

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

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

# global (alias: \_G)

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

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

|                       |            |                    |          |
|-----------------------|------------|--------------------|----------|
| <b>texio</b>          | table      | <b>url</b>         | table    |
| <b>texisdefined</b>   | data table | <b>userdata</b>    | table    |
| <b>texmodes</b>       | data table | <b>utf</b>         | table    |
| <b>texsystemmodes</b> | data table | <b>utf8</b>        | table    |
| <b>thirddata</b>      | table      | <b>utilities</b>   | table    |
| <b>toboollean</b>     | function   | <b>visualizers</b> | table    |
| <b>todecimal</b>      | function   | <b>warn</b>        | function |
| <b>token</b>          | table      | <b>width</b>       | number   |
| <b>tokens</b>         | table      | <b>xcomplex</b>    | table    |
| <b>tonumber</b>       | function   | <b>xdecimal</b>    | table    |
| <b>tostring</b>       | function   | <b>xmath</b>       | table    |
| <b>tracers</b>        | table      | <b>xml</b>         | table    |
| <b>trackers</b>       | table      | <b>xpcall</b>      | function |
| <b>type</b>           | function   | <b>xshift</b>      | number   |
| <b>typesetters</b>    | table      | <b>xzip</b>        | table    |
| <b>unpack</b>         | function   | <b>zip</b>         | table    |
| <b>updaters</b>       | table      | <b>zlib</b>        | table    |

## aes (context)

**decode** function  
**encode** function

**random** function

# attributes (context)

## **alternates** table

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

## **applyoverloads** function

## **checkvalues** function

## **colorintents** table

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

## **colors** table

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

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

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

|                          |                 |
|--------------------------|-----------------|
| N none                   | F forcesupport  |
| F register               | F handler       |
| D registered             | B hasorder      |
| B supported              | D listwise      |
| F toattribute            | F register      |
| B triggering             | D registered    |
| F value                  | F resolve_begin |
| D values                 | F resolve_end   |
| <b>unsetvalue</b>        | F resolve_reset |
| <b>values</b>            | F resolve_step  |
| <b>viewerlayers</b>      | D scopes        |
| N attribute              | F setfeatures   |
| F cleanup                | F setup         |
| D data                   | F start         |
| F define                 | F stop          |
| F definedlayoutcomponent | B supported     |
| F enable                 | D values        |



# backends (context)

**closeout** function

**codeinjections** table

F registerboxresource

F restoreboxresource

**current** string

**defaults** table

T codeinjections

F prerollreference

F setautoprefix

F vfstartcolor

F vfstopcolor

T nodeinjections

F cmykcolor

F destination

F graycolor

F injectknockout

F injectoverprint

F reference

F rgbcolor

F spotcolor

F transparency

T registrations

F transparency

D tables

**getcallbackstate** function

**included** table

B context

B date

B id

B metadata

B pdf

**initialize** function

**latelua** function

**nodeinjections** table

**nothing** function

**openout** function

**registered** table

T pdf

T codeinjections

F addbookmarks

F analyzenormalsymbol

F analyzesymbol

F attachmentid

F bitmap

F clonefield

F copyimage

F definefield

F definefieldset

F defineviewerlayer

F embedfile

F embedimage

F enabletags

F exportformdata

F fieldsurrounding

F flushmergelayer

F getbookmarks

F getboxresourcebox

F getdefaultfieldvalue

F getfieldcategory

F getfieldset

F getformatoption

F getinfo

F getpreviewfigure

F getrefobj

F insertrenderingwindow

F jp2

F jpg

F maptag

F mergebookmarks

F mergecomments

F mergefields

F mergereferences

F mergerenditions

F mergeviewerlayers

F newimage

F png

F prerollreference

F presetsymbol

F presetsymbolist

F processrendering

F registerdocumentcloseaction

F registerdocumentopenaction

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

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

T tables  
**registrations**      table  
**setencryption**      function  
**tables**              table  
**writeout**            function

## basexx (extra lua)

**decode16**    function

**decode64**    function

**decode85**    function

**decodeLZW**   function

**decodeRL**    function

**encode16**    function

**encode64**    function

**encode85**    function

**encodeLZW**   function

**encodeRL**    function

## bit32 (basic lua)

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

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

## blobs (context)

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

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

## boolean (context)

**tocontext** function

**tonumber** function

## buffers (context)

|                       |          |
|-----------------------|----------|
| <b>append</b>         | function |
| <b>assign</b>         | function |
| <b>collectcontent</b> | function |
| <b>empty</b>          | function |
| <b>erase</b>          | function |
| <b>exists</b>         | function |
| <b>get</b>            | function |
| <b>getcontent</b>     | function |
| <b>getctxlua</b>      | function |
| <b>getlines</b>       | function |
| <b>getmkvi</b>        | function |
| <b>gettex</b>         | function |
| <b>loadcontent</b>    | function |

|                        |          |
|------------------------|----------|
| <b>parallel</b>        | table    |
| F define               |          |
| F hassomecontent       |          |
| F next                 |          |
| F place                |          |
| F reset                |          |
| F save                 |          |
| <b>prepend</b>         | function |
| <b>raw</b>             | function |
| <b>run</b>             | function |
| <b>samplefile</b>      | function |
| <b>splitsamplefile</b> | function |
| <b>undent</b>          | function |

# builders (context)

|                         |          |                                |          |
|-------------------------|----------|--------------------------------|----------|
| <b>checkparcontext</b>  | function | F split                        |          |
| <b>checksidefloat</b>   | function | F start                        |          |
| <b>hpack</b>            | table    | F stop                         |          |
| F qualityactions        |          | F tag                          |          |
| F report                |          | <b>profiling</b>               | table    |
| F show                  |          | F add                          |          |
| <b>kernel</b>           | table    | F boxlinehandler               |          |
| F collapsing            |          | F distance                     |          |
| F hyphenating           |          | F fixedprofile                 |          |
| F kerning               |          | F get                          |          |
| F ligaturing            |          | F list                         |          |
| F mlisttohlist          |          | F pagehandler                  |          |
| <b>local_box_filter</b> | function | F pagelinehandler              |          |
| <b>paragraphs</b>       | table    | F profilebox                   |          |
| T constructors          |          | F profilelines                 |          |
| N attribute             |          | F set                          |          |
| F define                |          | F setlines                     |          |
| F disable               |          | <b>registerpaspasscallback</b> | function |
| F enable                |          | <b>vpack</b>                   | table    |
| F handler               |          | F qualityactions               |          |
| T methods               |          | F report                       |          |
| F basic                 |          | <b>vspacing</b>                | table    |
| F default               |          | D categories                   |          |
| F hpack                 |          | F checkstrutdepth              |          |
| F oneline               |          | F collapsevbox                 |          |
| D names                 |          | T data                         |          |
| D numbers               |          | D map                          |          |
| F set                   |          | D skip                         |          |
| F start                 |          | D snapmethods                  |          |
| F stop                  |          | F definesnapmethod             |          |
| T expansion             |          | B fixed                        |          |
| F trace                 |          | F flushcontributions           |          |
| F kepttogether          |          | F forcepageflush               |          |
| F registertogether      |          | F forcestrutdepth              |          |
| T solutions             |          | F getnofpreviouslines          |          |
| T splitters             |          | F inject                       |          |
| F define                |          | F injectdisable                |          |
| F optimize              |          | F injectpenalty                |          |
| T registered            |          | F injectskip                   |          |
| F reset                 |          | F interceptsamepagecontent     |          |
| F set                   |          | F pagehandler                  |          |



F pageoverflow

F popatsame

F pushatsame

F setmap

F setskip

F snapbox

F synchronizepage

F tocategories

F tocategory

F vboxhandler

## cache (context)

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

## callback (basic tex)

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

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

# callbacks (context)

**freeze** function

**functions** table

F start\_page\_number

F stop\_page\_number

**known** function

**list** data table

**pop** function

**push** function

**register** function

**report** function

**supported** table

B alignment\_filter

B append\_line\_filter

B append\_to\_vlist\_filter

B begin\_paragraph

B build\_page\_insert

B buildpage\_filter

B define\_font

B find\_format\_file

B find\_log\_file

B get\_attribute

B get\_math\_dictionary

B get\_noad\_class

B glyph\_run

B handle\_overload

B handle\_uleader

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 linebreak\_quality

B local\_box\_filter

B make\_extensible

B math\_rule

B missing\_character

B mlist\_to\_hlist

B open\_data\_file

B packed\_vbox\_filter

B paragraph\_context

B paragraph\_pass

B post\_linebreak\_filter

B pre\_dump

B pre\_linebreak\_filter

B pre\_output\_filter

B process\_character

B process\_jobname

B quality\_font

B register\_extensible

B show\_break

B show\_build

B show\_error\_message

B show\_lua\_call

B show\_warning\_message

B show\_whatsit

B start\_file

B start\_run

B stop\_file

B stop\_run

B trace\_memory

B vpack\_filter

B vpack\_quality

B wrapup\_run

## catcodes (context)

**names** data table

**numbers** data table

**register** function

# characters (context)

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

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

## chemistry (context)

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



## containers (context)

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

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

## converters (context)

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

**upper**  
**verbose**  
D data  
F translate

function  
table

**weekday**  
**word**  
**words**

function  
function  
function

## coroutine (basic lua)

**close**            function  
**create**          function  
**isyieldable**    function  
**resume**          function

**running**        function  
**status**         function  
**wrap**           function  
**yield**          function

# ctxrunner (context)

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

## debug (basic lua)

**getinfo**    function

**sethook**    function

**traceback** function

## dir (context)

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

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

## directives (context)

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

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



# document (context)

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

# documentdata (context)

**variable** function

# drivers (context)

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

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

## environment (context)

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

# experiments (context)

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

# figures (context)

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

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



## file (basic lua)

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

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

## fio (extra lua)

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

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

# floats (context)

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

## font (basic tex)

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

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

# fonts (context)

|                           |       |                         |
|---------------------------|-------|-------------------------|
| <b>analyzers</b>          | table | D cache                 |
| D features                |       | F calculatescale        |
| D initializers            |       | F checkedfeatures       |
| D methods                 |       | F checkedfilename       |
| F setstate                |       | F collectprocessors     |
| D states                  |       | F currentfonthasfeature |
| B useunicodemarks         |       | D designsizes           |
| <b>callbacks</b>          | table | F enhanceparameters     |
| F callback                |       | T enhancers             |
| F devirtualize            |       | T afm                   |
| <b>checkers</b>           | table | F apply                 |
| F getmissing              |       | F patch                 |
| D mapping                 |       | T patches               |
| F missing                 |       | F register              |
| F placeholder             |       | F report                |
| <b>cid</b>                | table | F register              |
| F getmap                  |       | F report                |
| F loadfile                |       | T otf                   |
| <b>collections</b>        | table | F addfeature            |
| F checkenabled            |       | F apply                 |
| F clonevector             |       | F enhance               |
| F define                  |       | F patch                 |
| T definitions             |       | T patches               |
| F direct                  |       | F register              |
| F found                   |       | F report                |
| F prepare                 |       | F register              |
| F process                 |       | F report                |
| F register                |       | T tfm                   |
| F registermain            |       | F apply                 |
| F report                  |       | F patch                 |
| F reset                   |       | T patches               |
| T vectors                 |       | F register              |
| <b>constructors</b>       | table | F report                |
| F addcharacters           |       | F register              |
| F addcoreunicodes         |       | F report                |
| F aftercopyingcharacters  |       | N factor                |
| F applyfinalizers         |       | T features              |
| F applymanipulators       |       | D afm                   |
| F assignmathparameters    |       | D otf                   |
| F beforecopyingcharacters |       | D tfm                   |
| F beforepassingfonttotex  |       | F finalize              |

|                            |   |
|----------------------------|---|
| F getfeatureaction         | S defaultnodealternate                              |
| F getmathparameter         | D features  |
| 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 ctx_camelcasing                                   |
| D rightkerned              | F devanagari_remove_joiners                         |
| D texligatures             | F devanagari_reorder_matras                         |
| F load                     | F devanagari_reorder_pre_base_reordering_consonants |
| T readers                  | F devanagari_reorder_reph                           |
| F getinfo                  | F gpos_context                                      |
| F loadfont                 | F gpos_contextchain                                 |
| F loadshapes               | F gpos_cursive                                      |
| F setfeatures              | F gpos_mark2base                                    |
| B syncspace                | F gpos_mark2ligature                                |
| N version                  | F gpos_mark2mark                                    |
| T otf                      | F gpos_pair   |
| F addfeature               | F gpos_single                                       |
| F basemodeinitializer      | F gsub_alternate                                    |
| D cache                    | F gsub_context                                      |
| F collectlookups           | F gsub_contextchain                                 |
| T coverup                  | F gsub_ligature                                     |
| T actions                  | F gsub_multiple                                     |
| F alternate                | F gsub_reversecontextchain                          |
| F chainposition            | F gsub_single                                       |
| F chainsubstitution        | F trigger_space_kerns                               |
| F kern                     | T helpers   |
| F ligature                 | F blockligatures                                    |
| F multiple                 | F pardirstate                                       |
| F pair                     | F txtfirststate                                     |
| F single                   | F load  |
| F substitution             | F loadoutlinedata                                   |
| F register                 | F loadstreamdata                                    |
| S stepkey                  | F modeinitializer                                   |
| F dataset                  | D mpscache  |
| F datasetpositionprocessor | D pdfcache  |
| S defaultbasealternate     | F plugininitializer                                 |

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

|                     |                     |
|---------------------|---------------------|
| F open              | F writecardinal3    |
| F read2dot14        | F writecardinal3le  |
| F readbyte          | F writecardinal4    |
| F readbytes         | F writecardinal4le  |
| F readbytetable     | F writeinteger1     |
| F readcardinal      | F writeinteger1le   |
| F readcardinal1     | F writeinteger2     |
| F readcardinal1le   | F writeinteger2le   |
| F readcardinal2     | F writeinteger3     |
| F readcardinal2le   | F writeinteger3le   |
| F readcardinal3     | F writeinteger4     |
| F readcardinal3le   | F writeinteger4le   |
| F readcardinal4     | F writestring       |
| F readcardinal4le   | F stripredundant    |
| F readcardinaltable | F svg               |
| F readchar          | N tableversion      |
| F readcline         | F unifymissing      |
| F readcstring       | F unpack            |
| F readfixed2        | F vhea              |
| F readfixed4        | F vmtx              |
| F readinteger       | F vorg              |
| F readinteger1      | F vvar              |
| F readinteger1le    | F woff2otf          |
| F readinteger2      | F registerpalette   |
| F readinteger2le    | F registerplugin    |
| F readinteger3      | F reorderlookups    |
| F readinteger3le    | F scriptandlanguage |
| F readinteger4      | F setdynamics       |
| F readinteger4le    | F setfeatures       |
| F readintegertable  | T statistics        |
| F readsignedbyte    | D usedfeatures      |
| F readstring        | D svgcache          |
| F readtag           | B svgenabled        |
| F setposition       | T tables            |
| F size              | D baselines         |
| F skip              | D features          |
| F skiplong          | D featuretypes      |
| F skipposition      | D languages         |
| F skipshort         | D scripts           |
| F writebyte         | F texthandler       |
| F writecardinal1    | T vectors           |
| F writecardinal1le  | T arab              |
| F writecardinal2    | T gpos              |
| F writecardinal2le  | N curs              |



- N kern
- N mark
- N mkmk
- T gsub
- N calt
- N ccmp
- N cswh
- N dlig
- N fina
- N init
- N isol
- N liga
- N medi
- N mset
- N rclt
- N rlig
- N version
- T pfb
- F loadvector
- N version
- T tfm
- D cache
- D features
- N maxnestingdepth
- N maxnestingsize
- T readers
- F loadpk
- F loadtfm
- F loadtfmvf
- F loadvf
- F pktopdf
- F showpk
- F reencode
- F setfeatures
- N version
- T vf
- T combinations
- F combine
- T combiner
- D commands
- D helpers
- D math
- D predefined
- N version

- D whatever
- F hashfeatures
- F hashinstance
- T hashmethods
- F normal
- F virtual
- F initializefeatures
- D loadedfonts
- N noffontsloaded
- N nofsharedfonts
- N nofsharedhashes
- N nofsharedvectors
- N privateoffset
- D privateslots
- F readanddefine
- F registerfeature
- F resetfeature
- B resolvevirtualtoo
- F scale
- F scaled
- F setfactor
- F setfeature
- F setmathparameter
- F setname
- B sharefonts
- F trytosharefont
- N version

|                       |          |
|-----------------------|----------|
| <b>current</b>        | function |
| <b>currentid</b>      | function |
| <b>definers</b>       | table    |
| F addlookup           |          |
| F analyze             |          |
| F applypostprocessors |          |
| F checkedmode         |          |
| F checkedscript       |          |
| S defaultlookup       |          |
| F define              |          |
| F getspecification    |          |
| F internal            |          |
| F loadfont            |          |
| F makespecification   |          |
| T methods             |          |
| F install             |          |
| D variants            |          |

|                        |            |
|------------------------|------------|
| F read                 |            |
| F register             |            |
| F registered           |            |
| F registerfallbackfont |            |
| F registersplit        |            |
| F resetnullfont        |            |
| F resolve              |            |
| T resolvers            |            |
| F file                 |            |
| F name                 |            |
| F spec                 |            |
| <b>definetypface</b>   | function   |
| <b>dropins</b>         | table      |
| F clone                |            |
| F getshape             |            |
| F getshapes            |            |
| F nextid               |            |
| F provide              |            |
| F registerglyph        |            |
| F registerglyphs       |            |
| F swap                 |            |
| F swapone              |            |
| <b>effects</b>         | table      |
| <b>encodings</b>       | table      |
| T agl                  |            |
| D ctxcodes             |            |
| D extras               |            |
| D names                |            |
| D synonyms             |            |
| D unicodes             |            |
| D cache                |            |
| F is_known             |            |
| D known                |            |
| F load                 |            |
| F make_unicode_vector  |            |
| D math                 |            |
| N version              |            |
| <b>enhanceid</b>       | function   |
| <b>expansions</b>      | data table |
| <b>formats</b>         | data table |
| <b>getalternate</b>    | function   |
| <b>getindices</b>      | function   |
| <b>getkern</b>         | function   |
| <b>getmultiple</b>     | function   |

|                        |          |
|------------------------|----------|
| <b>getsubstitution</b> | function |
| <b>getters</b>         | table    |
| T alternate            |          |
| F opentype             |          |
| T kern                 |          |
| F opentype             |          |
| F type1                |          |
| F type3                |          |
| T multiple             |          |
| F opentype             |          |
| T substitution         |          |
| F opentype             |          |
| <b>goodies</b>         | table    |
| D colorschemes         |          |
| T data                 |          |
| T common-math.lfg      |          |
| S author               |          |
| S comment              |          |
| S copyright            |          |
| B initialized          |          |
| T mathematics          |          |
| T tweaks               |          |
| T presets              |          |
| F addmathkerns         |          |
| F braille              |          |
| F eulertocalligraphic  |          |
| F fallbacks            |          |
| F moderntocalligraphic |          |
| F moveintegrals        |          |
| F moveitalics          |          |
| F pagellaradical       |          |
| F rsfstoscript         |          |
| F rsfsuprighttoscript  |          |
| F scripttocalligraphic |          |
| F smalldigits          |          |
| F wipeanchors          |          |
| F wipeitalics          |          |
| F xitsarabic           |          |
| S name                 |          |
| S version              |          |
| T dejavu-math          |          |
| S author               |          |
| S comment              |          |
| S copyright            |          |

B initialized  
 T mathematics  
   T alternates  
     T dotless  
       S comment  
       S feature  
       N value  
 T bigslots  
 T parameters  
   N AccentBaseDepth  
   N AccentTopShiftUp  
   N DelimiterPercent  
   N DelimiterShortfall  
   N DisplayOperatorMinHeight  
   N FlattenedAccentTopShiftUp  
   N FractionRuleThickness  
   S PrimeBaselineDropMax  
   S PrimeShiftUp  
   S PrimeShiftUpCramped  
   N SubscriptShiftDown  
   S SubscriptShiftDownWithSuperscript  
   N SuperscriptShiftUp  
 T tweaks  
   T aftercopying  
 S name  
 S version  
 T dejavu-text  
   S author  
   S comment  
   S copyright  
   T extensions  
 B initialized  
   S name  
   S version  
 D designsizes  
 D filenames  
 F getcompositions  
 T list  
 F load  
 F prepare\_features  
 F register  
 F registerpostprocessor  
 F report  
 T suffixes

**handlers**                   table  
**hashes**                   table

D characters  
 D classes  
 D csnames  
 D descriptions  
 D dynamics  
 D emwidths  
 D exheights  
 D features  
 D identifiers  
 D italics  
 D lastmathids  
 D marks  
 D mathparameters  
 D modes  
 D originals  
 D parameters  
 T processes  
 D properties  
 D quads  
 D resources  
 T setdynamics  
 T shapes  
 D spaces  
 D spacings  
 T streams  
 D unicodes  
 D unislots  
 D variants  
 D xheights

**helpers**                   table

F addextraprivate  
 F addprivate  
 F appendcommands  
 F appendcommandtable  
 F checkflags  
 F checkmerge  
 F checksteps  
 F collectanchors  
 F combineglyphs  
 D commands  
 F composecharacters  
 F descriptiontoslot

|                             |                                |
|-----------------------------|--------------------------------|
| F dimenfactor               | N delimited ghost dddot        |
| F expandglyph               | N delimited ghost ddot         |
| T extraprivates             | N delimited ghost dot          |
| F fontpatternhassize        | N delimited ghost dprime       |
| F getcoloredglyphs          | N delimited ghost hat          |
| F getdigitwidth             | N delimited ghost lower corner |
| F getinstancespec           | N delimited ghost prime        |
| F getparameters             | N delimited ghost qprime       |
| F getprivatecharornode      | N delimited ghost rdprime      |
| F getprivatenode            | N delimited ghost ring         |
| F getprivates               | N delimited ghost rprime       |
| F getprivateslot            | N delimited ghost rtprime      |
| F hasprivate                | N delimited ghost star         |
| F indextoslot               | N delimited ghost star 1       |
| F isprivate                 | N delimited ghost tilde        |
| F mathscriptslots           | N delimited ghost tprime       |
| F name                      | N delimited ghost upper corner |
| F nametoslot                | N delimited left annuity       |
| F newprivateslot            | N delimited left lower corner  |
| F prependcommands           | N delimited left upper corner  |
| F prependcommandtable       | N delimited right annuity      |
| F privateslot               | N delimited right ast          |
| F registerglyphbox          | N delimited right ast 1        |
| F scalecommands             | N delimited right bar          |
| F setboxdirectly            | N delimited right breve        |
| F setboxglyph               | N delimited right check        |
| F setboxglyphs              | N delimited right dagger       |
| F setdigitwidth             | N delimited right dagger 1     |
| F setmetaglyph              | N delimited right ddagger      |
| F setmetaglyphs             | N delimited right ddagger 1    |
| T sharedprivates            | N delimited right dddot        |
| N arrow left piece          | N delimited right ddot         |
| N arrow right piece         | N delimited right dot          |
| N cm brace piece            | N delimited right dprime       |
| N delimited ghost annuity   | N delimited right drprime      |
| N delimited ghost ast       | N delimited right dtprime      |
| N delimited ghost ast 1     | N delimited right hat          |
| N delimited ghost bar       | N delimited right lower corner |
| N delimited ghost breve     | N delimited right prime        |
| N delimited ghost check     | N delimited right qprime       |
| N delimited ghost dagger    | N delimited right ring         |
| N delimited ghost dagger 1  | N delimited right rprime       |
| N delimited ghost ddagger   | N delimited right star         |
| N delimited ghost ddagger 1 | N delimited right star 1       |

|                                |                                 |
|--------------------------------|---------------------------------|
| N delimited right tilde        | N flat double rule middle piece |
| N delimited right tprime       | N flat double rule right piece  |
| N delimited right upper corner | N flat rule left piece          |
| N double arrow left piece      | N flat rule middle piece        |
| N double arrow right piece     | N flat rule right piece         |
| N double rule left piece       | N fraction bar extender         |
| N double rule middle piece     | N left hook piece               |
| N double rule right piece      | N ll brace piece                |
| N flat accent 00300            | N lm brace piece                |
| N flat accent 00301            | N lr brace piece                |
| N flat accent 00302            | N maps to piece                 |
| N flat accent 00303            | N minus rule left piece         |
| N flat accent 00304            | N minus rule middle piece       |
| N flat accent 00306            | N minus rule right piece        |
| N flat accent 00307            | N mirror.10204                  |
| N flat accent 00308            | N mirror.10205                  |
| N flat accent 0030A            | N mirror.10206                  |
| N flat accent 0030C            | N mirror.10210                  |
| N flat accent 020DB            | N mirror.10211                  |
| N flat accent F06C3            | N mirror.10214                  |
| N flat accent F06C7            | N mirror.10215                  |
| N flat accent F06C9            | N mirror.10216                  |
| N flat accent F06CB            | N mirror.10217                  |
| N flat accent F06CD            | N mirror.10218                  |
| N flat accent F06D1            | N mirror.10219                  |
| N flat accent F06D3            | N mirror.10222                  |
| N flat accent F06D5            | N mirror.10223                  |
| N flat accent F06D7            | N mirror.10764                  |
| N flat accent F06DB            | N mirror.10769                  |
| N flat accent F06DD            | N mirror.10877                  |
| N flat accent F06DF            | N mirror.10878                  |
| N flat accent F06E1            | N mirror.10885                  |
| N flat accent F06E5            | N mirror.10886                  |
| N flat accent F06E7            | N mirror.10887                  |
| N flat accent F06E9            | N mirror.10888                  |
| N flat accent F06EB            | N mirror.10889                  |
| N flat accent F06EF            | N mirror.10890                  |
| N flat accent F06F1            | N mirror.10891                  |
| N flat accent F06F3            | N mirror.10892                  |
| N flat accent F06F5            | N mirror.10901                  |
| N flat accent F06F9            | N mirror.10902                  |
| N flat accent F06FB            | N mirror.10927                  |
| N flat accent F06FD            | N mirror.10928                  |
| N flat double rule left piece  | N mirror.120597                 |

N mirror.123  
N mirror.12310  
N mirror.12311  
N mirror.125  
N mirror.171  
N mirror.187  
N mirror.247  
N mirror.40  
N mirror.41  
N mirror.47  
N mirror.60  
N mirror.62  
N mirror.8242  
N mirror.8243  
N mirror.8244  
N mirror.8245  
N mirror.8246  
N mirror.8247  
N mirror.8249  
N mirror.8250  
N mirror.8260  
N mirror.8279  
N mirror.8512  
N mirror.8705  
N mirror.8706  
N mirror.8707  
N mirror.8708  
N mirror.8712  
N mirror.8713  
N mirror.8714  
N mirror.8715  
N mirror.8716  
N mirror.8717  
N mirror.8721  
N mirror.8725  
N mirror.8730  
N mirror.8733  
N mirror.8735  
N mirror.8736  
N mirror.8737  
N mirror.8738  
N mirror.8740  
N mirror.8747  
N mirror.8748

N mirror.8749  
N mirror.8750  
N mirror.8751  
N mirror.8752  
N mirror.8753  
N mirror.8754  
N mirror.8755  
N mirror.8761  
N mirror.8764  
N mirror.8765  
N mirror.8771  
N mirror.8773  
N mirror.8780  
N mirror.8786  
N mirror.8787  
N mirror.8788  
N mirror.8789  
N mirror.8799  
N mirror.8804  
N mirror.8805  
N mirror.8806  
N mirror.8807  
N mirror.8808  
N mirror.8809  
N mirror.8810  
N mirror.8811  
N mirror.8814  
N mirror.8815  
N mirror.8816  
N mirror.8817  
N mirror.8818  
N mirror.8819  
N mirror.8820  
N mirror.8821  
N mirror.8822  
N mirror.8823  
N mirror.8824  
N mirror.8825  
N mirror.8826  
N mirror.8827  
N mirror.8828  
N mirror.8829  
N mirror.8830  
N mirror.8831

N mirror.8832  
N mirror.8833  
N mirror.8834  
N mirror.8835  
N mirror.8836  
N mirror.8837  
N mirror.8838  
N mirror.8839  
N mirror.8840  
N mirror.8841  
N mirror.8842  
N mirror.8843  
N mirror.8844  
N mirror.8847  
N mirror.8848  
N mirror.8849  
N mirror.8850  
N mirror.8856  
N mirror.8866  
N mirror.8867  
N mirror.8870  
N mirror.8871  
N mirror.8872  
N mirror.8873  
N mirror.8874  
N mirror.8875  
N mirror.8876  
N mirror.8877  
N mirror.8878  
N mirror.8879  
N mirror.8882  
N mirror.8883  
N mirror.8884  
N mirror.8885  
N mirror.8886  
N mirror.8887  
N mirror.8888  
N mirror.8905  
N mirror.8906  
N mirror.8907  
N mirror.8908  
N mirror.8909  
N mirror.8912  
N mirror.8913

N mirror.8918  
N mirror.8919  
N mirror.8920  
N mirror.8921  
N mirror.8922  
N mirror.8923  
N mirror.8924  
N mirror.8925  
N mirror.8926  
N mirror.8927  
N mirror.8928  
N mirror.8929  
N mirror.8930  
N mirror.8931  
N mirror.8932  
N mirror.8933  
N mirror.8934  
N mirror.8935  
N mirror.8936  
N mirror.8937  
N mirror.8938  
N mirror.8939  
N mirror.8940  
N mirror.8941  
N mirror.8944  
N mirror.8945  
N mirror.8968  
N mirror.8969  
N mirror.8970  
N mirror.8971  
N mirror.8992  
N mirror.8993  
N mirror.9001  
N mirror.9002  
N mirror.91  
N mirror.92  
N mirror.93  
N mirror.984419  
N mirror.984831  
N mirror.984832  
N mirror.984833  
N mirror.984834  
N mirror.984835  
N mirror.984836

|                 |                 |
|-----------------|-----------------|
| N mirror.984837 | N mirror.984905 |
| N mirror.984838 | N mirror.984906 |
| N mirror.984839 | N mirror.984907 |
| N mirror.984840 | N mirror.984908 |
| N mirror.984841 | N mirror.984909 |
| N mirror.984842 | N mirror.984910 |
| N mirror.984843 | N mirror.984919 |
| N mirror.984844 | N mirror.984920 |
| N mirror.984853 | N mirror.984921 |
| N mirror.984854 | N mirror.984922 |
| N mirror.984855 | N mirror.984923 |
| N mirror.984856 | N mirror.984924 |
| N mirror.984857 | N mirror.984925 |
| N mirror.984858 | N mirror.984926 |
| N mirror.984859 | N mirror.984927 |
| N mirror.984860 | N mirror.984928 |
| N mirror.984861 | N mirror.984929 |
| N mirror.984862 | N mirror.984930 |
| N mirror.984863 | N mirror.984931 |
| N mirror.984864 | N mirror.984932 |
| N mirror.984865 | N mirror.984941 |
| N mirror.984866 | N mirror.984942 |
| N mirror.984875 | N mirror.984943 |
| N mirror.984876 | N mirror.984944 |
| N mirror.984877 | N mirror.984951 |
| N mirror.984878 | N mirror.984952 |
| N mirror.984879 | N mirror.984955 |
| N mirror.984880 | N mirror.984956 |
| N mirror.984881 | N mirror.984957 |
| N mirror.984882 | N mirror.984958 |
| N mirror.984883 | N mirror.984959 |
| N mirror.984884 | N mirror.984960 |
| N mirror.984885 | N mirror.984961 |
| N mirror.984886 | N mirror.984962 |
| N mirror.984887 | N mirror.985003 |
| N mirror.984888 | N mirror.985004 |
| N mirror.984897 | N mirror.985005 |
| N mirror.984898 | N mirror.985006 |
| N mirror.984899 | N mirror.985007 |
| N mirror.984900 | N mirror.985008 |
| N mirror.984901 | N mirror.985009 |
| N mirror.984902 | N mirror.985010 |
| N mirror.984903 | N mirror.985011 |
| N mirror.984904 | N mirror.985012 |



|                 |                 |
|-----------------|-----------------|
| N mirror.985013 | N mirror.985125 |
| N mirror.985014 | N mirror.985126 |
| N mirror.985015 | N mirror.985127 |
| N mirror.985016 | N mirror.985128 |
| N mirror.985017 | N mirror.985129 |
| N mirror.985018 | N mirror.985130 |
| N mirror.985019 | N mirror.985131 |
| N mirror.985020 | N mirror.985132 |
| N mirror.985021 | N mirror.985133 |
| N mirror.985022 | N mirror.985134 |
| N mirror.985023 | N mirror.985135 |
| N mirror.985024 | N mirror.985136 |
| N mirror.985025 | N mirror.985137 |
| N mirror.985026 | N mirror.985138 |
| N mirror.985031 | N mirror.985139 |
| N mirror.985033 | N mirror.985140 |
| N mirror.985034 | N mirror.985141 |
| N mirror.985038 | N mirror.985142 |
| N mirror.985040 | N mirror.985143 |
| N mirror.985041 | N mirror.985144 |
| N mirror.985045 | N mirror.985145 |
| N mirror.985047 | N mirror.985146 |
| N mirror.985048 | N mirror.985147 |
| N mirror.985052 | N mirror.985148 |
| N mirror.985054 | N mirror.985149 |
| N mirror.985055 | N mirror.985150 |
| N mirror.985059 | N mirror.985151 |
| N mirror.985061 | N mirror.985152 |
| N mirror.985062 | N mirror.985153 |
| N mirror.985066 | N mirror.985154 |
| N mirror.985068 | N mirror.985155 |
| N mirror.985069 | N mirror.985156 |
| N mirror.985113 | N mirror.985157 |
| N mirror.985114 | N mirror.985158 |
| N mirror.985115 | N mirror.985159 |
| N mirror.985116 | N mirror.985160 |
| N mirror.985117 | N mirror.985161 |
| N mirror.985118 | N mirror.985162 |
| N mirror.985119 | N mirror.985163 |
| N mirror.985120 | N mirror.985164 |
| N mirror.985121 | N mirror.985165 |
| N mirror.985122 | N mirror.985166 |
| N mirror.985123 | N mirror.985167 |
| N mirror.985124 | N mirror.985168 |

|                             |          |                       |            |
|-----------------------------|----------|-----------------------|------------|
| N mirror.985169             |          | F descriptions        |            |
| N mirror.985170             |          | F glyphs              |            |
| N mirror.985171             |          | <b>loggers</b>        | table      |
| N mirror.985172             |          | F format              |            |
| N mirror.985173             |          | F onetimemessage      |            |
| N mirror.985174             |          | F register            |            |
| N mirror.985175             |          | F reportdefinedfonts  |            |
| N mirror.985176             |          | F reportusedfeatures  |            |
| N mirror.985177             |          | <b>mappings</b>       | table      |
| N mirror.985178             |          | F addtounicode        |            |
| N mirror.985179             |          | F fromunicode16       |            |
| N mirror.985180             |          | F getentry            |            |
| N mirror.985181             |          | F loadfile            |            |
| N mirror.985182             |          | F loadline            |            |
| N mirror.985183             |          | F makenameparser      |            |
| N mirror.985184             |          | D overloads           |            |
| N mirror.985200             |          | F reset               |            |
| N radical bar extender      |          | F tounicode           |            |
| N radical rule left piece   |          | F tounicode16         |            |
| N radical rule middle piece |          | F tounicode16sequence |            |
| N radical rule right piece  |          | <b>metapost</b>       | table      |
| N right hook piece          |          | F baseline            |            |
| N rule left piece           |          | F boundingbox         |            |
| N rule middle piece         |          | F boxtomp             |            |
| N rule right piece          |          | F draw                |            |
| N ul brace piece            |          | F fill                |            |
| N um brace piece            |          | F glyph               |            |
| N unary minus               |          | F maxbounds           |            |
| N unary minus plus          |          | F paths               |            |
| N unary plus                |          | F widthline           |            |
| N unary plus minus          |          | F zeroline            |            |
| N ur brace piece            |          | <b>names</b>          | data table |
| N visualsplace              |          | <b>nulldata</b>       | data table |
| F splitfontpattern          |          | <b>privateoffsets</b> | table      |
| F tochar                    |          | B keepnames           |            |
| T vfinjectors               |          | N mathbase            |            |
| F startcolor                |          | N mathextrabase       |            |
| F stopcolor                 |          | N textbase            |            |
| T vfspecials                |          | N textextrabase       |            |
| T backgrounds               |          | <b>protrusions</b>    | data table |
| T outlines                  |          | <b>readers</b>        | table      |
| <b>infofont</b>             | function | F afm                 |            |
| <b>iterators</b>            | table    | F check_lua           |            |
| F characters                |          | F check_tfm           |            |

- F lua
- F ofm
- F opentype
- F otf
- F pfb
- D sequence
- F tfm
- F ttc
- F ttf
- F woff
- registersanitizer** function
- reserveid** function
- select** table
  - D alternatives
  - F bodyfont
  - D data
  - F default
  - D defaults
  - F definefallbackfamily
  - F definefontfamily
  - F definefontfamilypreset
  - D extras
  - F fallback
  - D fallbacks
  - F features
  - F filefallback
  - F fontdata
  - F fontfallback
  - F fontsynonym
  - F goodies
  - F mathfallback
  - D methods
  - D presets
  - F registerfallback
  - F registerfiles
  - F registerfontalternative

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

# functions (context)

**dummy** function

# graphics (context)

## backgrounds table

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

## bitmaps table

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

## identifiers table

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

## identify function

## synchronizers table

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

## gzip (extra lua)

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

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

# images (context)

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

# interactions (context)

**attachments** data table

**fields** table

F clone

F define

F defineset

F insert

**general** table

F getidentity

F getidentityvariable

**help** table

F collect

F reference

F register

**javascripts** table

F addtopreamble

F code

D codes

F flushpreambles

D functions

D preambles

F setpreamble

F storecode

F storepreamble

F usepreamblenow

F usescripts

**linkedList** data table

**pages** table

F setpagetransition

F setupcanvas

**references** table

F setcloseddocumentaction

F setclosepageaction

F setopendocumentaction

F setopenpageaction

**renderings** data table



# interfaces (context)

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

## io (basic lua)

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

# job (context)

|                          |          |                    |       |
|--------------------------|----------|--------------------|-------|
| <b>comment</b>           | function | F realpage         |       |
| <b>datasets</b>          | table    | F realpageorder    |       |
| D collected              |          | F setstate         |       |
| F extend                 |          | D tobesaved        |       |
| F getdata                |          | <b>parwrappers</b> | table |
| F setdata                |          | D collected        |       |
| D tobesaved              |          | D tobesaved        |       |
| <b>disablesave</b>       | function | <b>positions</b>   | table |
| <b>embedded</b>          | table    | F b_column         |       |
| D collected              |          | F b_region         |       |
| D tobesaved              |          | F c                |       |
| <b>fileobjreferences</b> | table    | D collected        |       |
| D collected              |          | F column           |       |
| D tobesaved              |          | F columnofpos      |       |
| <b>files</b>             | table    | F copy             |       |
| D collected              |          | F depth            |       |
| F context                |          | F e_column         |       |
| B forcerun               |          | F e_region         |       |
| F run                    |          | F enhance          |       |
| D tobesaved              |          | F extra            |       |
| <b>getrandomseed</b>     | function | F get              |       |
| <b>initialize</b>        | function | F getcolumndata    |       |
| <b>linkedlists</b>       | table    | F getfree          |       |
| D collected              |          | F gethpos          |       |
| D tobesaved              |          | F getpos           |       |
| <b>load</b>              | function | F getreserved      |       |
| <b>loadother</b>         | function | F getrpos          |       |
| <b>objects</b>           | table    | F getsync          |       |
| D collected              |          | F gettobesaved     |       |
| F get                    |          | F getvpos          |       |
| F number                 |          | F hangafter        |       |
| F page                   |          | F hangindent       |       |
| F save                   |          | F height           |       |
| F set                    |          | F hsize            |       |
| D tobesaved              |          | N lastx            |       |
| <b>pack</b>              | boolean  | N lasty            |       |
| <b>packversion</b>       | number   | F leftskip         |       |
| <b>pagestates</b>        | table    | F lowerleft        |       |
| D collected              |          | F lowerright       |       |
| F countervalue           |          | F markregionbox    |       |
| F extend                 |          | F n                |       |

F onsamepage  
F overlapping  
F p  
F page  
F paragraph  
F parindent  
F position  
F r  
F region  
F registerhandlers  
F replace  
F rightskip  
F set  
F setall  
F setregionbox  
F setspec  
F settobesaved  
D tobesaved  
F upperleft  
F upperright  
F used  
F whd  
F width

F x  
F xy  
F y  
**register** function  
**save** function  
**structure** table  
D collected  
T components  
T namestack  
T tobesaved  
T branches  
S name  
S type  
**variables** table  
D checksums  
D collected  
F getchecksum  
F makechecksum  
F restore  
F save  
F setchecksum  
D tobesaved  
**version** number

## language (basic tex)

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

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

# languages (context)

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

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

# layouts (context)

|                          |          |                          |       |
|--------------------------|----------|--------------------------|-------|
| <b>getcanvas</b>         | function | <b>status</b>            | table |
| <b>getpagedimensions</b> | function | F isleftpage             |       |
| <b>setupcanvas</b>       | function | F lefttorrightpageaction |       |



## lfs (extra lua)

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

|                      |                     |
|----------------------|---------------------|
| <b>link</b>          | overloaded function |
| <b>mkdir</b>         | overloaded function |
| <b>mkdirs</b>        | function            |
| <b>modification</b>  | function            |
| <b>readlink</b>      | function            |
| <b>rmdir</b>         | overloaded function |
| <b>setexecutable</b> | function            |
| <b>symlink</b>       | function            |
| <b>symlinktarget</b> | function            |
| <b>touch</b>         | overloaded function |
| <b>walkdir</b>       | function            |

# libraries (context)

**basiclua** data table

**basictex** data table

**builtin** data table

**extralua** data table

**extratex** data table

**functions** data table

**globals** data table

# lmx (context)

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

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

# logs (context)

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

# lpdf (context)

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

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

|                                  |          |                           |          |
|----------------------------------|----------|---------------------------|----------|
| <b>number</b>                    | function | <b>unicode</b>            | function |
| <b>object</b>                    | function | <b>usedcharacters</b>     | table    |
| <b>objectcompresslevel</b>       | function | <b>usedfontnames</b>      | table    |
| <b>pagereference</b>             | function | N dejavusansmonoboldttf-1 |          |
| <b>patternstream</b>             | function | <b>usedfontobjects</b>    | table    |
| <b>pdfcolor</b>                  | function | N dejavusansmonoboldttf-1 |          |
| <b>pdftimestamp</b>              | function | <b>usedfontstreams</b>    | table    |
| <b>print</b>                     | function | T dejavusansmonoboldttf-1 |          |
| <b>procset</b>                   | function | T characters              |          |
| <b>protectresources</b>          | boolean  | T descriptions            |          |
| <b>rectangle</b>                 | function | T fonts                   |          |
| <b>reference</b>                 | function | T goodies                 |          |
| <b>registerannotation</b>        | function | S original                |          |
| <b>registerdestination</b>       | function | T parameters              |          |
| <b>registerdocumentfinalizer</b> | function | N ascender                |          |
| <b>registerfont</b>              | function | N descender               |          |
| <b>registerfontmethod</b>        | function | N designsize              |          |
| <b>registerinitializer</b>       | function | T expansion               |          |
| <b>registerpagefinalizer</b>     | function | N shrink                  |          |
| <b>registerpattern</b>           | function | N step                    |          |
| <b>reserveobject</b>             | function | N stretch                 |          |
| <b>rgbcode</b>                   | function | N extendfactor            |          |
| <b>rotationcm</b>                | function | N extrafactor             |          |
| <b>setcompression</b>            | function | N extraspace              |          |
| <b>setencryption</b>             | function | N factor                  |          |
| <b>setincludecidset</b>          | function | N hfactor                 |          |
| <b>setpageorder</b>              | function | N mathsize                |          |
| <b>setpagestate</b>              | function | N maxsize                 |          |
| <b>setpagetag</b>                | function | N minsize                 |          |
| <b>setversion</b>                | function | N mode                    |          |
| <b>sharedobject</b>              | function | N quad                    |          |
| <b>shareobject</b>               | function | N scaledpoints            |          |
| <b>shareobjectreference</b>      | function | N size                    |          |
| <b>spotcode</b>                  | function | N slant                   |          |
| <b>stream</b>                    | function | N slantfactor             |          |
| <b>string</b>                    | function | N space                   |          |
| <b>toeight</b>                   | function | N spaceshrink             |          |
| <b>topdfdoc</b>                  | function | N spacestretch            |          |
| <b>tosixteen</b>                 | function | N squeezefactor           |          |
| <b>transparency</b>              | function | N textsize                |          |
| <b>transparencycode</b>          | function | N units                   |          |
| <b>transparencygroups</b>        | table    | N vfactor                 |          |
| B none                           |          | N width                   |          |
| <b>transparencyvalue</b>         | function | N xheight                 |          |

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



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

|                 |                   |
|-----------------|-------------------|
| N Icircumflex   | N Oslash          |
| N Idieresis     | N Oslashacute     |
| N Idotaccent    | N Otilde          |
| N Igrave        | N P               |
| N Imacron       | N Phi             |
| N Iogonek       | N Pi              |
| N Iota          | N Psi             |
| N Iotadieresis  | N Q               |
| N Iotatonos     | N R               |
| N Itilde        | N Racute          |
| N J             | N Rcaron          |
| N Jcircumflex   | N Rcommaaccent    |
| N K             | N Rho             |
| N Kappa         | N S               |
| N Kcommaaccent  | N Sacute          |
| N L             | N Scaron          |
| N Lacute        | N Scedilla        |
| N Lambda        | N Scircumflex     |
| N Lcaron        | N Scommaaccent    |
| N Lcommaaccent  | N Sigma           |
| N Ldot          | N T               |
| N Lslash        | N Tau             |
| N M             | N Tbar            |
| N Mu            | N Tcaron          |
| N N             | N Tcommaaccent    |
| N Nacute        | N Theta           |
| N Ncaron        | N Thorn           |
| N Ncommaaccent  | N Tilde           |
| N Ntilde        | N U               |
| N Nu            | N Ugrave          |
| N O             | N Uhorn           |
| N OE            | N Uhungarumlaut   |
| N Oacute        | N Umacron         |
| N Obreve        | N Uogonek         |
| N Ocircumflex   | N Upsilon         |
| N Odieresis     | N Upsilon1        |
| N Ograve        | N Upsilondieresis |
| N Ohorn         | N Upsilontonos    |
| N Ohungarumlaut | N Uring           |
| N Omacron       | N Utilde          |
| N Omega         | N V               |
| N Omegatonos    | N W               |
| N Omicron       | N Wacute          |
| N Omicrontonos  | N Wcircumflex     |

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

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

|                      |                    |
|----------------------|--------------------|
| N hbar               | N lfblock          |
| N hcircumflex        | N lira             |
| N heart              | N logicaland       |
| N hookabovecomb      | N logicalnot       |
| N house              | N logicalor        |
| N hungarumlaut       | N longs            |
| N hyphen             | N lozenge          |
| N i                  | N lslash           |
| N iacute             | N ltshade          |
| N ibreve             | N m                |
| N icircumflex        | N macron           |
| N idieresis          | N male             |
| N igrave             | N minus            |
| N ij                 | N minute           |
| N imacron            | N mu               |
| N infinity           | N multiply         |
| N integral           | N musicalnote      |
| N integralbt         | N musicalnotedbl   |
| N integraltp         | N n                |
| N intersection       | N nacute           |
| N invbullet          | N napostrophe      |
| N invcircle          | N ncaron           |
| N invsmileface       | N ncommaaccent     |
| N iogonek            | N nine             |
| N iota               | N nonbreakingspace |
| N iotadieresis       | N nonmarkingreturn |
| N iotadieresis-tonos | N notdef           |
| N iotatonos          | N notelement       |
| N itilde             | N notequal         |
| N j                  | N notsubset        |
| N jcircumflex        | N ntilde           |
| N jot                | N nu               |
| N k                  | N numbersign       |
| N kappa              | N o                |
| N kcommaaccent       | N oacute           |
| N kgreenlandic       | N obreve           |
| N l                  | N ocircumflex      |
| N lacute             | N odieresis        |
| N lambda             | N oe               |
| N lcaron             | N ogonek           |
| N lcommaaccent       | N ograve           |
| N ldot               | N ohorn            |
| N less               | N ohungarumlaut    |
| N lessequal          | N omacron          |

|                  |                  |
|------------------|------------------|
| N omega          | N quotedblleft   |
| N omega1         | N quotedblright  |
| N omegatonos     | N quoteleft      |
| N omicron        | N quotereversed  |
| N omicrontonos   | N quoteright     |
| N one            | N quotesinglbase |
| N oneeighth      | N quotesingle    |
| N onehalf        | N r              |
| N onequarter     | N racute         |
| N onesuperior    | N radical        |
| N onethird       | N rcaron         |
| N openbullet     | N rcommaaccent   |
| N ordfeminine    | N reflexsubset   |
| N ordmasculine   | N reflexsuperset |
| N orthogonal     | N registered     |
| N oslash         | N revlogicalnot  |
| N oslashacute    | N rho            |
| N otilde         | N ring           |
| N p              | N rtblock        |
| N paragraph      | N s              |
| N parenleft      | N sacute         |
| N parenright     | N scaron         |
| N partialdiff    | N scedilla       |
| N percent        | N scircumflex    |
| N period         | N scommaaccent   |
| N periodcentered | N second         |
| N perpendicular  | N section        |
| N perthousand    | N semicolon      |
| N peseta         | N seven          |
| N phi            | N seveneighths   |
| N phil           | N sfthyphen      |
| N pi             | N shade          |
| N plus           | N sigma          |
| N plusminus      | N signal         |
| N product        | N similar        |
| N propersubset   | N six            |
| N propersuperset | N slash          |
| N proportional   | N smileface      |
| N psi            | N space          |
| N q              | N spade          |
| N question       | N sterling       |
| N questiondown   | N suchthat       |
| N quotedbl       | N summation      |
| N quotedblbase   | N sun            |

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

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



|                  |                           |          |
|------------------|---------------------------|----------|
| N cache_version  | N xheight                 |          |
| T changed        | T properties              |          |
| T characters     | S filename                |          |
| T descriptions   | S fontname                |          |
| T mathparameters | S format                  |          |
| T parameters     | S fullname                |          |
| N ascender       | B hasmath                 |          |
| N charwidth      | N id                      |          |
| N descender      | S mode                    |          |
| N designsize     | B monospaced              |          |
| N extraspace     | S name                    |          |
| N italicangle    | N private                 |          |
| N maxsize        | S psname                  |          |
| N minsize        | B setitalics              |          |
| N quad           | S space                   |          |
| N slant          | N subfont                 |          |
| N space          | S writingmode             |          |
| N spaceshrink    | <b>usedindices</b>        | table    |
| N spacestretch   | T dejavusansmonoboldttf-1 |          |
| N units          | <b>verbose</b>            | function |
| N vheight        |                           |          |

## lpeg (basic lua)

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

## lua (basic tex)

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

## luac (context)

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

# luatex (context)

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

# lxml (context)

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

|                         |          |                      |            |
|-------------------------|----------|----------------------|------------|
| <b>rawroot</b>          | function | F add                |            |
| <b>rawtex</b>           | function | F compare            |            |
| <b>refatt</b>           | function | F flush              |            |
| <b>register</b>         | function | F reset              |            |
| <b>registerentity</b>   | function | F show               |            |
| <b>removesetup</b>      | function | F sort               |            |
| <b>replace</b>          | function | <b>splitid</b>       | function   |
| <b>resetcdata</b>       | function | <b>startraw</b>      | function   |
| <b>resetsetups</b>      | function | <b>startunesaped</b> | function   |
| <b>resolvedentity</b>   | function | <b>stopraw</b>       | function   |
| <b>root</b>             | function | <b>stopunesaped</b>  | function   |
| <b>save</b>             | function | <b>store</b>         | function   |
| <b>serialize</b>        | function | <b>strip</b>         | function   |
| <b>setaction</b>        | function | <b>stripped</b>      | function   |
| <b>setatt</b>           | function | <b>tag</b>           | function   |
| <b>setattribute</b>     | function | <b>texatt</b>        | function   |
| <b>setcdata</b>         | function | <b>text</b>          | function   |
| <b>setcommandtonone</b> | function | <b>tobuffer</b>      | function   |
| <b>setcommandtotext</b> | function | <b>tofile</b>        | function   |
| <b>setpar</b>           | function | <b>toparameters</b>  | function   |
| <b>setparam</b>         | function | <b>toverbatim</b>    | function   |
| <b>setparameter</b>     | function | <b>verbatim</b>      | function   |
| <b>setsetup</b>         | function | <b>withindex</b>     | function   |
| <b>snippet</b>          | function | <b>xmltexhandler</b> | data table |
| <b>sorters</b>          | table    |                      |            |

## math (basic lua)

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



# mathematics (context)

|                               |            |                               |            |
|-------------------------------|------------|-------------------------------|------------|
| <b>addfallbacks</b>           | function   | <b>makefont</b>               | function   |
| <b>addvariant</b>             | function   | <b>mapremap</b>               | data table |
| <b>alphabets</b>              | data table | <b>overloadparameters</b>     | function   |
| <b>alternatives</b>           | data table | <b>preset</b>                 | function   |
| <b>beforepassingfonttotex</b> | function   | <b>presets</b>                | table      |
| <b>big</b>                    | function   | T less                        |            |
| <b>boldmap</b>                | data table | T more                        |            |
| <b>categories</b>             | table      | T zero                        |            |
| D functions                   |            | <b>privatebase</b>            | number     |
| <b>charactersets</b>          | data table | <b>registersimplematrix</b>   | function   |
| <b>checkaftercopyingfont</b>  | function   | <b>remapalphabets</b>         | function   |
| <b>classes</b>                | data table | <b>renderings</b>             | table      |
| <b>classnames</b>             | data table | D mappings                    |            |
| <b>codes</b>                  | data table | D numbers                     |            |
| <b>collected</b>              | function   | D sets                        |            |
| <b>define</b>                 | function   | <b>renderset</b>              | function   |
| <b>dictionaries</b>           | table      | <b>resetattributes</b>        | function   |
| D data                        |            | <b>scaleparameters</b>        | function   |
| D defaults                    |            | <b>sets</b>                   | data table |
| D groups                      |            | <b>setsnapping</b>            | function   |
| F groupset                    |            | <b>setvariant</b>             | function   |
| F groupsetgroup               |            | <b>startcollecting</b>        | function   |
| D names                       |            | <b>stopcollecting</b>         | function   |
| F registercharacter           |            | <b>styles</b>                 | data table |
| F registergroup               |            | <b>syncboth</b>               | function   |
| F registergroupset            |            | <b>syncname</b>               | function   |
| D sets                        |            | <b>syncstyle</b>              | function   |
| D variants                    |            | <b>toengineclass</b>          | function   |
| <b>dimensions</b>             | function   | <b>toname</b>                 | function   |
| <b>extensiblecode</b>         | function   | <b>tostyle</b>                | function   |
| <b>extensibles</b>            | data table | <b>tweakaftercopyingfont</b>  | function   |
| <b>extrabase</b>              | number     | <b>tweakbeforecopyingfont</b> | function   |
| <b>fallbacks</b>              | table      | <b>tweaks</b>                 | table      |
| F apply                       |            | F accentdimensions            |            |
| F install                     |            | F action                      |            |
| <b>fallbackstyleattr</b>      | function   | F addactuarian                |            |
| <b>gaps</b>                   | data table | F addarrows                   |            |
| <b>getboth</b>                | function   | F addbars                     |            |
| <b>getstyle</b>               | function   | F addequals                   |            |
| <b>horizontalcode</b>         | function   | F addfourier                  |            |
| <b>initializeparameters</b>   | function   | F addmirrors                  |            |

|                    |                        |            |
|--------------------|------------------------|------------|
| F addparts         | F parameters           |            |
| F addprivates      | F radicaldegreeanchors |            |
| F addrules         | F replace              |            |
| F addscripts       | F replacealphabets     |            |
| F bigslots         | F replacerules         |            |
| F checkaccents     | F setoptions           |            |
| F checkspacing     | F setovershoots        |            |
| F copyaccents      | F showinfo             |            |
| T datasets         | F simplifykerns        |            |
| T accentdimensions | F sortvariants         |            |
| T accent           | F staircase            |            |
| T over             | T subsets              |            |
| T under            | T acenorsuvxz          |            |
| T addarrows        | T bhklt                |            |
| T addscripts       | T d                    |            |
| T checkspacing     | T dotless              |            |
| T copyaccents      | T f                    |            |
| T fixprimes        | T gjqy                 |            |
| T fixslashes       | T horizontalfences     |            |
| T wipecues         | T i                    |            |
| F dimensions       | T integrals            |            |
| F extendaccents    | T mw                   |            |
| F fallbacks        | T p                    |            |
| F fixaccents       | F substitute           |            |
| F fixellipses      | F topanchors           |            |
| F fixintegrals     | F tweaks               |            |
| F fixoldschool     | F version              |            |
| F fixprimes        | F wipeanchors          |            |
| F fixradicals      | F wipecues             |            |
| F fixslashes       | F wipeitalics          |            |
| F flattenaccents   | F wipevariants         |            |
| F inspect          | <b>utfmathaccent</b>   | function   |
| F keepbases        | <b>utfmathclass</b>    | function   |
| F kernpairs        | <b>utfmathcommand</b>  | function   |
| F kerns            | <b>utfmathfiller</b>   | function   |
| T kernsets         | <b>utfmathstretch</b>  | function   |
| T .,               | <b>variantcode</b>     | function   |
| F margins          | <b>variantcount</b>    | function   |
| F message          | <b>virtualize</b>      | function   |
| F moveitalics      | <b>virtualized</b>     | data table |
| F movelimits       |                        |            |

## md5 (extra lua)

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

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

# metapost (context)

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

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

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

N vacuous

**typesvgpage**  
**unload**

function  
function

**untagvariable**  
**variables**

function  
table

## mime (extra lua)

**b64** function

**decode** function

**decodet** table

F base64

F quoted-printable

**dot** function

**encode** function

**encodet** table

F base64

F quoted-printable

**eol** function

**normalize** function

**qp** function

**qpwrp** function

**report** function

**stuff** function

**unb64** function

**unqp** function

**wrap** function

**wrapt** table

F base64

F default

F quoted-printable

F text

**wrp** function



# mp (context)

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

|                                   |          |                              |          |
|-----------------------------------|----------|------------------------------|----------|
| <b>lmt_contours_nofvalues</b>     | function | <b>mf_blob_width</b>         | function |
| <b>lmt_contours_nx</b>            | function | <b>mf_external_figure</b>    | function |
| <b>lmt_contours_ny</b>            | function | <b>mf_finish_saving_data</b> | function |
| <b>lmt_contours_range</b>         | function | <b>mf_formatted_text</b>     | function |
| <b>lmt_contours_shade_paths</b>   | function | <b>mf_get_outline_text</b>   | function |
| <b>lmt_contours_shade_set</b>     | function | <b>mf_graphic_text</b>       | function |
| <b>lmt_contours_shape_paths</b>   | function | <b>mf_inject_blob</b>        | function |
| <b>lmt_contours_start</b>         | function | <b>mf_map_move</b>           | function |
| <b>lmt_contours_stop</b>          | function | <b>mf_map_text</b>           | function |
| <b>lmt_contours_value</b>         | function | <b>mf_named_color</b>        | function |
| <b>lmt_contours_xrange</b>        | function | <b>mf_outline_text</b>       | function |
| <b>lmt_contours_yrange</b>        | function | <b>mf_save_data</b>          | function |
| <b>lmt_function_x</b>             | function | <b>mf_script_index</b>       | function |
| <b>lmt_glyphshape_accent</b>      | function | <b>mf_start_saving_data</b>  | function |
| <b>lmt_glyphshape_baseline</b>    | function | <b>mf_stop_saving_data</b>   | function |
| <b>lmt_glyphshape_boundingbox</b> | function | <b>mode</b>                  | function |
| <b>lmt_glyphshape_depth</b>       | function | <b>n</b>                     | function |
| <b>lmt_glyphshape_height</b>      | function | <b>number</b>                | function |
| <b>lmt_glyphshape_italic</b>      | function | <b>numeric</b>               | function |
| <b>lmt_glyphshape_n</b>           | function | <b>pair</b>                  | function |
| <b>lmt_glyphshape_path</b>        | function | <b>pairpoints</b>            | function |
| <b>lmt_glyphshape_start</b>       | function | <b>path</b>                  | function |
| <b>lmt_glyphshape_stop</b>        | function | <b>pathpoints</b>            | function |
| <b>lmt_glyphshape_usedbox</b>     | function | <b>points</b>                | function |
| <b>lmt_glyphshape_usedline</b>    | function | <b>print</b>                 | function |
| <b>lmt_glyphshape_width</b>       | function | F boolean                    |          |
| <b>lmt_mesh_set</b>               | function | F color                      |          |
| <b>lmt_mesh_update</b>            | function | F direct                     |          |
| <b>lmt_poisson_generate</b>       | function | F draw                       |          |
| <b>lmt_start_potrace</b>          | function | F fill                       |          |
| <b>lmt_step_potrace</b>           | function | F flush                      |          |
| <b>lmt_stop_potrace</b>           | function | F fprintf                    |          |
| <b>lmt_surface_do</b>             | function | F integer                    |          |
| <b>lmt_svg_include</b>            | function | F number                     |          |
| <b>mf_blob_add</b>                | function | F numeric                    |          |
| <b>mf_blob_dimensions</b>         | function | F pair                       |          |
| <b>mf_blob_index</b>              | function | F pairpoints                 |          |
| <b>mf_blob_new</b>                | function | F path                       |          |
| <b>mf_blob_raw_content</b>        | function | F pathpoints                 |          |
| <b>mf_blob_raw_dimensions</b>     | function | F points                     |          |
| <b>mf_blob_raw_reset</b>          | function | F print                      |          |
| <b>mf_blob_raw_toutf</b>          | function | F quadruple                  |          |
| <b>mf_blob_raw_wipe</b>           | function | F quadruplepoints            |          |
| <b>mf_blob_size</b>               | function | F quoted                     |          |

|                        |          |                      |          |
|------------------------|----------|----------------------|----------|
| F size                 |          | F path               |          |
| F string               |          | F pen                |          |
| F transform            |          | F property           |          |
| F triplet              |          | F string             |          |
| F tripletpoints        |          | F symbol             |          |
| F vprint               |          | F token              |          |
| <b>processingmode</b>  | function | T tokenscanners      |          |
| <b>quadruple</b>       | function | F transform          |          |
| <b>quadruplepoints</b> | function | T typescanners       |          |
| <b>quoted</b>          | function | F whatever           |          |
| <b>report</b>          | function | <b>set</b>           | table    |
| <b>scan</b>            | table    | <b>size</b>          | function |
| F boolean              |          | <b>skip</b>          | table    |
| F cmykcolor            |          | F token              |          |
| F color                |          | <b>solve</b>         | function |
| F expression           |          | <b>string</b>        | function |
| F integer              |          | <b>systemmode</b>    | function |
| F next                 |          | <b>transform</b>     | function |
| F number               |          | <b>triplet</b>       | function |
| F numeric              |          | <b>tripletpoints</b> | function |
| F pair                 |          | <b>vprint</b>        | function |

## mplib (extra tex)

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

# noads (context)

|                 |       |                      |              |
|-----------------|-------|----------------------|--------------|
| <b>handlers</b> | table |                      | F showtree   |
| F alternates    |       |                      | F snap       |
| F autofences    |       |                      | F spacing    |
| F classes       |       |                      | F suspicious |
| F collapse      |       |                      | F tags       |
| F dictionaries  |       |                      | F unscript   |
| F export        |       |                      | F unstack    |
| F families      |       |                      | F variants   |
| F fencing       |       | <b>process</b>       | function     |
| F fixscripts    |       | <b>processnested</b> | function     |
| F kernpairs     |       | <b>processors</b>    | table        |
| F makeup        |       | T dictionaries       |              |
| F normalize     |       | F mlisttohtml        |              |
| F numbers       |       | T suspicious         |              |
| F relocate      |       | T unscript           |              |
| F render        |       | T unstack            |              |
| F resize        |       | <b>processouter</b>  | function     |

# node (basic tex)

|                             |          |                      |
|-----------------------------|----------|----------------------|
| <b>checkdiscretionaries</b> | function | F getbottom          |
| <b>checkdiscretionary</b>   | function | F getbox             |
| <b>copy</b>                 | function | F getcachestate      |
| <b>copylist</b>             | function | F getchar            |
| <b>count</b>                | function | F getchardict        |
| <b>currentattributes</b>    | function | F getcharspec        |
| <b>dimensions</b>           | function | F getchoice          |
| <b>direct</b>               | table    | F getclass           |
| F addmargins                |          | F getdata            |
| F addxoffset                |          | F getdegree          |
| F addxymargins              |          | F getdelimiter       |
| F addyoffset                |          | F getdenominator     |
| F appendaftertail           |          | F getdepth           |
| F checkdiscretionaries      |          | F getdirection       |
| F checkdiscretionary        |          | F getdisc            |
| F collapsing                |          | F getdiscpart        |
| F copy                      |          | F getexpansion       |
| F copylist                  |          | F getfam             |
| F copyonly                  |          | F getfield           |
| F count                     |          | F getfont            |
| F currentattributes         |          | F getgeometry        |
| F dimensions                |          | F getglue            |
| F effectiveglue             |          | F getglyphdata       |
| F endofmath                 |          | F getglyphdimensions |
| F exchange                  |          | F getheight          |
| F fields                    |          | F getid              |
| F findattribute             |          | F getindex           |
| F findattributerange        |          | F getinputfields     |
| F findnode                  |          | F getkern            |
| F firstglyph                |          | F getkerndimension   |
| F flattendiscretionaries    |          | F getlanguage        |
| F flattenleaders            |          | F getleader          |
| F flushlist                 |          | F getleftdelimiter   |
| F flushnode                 |          | F getlist            |
| F free                      |          | F getlistdimensions  |
| F freeze                    |          | F getnext            |
| F getanchors                |          | F getnodes           |
| F getattribute              |          | F getnormalizedline  |
| F getattributelist          |          | F getnucleus         |
| F getattributes             |          | F getnumerator       |
| F getboth                   |          | F getoffsets         |

|                     |                      |
|---------------------|----------------------|
| F getoptions        | F insertafter        |
| F getorientation    | F insertbefore       |
| F getparstate       | F isboth             |
| F getpenalty        | F ischar             |
| F getpost           | F isdirect           |
| F getpre            | F isglyph            |
| F getprev           | F isnext             |
| F getprime          | F isnextchar         |
| F getpropertystable | F isnextglyph        |
| F getproperty       | F isnode             |
| F getreplace        | F isprev             |
| F getrightdelimiter | F isprevchar         |
| F getruledimensions | F isprevglyph        |
| F getscale          | F isspeciallist      |
| F getscales         | F isvalid            |
| F getscrip          | F iszeroglue         |
| F getshift          | F kerning            |
| F getspeciallist    | F lastnode           |
| F getstate          | F length             |
| F getsub            | F ligaturing         |
| F getsubpre         | F makeextensible     |
| F getsubtype        | F migrate            |
| F getsup            | F mlisttohtml        |
| F getsuppre         | F naturalhsize       |
| F gettop            | F naturalwidth       |
| F gettotal          | F new                |
| F getusedattributes | F newmathglyph       |
| F getwhd            | F newtextglyph       |
| F getwidth          | F patchattributes    |
| F getwordrange      | F prependbeforehead  |
| F getxscale         | F protectglyph       |
| F getxyscales       | F protectglyphs      |
| F getyscale         | F protectglyphsnone  |
| F gluetostring      | F protrusionskipable |
| F hasattribute      | F rangedimensions    |
| F hasdimensions     | F remove             |
| F hasfield          | F removefromlist     |
| F hasgeometry       | F repack             |
| F hasglyph          | F reverse            |
| F hasglyphoption    | F serialized         |
| F hpack             | F setanchors         |
| F hyphenating       | F setattribute       |
| F id                | F setattributelist   |
| F ignoremathskip    | F setattributes      |

|                    |                     |
|--------------------|---------------------|
| F setboth          | F setrightdelimiter |
| F setbottom        | F setruledimensions |
| F setbox           | F setscales         |
| F setchar          | F setscript         |
| F setchardict      | F setshift          |
| F setchoice        | F setspeciallist    |
| F setclass         | F setsplit          |
| F setdata          | F setstate          |
| F setdegree        | F setsub            |
| F setdelimiter     | F setsubpre         |
| F setdenominator   | F setsubtype        |
| F setdepth         | F setsup            |
| F setdirection     | F setsuppre         |
| F setdisc          | F settop            |
| F setdiscpart      | F settotal          |
| F setexpansion     | F setwhd            |
| F setfam           | F setwidth          |
| F setfield         | F show              |
| F setfont          | F slide             |
| F setgeometry      | F softenhyphens     |
| F setglue          | F startofpar        |
| F setglyphdata     | F subtypes          |
| F setheight        | F tail              |
| F setindex         | F todirect          |
| F setinputfields   | F tonode            |
| F setkern          | F tostring          |
| F setlanguage      | F tovaliddirect     |
| F setleader        | F traverse          |
| F setleftdelimiter | F traversechar      |
| F setlink          | F traversecontent   |
| F setlist          | F traverseglyph     |
| F setnext          | F traverseid        |
| F setnucleus       | F traverseleader    |
| F setnumerator     | F traverselist      |
| F setoffsets       | F type              |
| F setoptions       | F types             |
| F setorientation   | F unprotectglyph    |
| F setpenalty       | F unprotectglyphs   |
| F setpost          | F unsetattribute    |
| F setpre           | F unsetattributes   |
| F setprev          | F usedlist          |
| F setprime         | F usesfont          |
| F setproperty      | F verticalbreak     |
| F setreplace       | F vpack             |



|                               |          |
|-------------------------------|----------|
| F write                       |          |
| F xscaled                     |          |
| F yscaled                     |          |
| <b>effectiveglue</b>          | function |
| <b>endofmath</b>              | function |
| <b>family_font</b>            | function |
| <b>fields</b>                 | function |
| <b>findattribute</b>          | function |
| <b>firstglyph</b>             | function |
| <b>flattendiscretionaries</b> | function |
| <b>flushlist</b>              | function |
| <b>flushnode</b>              | function |
| <b>free</b>                   | function |
| <b>getattribute</b>           | function |
| <b>getcachestate</b>          | function |
| <b>getfield</b>               | function |
| <b>getglue</b>                | function |
| <b>getpropertystable</b>      | function |
| <b>getproperty</b>            | function |
| <b>gluetostring</b>           | function |
| <b>hasattribute</b>           | function |
| <b>hasfield</b>               | function |
| <b>hasglyph</b>               | function |
| <b>hpack</b>                  | function |
| <b>hyphenating</b>            | function |
| <b>id</b>                     | function |
| <b>insertafter</b>            | function |
| <b>insertbefore</b>           | function |
| <b>instock</b>                | function |
| <b>inuse</b>                  | function |
| <b>isnode</b>                 | function |
| <b>iszeroglue</b>             | function |
| <b>kerning</b>                | function |
| <b>lastnode</b>               | function |

|                           |          |
|---------------------------|----------|
| <b>length</b>             | function |
| <b>ligaturing</b>         | function |
| <b>makeextensible</b>     | function |
| <b>mlisttohlist</b>       | function |
| <b>new</b>                | function |
| <b>protectglyph</b>       | function |
| <b>protectglyphs</b>      | function |
| <b>protrusionskipable</b> | function |
| <b>rangedimensions</b>    | function |
| <b>remove</b>             | function |
| <b>serialized</b>         | function |
| <b>setattribute</b>       | function |
| <b>setfield</b>           | function |
| <b>setglue</b>            | function |
| <b>setproperty</b>        | function |
| <b>show</b>               | function |
| <b>slide</b>              | function |
| <b>subtypes</b>           | function |
| <b>tail</b>               | function |
| <b>todirect</b>           | function |
| <b>tonode</b>             | function |
| <b>tostring</b>           | function |
| <b>traverse</b>           | function |
| <b>traverseid</b>         | function |
| <b>type</b>               | function |
| <b>types</b>              | function |
| <b>unprotectglyph</b>     | function |
| <b>unprotectglyphs</b>    | function |
| <b>unsetattribute</b>     | function |
| <b>usedlist</b>           | function |
| <b>usesfont</b>           | function |
| <b>vpack</b>              | function |
| <b>write</b>              | function |

# nodes (context)

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

|                        |          |                                |            |
|------------------------|----------|--------------------------------|------------|
| F characters           |          | F setmove                      |            |
| F checkglyphs          |          | F setposition                  |            |
| F checkparcounter      |          | F setspacekerns                |            |
| F cleanupbox           |          | <b>insertafter</b>             | function   |
| F cleanuppage          |          | <b>insertbefore</b>            | function   |
| F export               |          | <b>insertlistafter</b>         | function   |
| F finalizebox          |          | <b>installattributehandler</b> | function   |
| F finalizelist         |          | <b>is_display_math</b>         | function   |
| F fixmathalign         |          | <b>isdirect</b>                | function   |
| F flatten              |          | <b>isnode</b>                  | function   |
| F flattenline          |          | <b>isnut</b>                   | function   |
| F mathmatrixornaments  |          | <b>kerncodes</b>               | data table |
| F mathmatrixrules      |          | <b>leftmarginwidth</b>         | function   |
| F migrate              |          | <b>linefillers</b>             | table      |
| F protectglyphs        |          | F filler                       |            |
| F recolor              |          | F handler                      |            |
| F show                 |          | F set                          |            |
| F showhyphenation      |          | <b>lines</b>                   | table      |
| F showpreamble         |          | T boxed                        |            |
| F stripping            |          | F addlinenumbers               |            |
| F textbackgrounds      |          | F register                     |            |
| F unprotectglyphs      |          | F setup                        |            |
| F visualizehyphenation |          | D data                         |            |
| F wipe                 |          | F finalize                     |            |
| <b>hasattribute</b>    | function | F number                       |            |
| <b>hasfield</b>        | function | <b>link</b>                    | function   |
| <b>hpack</b>           | function | <b>linked</b>                  | function   |
| <b>idsandsubtypes</b>  | function | <b>list</b>                    | function   |
| <b>idstosting</b>      | function | <b>listcodes</b>               | data table |
| <b>injections</b>      | table    | <b>listtoutf</b>               | function   |
| F copy                 |          | <b>literalvalues</b>           | data table |
| F getligaindex         |          | <b>locate</b>                  | function   |
| F getthreshold         |          | <b>markcodes</b>               | data table |
| F handler              |          | <b>markers</b>                 | table      |
| F installgetspaceboth  |          | F get                          |            |
| F installnewkern       |          | F set                          |            |
| F isspace              |          | <b>mathcodes</b>               | data table |
| F keepcounts           |          | <b>mathvalues</b>              | data table |
| F reset                |          | <b>maxboxwidth</b>             | function   |
| F resetcounts          |          | <b>migrations</b>              | table      |
| F setcursive           |          | F setinserts                   |            |
| F setkern              |          | F setmarks                     |            |
| F setligaindex         |          | <b>new</b>                     | function   |
| F setmark              |          | <b>noadcodes</b>               | data table |

**nodecodes****nopts****nuts**

F addmargins  
 F addxoffset  
 F addxymargins  
 F addyoffset  
 F append  
 F appendaftertail  
 F apply  
 F applyvisuals  
 F checkdiscretionaries  
 F checkslide  
 F collapsing  
 T colors  
   F set  
 T components  
   F copynocomponents  
   F copyonlyglyphs  
   F count  
   F flush  
   F get  
   F set  
 F concat  
 F copy  
 F copy\_properties  
 F copyleft  
 F copynode  
 F copyonly  
 F copyvisual  
 F count  
 F countall  
 F currentattributes  
 F delete  
 F dimensions  
 F dirdimensions  
 F effectiveglue  
 F endofmath  
 F exchange  
 F findattribute  
 F findnode  
 F firstcharacter  
 F firstcharinbox  
 F firstglyph

**data table****function****table**

F flattendiscretionaries  
 F flattenleaders  
 F flush  
 F flushlist  
 F flushnode  
 F free  
 F freeze  
 F fullhpack  
 F getanchors  
 F getattr  
 F getattribute  
 F getattributelist  
 F getattributes  
 F getattrlist  
 F getattrs  
 F getboth  
 F getbottom  
 F getbox  
 F getboxglue  
 F getchar  
 F getchardict  
 F getcharspec  
 F getchoice  
 F getclass  
 F getcomponents  
 F getdata  
 F getdegree  
 F getdelimiter  
 F getdenominator  
 F getdepth  
 F getdirection  
 F getdisc  
 F getdiscpart  
 F getdiscretionary  
 F getexpansion  
 F getfam  
 F getfield  
 F getfont  
 F getgeometry  
 F getglue  
 F getglyphdata  
 F getglyphdimensions  
 F getheight  
 F getid

|                      |                     |
|----------------------|---------------------|
| F getindex           | F getusedattributes |
| F getinputfields     | F getvalue          |
| F getkern            | F getwhd            |
| F getkerndimension   | F getwidth          |
| F getlang            | F getwordrange      |
| F getlanguage        | F getxscale         |
| F getleader          | F getxyscales       |
| F getleftdelimiter   | F getyscale         |
| F getlist            | F gluetostring      |
| F getlistdimensions  | F hasattribute      |
| F getmiddle          | F hasdimensions     |
| F getmiddledelimiter | F hasfield          |
| F getnext            | F hasgeometry       |
| F getnormalizedline  | F hasglyph          |
| F getnucleus         | F hasglyphoption    |
| F getnumerator       | F hpack             |
| F getoffsets         | F hyphenating       |
| F getoptions         | F ignoremathskip    |
| F getorientation     | F insertafter       |
| F getparstate        | F insertbefore      |
| F getpenalty         | F insertlistafter   |
| F getpost            | F is_display_math   |
| F getpre             | F isboth            |
| F getprev            | F ischar            |
| F getprime           | F isdirect          |
| F getprop            | F isdone            |
| F getreplace         | F isglyph           |
| F getrightdelimiter  | F isnext            |
| F getruledata        | F isnextchar        |
| F getruledimensions  | F isnextglyph       |
| F getscale           | F isnode            |
| F getscales          | F isnut             |
| F getscrip           | F isprev            |
| F getshift           | F isprevchar        |
| F getspeciallist     | F isprevglyph       |
| F getstate           | F iszeroglue        |
| F getsub             | F kerning           |
| F getsubpre          | F lastnode          |
| F getsubtype         | F length            |
| F getsup             | F ligaturing        |
| F getsuppre          | F link              |
| F getsurround        | F linked            |
| F gettop             | F locate            |
| F gettotal           | F migrate           |

|                     |                        |
|---------------------|------------------------|
| F migratebox        | F originliteral        |
| F mlisttohlist      | F outlinerule          |
| F naturalhsize      | F pageliteral          |
| F naturalwidth      | F penalty              |
| F nestedtracedslide | F radical              |
| F new               | F rawliteral           |
| F newmathglyph      | F register             |
| F openup            | F restore              |
| F patchattributes   | F righthangskip        |
| T pool              | F rightmarginkern      |
| F accent            | F rightskip            |
| F baselineskip      | F rule                 |
| F boundary          | F save                 |
| F boxrule           | F savepos              |
| F choice            | F setmatrix            |
| F cleanup           | F setstate             |
| F delim             | F shrink               |
| F delimiter         | F startrotation        |
| F direction         | F stock                |
| F directliteral     | F stretch              |
| F disc              | F strutrue             |
| F emptyrule         | F subbox               |
| F fence             | F sublist              |
| F fontkern          | F temp                 |
| F fraction          | F usage                |
| F glue              | F userdefined          |
| F gluespec          | T usersids             |
| F glyph             | F usernode             |
| F hlist             | F userrule             |
| F imagerule         | F virtualrule          |
| F indentskip        | F vlist                |
| F italicckern       | F wordboundary         |
| F kern              | F prepend              |
| F latelua           | F prependbeforehead    |
| F leader            | F processranges        |
| F lefthangskip      | F processwords         |
| F leftmarginkern    | F protectglyph         |
| F leftskip          | F protectglyphs        |
| F lineskip          | F protectglyphsnone    |
| F literal           | F protrusionskipppable |
| F mathchar          | F rangedimensions      |
| F mathtextchar      | F rawprop              |
| F negatedglue       | F reference            |
| F noad              | F rehpack              |

|                    |                      |
|--------------------|----------------------|
| F remove           | F setgeometry        |
| F removefromlist   | F setglue            |
| F repack           | F setglyphdata       |
| F repackhlist      | F setheight          |
| F replace          | F setinputfields     |
| F reverse          | F setkern            |
| T rules            | F setlang            |
| T ruleactions      | F setlanguage        |
| F box              | F setleader          |
| F draw             | F setleftdelimiter   |
| F fill             | F setlink            |
| F mp               | F setlist            |
| F stroke           | F setmiddledelimiter |
| F userrule         | F setnext            |
| F serialized       | F setnucleus         |
| F setanchors       | F setnumerator       |
| F setattr          | F setoffsets         |
| F setattribute     | F setoptions         |
| F setattributelist | F setorientation     |
| F setattributes    | F setparproperty     |
| F setattrlist      | F setpenalty         |
| F setattrs         | F setpost            |
| F setboth          | F setpre             |
| F setbottom        | F setprev            |
| F setbox           | F setprime           |
| F setboxglue       | F setprop            |
| F setchar          | F setreplace         |
| F setchardict      | F setrightdelimiter  |
| F setchoice        | F setruledata        |
| F setclass         | F setruledimensions  |
| F setcomponents    | F setscale           |
| F setdata          | F setscales          |
| F setdegree        | F setscript          |
| F setdelimiter     | F setshift           |
| F setdenominator   | F setspeciallist     |
| F setdepth         | F setsplit           |
| F setdirection     | F setstate           |
| F setdisc          | F setsub             |
| F setdiscpart      | F setsubpre          |
| F setdiscretionary | F setsubtype         |
| F setexpansion     | F setup              |
| F setfam           | F setsuppre          |
| F setfield         | F setsurround        |
| F setfont          | F settop             |

|                   |                     |            |
|-------------------|---------------------|------------|
| F setvalue        | F next              |            |
| F setvisual       | F node              |            |
| F setvisuals      | F penalty           |            |
| F setwhd          | F rule              |            |
| F setwidth        | F unset             |            |
| F show            | F vlist             |            |
| F slide           | F whatsit           |            |
| F softenhyphens   | T treversers        |            |
| F somepenalty     | F char              |            |
| F somespace       | F content           |            |
| F splitbox        | F glyph             |            |
| F startofpar      | F leader            |            |
| F striprange      | F list              |            |
| F tail            | F node              |            |
| F takeattr        | T typesetters       |            |
| F takebox         | F tohbox            |            |
| F takelist        | F tohpack           |            |
| F theprop         | F tonodes           |            |
| F tonode          | F to vbox           |            |
| F tonodes         | F to vpack          |            |
| F tonut           | F unprotectglyph    |            |
| F tosequence      | F unprotectglyphs   |            |
| F toString        | F unsetattribute    |            |
| F tracedslide     | F unsetattributes   |            |
| F traverse        | F untracedslide     |            |
| F traversechar    | F usedlist          |            |
| F traversecontent | F usesfont          |            |
| F traverseglyph   | F verticalbreak     |            |
| F traverseid      | F vianodes          |            |
| F traverseleader  | F vianuts           |            |
| F traverselist    | F vpack             |            |
| T traversers      | F write             |            |
| F alignrecord     | F xscaled           |            |
| F boundary        | F yscaled           |            |
| F char            | <b>packlist</b>     | function   |
| F content         | <b>parcodes</b>     | data table |
| F dir             | <b>penaltycodes</b> | data table |
| F disc            | <b>plugindata</b>   | table      |
| F glue            | F finalizer         |            |
| F glyph           | F initializer       |            |
| F hlist           | S name              |            |
| F leader          | T namespace         |            |
| F list            | N attribute         |            |
| F mark            | D data              |            |



|                         |            |                          |            |
|-------------------------|------------|--------------------------|------------|
| F enable                |            | F handler                |            |
| F handler               |            | T stack                  |            |
| F register              |            | <b>reheap</b>            | function   |
| D registered            |            | <b>remove</b>            | function   |
| D values                |            | <b>repackhlist</b>       | function   |
| F processor             |            | <b>replace</b>           | function   |
| <b>points</b>           | function   | <b>report</b>            | function   |
| <b>pool</b>             | table      | <b>rightmarginwidth</b>  | function   |
| F baselineskip          |            | <b>rulecodes</b>         | data table |
| F cleanup               |            | <b>rules</b>             | table      |
| F directliteral         |            | F handler                |            |
| F glyph                 |            | F process                |            |
| F hlist                 |            | F set                    |            |
| F latelua               |            | F userrule               |            |
| F leader                |            | <b>serialize</b>         | function   |
| F lineskip              |            | <b>serializebox</b>      | function   |
| F literal               |            | <b>serialized</b>        | function   |
| F originliteral         |            | <b>setattr</b>           | function   |
| F register              |            | <b>setattribute</b>      | function   |
| F restore               |            | <b>setboth</b>           | function   |
| F save                  |            | <b>setbox</b>            | function   |
| F savepos               |            | <b>setboxtonaturalwd</b> | function   |
| F setmatrix             |            | <b>setchar</b>           | function   |
| F stock                 |            | <b>setfield</b>          | function   |
| F usage                 |            | <b>setfont</b>           | function   |
| F usernode              |            | <b>setleader</b>         | function   |
| F vlist                 |            | <b>setlink</b>           | function   |
| <b>prepend</b>          | function   | <b>setlist</b>           | function   |
| <b>print</b>            | function   | <b>setnext</b>           | function   |
| <b>processors</b>       | table      | <b>setprev</b>           | function   |
| F alignment_filter      |            | <b>setproperty</b>       | function   |
| F append_line_filter    |            | <b>shifts</b>            | table      |
| F glyph_run             |            | F handler                |            |
| F post_linebreak_filter |            | F set                    |            |
| F pre_linebreak_filter  |            | <b>showboxes</b>         | function   |
| F trace_glyph_run_a     |            | <b>showlist</b>          | function   |
| F trace_glyph_run_b     |            | <b>showsimplelist</b>    | function   |
| <b>properties</b>       | table      | <b>skipcodes</b>         | data table |
| T data                  |            | <b>snapshots</b>         | table      |
| <b>pts</b>              | function   | F getsamples             |            |
| <b>radicalcodes</b>     | data table | F resetsamples           |            |
| <b>references</b>       | table      | F takesample             |            |
| N attribute             |            | <b>somepenalty</b>       | function   |
| T done                  |            | <b>somespace</b>         | function   |

|                             |            |                    |          |
|-----------------------------|------------|--------------------|----------|
| <b>specialskipcodes</b>     | table      | <b>totree</b>      | function |
| <b>splitbox</b>             | function   | <b>toutf</b>       | function |
| <b>startofpar</b>           | function   | <b>tracers</b>     | table    |
| <b>stripdiscretionaries</b> | function   | T colors           |          |
| <b>stripping</b>            | table      | F reset            |          |
| T glyphs                    |            | F set              |          |
| F set                       |            | F setlist          |          |
| <b>subtypes</b>             | data table | F directions       |          |
| <b>tail</b>                 | function   | F fontchar         |          |
| <b>takeattr</b>             | function   | T frequencies      |          |
| <b>takebox</b>              | function   | F register         |          |
| <b>tasks</b>                | 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          |          |
| <b>tobasepoints</b>         | function   | F messages         |          |
| <b>tocentimeters</b>        | function   | F nofsteps         |          |
| <b>toxiceros</b>            | function   | F register         |          |
| <b>todidots</b>             | function   | F reset            |          |
| <b>todimen</b>              | function   | F start            |          |
| <b>toinches</b>             | function   | F stop             |          |
| <b>tomillimeters</b>        | function   | F stop             |          |
| <b>tonode</b>               | function   | T transparencies   |          |
| <b>tonodes</b>              | function   | F reset            |          |
| <b>tonut</b>                | function   | F set              |          |
| <b>topicas</b>              | function   | F setlist          |          |
| <b>topoints</b>             | function   | <b>traverse</b>    | function |
| <b>toscaledpoints</b>       | function   | <b>traverseid</b>  | function |
| <b>tosequence</b>           | function   | <b>typesetters</b> | table    |
| <b>tostring</b>             | function   | F hbox             |          |
| <b>totable</b>              | function   | F hpack            |          |

|                       |          |                     |            |
|-----------------------|----------|---------------------|------------|
| F tohbox              |          | N italic            |            |
| F tohpack             |          | N kern              |            |
| F tonodes             |          | N line              |            |
| F toinbox             |          | N marginkern        |            |
| F tohpack             |          | N mark              |            |
| F vpack               |          | N math              |            |
| <b>unsetattribute</b> | function | N mathglue          |            |
| <b>usedlist</b>       | function | N mathkern          |            |
| <b>vianodes</b>       | function | N origin            |            |
| <b>vianuts</b>        | function | N par               |            |
| <b>visualizebox</b>   | function | N penalty           |            |
| <b>visualizers</b>    | table    | N simple            |            |
| F attribute           |          | N simplehbox        |            |
| T attributes          |          | N simplevbox        |            |
| F box                 |          | N simplevtop        |            |
| F enable              |          | N space             |            |
| F getusedfont         |          | N strut             |            |
| F handler             |          | N user              |            |
| F markfonts           |          | N vbox              |            |
| T modes               |          | N vtop              |            |
| N boundary            |          | N whatsit           |            |
| N depth               |          | F register          |            |
| N dir                 |          | F setfont           |            |
| N discretionary       |          | F setlayer          |            |
| N expansion           |          | F setruledglyph     |            |
| N fontkern            |          | F setvisual         |            |
| N glue                |          | <b>vpack</b>        | function   |
| N glyph               |          | <b>whatsitcodes</b> | data table |
| N hbox                |          | <b>write</b>        | function   |
| N insert              |          |                     |            |

## number (context)

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

## objects (context)

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

# optional (context)

## **curl** table

F escape  
F fetch  
F getversion  
F initialize  
F unescape

## **foreign** table

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

## **ghostscript** table

F execute  
F initialize

## **graphicsmagick** table

F execute  
F initialize

## **hb** table

F getshapers  
F getversion  
F initialize  
F loadfont  
F shapestring

## **imagemagick** table

F execute  
F initialize

## **kpse** table

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

## **library** table

F load

## **loaded** table

## **lz4** table

F compress  
F decompresssize  
F framecompress  
F framedecompress  
F initialize

## **lzma** table

F compress  
F decompress  
F initialize

## **lzo** table

F compress  
F decompresssize  
F initialize

## **mujs** table

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

## **mysql** table

F close  
F execute  
F getmessage  
F initialize  
F open

## **postgres** table

F close  
F execute  
F getmessage  
F initialize  
F open

## **sqlite** table

F close

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

## os (basic lua)

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



## package (basic lua)

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

# pagebuilders (context)

## columnsets      table

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

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

## injections      table

- F flushafter
- F flushbefore
- F save

## mixedcolumns      table

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

## pdf (basic tex)

`immediateobj` function

## pdfc (extra tex)

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

# physics (context)

**units** table

F registershortcut

F registerunit

D tables

## pngdecode (extra tex)

**applyfilter**    function

**expand**        function

**interlace**     function

**splitmask**    function

**tocmyk**        function

**tomask**        function

# posit (extra lua)

|                |          |              |
|----------------|----------|--------------|
| <b>NaN</b>     | function | F bor        |
| <b>NaR</b>     | function | F bxor       |
| <b>__add</b>   | function | F ceil       |
| <b>__band</b>  | function | F conj       |
| <b>__bor</b>   | function | F copy       |
| <b>__bxor</b>  | function | F cos        |
| <b>__div</b>   | function | F exp        |
| <b>__eq</b>    | function | F exp2       |
| <b>__index</b> | table    | F floor      |
| F NaN          |          | F fromposit  |
| F NaR          |          | F integer    |
| F __add        |          | F log        |
| F __band       |          | F log10      |
| F __bor        |          | F log1p      |
| F __bxor       |          | F log2       |
| F __div        |          | F logb       |
| F __eq         |          | F max        |
| T __index      |          | F min        |
| F NaN          |          | F modf       |
| F NaR          |          | F new        |
| F __add        |          | F pow        |
| F __band       |          | F rotate     |
| F __bor        |          | F round      |
| F __bxor       |          | F rounded    |
| F __div        |          | F shift      |
| F __eq         |          | F sin        |
| F __le         |          | F sqrt       |
| F __lt         |          | F tan        |
| F __mul        |          | F tonumber   |
| S __name       |          | F toposit    |
| F __pow        |          | F tostring   |
| F __shl        |          | F __le       |
| F __shr        |          | F __lt       |
| F __sub        |          | F __mul      |
| F __tostring   |          | S __name     |
| F __unm        |          | F __pow      |
| F abs          |          | F __shl      |
| F acos         |          | F __shr      |
| F asin         |          | F __sub      |
| F atan         |          | F __tostring |
| F band         |          | F __unm      |

|               |          |                   |          |
|---------------|----------|-------------------|----------|
| F abs         |          | <b>__shl</b>      | function |
| F acos        |          | <b>__shr</b>      | function |
| F asin        |          | <b>__sub</b>      | function |
| F atan        |          | <b>__tostring</b> | function |
| F band        |          | <b>__unm</b>      | function |
| F bor         |          | <b>abs</b>        | function |
| F bxor        |          | <b>acos</b>       | function |
| F ceil        |          | <b>asin</b>       | function |
| F conj        |          | <b>atan</b>       | function |
| F copy        |          | <b>band</b>       | function |
| F cos         |          | <b>bor</b>        | function |
| F exp         |          | <b>bxor</b>       | function |
| F exp2        |          | <b>ceil</b>       | function |
| F floor       |          | <b>conj</b>       | function |
| F fromposit   |          | <b>copy</b>       | function |
| F integer     |          | <b>cos</b>        | function |
| F log         |          | <b>exp</b>        | function |
| F log10       |          | <b>exp2</b>       | function |
| F log1p       |          | <b>floor</b>      | function |
| F log2        |          | <b>fromposit</b>  | function |
| F logb        |          | <b>integer</b>    | function |
| F max         |          | <b>log</b>        | function |
| F min         |          | <b>log10</b>      | function |
| F modf        |          | <b>log1p</b>      | function |
| F new         |          | <b>log2</b>       | function |
| F pow         |          | <b>logb</b>       | function |
| F rotate      |          | <b>max</b>        | function |
| F round       |          | <b>min</b>        | function |
| F rounded     |          | <b>modf</b>       | function |
| F shift       |          | <b>new</b>        | function |
| F sin         |          | <b>pow</b>        | function |
| F sqrt        |          | <b>rotate</b>     | function |
| F tan         |          | <b>round</b>      | function |
| F tonumber    |          | <b>rounded</b>    | function |
| F toposit     |          | <b>shift</b>      | function |
| F tostring    |          | <b>sin</b>        | function |
| <b>__le</b>   | function | <b>sqrt</b>       | function |
| <b>__lt</b>   | function | <b>tan</b>        | function |
| <b>__mul</b>  | function | <b>tonumber</b>   | function |
| <b>__name</b> | string   | <b>toposit</b>    | function |
| <b>__pow</b>  | function | <b>tostring</b>   | function |



## potrace (context)

|                    |          |                  |          |
|--------------------|----------|------------------|----------|
| <b>concat</b>      | function | <b>new</b>       | function |
| <b>contourplot</b> | function | <b>process</b>   | function |
| <b>count</b>       | function | <b>setbitmap</b> | function |
| <b>flush</b>       | function | <b>stripped</b>  | function |
| <b>free</b>        | function | <b>totable</b>   | function |
| <b>getbitmap</b>   | function | <b>trace</b>     | function |

# publications (context)

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

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

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

|                           |          |                     |          |
|---------------------------|----------|---------------------|----------|
| N nofbytes                |          | F showdatasetfields |          |
| N nofdatasets             |          | F showentry         |          |
| N nofdefinitions          |          | F showfields        |          |
| N nofshortcuts            |          | F showhashedauthors |          |
| <b>tables</b>             | table    | F showtables        |          |
| D implicits               |          | F showvariants      |          |
| D origins                 |          | <b>typesetters</b>  | table    |
| D privates                |          | F author            |          |
| D sets                    |          | F string            |          |
| D specials                |          | <b>usedataset</b>   | function |
| D types                   |          | <b>usedentries</b>  | function |
| D virtuals                |          | <b>writers</b>      | table    |
| <b>tags</b>               | function | F author            |          |
| <b>tracers</b>            | table    | F keyword           |          |
| F showdatasetauthors      |          | F pagenumber        |          |
| F showdatasetcompleteness |          | F range             |          |

# regimes (context)

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

# resolvers (context)

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

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



|                      |            |                                 |          |
|----------------------|------------|---------------------------------|----------|
| <b>uselibrary</b>    | function   | <b>variable</b>                 | function |
| <b>usertypes</b>     | data table | <b>variableofformat</b>         | function |
| <b>usezipfile</b>    | function   | <b>variableofformatorsuffix</b> | function |
| <b>validatedpath</b> | function   | <b>wildcardpattern</b>          | function |

## sandbox (context)

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

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

# scripts (context)

**autofontfeature** table

F disable  
F enable  
F handler

**colors** data table

**decomposehangul** function

**defaults** table

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

**getdata** function

**getinjector** function

**getsplitter** function

**getstatus** function

**handlers** data table

**helpers** data table

**injectors** data table

**inserters** table

F nobreakspace\_after

F nobreakspace\_before

F space\_after

F space\_before

F zerowidthspace\_after

F zerowidthspace\_before

**installdataset** function

**installmethod** function

**numbertodataset** data table

**numbertohandler** data table

**reset** function

**set** function

**setstatus** function

**splitters** data table

## set (context)

**contains**    function

**create**     function

**tolist**     function

**tonumber**   function

**totable**    function

## sha2 (extra lua)

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

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

## sio (extra lua)

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

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

# socket (extra lua)

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

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

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



# sorters (context)

**basicsorter** function

**comparers** table

F basic

**constants** table

S defaultdigits

S defaultlanguage

S defaultmethod

N digitmaximum

N digitoffset

N ignoredoffset

N replacementoffset

T validmethods

B ch

B mc

B mm

B pc

B pm

B uc

B zc

B zm

**definitions** data table

**firstofsplit** function

**packch** function

**packuc** function

**replacementlist** function

**setlanguage** function

**sort** function

**splitters** table

F utf

**strip** function

**tracers** data table

**update** function

## sparse (context)

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

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

## statistics (context)

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

## status (basic tex)

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

## storage (context)

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

## streams (context)

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

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

## string (basic lua)

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

|                     |              |          |
|---------------------|--------------|----------|
| <b>utfcharacter</b> | <b>table</b> | function |
| <b>utflength</b>    |              | function |
| <b>utfpadd</b>      |              | function |
| <b>utfpadding</b>   |              | function |
| <b>utfvalue</b>     |              | function |
| <b>utfvalues</b>    |              | function |

|                     |              |          |
|---------------------|--------------|----------|
| <b>utfvalue</b>     | <b>table</b> | function |
| <b>valid</b>        |              | function |
| <b>voigt</b>        |              | function |
| <b>voigt_hwhm</b>   |              | function |
| <b>wordsplitter</b> |              | function |



# structures (context)

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

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

|                            |              |
|----------------------------|--------------|
| F prefixedpage             |              |
| F process                  |              |
| D pushed                   |              |
| F pushnesting              |              |
| F rawnumber                |              |
| F realpage                 |              |
| F reordered                |              |
| T result                   |              |
| F savedlistnumber          |              |
| F savedlistprefixednumber  |              |
| F savedlisttitle           |              |
| D sectionblocks            |              |
| F sectionnumber            |              |
| F size                     |              |
| F title                    |              |
| D tobesaved                |              |
| F use                      |              |
| F userdata                 |              |
| F uservalue                |              |
| <b>marks</b>               | <b>table</b> |
| F number                   |              |
| F title                    |              |
| <b>notes</b>               | <b>table</b> |
| F check_spacing            |              |
| F checkpagechange          |              |
| F define                   |              |
| F doifonsamepageasprevious |              |
| F get                      |              |
| F getdeltapage             |              |
| F getinternal              |              |
| F getn                     |              |
| F getstate                 |              |
| F hascontent               |              |
| F internal                 |              |
| F internalid               |              |
| F listindex                |              |
| D numbers                  |              |
| F ordered                  |              |
| F postpone                 |              |
| F resetpostponed           |              |
| F restore                  |              |
| F save                     |              |
| F setstate                 |              |
| D states                   |              |

|              |              |
|--------------|--------------|
| F store      |              |
| <b>pages</b> | <b>table</b> |
| F allmarked  |              |
| F analyze    |              |
| D collected  |              |
| F fraction   |              |
| F in_body    |              |
| F is_odd     |              |
| F mark       |              |
| F marked     |              |
| F markedlist |              |
| N nopages    |              |
| F number     |              |
| F on_right   |              |
| F save       |              |
| D tobesaved  |              |
| F toranges   |              |

|                     |              |
|---------------------|--------------|
| <b>references</b>   | <b>table</b> |
| F analyze           |              |
| F checked           |              |
| F checkedfile       |              |
| F checkedfileorurl  |              |
| F checkedprogram    |              |
| F checkedrealpage   |              |
| F checkedurl        |              |
| D collected         |              |
| U componentsplitter |              |
| F currentmetadata   |              |
| F currentorder      |              |
| D currentset        |              |
| F define            |              |
| D defined           |              |
| D derived           |              |
| F enhance           |              |
| D executers         |              |
| F export            |              |
| T files             |              |
| T data              |              |
| F define            |              |
| F found             |              |
| F get               |              |
| F filter            |              |
| F filterdefault     |              |
| D filters           |              |

|                                  |
|----------------------------------|
| D flaginternals                  |
| F from                           |
| D functions                      |
| F get                            |
| F getcurrentmetadata             |
| F getcurrentprefixspec           |
| F getinnermethod                 |
| F getinternalcachedlistreference |
| F getinternallistreference       |
| F getinternalreference           |
| F getoutermethod                 |
| D handlers                       |
| F identify                       |
| F import                         |
| F inject                         |
| F injectcurrentset               |
| S innermethod                    |
| F integrate                      |
| D internals                      |
| F load                           |
| F loadpresets                    |
| F mark                           |
| S outermethod                    |
| F pagefromhash                   |
| D pages                          |
| U prefixsplitter                 |
| D productdata                    |
| T programs                       |
| T data                           |
| F define                         |
| F get                            |
| F realpageofpage                 |
| U referencesplitter              |
| D referred                       |
| F referredpage                   |
| F registerfinalizer              |
| F registerinitializer            |
| F registerpage                   |
| F reset                          |
| D runners                        |
| F set                            |
| F setandgetattribute             |
| F setinternalreference           |
| F setlinkmethod                  |

- F setnextinternal
- F setnextorder
- F setreferencerealpage
- F setstructure
- D specials
- F splitcomponent
- F splitprefix
- F splitreference
- F synchronizepage
- T testrunners
  - F inner
  - F special
  - F special operation
  - F special operation with arguments

#### T testspecials

- F deltapage
- F i
- F internal
- F page
- F realpage
- F section
- F userpage

D tobereferred

D tobesaved

D tracedpages

#### T urls

- T data
- F define
- F found
- F get
- F untext

D usedinternals

D usedviews

F valid

## registers

table

- F analyze
- D collected
- F compare
- F define
- F enhance
- F extend
- F filter
- F filtercollected
- F finalize

- F findinternal
- F flush
- F get
- F integrate
- F prepare
- F process
- F setmethod
- F sort
- F store
- D tobesaved
- F tweak
- F unique
- F use
- F userdata

## sections

table

- F autodepth
- F cct
- D collected
- F current
- F currentblock
- F currentid
- F currentlevel
- F currentsectionindex
- F depthnumber
- F finddata
- F findnumber
- F fullnumber
- F getcurrentlevel
- F getlevel
- F getnumber
- F internalreference
- D levelmap
- D levels
- F matchingtilldepth
- F numberatdepth
- F numbers
- F popblock
- F prefixedconverted
- F pushblock
- F register
- D registered
- F reportstructure
- F save
- T sectionblockdata

- T bodypart
- S bookmark
- F set
- F setblock
- F setchecker
- F setentry
- F setinitialblock
- F setlevel
- F setnumber
- F showstructure
- F structuredata
- F title
- D tobesaved
- F typesetnumber
- F userdata
- B verbose

## sets table

- F define
- F get
- F getall
- D setlist

## specials table

- D collected
- F retrieve
- F store
- D tobesaved

## synonyms table

- F analyzed
- D collected
- F compare
- F define
- F enhance
- F filter
- F finalize
- F flush
- F isshown
- F isused
- F meaning
- F pages
- F prepare
- F process
- F register
- F registershown
- F registerused

- F reset
- F resetall
- F resetlist
- F resetshown
- F resetused
- F sort
- F synonym
- D tobesaved

## tags table

- T backend
- T checks
  - F marginanchor
  - F margintext
  - F math
  - F mrow
  - F mtable
- T destinationhash
- T extras
  - F adddestination
  - F addimplicit
  - F addinternal
  - F addreference
  - F combination
  - F delimitedsymbol
  - F description
  - F descriptionsymbol
  - F document
  - F float
  - F formulacontent
  - F image
  - F item
  - F itemgroup
  - F link
  - F listitem
  - F mi
  - F msub
  - F msup
  - F paragraph
  - F publication
  - F reference
  - F registerlocation
  - F registerpages
  - F registerseparator
  - F section

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

## table (basic lua)

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

# tex (basic tex)

|                           |            |                                   |            |
|---------------------------|------------|-----------------------------------|------------|
| <b>amcode</b>             | table      | <b>fitnesscodes</b>               | data table |
| <b>attribute</b>          | table      | <b>flagcodes</b>                  | data table |
| <b>automigrationcodes</b> | data table | <b>fontidentifier</b>             | function   |
| <b>badness</b>            | function   | <b>fontname</b>                   | function   |
| <b>boundaries</b>         | table      | <b>forcehmode</b>                 | function   |
| D names                   |            | <b>forceinputstatefile</b>        | function   |
| D numbers                 |            | <b>forceinputstateline</b>        | function   |
| F system                  |            | <b>fprint</b>                     | function   |
| <b>box</b>                | table      | <b>frozenparcodes</b>             | data table |
| <b>boxresources</b>       | table      | <b>get</b>                        | function   |
| F getbox                  |            | <b>getalignmentcontextvalues</b>  | function   |
| F getdimensions           |            | <b>getamcode</b>                  | function   |
| F save                    |            | <b>getappendlinecontextvalues</b> | function   |
| F use                     |            | <b>getattribute</b>               | function   |
| <b>breakcodes</b>         | data table | <b>getautomigrationvalues</b>     | function   |
| <b>buildcodes</b>         | data table | <b>getbox</b>                     | function   |
| <b>catcode</b>            | table      | <b>getboxdir</b>                  | function   |
| <b>chardef</b>            | function   | <b>getboxresourcebox</b>          | function   |
| <b>classoptioncodes</b>   | data table | <b>getboxresourcedimensions</b>   | function   |
| <b>codes</b>              | table      | <b>getbreakcontextvalues</b>      | function   |
| <b>conditionals</b>       | data table | <b>getbuildcontextvalues</b>      | function   |
| <b>constants</b>          | data table | <b>getcardinalvalue</b>           | function   |
| <b>count</b>              | table      | <b>getcatcode</b>                 | function   |
| <b>cprint</b>             | function   | <b>getcharacteritagvalues</b>     | function   |
| <b>ctdcatcodes</b>        | number     | <b>getcount</b>                   | function   |
| <b>ctxcatcodes</b>        | number     | <b>getdelcode</b>                 | function   |
| <b>definefont</b>         | function   | <b>getdelcodes</b>                | function   |
| <b>delcode</b>            | table      | <b>getdimen</b>                   | function   |
| <b>dimen</b>              | table      | <b>getdimensionvalue</b>          | function   |
| <b>dimensiondef</b>       | function   | <b>getdirectionvalues</b>         | function   |
| <b>directioncodes</b>     | data table | <b>getdiscoptionvalues</b>        | function   |
| <b>directives</b>         | data table | <b>getdiscstatevalues</b>         | function   |
| <b>discoptioncodes</b>    | data table | <b>geterrorvalues</b>             | function   |
| <b>dontcomplain</b>       | function   | <b>getfillvalues</b>              | function   |
| <b>enableprimitives</b>   | function   | <b>getfitnessvalues</b>           | function   |
| <b>error</b>              | function   | <b>getflagvalues</b>              | function   |
| <b>expandasvalue</b>      | function   | <b>getfloat</b>                   | function   |
| <b>experiments</b>        | data table | <b>getfontoffamily</b>            | function   |
| <b>extraprimitives</b>    | function   | <b>getfrozenparvalues</b>         | function   |
| <b>fatalerror</b>         | function   | <b>getglue</b>                    | function   |
| <b>fillcodes</b>          | data table | <b>getglueoptionvalues</b>        | function   |



|                                 |          |                                  |            |
|---------------------------------|----------|----------------------------------|------------|
| <b>getglyphdata</b>             | function | <b>getmathvariantvalues</b>      | function   |
| <b>getglyphoptionvalues</b>     | function | <b>getmode</b>                   | function   |
| <b>getglyphscales</b>           | function | <b>getmodevalues</b>             | function   |
| <b>getglyphscript</b>           | function | <b>getmuglue</b>                 | function   |
| <b>getglyphstate</b>            | function | <b>getmuskip</b>                 | function   |
| <b>getgroupvalues</b>           | function | <b>getnest</b>                   | function   |
| <b>gethccode</b>                | function | <b>getnestlevel</b>              | function   |
| <b>gethelptext</b>              | function | <b>getnoadoptionvalues</b>       | function   |
| <b>gethmcode</b>                | function | <b>getnormalizelinevalues</b>    | function   |
| <b>gethyphenationvalues</b>     | function | <b>getnormalizeparvalues</b>     | function   |
| <b>getinputstatefile</b>        | function | <b>getoutputactive</b>           | function   |
| <b>getinputstateline</b>        | function | <b>getpacktypevalues</b>         | function   |
| <b>getinputstatemode</b>        | function | <b>getpagecontextvalues</b>      | function   |
| <b>getinsertcontent</b>         | function | <b>getpagestate</b>              | function   |
| <b>getinsertdepth</b>           | function | <b>getparbeginvalues</b>         | function   |
| <b>getinsertdistance</b>        | function | <b>getparcontextvalues</b>       | function   |
| <b>getinsertheight</b>          | function | <b>getpardir</b>                 | function   |
| <b>getinsertlimit</b>           | function | <b>getparmodevalues</b>          | function   |
| <b>getinsertmultiplier</b>      | function | <b>getparpassclassvalues</b>     | function   |
| <b>getinsertwidth</b>           | function | <b>getparstate</b>               | function   |
| <b>getintegervalue</b>          | function | <b>getpenaltyoptionvalues</b>    | function   |
| <b>getinteraction</b>           | function | <b>getpositvalue</b>             | function   |
| <b>getiovalues</b>              | function | <b>getprimitiveorigins</b>       | function   |
| <b>getkerneloptionvalues</b>    | function | <b>getregisterindex</b>          | function   |
| <b>getlargestusedmark</b>       | function | <b>getrunstatevalues</b>         | function   |
| <b>getlccode</b>                | function | <b>getsfcode</b>                 | function   |
| <b>getlinedir</b>               | function | <b>getshapingpenaltiesvalues</b> | function   |
| <b>getlist</b>                  | function | <b>getskip</b>                   | function   |
| <b>getlistanchorvalues</b>      | function | <b>getspecialmathclassvalues</b> | function   |
| <b>getlistgeometryvalues</b>    | function | <b>gettextcontrolvalues</b>      | function   |
| <b>getlistsigvalues</b>         | function | <b>gettextdir</b>                | function   |
| <b>getlocalbox</b>              | function | <b>gettoks</b>                   | function   |
| <b>getlocallevel</b>            | function | <b>getuccode</b>                 | function   |
| <b>getmark</b>                  | function | <b>glue</b>                      | table      |
| <b>getmath</b>                  | function | <b>glueoptioncodes</b>           | data table |
| <b>getmathclassoptionvalues</b> | function | <b>glyphoptioncodes</b>          | data table |
| <b>getmathcode</b>              | function | <b>groupcodes</b>                | data table |
| <b>getmathcodes</b>             | function | <b>hashtokens</b>                | function   |
| <b>getmathcontrolvalues</b>     | function | <b>hccode</b>                    | table      |
| <b>getmathdir</b>               | function | <b>hmcode</b>                    | table      |
| <b>getmathoptionvalues</b>      | function | <b>hyphenationcodes</b>          | data table |
| <b>getmathparametervalue</b>    | function | <b>ifs</b>                       | data table |
| <b>getmathstylenamevalues</b>   | function | <b>inimatcodes</b>               | number     |
| <b>getmathstylevalues</b>       | function | <b>integerdef</b>                | function   |

|                             |            |                              |
|-----------------------------|------------|------------------------------|
| <b>isattribute</b>          | function   | N maxboxregisterindex        |
| <b>isbox</b>                | function   | N maxbytecodeindex           |
| <b>iscount</b>              | function   | N maxcalculatedbadness       |
| <b>isdefined</b>            | function   | N maxcardinal                |
| <b>isdimen</b>              | function   | N maxcategorycode            |
| <b>isfloat</b>              | function   | N maxcharactercode           |
| <b>isglue</b>               | function   | N maxdatavalue               |
| <b>ismuglue</b>             | function   | N maxdimen                   |
| <b>ismuskip</b>             | function   | N maxdimenregisterindex      |
| <b>isprintable</b>          | function   | N maxfloatregisterindex      |
| <b>isskip</b>               | function   | N maxfontadjustshrinkfactor  |
| <b>istoks</b>               | function   | N maxfontadjuststep          |
| <b>lastnodetype</b>         | function   | N maxfontadjuststretchfactor |
| <b>lccode</b>               | table      | N maxfunctionreference       |
| <b>linebreak</b>            | function   | N maxglueregisterindex       |
| <b>listanchorcodes</b>      | data table | N maxhalfvalue               |
| <b>lists</b>                | table      | N maxhalfword                |
| <b>listsigncodes</b>        | data table | N maxinteger                 |
| <b>luacatcodes</b>          | number     | N maxintregisterindex        |
| <b>magicconstants</b>       | table      | N maxlimitedscale            |
| N assumedmathcontrol        |            | N maxmarkindex               |
| N awfulbad                  |            | N maxmathclasscode           |
| N decentcriterion           |            | N maxmathfamilyindex         |
| N defaultcatcodetable       |            | N maxmathscalingfactor       |
| N defaultdeadcycles         |            | N maxmuglueregisterindex     |
| N defaulteqnogapstep        |            | N maxnewlinecharacter        |
| N defaultthangafter         |            | N maxnofbytecodes            |
| N defaultoutputbox          |            | N maxnofcatcodetables        |
| N defaultpredisplaygap      |            | N maxnoffonts                |
| N defaultrule               |            | N maxnoflanguages            |
| N defaultspacefactor        |            | N maxnofmarks                |
| N defaulttolerance          |            | N maxnofmathfamilies         |
| N deplorable                |            | N maxquarterword             |
| N ejectpenalty              |            | N maxsizeofword              |
| N ignoredepth               |            | N maxspacefactor             |
| N infinitebad               |            | N maxtoksregisterindex       |
| N infinitepenalty           |            | N mincardinal                |
| N infinity                  |            | N mindatavalue               |
| N largewidthexcess          |            | N mindimen                   |
| N loosecriterion            |            | N minhalfword                |
| N mathbeginclass            |            | N mininfinity                |
| N mathdefaultpenalty        |            | N mininteger                 |
| N mathendclass              |            | N minquarterword             |
| N maxattributeregisterindex |            | N minspacefactor             |

|                          |            |                   |          |
|--------------------------|------------|-------------------|----------|
| N nocatcodetable         |            | poplocal          | function |
| N null                   |            | popsavelevel      | function |
| N nullflag               |            | posit             | table    |
| N nullfont               |            | positdef          | function |
| N onebp                  |            | preparelinebreak  | function |
| N presetrulethickness    |            | primitives        | function |
| N runningrule            |            | print             | function |
| N smallstretchability    |            | prtcatcodes       | number   |
| N texeqtbsize            |            | pushlocal         | function |
| N texhashprime           |            | pushsavelevel     | function |
| N texhashsize            |            | quitlocal         | function |
| N two                    |            | quittoks          | function |
| N undefinedmathparameter |            | resetparagraph    | function |
| N unity                  |            | rlncatcodes       | number   |
| N unusedattributevalue   |            | romannumeral      | function |
| N unusedmathfamily       |            | round             | function |
| N unusedmathstyle        |            | runlocal          | function |
| N unusedscriptvalue      |            | runstring         | function |
| N unusedstatevalue       |            | runtoks           | function |
| N zeroglue               |            | saveboxresource   | function |
| mathchardef              | function   | scale             | function |
| mathcode                 | table      | scantoks          | function |
| mathcontrolcodes         | data table | set               | function |
| mathoptioncodes          | data table | setamcode         | function |
| mathparametercodes       | data table | setattribute      | function |
| modelevels               | table      | setbox            | function |
| N horizontal             |            | setboxdir         | function |
| N math                   |            | setcardinalvalue  | function |
| N unset                  |            | setcatcode        | function |
| N vertical               |            | setcount          | function |
| modes                    | data table | setdelcode        | function |
| mprint                   | function   | setdimen          | function |
| muglue                   | table      | setdimensionvalue | function |
| muskip                   | table      | setfloat          | function |
| nest                     | table      | setglue           | function |
| nilcatcodes              | number     | setglyphdata      | function |
| noadoptoptioncodes       | data table | setglyphscript    | function |
| normalizelinecodes       | data table | setglyphstate     | function |
| normalizeparcodes        | data table | sethccode         | function |
| notcatcodes              | number     | sethmcode         | function |
| number                   | function   | setinputstatefile | function |
| parcontextcodes          | data table | setinputstateline | function |
| parpassclasscodes        | data table | setinputstatemode | function |
| penaltyoptioncodes       | data table | setinsertcontent  | function |

|                            |                     |                              |            |
|----------------------------|---------------------|------------------------------|------------|
| <b>setinsertdistance</b>   | function            | <b>skip</b>                  | table      |
| <b>setinsertlimit</b>      | function            | <b>snapshotpar</b>           | function   |
| <b>setinsertmultiplier</b> | function            | <b>sp</b>                    | function   |
| <b>setintegervalue</b>     | function            | <b>specialmathclasscodes</b> | data table |
| <b>setinteraction</b>      | function            | <b>splitbox</b>              | function   |
| <b>setlcode</b>            | function            | <b>sprint</b>                | function   |
| <b>setlinedir</b>          | function            | <b>stringtocodesbitmap</b>   | function   |
| <b>setlist</b>             | function            | <b>systemmodes</b>           | data table |
| <b>setlocalbox</b>         | function            | <b>takebox</b>               | function   |
| <b>setmath</b>             | function            | <b>texcatcodes</b>           | number     |
| <b>setmathcode</b>         | function            | <b>textcontrolcodes</b>      | data table |
| <b>setmathdir</b>          | function            | <b>toks</b>                  | table      |
| <b>setmuglue</b>           | function            | <b>tonumber</b>              | function   |
| <b>setmuskip</b>           | function            | <b>toscaled</b>              | function   |
| <b>setnest</b>             | function            | <b>tpacatcodes</b>           | number     |
| <b>setpardir</b>           | function            | <b>tpbcacodes</b>            | number     |
| <b>setpositvalue</b>       | function            | <b>tprint</b>                | function   |
| <b>setrunstate</b>         | overloaded function | <b>trackers</b>              | data table |
| <b>setsfcode</b>           | function            | <b>triggerbuildpage</b>      | function   |
| <b>setskip</b>             | function            | <b>txtcatcodes</b>           | number     |
| <b>settextrdir</b>         | function            | <b>type</b>                  | function   |
| <b>settoks</b>             | function            | <b>uccode</b>                | table      |
| <b>setuccode</b>           | function            | <b>uprint</b>                | function   |
| <b>sfcode</b>              | table               | <b>useboxresource</b>        | function   |
| <b>shiftparshape</b>       | function            | <b>vrbcacodes</b>            | number     |
| <b>shipout</b>             | function            | <b>write</b>                 | function   |
| <b>showcontext</b>         | function            |                              |            |

# texconfig (basic tex)

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

## texio (basic tex)

|                          |          |
|--------------------------|----------|
| <b>closeinput</b>        | function |
| <b>forceendoffile</b>    | function |
| <b>getinputindex</b>     | function |
| <b>getsourcefilename</b> | function |
| <b>setlogfile</b>        | function |
| <b>terminal</b>          | function |

|                        |          |
|------------------------|----------|
| <b>write</b>           | function |
| <b>write_nl</b>        | function |
| <b>writeln</b>         | function |
| <b>writeselector</b>   | function |
| <b>writeselectorlf</b> | function |
| <b>writeselectornl</b> | function |

## token (basic tex)

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

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



|                     |          |                           |          |
|---------------------|----------|---------------------------|----------|
| <b>set_macro</b>    | function | <b>skip_next_expanded</b> | function |
| <b>setchar</b>      | function | <b>skipnext</b>           | function |
| <b>setdimension</b> | function | <b>skipnextexpanded</b>   | function |
| <b>setinteger</b>   | function | <b>type</b>               | function |
| <b>setlua</b>       | function | <b>undefine_macro</b>     | function |
| <b>setmacro</b>     | function | <b>undefinemacro</b>      | function |
| <b>skip_next</b>    | function |                           |          |

# tokens (context)

|                  |          |                   |                           |
|------------------|----------|-------------------|---------------------------|
| <b>accessors</b> | table    |                   | U color                   |
| F active         |          |                   | U colordefalc             |
| F cmd            |          |                   | U colordefflc             |
| F cmdchrsc       |          |                   | U colordefflt             |
| F cmdname        |          |                   | U colordefrlt             |
| F command        |          |                   | U dofinishreference       |
| F csname         |          |                   | U dostarttext             |
| F expandable     |          |                   | U finishjob               |
| F frozen         |          |                   | U firstofoneargument      |
| F index          |          |                   | U firstoftwoarguments     |
| F name           |          |                   | U gobbleoneargument       |
| F protected      |          |                   | U goto                    |
| F range          |          |                   | U iftrue                  |
| <b>astable</b>   | function |                   | U input                   |
| <b>bits</b>      | table    |                   | U loadfoundtypescriptfile |
| N active         |          |                   | U rlap                    |
| N alignment      |          |                   | U secondoftwoarguments    |
| N begingroup     |          |                   | U setfalsevalue           |
| N character      |          |                   | U setsectionblock         |
| N close          |          |                   | U setupsystem             |
| N comment        |          |                   | U startcolumns            |
| N endgroup       |          |                   | U starttabulate           |
| N endofline      |          |                   | U starttitle              |
| N escape         |          |                   | U startxtitle             |
| N ignore         |          |                   | U stopcolumns             |
| N invalid        |          |                   | U stoptabulate            |
| N letter         |          |                   | U stoptitle               |
| N mathshift      |          |                   | U stopxtitle              |
| N open           |          |                   | U texsetup                |
| N other          |          |                   | U xmlw                    |
| N parameter      |          | <b>commands</b>   | data table                |
| N space          |          | <b>compile</b>    | function                  |
| N subscript      |          | <b>constant</b>   | function                  |
| N superscript    |          | <b>converters</b> | table                     |
| N whitespace     |          | S toboolean       |                           |
| <b>cache</b>     | table    | S todimen         |                           |
| U NC             |          | S toglue          |                           |
| U NR             |          | S tonumber        |                           |
| U bf             |          | S tostring        |                           |
| U buff_finish    |          | <b>create</b>     | function                  |
| U c_font_compact |          | <b>defined</b>    | function                  |

**flags** function  
**getinteger** function  
**getters** table  
**gobble** function  
**isdefined** function  
**istoken** function  
**new** function  
**pickup** function  
**popmacro** function  
**presets** table

F box  
 F count  
 F ctoken  
 F dimen  
 F glue  
 F macro  
 F meaning  
 F skip  
 F token

T 1 argument  
 T 1 integer  
 T 1 optional  
 T 1 string  
 T 2 arguments  
 T 2 integers  
 T 2 optionals  
 T 2 strings  
 T 3 arguments  
 T 3 integers  
 T 3 optionals  
 T 3 strings  
 T 4 arguments  
 T 4 integers  
 T 4 optionals  
 T 4 strings  
 T 5 strings  
 T 6 strings  
 T 7 strings  
 T 8 strings

**pushmacro** function  
**scanners** table

F argument  
 F argumentasis  
 F array

F boolean  
 F box  
 F bracketed  
 F bracketedasis  
 F cardinal  
 F char  
 F cmdchr  
 F cmdchrexploded  
 F code  
 F conditional  
 F count  
 F csname  
 F csnameunchecked  
 F delimited  
 F detokened  
 F dimen  
 F dimenargument  
 F dimension  
 F float  
 F glue  
 F gluespec  
 F gluevalues  
 F hash  
 F hbox  
 F integer  
 F integerargument  
 F ischar  
 F key  
 F keyword  
 F keywordcs  
 F letters  
 F list  
 F luacardinal  
 F luainteger  
 F luanumber  
 F lxmld  
 F next  
 F nextchar  
 F nextexpanded  
 F number  
 F optional  
 F peek  
 F peekchar  
 F peekexpanded

F posit  
F real  
F scanclose  
F scanopen  
F skip  
F skipexpanded  
F string  
F table  
F token  
F tokencode  
F tokenlist  
F tokens  
F toks  
F value  
F vbox  
F verbatim  
F vtop  
F whd  
F word

**setinteger** function

**setters** table

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

**shortcuts** table

T bits  
N active  
N alignment  
N begingroup  
N character  
N close  
N comment  
N endgroup  
N endoffline  
N escape  
N ignore  
N invalid  
N letter  
N mathshift

N open  
N other  
N parameter  
N space  
N subscript  
N superscript  
N whitespace  
N close  
F inspect  
N open  
F report  
F scanargument  
F scanargumentasis  
F scanarray  
F scanboolean  
F scanbox  
F scanbracketed  
F scanbracketedasis  
F scancardinal  
F scanclose  
F scancode  
F scanconditional  
F scancsname  
F scancsnameunchecked  
F scandelimited  
F scandetokened  
F scandimen  
F scandimenargument  
F scandimension  
F scanfloat  
F scanglue  
F scangluespec  
F scangluevalues  
F scanhash  
F scanhbox  
F scaninteger  
F scanintegerargument  
F scankeyword  
F scankeyworddcs  
F scanletters  
F scanlist  
T scanners  
F argument  
F argumentasis

|                   |                 |
|-------------------|-----------------|
| F array           | F peekexpanded  |
| F boolean         | F posit         |
| F box             | F real          |
| F bracketed       | F scanclose     |
| F bracketedasis   | F scanopen      |
| F cardinal        | F skip          |
| F char            | F skipexpanded  |
| F cmdchr          | F string        |
| F cmdchrexploded  | F table         |
| F code            | F token         |
| F conditional     | F tokencode     |
| F count           | F tokenlist     |
| F csname          | F tokens        |
| F csnameunchecked | F toks          |
| F delimited       | F value         |
| F detokened       | F vbox          |
| F dimen           | F verbatim      |
| F dimenargument   | F vtop          |
| F dimension       | F whd           |
| F float           | F word          |
| F glue            | F scannumber    |
| F gluespec        | F scanopen      |
| F gluevalues      | F scanoptional  |
| F hash            | F scanstring    |
| F hbox            | F scantable     |
| F integer         | F scantokenlist |
| F integerargument | F scantoks      |
| F ischar          | F scanvbox      |
| F key             | F scanverbatim  |
| F keyword         | F scanvtop      |
| F keywordcs       | F scanword      |
| F letters         | F toboolean     |
| F list            | F todimen       |
| F luacardinal     | T tokens        |
| F luainteger      | T accessors     |
| F luanumber       | F active        |
| F lxmlid          | F cmd           |
| F next            | F cmdchr        |
| F nextchar        | F cmdname       |
| F nextexpanded    | F command       |
| F number          | F csname        |
| F optional        | F expandable    |
| F peek            | F frozen        |
| F peekchar        | F index         |

|                           |                    |
|---------------------------|--------------------|
| F name                    | S toboolean        |
| F protected               | S todimen          |
| F range                   | S toglue           |
| F astable                 | S tonumber         |
| T cache                   | S toString         |
| U NC                      | F create           |
| U NR                      | F defined          |
| U bf                      | F flags            |
| U buff_finish             | F getinteger       |
| U c_font_compact          | T getters          |
| U color                   | F box              |
| U colordefalc             | F count            |
| U colordefflc             | F cstoken          |
| U colordefflt             | F dimen            |
| U colordefrlt             | F glue             |
| U dofinishreference       | F macro            |
| U dostarttext             | F meaning          |
| U finishjob               | F skip             |
| U firstofoneargument      | F token            |
| U firstoftwoarguments     | F gobble           |
| U gobbleoneargument       | F isdefined        |
| U goto                    | F istoken          |
| U iftrue                  | F new              |
| U input                   | F pickup           |
| U loadfoundtypescriptfile | F popmacro         |
| U rlap                    | T presets          |
| U secondoftwoarguments    | F pushmacro        |
| U setfalsevalue           | F setinteger       |
| U setsectionblock         | T setters          |
| U setupsystem             | F box              |
| U startcolumns            | F char             |
| U starttabulate           | F count            |
| U starttitle              | F dimen            |
| U startxtitle             | F glue             |
| U stopcolumns             | F lua              |
| U stoptabulate            | F macro            |
| U stoptitle               | F skip             |
| U stopxtitle              | T shortcuts        |
| U texsetup                | N close            |
| U xmlw                    | F inspect          |
| D commands                | N open             |
| F compile                 | F report           |
| F constant                | F scanargument     |
| T converters              | F scanargumentasis |

F scanarray  
F scanboolean  
F scanbox  
F scanbracketed  
F scanbracketedasis  
F scancardinal  
F scanclose  
F scancode  
F scanconditional  
F scancsname  
F scancsnameunchecked  
F scandelimited  
F scandetokened  
F scandimen  
F scandimenargument  
F scandimension  
F scanfloat  
F scanglue  
F scangluespec  
F scangluevalues  
F scanhash  
F scanhbox  
F scaninteger  
F scanintegerargument

F scankeyword  
F scankeywordcs  
F scanletters  
F scanlist  
F scannumber  
F scanopen  
F scanoptional  
F scanstring  
F scantable  
F scantokenlist  
F scantoks  
F scanvbox  
F scanverbatim  
F scanvtop  
F scanword  
F toboolean  
F todimen  
F tonumber  
F tostring

D values

F tonumber

F tostring

**values**      data table

## tracers (context)

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

**showlines**    function



## trackers (context)

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

# typesetters (context)

|                       |       |                   |                  |
|-----------------------|-------|-------------------|------------------|
| <b>alignments</b>     | table |                   | T handlers       |
| <b>breakpoints</b>    | table |                   | F installhandler |
|                       |       |                   | F set            |
|                       |       |                   | F setcolor       |
|                       |       |                   | F tomode         |
|                       |       | <b>firstlines</b> | table            |
|                       |       |                   | T actions        |
|                       |       |                   | F default        |
|                       |       |                   | F line           |
|                       |       |                   | F word           |
|                       |       |                   | F handler        |
|                       |       |                   | F set            |
| <b>cases</b>          | table | <b>fontkerns</b>  | table            |
|                       |       |                   | F handler        |
|                       |       | <b>initials</b>   | table            |
|                       |       |                   | T actions        |
|                       |       |                   | F default        |
|                       |       |                   | F handler        |
|                       |       |                   | F set            |
| <b>characteralign</b> | table | <b>injectors</b>  | table            |
|                       |       |                   | F check          |
|                       |       |                   | T list           |
|                       |       |                   | F mark           |
|                       |       |                   | F reset          |
|                       |       |                   | F set            |
|                       |       |                   | F show           |
| <b>characters</b>     | table | <b>italics</b>    | table            |
|                       |       |                   | F enablemath     |
|                       |       |                   | F enabletext     |
|                       |       |                   | F forcevariant   |
|                       |       |                   | F handler        |
|                       |       |                   | F reset          |
|                       |       |                   | F set            |
| <b>checkers</b>       | table | <b>kerns</b>      | table            |
|                       |       |                   | D factors        |
|                       |       |                   | F handler        |
|                       |       |                   | F keepligature   |
|                       |       |                   | D mapping        |
|                       |       |                   | F set            |
| <b>cleaners</b>       | table | <b>localboxes</b> | table            |
|                       |       |                   | F handler        |
|                       |       |                   |                  |
| <b>digits</b>         | table |                   |                  |
|                       |       |                   |                  |
|                       |       |                   |                  |
| <b>directions</b>     | table |                   |                  |
|                       |       |                   |                  |
|                       |       |                   |                  |
|                       |       |                   |                  |
|                       |       |                   |                  |

## **manipulators**      table

F apply  
F applyspecification  
T methods  
  F Word  
  F Words  
  F abbreviatedjournal  
  F expandedjournal  
  F lowercase  
  F stripperperiod  
  F uppercase  
T patterns  
  U list  
  U pair  
F splitspecification

## **margins**            table

F finalhandler  
F globalhandler  
F localhandler  
F save

## **marksuspects**      function

## **paragraphs**        table

F addanchortoline  
F addtoline  
F calculatedelta  
F checkline  
F moveinline

## **periodkerns**        table

D factors  
F handler  
D mapping  
F set

## **processors**         table

F apply  
F register  
F reset  
F split  
F startapply  
F stopapply

F stripped

F tostring

## **rubies**             table

F attach  
F check

## **showsuspects**      function

## **spacings**            table

F define  
F handler  
D mapping  
T numbers  
  T frenchpunctuation  
  T characters  
  S name  
  N number

F reset

F set

F setup

## **synchronize**        table

F handler

## **tighten**             table

F handler

## **wrappers**            table

## **xtables**             table

F cleanup  
F construct  
F create  
F finish\_row  
F flush  
F initialize\_construct  
F initialize\_reflow\_height  
F initialize\_reflow\_width  
F next\_row  
F reflow\_height  
F reflow\_width  
F set\_construct  
F set\_reflow\_height  
F set\_reflow\_width

## updaters (context)

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

## url (context)

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

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

## utf8 (basic lua)

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

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

# utilities (context)

## **debugger**            table

F disable  
F enable  
F savestats  
F showstats  
F showtraceback

## **files**                table

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

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

## **formatters**           table

F formatcolumns  
F list  
F stripzeros

## **ghostscript**           table

F convert  
F statistics

## **graphicmagick**        table

F convert  
F statistics

## **graphicsmagick**      table

F convert  
F statistics

## **lua**                    table

|                |                        |   |   |
|----------------|------------------------|---|---|
| B              | alwaysstripcode        | B | broad                                     |
| F              | checkmemory            | B | fit                                       |
| F              | compile                | B | max                                       |
| F              | loadedluacode          | B | min                                       |
| F              | loadstring             | T | text,hidden,paper,page,leftpage,rightpage |
| F              | loadstripped           | B | hidden                                    |
| N              | nofstrippedbytes       | B | leftpage                                  |
| N              | nofstrippedchunks      | B | page                                      |
| F              | registerfinalizer      | B | paper                                     |
| B              | stripcode              | B | rightpage                                 |
| T              | strippedchunks         | B | text                                      |
| F              | strippedloadstring     | F | iterator                                  |
| T              | suffixes               | F | keq_to_hash                               |
| S              | lua                    | F | listitem                                  |
| S              | luc                    | F | make_settings_to_hash_pattern             |
| S              | lui                    | F | mergehashes                               |
| S              | luj                    | F | options_to_array                          |
| S              | luv                    | F | options_to_hash                           |
| S              | tma                    | T | patterns                                  |
| S              | tmc                    | U | settings_to_array                         |
| S              | tua                    | U | settings_to_hash_a                        |
| S              | tuc                    | U | settings_to_hash_b                        |
| <b>packers</b> | <b>table</b>           | U | settings_to_hash_c                        |
| F              | hashed                 | U | settings_to_hash_d                        |
| F              | new                    | U | unittotex                                 |
| F              | pack                   | F | process_stripped_settings                 |
| F              | simplehashed           | F | rfc4180splitter                           |
| F              | strip                  | F | runtime                                   |
| F              | unpack                 | F | settings_to_array                         |
| N              | version                | F | settings_to_array_obey_fences             |
| <b>parsers</b> | <b>table</b>           | F | settings_to_array_with_repeat             |
| F              | add_settings_to_array  | F | settings_to_hash                          |
| F              | arguments_to_table     | F | settings_to_hash_colon_too                |
| F              | array_to_string        | F | settings_to_hash_strict                   |
| F              | csvsplitter            | F | settings_to_hash_tolerant                 |
| F              | getparameters          | F | settings_to_numbers                       |
| F              | groupedsplitat         | F | settings_to_set                           |
| F              | hash_to_string         | F | simple_hash_to_string                     |
| T              | hashes                 | F | splitmethod                               |
| T              | settings_to_list       | F | splitthousands                            |
| T              | tablet                 | F | stepper                                   |
| T              | settings_to_set        | F | stripped_settings_to_array                |
| T              | min,max,fit,broad,auto | F | totime                                    |
| B              | auto                   | F | unittotex                                 |



F unittoxml

**randomizer**            table

F get

F getnumber

F getrepeatable

F getrepeatableseed

F getseed

F newrepeatable

F popseed

F pushseed

F repeatable

F reuseseed

F setseed

F setseedi

**randomizers**           table

F poisson

**sequencers**           table

F appendaction

F appendgroup

F compile

F disableaction

F disablegroup

F enableaction

F enablegroup

D functions

F localize

F new

F nodeprocessor

F prependaction

F prependgroup

F removeaction

F replaceaction

F setkind

F tostring

**setters**                table

F disable

F enable

F initialize

F list

F new

F register

F report

F reset

F show

**stacker**                table

F new

**storage**                table

F allocate

F checked

F mark

F marked

F setinitializer

F sparse

**streams**                table

F close

F getposition

F getsizes

F getstring

F look

F open

F openstring

F read2dot14

F readbyte

F readbytes

F readbytetable

F readcardinal

F readcardinal1

F readcardinal1le

F readcardinal2

F readcardinal2le

F readcardinal3

F readcardinal3le

F readcardinal4

F readcardinal4le

F readcardinaltable

F readchar

F readcline

F readcstring

F readfixed2

F readfixed4

F readinteger

F readinteger1

F readinteger1le

F readinteger2

F readinteger2le

F readinteger3

F readinteger3le

F readinteger4

|                       |              |                     |              |
|-----------------------|--------------|---------------------|--------------|
| F readinteger4le      |              | F definetable       |              |
| F readintegertable    |              | F encapsulate       |              |
| F readsignedbyte      |              | F insertaftervalue  |              |
| F readstring          |              | F insertbeforevalue |              |
| F setposition         |              | F migratetable      |              |
| F size                |              | F removevalue       |              |
| F skip                |              | F replacevalue      |              |
| F skipbytes           |              | <b>tar</b>          | <b>table</b> |
| F skiplong            |              | T archives          |              |
| F skipshort           |              | F closearchive      |              |
| F tocardinal1         |              | T files             |              |
| F tocardinal1le       |              | F fetch             |              |
| F tocardinal2         |              | F hash              |              |
| F tocardinal2le       |              | F list              |              |
| F tocardinal3         |              | F pack              |              |
| F tocardinal3le       |              | F unpack            |              |
| F tocardinal4         |              | F openarchive       |              |
| F tocardinal4le       |              | T registeredfiles   |              |
| <b>strings</b>        | <b>table</b> | T streams           |              |
| F collapse            |              | F fetch             |              |
| F collapseCrLf        |              | F hash              |              |
| T formatters          |              | F list              |              |
| F add                 |              | F pack              |              |
| F new                 |              | F unpack            |              |
| F newcollector        |              | T strings           |              |
| F newrepeater         |              | F fetch             |              |
| F nice                |              | F hash              |              |
| T striplinepatterns   |              | F list              |              |
| U collapse            |              | F pack              |              |
| U collapse all        |              | F unpack            |              |
| U prune               |              | <b>templates</b>    | <b>table</b> |
| U prune and collapse  |              | F load              |              |
| U prune and no empty  |              | F replace           |              |
| U prune and to space  |              | F replacer          |              |
| U retain              |              | F resolve           |              |
| U retain and collapse |              | <b>zipfiles</b>     | <b>table</b> |
| U retain and no empty |              | F close             |              |
| F striplines          |              | F found             |              |
| F striplong           |              | F hash              |              |
| F tabtospace          |              | F list              |              |
| T tracers             |              | F open              |              |
| <b>tables</b>         | <b>table</b> | F unzip             |              |
| F accesstable         |              | F unzipdir          |              |
| F definedtable        |              | F zipdir            |              |

## visualizers (context)

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

# xcomplex (extra lua)

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

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

## xdecimal (extra lua)

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

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

## xmath (extra lua)

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



# xml (context)

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

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

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

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

## xzip (extra lua)

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

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

## zip (extra lua)

**archives**

table

**closearchive**

function

**openarchive**

function

**registeredfiles**

table

## zlib (extra lua)

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

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