Fbor       |          | 1 | F tonumber     |
| Fbxor      |          | 1 | F tostring     |
| Fdiv       |          |   | F trim         |
| Feq        |          |   | le             |
| Tindex     |          |   | lt             |
| Fadd       |          | F | mul            |
| Fband      |          | S | name           |
| Fbor       |          | F | pow            |
| Fbxor      |          |   | shl            |
| Fdiv       |          | F | shr            |
| Feq        |          |   | sub            |
| Fle        |          | F | tostring       |
| Flt        |          | F | unm            |
| Fmul       |          | F | abs            |
| Sname      |          | F | band           |
| Fpow       |          | F | bor            |
| Fshl       |          | F | bxor           |
| Fshr       |          | F | conj           |
| Fsub       |          | F | сору           |
| Ftostri    | ng       | F | exp            |
| Funm       |          | F | getprecision   |
| F abs      |          | F | ln             |
| F band     |          | F | log            |
| F bor      |          | F | max            |
| F bxor     |          |   | min            |
| F conj     |          | F | minus          |
| F copy     |          |   | new            |
| F exp      |          |   | plus           |
| F getpreci | sion     |   | pow            |
| Fln        |          |   | rotate         |
| F log      |          |   | setprecision   |
| F max      |          | F | shift          |
|            |          |   |                |

| F sqrt     |          |
|------------|----------|
| F tonumber |          |
| F tostring |          |
| F trim     |          |
| le         | function |
| lt         | function |
| mul        | function |
| name       | string   |
| pow        | function |
| shl        | function |
| shr        | function |
| sub        | function |
| tostring   | function |
| unm        | function |
| abs        | function |
| band       | function |
| bor        | function |
| bxor       | function |
| conj       | function |
|            |          |

| сору         | function |
|--------------|----------|
| exp          | function |
| getprecision | function |
| ln           | function |
| log          | function |
| max          | function |
| min          | function |
| minus        | function |
| new          | function |
| plus         | function |
| pow          | function |
| rotate       | function |
| setprecision | function |
| shift        | function |
| sqrt         | function |
| tonumber     | function |
| tostring     | function |
| trim         | function |

#### xmath (extra lua)

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

#### xml (context)

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

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

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

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

#### xzip (extra lua)

adler32 function
compress function
crc32 function

decompress function
expandsize function

#### zip (extra lua)

archives table
closearchive function

openarchive function
registeredfiles table

#### zlib (extra lua)

adler32 function
compress function
crc32 function

decompress function
expandsize function