

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

# ConTEXt MkIV

# global (alias: \_G)

|                       |          |                            |          |
|-----------------------|----------|----------------------------|----------|
| <b>LUATEXVERSION</b>  | number   | <b>floats</b>              | table    |
| <b>MP</b>             | table    | <b>font</b>                | table    |
| <b>_LUAVERSION</b>    | number   | <b>fontloader</b>          | table    |
| <b>_MAJORVERSION</b>  | number   | <b>fonts</b>               | table    |
| <b>_MINORVERSION</b>  | number   | <b>frozen</b>              | boolean  |
| <b>arg</b>            | table    | <b>functions</b>           | table    |
| <b>assert</b>         | function | <b>getmetatable</b>        | function |
| <b>attributes</b>     | table    | <b>getpos</b>              | function |
| <b>backends</b>       | table    | <b>getvpos</b>             | function |
| <b>bit32</b>          | table    | <b>global</b>              | table    |
| <b>blobs</b>          | table    | <b>graphics</b>            | table    |
| <b>boolean</b>        | table    | <b>gregorian_to_jalali</b> | function |
| <b>buffers</b>        | table    | <b>gzip</b>                | table    |
| <b>builders</b>       | table    | <b>img</b>                 | table    |
| <b>caches</b>         | table    | <b>inspect</b>             | function |
| <b>callback</b>       | table    | <b>interactions</b>        | table    |
| <b>callbacks</b>      | table    | <b>interfaces</b>          | table    |
| <b>catcodes</b>       | table    | <b>io</b>                  | table    |
| <b>characters</b>     | table    | <b>ipairs</b>              | function |
| <b>chemistry</b>      | table    | <b>jalali_to_gregorian</b> | function |
| <b>collectgarbage</b> | function | <b>job</b>                 | table    |
| <b>commands</b>       | table    | <b>lang</b>                | table    |
| <b>containers</b>     | table    | <b>languages</b>           | table    |
| <b>context</b>        | function | <b>last</b>                | number   |
| <b>converters</b>     | table    | <b>layouts</b>             | table    |
| <b>coroutine</b>      | table    | <b>lfs</b>                 | table    |
| <b>ctxrunner</b>      | table    | <b>libraries</b>           | table    |
| <b>debug</b>          | table    | <b>lmx</b>                 | table    |
| <b>dimen</b>          | function | <b>load</b>                | function |
| <b>dir</b>            | table    | <b>loadfile</b>            | function |
| <b>directives</b>     | table    | <b>loadstring</b>          | function |
| <b>document</b>       | table    | <b>logs</b>                | table    |
| <b>documentdata</b>   | table    | <b>lpdf</b>                | table    |
| <b>dofile</b>         | function | <b>lpeg</b>                | table    |
| <b>done</b>           | boolean  | <b>ltn12</b>               | table    |
| <b>environment</b>    | table    | <b>lua</b>                 | table    |
| <b>epdf</b>           | table    | <b>luatex</b>              | table    |
| <b>error</b>          | function | <b>lxml</b>                | table    |
| <b>experiments</b>    | table    | <b>math</b>                | table    |
| <b>figures</b>        | table    | <b>mathematics</b>         | table    |
| <b>file</b>           | table    | <b>mbox</b>                | table    |

|                        |          |                        |            |
|------------------------|----------|------------------------|------------|
| <b>md5</b>             | table    | <b>setmetatable</b>    | function   |
| <b>metapost</b>        | table    | <b>socket</b>          | table      |
| <b>mime</b>            | table    | <b>sorters</b>         | table      |
| <b>module</b>          | function | <b>statistics</b>      | table      |
| <b>moduledata</b>      | table    | <b>status</b>          | table      |
| <b>modules</b>         | table    | <b>storage</b>         | table      |
| <b>mp</b>              | function | <b>streams</b>         | table      |
| <b>mplib</b>           | table    | <b>string</b>          | table      |
| <b>next</b>            | function | <b>structures</b>      | table      |
| <b>noads</b>           | table    | <b>swiglib</b>         | function   |
| <b>node</b>            | table    | <b>table</b>           | table      |
| <b>nodes</b>           | table    | <b>tex</b>             | table      |
| <b>number</b>          | table    | <b>texconditionals</b> | data table |
| <b>objects</b>         | table    | <b>texconfig</b>       | table      |
| <b>optionalrequire</b> | function | <b>texconstants</b>    | data table |
| <b>os</b>              | table    | <b>texifs</b>          | data table |
| <b>package</b>         | table    | <b>texio</b>           | table      |
| <b>pagebuilders</b>    | table    | <b>texisdefined</b>    | function   |
| <b>pairs</b>           | function | <b>texmodes</b>        | data table |
| <b>parametersets</b>   | table    | <b>texsystemmodes</b>  | data table |
| <b>pcall</b>           | function | <b>thirddata</b>       | table      |
| <b>pdf</b>             | table    | <b>toboolean</b>       | function   |
| <b>pdfboolean</b>      | function | <b>tokens</b>          | table      |
| <b>pdfnull</b>         | function | <b>tonumber</b>        | function   |
| <b>pdfreference</b>    | function | <b>tostring</b>        | function   |
| <b>pdfscanner</b>      | table    | <b>tracers</b>         | table      |
| <b>pdfverbose</b>      | function | <b>trackers</b>        | table      |
| <b>physics</b>         | table    | <b>type</b>            | function   |
| <b>print</b>           | function | <b>typesetters</b>     | table      |
| <b>profiler</b>        | table    | <b>unicode</b>         | table      |
| <b>publications</b>    | table    | <b>unpack</b>          | function   |
| <b>rawequal</b>        | function | <b>url</b>             | table      |
| <b>rawget</b>          | function | <b>userdata</b>        | table      |
| <b>rawlen</b>          | function | <b>utf</b>             | table      |
| <b>rawset</b>          | function | <b>utilities</b>       | table      |
| <b>regimes</b>         | table    | <b>v</b>               | number     |
| <b>require</b>         | function | <b>vf</b>              | table      |
| <b>resolvers</b>       | table    | <b>visualizers</b>     | table      |
| <b>sandbox</b>         | table    | <b>xml</b>             | table      |
| <b>scripts</b>         | table    | <b>xpcall</b>          | function   |
| <b>select</b>          | function | <b>zip</b>             | table      |
| <b>set</b>             | table    | <b>zlib</b>            | table      |
| <b>setinspector</b>    | function |                        |            |

# attributes (context)

## 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 definesimplegray
- F definespotcolor
- F definetransparency
- F enable
- F filter
- F forcedmodel
- F forcesupport
- F formatcolor
- F formatgray
- F getpagecolormodel
- F gray
- F graytohsv
- F handler
- F hsvtorgay
- F hsvtorgb
- F iccprofile
- F isblack
- N main
- S model

- D models
- F mpcolor
- F mpnamedcolor
- F mpoptions
- F namedcolorattributes
- U none
- F popset
- F processcolorcomponents
- F pushset
- F register
- D registered
- F registerspotcolor
- F rgb
- F rgbtocmyk
- F rgbtorgay
- F rgbtohsv
- N selector
- F setlist
- F setmodel
- F setpagecolormodel
- D sets
- F spec
- F spot
- F spotcolorname
- F spotcolorparent
- F spotcolorvalue
- B supported
- F transparencycomponents
- B triggering
- F usecolors
- D valid
- F value
- D values
- B weightgray

define

effects

function

table

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

|                       |            |                          |        |
|-----------------------|------------|--------------------------|--------|
| D registered          |            | N hardlight              |        |
| D values              |            | N hue                    |        |
| <b>handlers</b>       | table      | N lighten                |        |
| <b>list</b>           | data table | N luminosity             |        |
| <b>names</b>          | data table | N multiply               |        |
| <b>negatives</b>      | table      | N none                   |        |
| N attribute           |            | N normal                 |        |
| D data                |            | N overlay                |        |
| F enable              |            | N saturation             |        |
| F handler             |            | N screen                 |        |
| F register            |            | N softlight              |        |
| D registered          |            | U none                   |        |
| F set                 |            | F register               |        |
| <b>numbers</b>        | data table | D registered             |        |
| <b>ofnode</b>         | function   | B supported              |        |
| <b>private</b>        | function   | B triggering             |        |
| <b>public</b>         | function   | F value                  |        |
| <b>restore</b>        | function   | D values                 |        |
| <b>save</b>           | function   | <b>unsetvalue</b>        | number |
| <b>showcurrent</b>    | function   | <b>viewerlayers</b>      | table  |
| <b>states</b>         | table      | N attribute              |        |
| F disabletriggering   |            | F cleanup                |        |
| F enabletriggering    |            | D data                   |        |
| F finalize            |            | F define                 |        |
| F initialize          |            | F definedlayoutcomponent |        |
| F process             |            | F enable                 |        |
| F selective           |            | F forcesupport           |        |
| F stacked             |            | F handler                |        |
| F stacker             |            | B hasorder               |        |
| <b>system</b>         | function   | D listwise               |        |
| <b>transparencies</b> | table      | F register               |        |
| N attribute           |            | D registered             |        |
| D data                |            | F resolve_begin          |        |
| F enable              |            | F resolve_end            |        |
| F forcesupport        |            | F resolve_reset          |        |
| F handler             |            | F resolve_step           |        |
| T names               |            | D scopes                 |        |
| N color               |            | F setfeatures            |        |
| N colorburn           |            | F start                  |        |
| N colordodge          |            | F stop                   |        |
| N darken              |            | B supported              |        |
| N difference          |            | D values                 |        |
| N exclusion           |            |                          |        |

# backends (context)

## **codeinjections** table

F boxresourcedimensions  
F registerboxresource  
F restoreboxresource

## **current** string

## **defaults** table

T codeinjections  
F gethpos  
F getmatrix  
F getpos  
F getvpos  
F hasmatrix  
T nodeinjections  
T registrations  
D tables

## **included** table

B context  
B date  
B id  
B metadata  
B pdf

## **install** function

## **nodeinjections** table

F restore  
F save  
F transform

## **nothing** function

## **pdf** table

T codeinjections  
F addbookmarks  
F attachmentid  
F clonefield  
F definefield  
F definefieldset  
F defineviewerlayer  
F embedfile  
F enabletags  
F exportformdata  
F getbookmarks  
F getdefaultfieldvalue  
F getfieldcategory

F getfieldset  
F getformatoption  
F gethpos  
F getmatrix  
F getoutputfilename  
F getpos  
F getpreviewfigure  
F getvpos  
F hasmatrix  
F insertrenderingwindow  
F mergebookmarks  
F mergereferences  
F mergeviewerlayers  
F prerollreference  
F presetsymbol  
F presetsymbollist  
F processrendering  
F registerdocumentcloseaction  
F registerdocumentopenaction  
F registeredsymbol  
F registerpagecloseaction  
F registerpageopenaction  
F registersymbol  
F setfieldcalculationset  
F setfigurealternative  
F setfigurecolorspace  
F setfiguremask  
F setformat  
F setformsmethod  
F setpagetransition  
F setupcanvas  
F setupidentity  
F setxmpfile  
F startlayer  
F startunicodetoactualtext  
F startunicodetoactualtextdirect  
F stoplayer  
F stopunicodetoactualtext  
F stopunicodetoactualtextdirect  
F supportedformats  
F unicodetoactualtext

|                      |                         |          |
|----------------------|-------------------------|----------|
| F useviewerlayer     | F reference             |          |
| F validfield         | F rgbcolor              |          |
| F validfieldcategory | F spotcolor             |          |
| F validfieldset      | F startlayer            |          |
| S comment            | F startstackedlayer     |          |
| T nodeinjections     | F stoplayer             |          |
| F addtags            | F stopstackedlayer      |          |
| F annotation         | F transparency          |          |
| F attachfile         | F typesetfield          |          |
| F changestackedlayer | T registrations         |          |
| F cmykcolor          | F cmykindexcolor        |          |
| F comment            | F cmykspotcolor         |          |
| F destination        | F getspotcolorreference |          |
| F effect             | F grayindexcolor        |          |
| F graycolor          | F grayspotcolor         |          |
| F injectbitmap       | F rgbindexcolor         |          |
| F insertmovie        | F rgbspotcolor          |          |
| F insertsound        | F spotcolorname         |          |
| F insertswf          | F transparency          |          |
| F insertu3d          | T tables                |          |
| F knockout           | D vfspecials            |          |
| F negative           | <b>registrations</b>    | table    |
| F overprint          | <b>tables</b>           | table    |
| F positive           | <b>timestamp</b>        | 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>F define</b>         |          |
| <b>assign</b>         | function | <b>F hassomecontent</b> |          |
| <b>collectcontent</b> | function | <b>F next</b>           |          |
| <b>erase</b>          | function | <b>F place</b>          |          |
| <b>exists</b>         | function | <b>F reset</b>          |          |
| <b>getcontent</b>     | function | <b>F save</b>           |          |
| <b>getlines</b>       | function | <b>prepend</b>          | function |
| <b>loadcontent</b>    | function | <b>raw</b>              | function |
| <b>parallel</b>       | table    | <b>undent</b>           | function |

# builders (context)

## kernel table

- F hyphenation
- F kerning
- F ligaturing
- F mlist\_to\_hlist
- T originals
  - F hyphenate
  - F kerning
  - F ligaturing

## paragraphs table

- T constructors
  - N attribute
  - F define
  - F disable
  - F enable
  - F handler
- T methods
  - F basic
  - F default
  - F hpack
  - F oneline
- D names
- D numbers
- F set
- F start
- F stop
- T expansion
  - F trace
- F kepttogether
- F registertogether
- T solutions
  - T splitters
    - F define
    - F optimize

- T registered
- F reset
- F set
- F split
- F start
- F stop
- F tag

## profiling table

- F add
- F distance
- F fixedprofile
- F get
- F list
- F pagehandler
- F profilebox
- F set

## vspacing table

- F analyze
- D categories
- F collapsevbox
- T data
  - D map
  - D skip
  - D snapmethods
- F definesnapmethod
- B fixed
- F pagehandler
- F resetprevdepth
- F setmap
- F setskip
- F snapbox
- F tocategories
- F tocategory
- F vboxhandler

## cache (context)

|                             |          |                             |          |
|-----------------------------|----------|-----------------------------|----------|
| <b>ask</b>                  | boolean  | <b>is_writable</b>          | function |
| <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>relocate</b>             | boolean  |
| <b>defaults</b>             | table    | <b>savecontent</b>          | function |
| <b>define</b>               | function | <b>savadata</b>             | function |
| <b>direct</b>               | boolean  | <b>setfirstwritablefile</b> | function |
| <b>force</b>                | boolean  | <b>setluanames</b>          | function |
| <b>getfirstreadablefile</b> | function | <b>tree</b>                 | string   |
| <b>getreadablepaths</b>     | function | <b>treehash</b>             | function |
| <b>getwritablepath</b>      | function | <b>usedpaths</b>            | function |
| <b>hashed</b>               | function |                             |          |

## callback (basic tex)

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

**register** overloaded function

## callbacks (context)

|               |            |
|---------------|------------|
| <b>freeze</b> | function   |
| <b>known</b>  | function   |
| <b>list</b>   | data table |
| <b>pop</b>    | function   |

|                 |          |
|-----------------|----------|
| <b>push</b>     | function |
| <b>register</b> | function |
| <b>report</b>   | function |

## catcodes (context)

**names** data table

**numbers** data table

**register** function



# characters (context)

| <b>activeoffset</b>   | <b>number</b>     | <b>lhash</b>      | <b>data table</b> |
|-----------------------|-------------------|-------------------|-------------------|
| <b>adobename</b>      | <b>function</b>   | <b>linebreaks</b> | <b>table</b>      |
| <b>bidirectional</b>  | <b>data table</b> | S ai              |                   |
| <b>blockrange</b>     | <b>function</b>   | S al              |                   |
| <b>blocks</b>         | <b>data table</b> | S b2              |                   |
| <b>casemap</b>        | <b>table</b>      | S ba              |                   |
| <b>categories</b>     | <b>data table</b> | S bb              |                   |
| <b>category</b>       | <b>function</b>   | S bk              |                   |
| <b>categorytags</b>   | <b>data table</b> | S cb              |                   |
| <b>classifiers</b>    | <b>table</b>      | S cj              |                   |
| <b>collapsed</b>      | <b>data table</b> | S cl              |                   |
| <b>contextname</b>    | <b>function</b>   | S cm              |                   |
| <b>csletters</b>      | <b>data table</b> | S cp              |                   |
| <b>data</b>           | <b>data table</b> | S cr              |                   |
| <b>decomposed</b>     | <b>data table</b> | S ex              |                   |
| <b>description</b>    | <b>function</b>   | S gl              |                   |
| <b>descriptions</b>   | <b>data table</b> | S h2              |                   |
| <b>detailltags</b>    | <b>data table</b> | S h3              |                   |
| <b>directions</b>     | <b>table</b>      | S hl              |                   |
| <b>encodes</b>        | <b>data table</b> | S hy              |                   |
| <b>entities</b>       | <b>data table</b> | S id              |                   |
| <b>fallbacks</b>      | <b>data table</b> | S in              |                   |
| <b>filters</b>        | <b>data table</b> | S is              |                   |
| <b>fractions</b>      | <b>table</b>      | S jl              |                   |
| <b>fromnumber</b>     | <b>function</b>   | S jt              |                   |
| <b>fschars</b>        | <b>data table</b> | S jv              |                   |
| <b>fscodes</b>        | <b>data table</b> | S lf              |                   |
| <b>getrange</b>       | <b>function</b>   | S nl              |                   |
| <b>graphemes</b>      | <b>data table</b> | S ns              |                   |
| <b>hangul</b>         | <b>data table</b> | S nu              |                   |
| <b>initialize</b>     | <b>function</b>   | S op              |                   |
| <b>is_character</b>   | <b>data table</b> | S po              |                   |
| <b>is_command</b>     | <b>data table</b> | S pr              |                   |
| <b>is_letter</b>      | <b>data table</b> | S qu              |                   |
| <b>is_mark</b>        | <b>data table</b> | S ri              |                   |
| <b>is_punctuation</b> | <b>data table</b> | S sa              |                   |
| <b>is_spacing</b>     | <b>data table</b> | S sg              |                   |
| <b>lcchars</b>        | <b>data table</b> | S sp              |                   |
| <b>lccode</b>         | <b>function</b>   | S sy              |                   |
| <b>lccodes</b>        | <b>data table</b> | S wj              |                   |
| <b>lettered</b>       | <b>function</b>   | S xx              |                   |

|                              |            |                     |            |
|------------------------------|------------|---------------------|------------|
| S zw                         |            | T char              |            |
| <b>lower</b>                 | function   | T compat            |            |
| <b>math</b>                  | table      | <b>subscripts</b>   | table      |
| <b>mathpairs</b>             | data table | <b>superscripts</b> | table      |
| <b>mirrors</b>               | table      | <b>synonyms</b>     | data table |
| <b>otfscripts</b>            | data table | <b>tex</b>          | table      |
| <b>ranges</b>                | data table | D accentmapping     |            |
| <b>registerentities</b>      | function   | D commandmapping    |            |
| <b>remap_hangul_syllable</b> | function   | F defineaccents     |            |
| <b>setactivecatcodes</b>     | function   | F safechar          |            |
| <b>setlettercatcodes</b>     | function   | F toutf             |            |
| <b>shape</b>                 | function   | F toutfpattern      |            |
| <b>shaped</b>                | function   | <b>textclasses</b>  | table      |
| <b>shash</b>                 | data table | <b>tonumber</b>     | function   |
| <b>shchars</b>               | data table | <b>ucchars</b>      | data table |
| <b>shcodes</b>               | data table | <b>uccode</b>       | function   |
| <b>showstring</b>            | function   | <b>uccodes</b>      | data table |
| <b>specialchars</b>          | data table | <b>uhash</b>        | data table |
| <b>specials</b>              | data table | <b>unicodechar</b>  | function   |
| <b>splits</b>                | table      | <b>upper</b>        | function   |

## chemistry (context)

|                       |            |
|-----------------------|------------|
| <b>component</b>      | function   |
| <b>define</b>         | function   |
| <b>definitions</b>    | data table |
| <b>format</b>         | string     |
| <b>inlinechemical</b> | function   |
| <b>instance</b>       | string     |
| <b>method</b>         | string     |

|                       |          |
|-----------------------|----------|
| <b>molecule</b>       | function |
| <b>moleculeparser</b> | userdata |
| <b>start</b>          | function |
| <b>stop</b>           | function |
| <b>structures</b>     | number   |
| <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>isleapyear</b>        | function   |
| <b>A:es</b>               | function | <b>lchexnumber</b>       | function   |
| <b>AK</b>                 | function | <b>lchexnumbers</b>      | function   |
| <b>Alphabetic</b>         | function | <b>leapyear</b>          | function   |
| <b>Alphabetic:es</b>      | function | <b>lower</b>             | function   |
| <b>Character</b>          | function | <b>max</b>               | function   |
| <b>Characters</b>         | function | <b>maxchrs</b>           | function   |
| <b>I</b>                  | function | <b>minute</b>            | function   |
| <b>KA</b>                 | function | <b>month</b>             | function   |
| <b>KR</b>                 | function | <b>nicenumber</b>        | function   |
| <b>R</b>                  | function | <b>nofdays</b>           | function   |
| <b>RK</b>                 | function | <b>number</b>            | function   |
| <b>Romannumerals</b>      | function | <b>numbers</b>           | function   |
| <b>Sloviannumerals</b>    | function | <b>octnumber</b>         | function   |
| <b>Spanishnumerals</b>    | function | <b>octstringtonumber</b> | function   |
| <b>Word</b>               | function | <b>ordinal</b>           | function   |
| <b>Words</b>              | function | <b>r</b>                 | function   |
| <b>a</b>                  | function | <b>rawcharacter</b>      | function   |
| <b>a:es</b>               | function | <b>romannumerals</b>     | function   |
| <b>abjadnodotnumerals</b> | function | <b>second</b>            | function   |
| <b>abjadnumerals</b>      | function | <b>sequences</b>         | data table |
| <b>alphabetic</b>         | function | <b>settime</b>           | function   |
| <b>alphabetic:es</b>      | function | <b>sloviannumerals</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>toroman</b>           | function   |
| <b>chr</b>                | function | <b>totime</b>            | function   |
| <b>chrs</b>               | function | <b>uchexnumber</b>       | function   |
| <b>cn</b>                 | function | <b>uchexnumbers</b>      | function   |
| <b>cn-a</b>               | function | <b>upper</b>             | function   |
| <b>cn-c</b>               | function | <b>verbose</b>           | table      |
| <b>convert</b>            | function |                          |            |
| <b>decimals</b>           | function | D data                   |            |
| <b>define</b>             | function | F translate              |            |
| <b>hexstringtonumber</b>  | function | <b>weekday</b>           | function   |
| <b>hour</b>               | function | <b>word</b>              | function   |
| <b>i</b>                  | function | <b>words</b>             | function   |
|                           |          | <b>year</b>              | function   |

## coroutine (basic lua)

**create**    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)

|                     |          |
|---------------------|----------|
| <b>debug</b>        | function |
| <b>gethook</b>      | function |
| <b>getinfo</b>      | function |
| <b>getlocal</b>     | function |
| <b>getmetatable</b> | function |
| <b>getregistry</b>  | function |
| <b>getupvalue</b>   | function |
| <b>getuservalue</b> | function |

|                     |          |
|---------------------|----------|
| <b>sethook</b>      | function |
| <b>setlocal</b>     | function |
| <b>setmetatable</b> | function |
| <b>setupvalue</b>   | function |
| <b>setuservalue</b> | function |
| <b>traceback</b>    | function |
| <b>upvalueid</b>    | function |
| <b>upvaluejoin</b>  | function |



## dir (context)

|                       |          |
|-----------------------|----------|
| <b>collectpattern</b> | function |
| <b>current</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 |

# 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     |            |                           |           |            |

## environment (context)

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

## epdf (extra tex)

**Array** function  
**Attribute** function  
**AttributeOwner\_Type** function  
**Attribute\_Type** function  
**Dict** function  
**Object** function

**PDFRectangle** function  
**StructElement\_Type** function  
**open** overloaded function  
**openMemStream** function  
**type** function

## experiments (context)

|                |            |
|----------------|------------|
| <b>data</b>    | data table |
| <b>default</b> | function   |
| <b>disable</b> | function   |
| <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 |

# figures (context)

|                         |            |                         |            |
|-------------------------|------------|-------------------------|------------|
| <b>applyratio</b>       | function   | <b>F ofindex</b>        |            |
| <b>badname</b>          | function   | <b>F package</b>        |            |
| <b>bases</b>            | data table | <b>F print</b>          |            |
| <b>bitmapimage</b>      | function   | <b>F scan</b>           |            |
| <b>boxnumber</b>        | number     | <b>F serialize</b>      |            |
| <b>cachepaths</b>       | data table | <b>F totable</b>        |            |
| <b>check</b>            | function   | <b>F types</b>          |            |
| <b>checkers</b>         | data table | <b>F write</b>          |            |
| <b>converters</b>       | data table | <b>include</b>          | function   |
| <b>current</b>          | function   | <b>includes</b>         | data table |
| <b>defaultdepth</b>     | number     | <b>initialize</b>       | function   |
| <b>defaultheight</b>    | number     | <b>loaded</b>           | data table |
| <b>defaultsearch</b>    | boolean    | <b>localpaths</b>       | data table |
| <b>defaultwidth</b>     | number     | <b>magics</b>           | data table |
| <b>done</b>             | function   | <b>mergegoodies</b>     | function   |
| <b>dummy</b>            | function   | <b>nofprocessed</b>     | number     |
| <b>exists</b>           | data table | <b>order</b>            | data table |
| <b>exists</b>           | function   | <b>paths</b>            | data table |
| <b>formats</b>          | data table | <b>patterns</b>         | data table |
| <b>found</b>            | data table | <b>pop</b>              | function   |
| <b>get</b>              | function   | <b>preferquality</b>    | boolean    |
| <b>getrealpage</b>      | function   | <b>programs</b>         | data table |
| <b>guess</b>            | function   | <b>push</b>             | function   |
| <b>hash</b>             | function   | <b>registerpattern</b>  | function   |
| <b>identifiers</b>      | data table | <b>registerresource</b> | function   |
| <b>identify</b>         | function   | <b>registersuffix</b>   | function   |
| <b>images</b>           | table      | <b>resources</b>        | data table |
| <b>F boxes</b>          |            | <b>scale</b>            | function   |
| <b>F check</b>          |            | <b>set</b>              | function   |
| <b>F checksize</b>      |            | <b>setlookups</b>       | function   |
| <b>F clone</b>          |            | <b>setmemstream</b>     | function   |
| <b>F copy</b>           |            | <b>setorder</b>         | function   |
| <b>F immediatewrite</b> |            | <b>setpaths</b>         | function   |
| <b>F keys</b>           |            | <b>suffixes</b>         | data table |
| <b>F new</b>            |            | <b>used</b>             | data table |
| <b>F node</b>           |            |                         |            |

## 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 |



# 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>current</b> | function            | <b>id</b>       | function            |
| <b>define</b>  | function            | <b>max</b>      | function            |
| <b>each</b>    | function            | <b>nextid</b>   | function            |
| <b>fonts</b>   | table               | <b>read_tfm</b> | function            |
| <b>frozen</b>  | function            | <b>read_vf</b>  | function            |
| <b>getfont</b> | overloaded function | <b>setfont</b>  | overloaded function |

# fontloader (extra tex)

|                          |          |                 |                     |
|--------------------------|----------|-----------------|---------------------|
| <b>apply_afmfile</b>     | function | <b>info</b>     | overloaded function |
| <b>apply_featurefile</b> | function | <b>open</b>     | overloaded function |
| <b>close</b>             | function | <b>to_table</b> | function            |
| <b>fields</b>            | function | <b>totable</b>  | function            |
| <b>fullinfo</b>          | function |                 |                     |

# fonts (context)

## analyzers

table

T features

N blwf

N fin2

N fin3

N fina

N half

N init

N isol

N med2

N medi

N pref

N pstf

N rphf

D initializers

D methods

F setstate

T states

N blwf

N fin2

N fin3

N fina

N half

N init

N isol

N mark

N med2

N medi

N pref

N pstf

N rest

N rphf

B useunicodemarks

## checkers

table

F getmissing

F missing

F placeholder

## cid

table

F getmap

F loadfile

## collections

table

F checkenabled

F clonevector

F define

T definitions

F found

F prepare

F process

F registermain

F report

F reset

T vectors

## constructors

table

F addcoreunicodes

F aftercopyingcharacters

F applymanipulators

F assignmathparameters

B autocleanup

F beforecopyingcharacters

D cache

B cacheintex

F calculatescale

F checkedfeatures

F checkedfilename

F checkvirtualids

F cleanupable

F collectprocessors

F currentfonthasfeature

D designsizes

D dontembed

F enhanceparameters

T enhancers

T afm

F apply

F patch

T patches

F register

F register

T otf

F addfeature

F apply

F enhance

|                       |   |
|-----------------------|---|
| F patch               | F alternate   |
| T patches             | F chainposition                                     |
| F register            | F chainsubstitution                                 |
| F register            | F kern  |
| T tfm                 | F ligature  |
| F apply               | F multiple  |
| F patch               | F pair  |
| T patches             | F substitution                                      |
| F register            | F register  |
| F register            | S stepkey   |
| N factor              | F dataset   |
| T features            | S defaultbasealternate                              |
| D afm                 | S defaultnodealternate                              |
| D otf                 | D features  |
| D tfm                 | F featuresprocessor                                 |
| F finalize            | F getactualtext                                     |
| F getfeatureaction    | F getalternate                                      |
| T handlers            | F getgsub   |
| T afm                 | F getkern   |
| B autoprefixed        | F getmultiple                                       |
| D cache               | F getsubstitution                                   |
| D features            | T handlers  |
| F getkern             | F devanagari_remove_joiners                         |
| T helpdata            | F devanagari_reorder_matras                         |
| D bothkerned          | F devanagari_reorder_pre_base_reordering_consonants |
| D leftkerned          | F devanagari_reorder_reph                           |
| D ligatures           | F gpos_context                                      |
| D rightkerned         | F gpos_contextchain                                 |
| D texligatures        | F gpos_cursive                                      |
| F load                | F gpos_mark2base                                    |
| T readers             | F gpos_mark2ligature                                |
| F getinfo             | F gpos_mark2mark                                    |
| F loadfont            | F gpos_pair   |
| F loadshapes          | F gpos_single                                       |
| F setfeatures         | F gsub_alterate                                     |
| B syncspace           | F gsub_context                                      |
| N version             | F gsub_contextchain                                 |
| T otf                 | F gsub_ligature                                     |
| F addfeature          | F gsub_multiple                                     |
| F basemodeinitializer | F gsub_reversecontextchain                          |
| D cache               | F gsub_single                                       |
| F collectlookups      | F trigger_space_kerns                               |
| T coverup             | T helpers   |
| T actions             | F pardirstate                                       |

|                       |                     |
|-----------------------|---------------------|
| F txdirstate          | F read2dot14        |
| F load                | F readbyte          |
| F modeinitializer     | F readbytes         |
| F nodemodeinitializer | F readcardinal      |
| D pdfcache            | F readcardinal1     |
| T plugins             | F readcardinal2     |
| T readers             | F readcardinal2le   |
| F addunicodetable     | F readcardinal3     |
| F cff                 | F readcardinal3le   |
| F checkhash           | F readcardinal4     |
| F cmap                | F readcardinal4le   |
| F colr                | F readchar          |
| F compact             | F readfixed4        |
| F cpal                | F readinteger       |
| F expand              | F readinteger1      |
| F extend              | F readinteger2      |
| F gdef                | F readinteger2le    |
| F getcomponents       | F readinteger3      |
| F getinfo             | F readinteger3le    |
| F glyf                | F readinteger4      |
| F gpos                | F readinteger4le    |
| F gsub                | F readstring        |
| F head                | F readtag           |
| F hhea                | F setposition       |
| F hmtx                | F size              |
| F kern                | F skip              |
| F loadfont            | F skiplong          |
| F loadshapes          | F skipshort         |
| F loca                | F writebyte         |
| F math                | F writecardinal2    |
| F maxp                | F writecardinal4    |
| F name                | F writestring       |
| F os/2                | F svg               |
| F pack                | N tableversion      |
| F parsecharstrings    | F unifymissing      |
| F post                | F unpack            |
| F registerextender    | F vhea              |
| F rehash              | F vmtx              |
| T streamreader        | F vorg              |
| F close               | F woff2otf          |
| F getposition         | F registerpalette   |
| F getsizes            | F registerplugin    |
| F look                | F scriptandlanguage |
| F open                | F setdynamics       |

|                      |                          |
|----------------------|--------------------------|
| F setfeatures        | T descriptions           |
| T statistics         | T parameters             |
| D usedfeatures       | S ascender               |
| T svg                | S descender              |
| F filterglyph        | S designsize             |
| F storepdfdata       | T expansion              |
| F topdf              | S auto                   |
| D svgcache           | S shrink                 |
| B svgenabled         | S step                   |
| T tables             | S stretch                |
| D baselines          | S extendfactor           |
| D features           | S factor                 |
| D featuretypes       | S hfactor                |
| D languages          | S mathsize               |
| D scripts            | T protrusion             |
| N version            | S auto                   |
| T pfb                | S quad                   |
| F loadvector         | S scaledpoints           |
| T tfm                | S scriptpercentage       |
| F addtounicode       | S scriptscriptpercentage |
| D features           | S size                   |
| N maxnestingdepth    | S slantfactor            |
| N maxnestingsize     | S slantperpoint          |
| F reencode           | T spacing                |
| F setfeatures        | S extra                  |
| N version            | S shrink                 |
| T vf                 | S stretch                |
| T combinations       | S width                  |
| F combine            | S units                  |
| T combiner           | S vfactor                |
| D commands           | S xheight                |
| D helpers            | T properties             |
| D math               | S autoitalicamount       |
| D predefined         | S cidinfo                |
| N version            | S embedding              |
| D whatever           | S encodingbytes          |
| F hashfeatures       | S filename               |
| F hashinstance       | S finalized              |
| T hashmethods        | S fontname               |
| F normal             | S format                 |
| F virtual            | S fullname               |
| F initializefeatures | S hasitalics             |
| T keys               | S hasmath                |
| T characters         | S mathitalics            |

|                       |          |                      |          |
|-----------------------|----------|----------------------|----------|
| S mode                |          | D variants           |          |
| S name                |          | F read               |          |
| S noglyphnames        |          | F register           |          |
| S nostackmath         |          | F registered         |          |
| S psname              |          | F registersplit      |          |
| S textitalics         |          | F resetnullfont      |          |
| S virtualized         |          | F resolve            |          |
| D loadedfonts         |          | T resolvers          |          |
| S namemode            |          | F file               |          |
| N noffontsloaded      |          | F name               |          |
| N nofsharedfonts      |          | F spec               |          |
| N nofsharedhashes     |          | <b>definetypface</b> | function |
| N nofsharedvectors    |          | <b>encodings</b>     | table    |
| N privateoffset       |          | T agl                |          |
| D privateslots        |          | D ctxcodes           |          |
| F readanddefine       |          | D extras             |          |
| F registerfeature     |          | D names              |          |
| F resetfeature        |          | T synonyms           |          |
| B resolvevirtualtoo   |          | N Acyrillic          |          |
| F scale               |          | N Becyrillic         |          |
| F scaled              |          | N Cdot               |          |
| F setfactor           |          | N Checyrillic        |          |
| F setfeature          |          | N Decyrillic         |          |
| F setname             |          | N Djecyrillic        |          |
| B sharefonts          |          | N Dzecyrillic        |          |
| F trytoshafeont       |          | N Dzhecyrillic       |          |
| N version             |          | N Ecyrillic          |          |
| <b>current</b>        | function | N Edot               |          |
| <b>currentid</b>      | function | N Efcyrillic         |          |
| <b>definers</b>       | table    | N Elcyrillic         |          |
| F addlookup           |          | N Emcyrillic         |          |
| F analyze             |          | N Encyrillic         |          |
| F applypostprocessors |          | N Ercyrillic         |          |
| F checkedmode         |          | N Ereversedcyrillic  |          |
| F checkedscript       |          | N Escyrillic         |          |
| F current             |          | N Fitacyrillic       |          |
| S defaultlookup       |          | N Gcedilla           |          |
| F define              |          | N Gdot               |          |
| F getspecification    |          | N Gecyrillic         |          |
| F internal            |          | N Gheupturncyrillic  |          |
| F loadfont            |          | N Gjecyrillic        |          |
| F makespecification   |          | N Hardsigncyrillic   |          |
| T methods             |          | N IAcyrillic         |          |
| F install             |          | N IUcyrillic         |          |



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|--------------------|-----------------------------|
| N Icyrillic        | N afii57700                 |
| N Idot             | N afii57705                 |
| N Iecyrillic       | N afii57723                 |
| N Iicyrillic       | N alef                      |
| N Iishortcyrillic  | N alefmaksurainitialarabic  |
| N Iocyrillic       | N alefmaksuramedialarabic   |
| N Izhitsacyrillic  | N approximatelyequal        |
| N Jecyrillic       | N asteriskaltonearabic      |
| N Kacyrillic       | N ayin                      |
| N Kcedilla         | N bet                       |
| N Khacyrillic      | N betdagesh                 |
| N Kjecyrillic      | N blackdownpointingtriangle |
| N Lcedilla         | N blackleftpointingpointer  |
| N Ljecyrillic      | N blackrectangle            |
| N Ncedilla         | N blackrightpointingpointer |
| N Njecyrillic      | N blacksmilingface          |
| N Ocyrillic        | N blacksquare               |
| N Odblacute        | N blackuppointingtriangle   |
| N Ohm              | N bulletinverse             |
| N Pecyrillic       | N cdot                      |
| N Rcedilla         | N compass                   |
| N Shacyrillic      | N dagesh                    |
| N Shhacyrillic     | N dalet                     |
| N Softsigncyrillic | N daletdagesh               |
| N Tcedilla         | N dalethatafpatah           |
| N Tecyrillic       | N dalethatafpatahhebrew     |
| N Tsecyrillic      | N dalethatafsegol           |
| N Tshacyrillic     | N dalethatafsegolhebrew     |
| N Ucyrillic        | N dalethebrew               |
| N Udblacute        | N dalethiriq                |
| N Ushortcyrillic   | N dalethiriqhebrew          |
| N Vecyrillic       | N daletholam                |
| N Yatcyrillic      | N daletholamhebrew          |
| N Yericyrillic     | N daletpatah                |
| N Yicyrillic       | N daletpatahhebrew          |
| N Zdot             | N daletqamats               |
| N Zecyrillic       | N daletqamatshebrew         |
| N Zhecyrillic      | N daletqubuts               |
| N acutecmb         | N daletqubutshebrew         |
| N acyrillic        | N daletsegol                |
| N afii00208        | N daletsegolhebrew          |
| N afii08941        | N daletsheva                |
| N afii57694        | N daletshevahebrew          |
| N afii57695        | N dalettsere                |

|                          |                            |
|--------------------------|----------------------------|
| N dammaarabic            | N hatafpatah16             |
| N dammatanaltonearabic   | N hatafpatah23             |
| N dargahebrew            | N hatafpatah2f             |
| N dbllowline             | N hatafpatahhebrew         |
| N decimalseparatorarabic | N hatafpatahnarrowhebrew   |
| N dialytikatonos         | N hatafpatahquarterhebrew  |
| N dotbelowcmb            | N hatafqamats              |
| N doubleyodpatah         | N hatafqamats1b            |
| N doubleyodpatahhebrew   | N hatafqamats28            |
| N edot                   | N hatafqamats34            |
| N eightarabic            | N hatafqamatshebrew        |
| N eighthnotebeamed       | N hatafqamatsnarrowhebrew  |
| N etnahtafoukhhebrew     | N hatafqamatsquarterhebrew |
| N etnahtafoukhlefthebrew | N hatafsegol               |
| N etnahtahebrew          | N hatafsegol17             |
| N fathaarabic            | N hatafsegol24             |
| N finalkaf               | N hatafsegol30             |
| N finalkafdagesh         | N hatafsegolhebrew         |
| N finalkafhebrew         | N hatafsegolnarrowhebrew   |
| N finalkafqamats         | N hatafsegolquarterhebrew  |
| N finalkafqamatshebrew   | N he                       |
| N finalkafsheva          | N hedagesh                 |
| N finalmem               | N hehfinalalttwoarabic     |
| N finalnun               | N het                      |
| N finalpe                | N hiriq                    |
| N finaltsadi             | N hiriq14                  |
| N fivearabic             | N hiriq21                  |
| N forall                 | N hiriq2d                  |
| N fourarabic             | N hiriqhebrew              |
| N gcedilla               | N hiriqnarrowhebrew        |
| N gdot                   | N hiriqqarterhebrew        |
| N gimel                  | N holam                    |
| N gimeldagesh            | N holam19                  |
| N gravecmb               | N holam26                  |
| N haaltonearabic         | N holam32                  |
| N hamzaarabic            | N holamhebrew              |
| N hamzadammaarabic       | N holamnarrowhebrew        |
| N hamzadammatanarabic    | N holamquarterhebrew       |
| N hamzafathaarabic       | N ilde                     |
| N hamzafathatanarabic    | N integralbottom           |
| N hamzalowarabic         | N integraltop              |
| N hamzalowkasraarabic    | N kaf                      |
| N hamzalowkasratanarabic | N kafdagesh                |
| N hatafpatah             | N kashidaautoarabic        |

N kashidaautosidebearingarabic  
 N kcedilla  
 N lamed  
 N lameddagesh  
 N lamedhebrew  
 N lamedholam  
 N lamedholamdagesh  
 N lamedholamdageshhebrew  
 N laminitialarabic  
 N lammeemjeeminitialarabic  
 N lcedilla  
 N logicalnotreversed  
 N mahapakhhebrew  
 N mem  
 N memdagesh  
 N merkhahebrew  
 N merkhakefulahebrew  
 N middot  
 N munahhebrew  
 N nbspace  
 N ncedilla  
 N newsheqelsign  
 N ninearabic  
 N noonhehinitialarabic  
 N nun  
 N nundagesh  
 N odblacute  
 N onearabic  
 N overscore  
 N patah  
 N patah1l  
 N patah1d  
 N patah2a  
 N patahhebrew  
 N patahnarrowhebrew  
 N patahquarterhebrew  
 N pe  
 N pedagesh  
 N qamats  
 N qamats10  
 N qamats1a  
 N qamats1c  
 N qamats27  
 N qamats29

N qamats33  
 N qamatsde  
 N qamatshebrew  
 N qamatsnarrowhebrew  
 N qamatsqatanhebrew  
 N qamatsqatanarrowhebrew  
 N qamatsqatanquarterhebrew  
 N qamatsqatanwidehebrew  
 N qamatsquarterhebrew  
 N qof  
 N qofdagesh  
 N qofhatafpatah  
 N qofhatafpatahhebrew  
 N qofhatafsegol  
 N qofhatafsegolhebrew  
 N qofhebrew  
 N qofhiriq  
 N qofhiriqhebrew  
 N qofholam  
 N qofholamhebrew  
 N qofpatah  
 N qofpatahhebrew  
 N qofqamats  
 N qofqamatshebrew  
 N qofqubuts  
 N qofqubutshebrew  
 N qofsegol  
 N qofsegolhebrew  
 N qofsheva  
 N qofshevahebrew  
 N qoftsere  
 N qubuts  
 N qubuts18  
 N qubuts25  
 N qubuts31  
 N qubutshebrew  
 N qubutsnarrowhebrew  
 N qubutsquarterhebrew  
 N quoteleftreversed  
 N rafe  
 N rcedilla  
 N reharabic  
 N resh  
 N reshhatafpatah

N reshatafpatahhebrew  
 N reshhatafsegol  
 N reshhatafsegolhebrew  
 N reshhebrew  
 N reshhiriq  
 N reshhiriqhebrew  
 N reshholam  
 N reshholamhebrew  
 N reshpatah  
 N reshpatahhebrew  
 N reshqamats  
 N reshqamatshebrew  
 N reshqubuts  
 N reshqubutshebrew  
 N reshsegol  
 N reshsegolhebrew  
 N reshsheva  
 N reshshevahebrew  
 N reshtsere  
 N reviahebrew  
 N samekh  
 N samekhdagesh  
 N segol  
 N segol13  
 N segol1f  
 N segol2c  
 N segolhebrew  
 N segolnarrowhebrew  
 N segolquarterhebrew  
 N sevenarabic  
 N sfthyphen  
 N shaddaarabic  
 N sheqel  
 N sheva  
 N sheva15  
 N sheva15  
 N sheva22  
 N sheva2e  
 N shevahebrew  
 N shevanarrowhebrew  
 N shevaquarterhebrew  
 N shin  
 N shindagesh  
 N shindageshshindot

N shindageshshindot  
 N shinshindot  
 N shinsindot  
 N siluqhebrew  
 N sixarabic  
 N tav  
 N tavadages  
 N tavadagesh  
 N tcedilla  
 N tchehinitialarabic  
 N tet  
 N tetdagesh  
 N tevirhebrew  
 N thousandsseparatorarabic  
 N threearabic  
 N tildecmb  
 N tipehahebrew  
 N tsadi  
 N tsadidagesh  
 N tsere  
 N tsere12  
 N tsere1e  
 N tsere2b  
 N tserehebrew  
 N tserenarrowhebrew  
 N tserequarterhebrew  
 N twoarabic  
 N udblacute  
 N vav  
 N vavdagesh  
 N vavdagesh65  
 N vavholam  
 N yerahbenyomohebrew  
 N yod  
 N yoddagesh  
 N zayin  
 N zayindagesh  
 N zdot  
 N zeroarabic  
 D unicodes  
 D cache  
 T ctxcodes  
 N AEacute  
 N AEligature

|                       |                       |
|-----------------------|-----------------------|
| N AEmacron            | N Dzcaronligature     |
| N Aacute              | N Dzigature           |
| N Abreve              | N Eacute              |
| N Abreveacute         | N Ebreve              |
| N Abrevedotbelow      | N Ecaron              |
| N Abrevegrave         | N Ecedilla            |
| N Abrevehook          | N Ecircumflex         |
| N Abrevetilde         | N Ecircumflexacute    |
| N Acaron              | N Ecircumflexdotbelow |
| N Acircumflex         | N Ecircumflexgrave    |
| N Acircumflexacute    | N Ecircumflexhook     |
| N Acircumflexdotbelow | N Ecircumflextilde    |
| N Acircumflexgrave    | N Ediaeresis          |
| N Acircumflexhook     | N Edotaccent          |
| N Acircumflextilde    | N Edotbelow           |
| N Adiaeresis          | N Edoublegrave        |
| N Adiaeresismacron    | N Egrave              |
| N Adotaccent          | N Ehook               |
| N Adotaccentmacron    | N Einvertedbreve      |
| N Adotbelow           | N Emacron             |
| N Adoublegrave        | N Egonek              |
| N Agrave              | N Eth                 |
| N Ahook               | N Etilde              |
| N Ainvertedbreve      | N Fhook               |
| N Amacron             | N Gacute              |
| N Agonek              | N Gbreve              |
| N Aring               | N Gcaron              |
| N Aringacute          | N Gcircumflex         |
| N Astroke             | N Gcommaaccent        |
| N Atilde              | N Gdotaccent          |
| N Bhook               | N Ghook               |
| N Cacute              | N Gstroke             |
| N Ccaron              | N Hcaron              |
| N Ccedilla            | N Hcircumflex         |
| N Ccircumflex         | N Hstroke             |
| N Cdotaccent          | N IJligature          |
| N Chook               | N Iacute              |
| N Cstroke             | N Ibreve              |
| N DZcaronligature     | N Icaron              |
| N DZligature          | N Icircumflex         |
| N Dafrican            | N Idiaeresis          |
| N Dcaron              | N Idotaccent          |
| N Dhook               | N Idotbelow           |
| N Dstroke             | N Idoublegrave        |

N Igrave  
N Ihook  
N Iinvertedbreve  
N Imacron  
N Iogonek  
N Istroke  
N Itilde  
N Jcircumflex  
N Kcaron  
N Kcommaaccent  
N Khook  
N LJligature  
N Lacute  
N Lbar  
N Lcaron  
N Lcommaaccent  
N Ldotmiddle  
N Ljligature  
N Lstroke  
N NJligature  
N Nacute  
N Ncaron  
N Ncommaaccent  
N Neng  
N Ngrave  
N Njligature  
N Ntilde  
N OEligature  
N Oacute  
N Obreve  
N Ocaron  
N Ocircumflex  
N Ocircumflexacute  
N Ocircumflexdotbelow  
N Ocircumflexgrave  
N Ocircumflexhook  
N Ocircumflextilde  
N Odiaeresis  
N Odiaeresismacron  
N Odotaccent  
N Odotaccentmacron  
N Odotbelow  
N Odoublegrave  
N Ograve

N Ohook  
N Ohorn  
N Ohornacute  
N Ohorndotbelow  
N Ohorngrave  
N Ohornhook  
N Ohorntilde  
N Ohungarumlaut  
N Oinvertedbreve  
N Omacron  
N Oogonek  
N Oogonekmacron  
N Ostroke  
N Ostrokeacute  
N Otilde  
N Otildemacron  
N Phook  
N Racute  
N Rcaron  
N Rcommaaccent  
N Rdoublegrave  
N Rinvertedbreve  
N Sacute  
N Scaron  
N Scedilla  
N Schwa  
N Scircumflex  
N Scommaaccent  
N Tcaron  
N Tcedilla  
N Tcommaaccent  
N Thook  
N Thorn  
N Tstroke  
N Uacute  
N Ubreve  
N Ucaron  
N Ucircumflex  
N Udiaeresis  
N Udiaeresisacute  
N Udiaeresiscaron  
N Udiaeresisgrave  
N Udiaeresismacron  
N Udotbelow

|                       |                          |
|-----------------------|--------------------------|
| N Udoublegrave        | N adiaeresismacron       |
| N Ugrave              | N adotaccent             |
| N Uhook               | N adotaccentmacron       |
| N Uhorn               | N adotbelow              |
| N Uhornacute          | N adoublegrave           |
| N Uhorndotbelow       | N aeacute                |
| N Uhorngrave          | N aeligature             |
| N Uhornhook           | N aemacron               |
| N Uhorntilde          | N agrave                 |
| N Uhungarumlaut       | N ahook                  |
| N Uinvertedbreve      | N ainvertedbreve         |
| N Umacron             | N amacron                |
| N Uogonek             | N aogonek                |
| N Uring               | N aring                  |
| N Utilde              | N aringacute             |
| N Wcircumflex         | N atilde                 |
| N Yacute              | N bhook                  |
| N Ycircumflex         | N breakablethinspace     |
| N Ydiaeresis          | N bstroke                |
| N Ydotbelow           | N cacute                 |
| N Ygrave              | N carriagereturn         |
| N Yhook               | N ccaron                 |
| N Ymacron             | N ccedilla               |
| N Ytilde              | N ccircumflex            |
| N Zacute              | N ccurl                  |
| N Zcaron              | N cdotaccent             |
| N Zdotaccent          | N chook                  |
| N Zhook               | N copyright              |
| N Zstroke             | N cstroke                |
| N aacute              | N cyrillicA              |
| N abreve              | N cyrillicAE             |
| N abreveacute         | N cyrillicAbreve         |
| N abrevedotbelow      | N cyrillicAdiaeresis     |
| N abrevegrave         | N cyrillicB              |
| N abrevehook          | N cyrillicBIGYUS         |
| N abrevetilde         | N cyrillicBIGYUSiotified |
| N acaron              | N cyrillicC              |
| N acircumflex         | N cyrillicCH             |
| N acircumflexacute    | N cyrillicCHEDC          |
| N acircumflexdotbelow | N cyrillicCHEDCabkhasian |
| N acircumflexgrave    | N cyrillicCHEabkhasian   |
| N acircumflexhook     | N cyrillicCHEdiaeresis   |
| N acircumflextilde    | N cyrillicCHEkhakassian  |
| N adiaeresis          | N cyrillicCHEvertstroke  |

|                              |                             |
|------------------------------|-----------------------------|
| N cyrillicD                  | N cyrillicKAbashkir         |
| N cyrillicDASIAPNEUMATA      | N cyrillicKAhook            |
| N cyrillicDJE                | N cyrillicKAstroke          |
| N cyrillicDZE                | N cyrillicKAvertstroke      |
| N cyrillicDZEabkhasian       | N cyrillicKJE               |
| N cyrillicDZHE               | N cyrillicKOPPA             |
| N cyrillicE                  | N cyrillicKSI               |
| N cyrillicELtail             | N cyrillicL                 |
| N cyrillicEMtail             | N cyrillicLITTLEYUS         |
| N cyrillicENDC               | N cyrillicLITTLEYUSiotified |
| N cyrillicENGHE              | N cyrillicLJE               |
| N cyrillicENhook             | N cyrillicM                 |
| N cyrillicENTail             | N cyrillicN                 |
| N cyrillicEREV               | N cyrillicNJE               |
| N cyrillicERY                | N cyrillicO                 |
| N cyrillicERTick             | N cyrillicOMEGA             |
| N cyrillicEbreve             | N cyrillicOMEGARound        |
| N cyrillicEdiaeresis         | N cyrillicOMEGAtitlo        |
| N cyrillicEgrave             | N cyrillicOT                |
| N cyrillicEiotified          | N cyrillicObarred           |
| N cyrillicF                  | N cyrillicObarreddiaeresis  |
| N cyrillicFITA               | N cyrillicOdiaeresis        |
| N cyrillicG                  | N cyrillicP                 |
| N cyrillicGHEmidhook         | N cyrillicPALATALIZATION    |
| N cyrillicGHEstroke          | N cyrillicPALOCHKA          |
| N cyrillicGHEupturn          | N cyrillicPEmidhook         |
| N cyrillicGJE                | N cyrillicPSI               |
| N cyrillicH                  | N cyrillicPSILIPNEUMATA     |
| N cyrillicHA                 | N cyrillicR                 |
| N cyrillicHADC               | N cyrillicS                 |
| N cyrillicHRDSN              | N cyrillicSCHWA             |
| N cyrillicI                  | N cyrillicSCHWAdiaeresis    |
| N cyrillicIE                 | N cyrillicSDSC              |
| N cyrillicII                 | N cyrillicSEMISOFT          |
| N cyrillicISHRT              | N cyrillicSFTSN             |
| N cyrillicISHRTtail          | N cyrillicSH                |
| N cyrillicIZHITSA            | N cyrillicSHCH              |
| N cyrillicIZHITSAdoublegrave | N cyrillicSHHA              |
| N cyrillicIdiaeresis         | N cyrillicT                 |
| N cyrillicIgrave             | N cyrillicTEDC              |
| N cyrillicImacron            | N cyrillicTETSE             |
| N cyrillicJE                 | N cyrillicTITLO             |
| N cyrillicK                  | N cyrillicTSHE              |
| N cyrillicKADC               | N cyrillicU                 |



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|--------------------------|------------------------------|
| N cyrillicUK             | N cyrillicgrave              |
| N cyrillicUSHRT          | N cyrilliceiortified         |
| N cyrillicUdiaeresis     | N cyrilliceltail             |
| N cyrillicUdoubleacute   | N cyrillicemtail             |
| N cyrillicUmacron        | N cyrillicendc               |
| N cyrillicV              | N cyrillicenghe              |
| N cyrillicYA             | N cyrillicenhook             |
| N cyrillicYAT            | N cyrillicentail             |
| N cyrillicYERUdiaeresis  | N cyrillicerev               |
| N cyrillicYI             | N cyrillicertick             |
| N cyrillicYO             | N cyrillicery                |
| N cyrillicYU             | N cyrillicf                  |
| N cyrillicYstr           | N cyrillicfita               |
| N cyrillicYstrstroke     | N cyrillicg                  |
| N cyrillicZ              | N cyrillicghemidhook         |
| N cyrillicZDSC           | N cyrillicghestroke          |
| N cyrillicZEdiaeresis    | N cyrillicgheupturn          |
| N cyrillicZH             | N cyrillicgje                |
| N cyrillicZHEbreve       | N cyrillich                  |
| N cyrillicZHEdescender   | N cyrillicha                 |
| N cyrillicZHEdiaeresis   | N cyrillichadc               |
| N cyrillica              | N cyrillichrdsn              |
| N cyrillicabreve         | N cyrillici                  |
| N cyrillicadiaeresis     | N cyrillicidiaeresis         |
| N cyrillicae             | N cyrillicie                 |
| N cyrillicb              | N cyrillicigrave             |
| N cyrillicbigyus         | N cyrillicii                 |
| N cyrillicbigyusiotified | N cyrillicimacron            |
| N cyrillicc              | N cyrillicishrt              |
| N cyrillicch             | N cyrillicishrttail          |
| N cyrilliccheabkhasian   | N cyrillicizhitsa            |
| N cyrillicchedc          | N cyrillicizhitsadoublegrave |
| N cyrillicchedcabkhasian | N cyrillicje                 |
| N cyrillicchediaeresis   | N cyrillick                  |
| N cyrillicchekhakassian  | N cyrillickabashkir          |
| N cyrillicchevertstroke  | N cyrillickadc               |
| N cyrillicd              | N cyrillickahook             |
| N cyrillicdje            | N cyrillickastroke           |
| N cyrillicdze            | N cyrillickavertstroke       |
| N cyrillicdzeabkhasian   | N cyrillickje                |
| N cyrillicdzhe           | N cyrillickoppa              |
| N cyrillice              | N cyrillicksi                |
| N cyrillicebreve         | N cyrillicl                  |
| N cyrillicediaeresis     | N cyrilliclittleyus          |

N cyrilliclittleyusiotified  
N cyrilliclje  
N cyrillicm  
N cyrillicn  
N cyrillicnje  
N cyrillico  
N cyrillicobarred  
N cyrillicobarreddiaeresis  
N cyrillicodiaeresis  
N cyrillicomega  
N cyrillicomegaround  
N cyrillicomegatitlo  
N cyrillicot  
N cyrillicp  
N cyrillicpemidhook  
N cyrillicpsi  
N cyrillicr  
N cyrillics  
N cyrillicschwa  
N cyrillicschwadiaeresis  
N cyrillicsdsc  
N cyrillicsemisoft  
N cyrillicsftsn  
N cyrillicsh  
N cyrillicshch  
N cyrillicshha  
N cyrillict  
N cyrillictedc  
N cyrillictetse  
N cyrillictshe  
N cyrillicu  
N cyrillicudiaeresis  
N cyrillicudoubleacute  
N cyrillicuk  
N cyrillicumacron  
N cyrillicushrt  
N cyrillicv  
N cyrillicya  
N cyrillicyat  
N cyrillicyerudiaeresis  
N cyrillicyi  
N cyrillicyo  
N cyrillicystr  
N cyrillicystrstroke

N cyrillicyu  
N cyrillicz  
N cyrilliczdsc  
N cyrilliczediaeresis  
N cyrilliczh  
N cyrilliczhebreve  
N cyrilliczhedescender  
N cyrilliczhediaeresis  
N dcaron  
N dcurl  
N dhook  
N dotlessI  
N dotlessJ  
N dotlessi  
N dotlessj  
N dotlessjstroke  
N dstroke  
N dtail  
N dzcaronligature  
N dzligature  
N eacute  
N ebreve  
N ecaron  
N ecedilla  
N ecircumflex  
N ecircumflexacute  
N ecircumflexdotbelow  
N ecircumflexgrave  
N ecircumflexhook  
N ecircumflextilde  
N ediaeresis  
N edotaccent  
N edotbelow  
N edoublegrave  
N egrave  
N ehook  
N einvertedbreve  
N emacron  
N emdash  
N emspace  
N endash  
N enspace  
N eogonek  
N etilde

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| N exclamdown                        | N greekEpsilon                    |
| N ffligature                        | N greekEpsilonondasia             |
| N ffligature                        | N greekEpsilonondasiatonos        |
| N ffligature                        | N greekEpsilonondasiavaria        |
| N fhook                             | N greekEpsilonpsili               |
| N figurespace                       | N greekEpsilonpsilitonos          |
| N filigature                        | N greekEpsilonpsilivaria          |
| N fiveeighths                       | N greekEpsilontonos               |
| N fivesixths                        | N greekEpsilonvaria               |
| N flligature                        | N greekEta                        |
| N fourfifths                        | N greekEtadasia                   |
| N fourperemspace                    | N greekEtadasiaaperispomeni       |
| N gacute                            | N greekEtadasiatonos              |
| N gbreve                            | N greekEtadasiaavaria             |
| N gcaron                            | N greekEtaiotasub                 |
| N gcircumflex                       | N greekEtaiotasubdasia            |
| N gcommaaccent                      | N greekEtaiotasubdasiaperispomeni |
| N gdotaccent                        | N greekEtaiotasubdasiatonos       |
| N greekAlpha                        | N greekEtaiotasubdasiavaria       |
| N greekAlphadasia                   | N greekEtaiotasubpsili            |
| N greekAlphadasiaaperispomeni       | N greekEtaiotasubpsiliperispomeni |
| N greekAlphadasiatonos              | N greekEtaiotasubpsilitonos       |
| N greekAlphadasiaavaria             | N greekEtaiotasubpsilivaria       |
| N greekAlphaiotasub                 | N greekEtaptsili                  |
| N greekAlphaiotasubdasia            | N greekEtaptsiliperispomeni       |
| N greekAlphaiotasubdasiaperispomeni | N greekEtaptsilitonos             |
| N greekAlphaiotasubdasiatonos       | N greekEtaptsilivaria             |
| N greekAlphaiotasubdasiavaria       | N greekEtatonos                   |
| N greekAlphaiotasubpsili            | N greekEtavaria                   |
| N greekAlphaiotasubpsiliperispomeni | N greekGamma                      |
| N greekAlphaiotasubpsilitonos       | N greekIota                       |
| N greekAlphaiotasubpsilivaria       | N greekIotadasia                  |
| N greekAlphamacron                  | N greekIotadasiaaperispomeni      |
| N greekAlphapsili                   | N greekIotadasiatonos             |
| N greekAlphapsiliperispomeni        | N greekIotadasiaavaria            |
| N greekAlphapsilitonos              | N greekIotadialytika              |
| N greekAlphapsilivaria              | N greekIotamacron                 |
| N greekAlphatonos                   | N greekIotapsili                  |
| N greekAlphavaria                   | N greekIotapsiliperispomeni       |
| N greekAlphavrachy                  | N greekIotapsilitonos             |
| N greekBeta                         | N greekIotapsilivaria             |
| N greekChi                          | N greekIotatonos                  |
| N greekCoronis                      | N greekIotavaria                  |
| N greekDelta                        | N greekIotavrachy                 |

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| N greekKappa                        | N greekUpsilondasiaperispomeni      |
| N greekLambda                       | N greekUpsilondasiatonos            |
| N greekMu                           | N greekUpsilondasiavaria            |
| N greekNu                           | N greekUpsilondialytika             |
| N greekOmega                        | N greekUpsilonmacron                |
| N greekOmegadasia                   | N greekUpsilonontonos               |
| N greekOmegadasiaaperispomeni       | N greekUpsilonvaria                 |
| N greekOmegadasiatonos              | N greekUpsilonvrachy                |
| N greekOmegadasiaavaria             | N greekXi                           |
| N greekOmegaiotasub                 | N greekZeta                         |
| N greekOmegaiotasubdasia            | N greekalpha                        |
| N greekOmegaiotasubdasiaperispomeni | N greekalphadasia                   |
| N greekOmegaiotasubdasiatonos       | N greekalphadasiaaperispomeni       |
| N greekOmegaiotasubdasiavaria       | N greekalphadasiatonos              |
| N greekOmegaiotasubpsili            | N greekalphadasiaavaria             |
| N greekOmegaiotasubpsiliperispomeni | N greekalphaiotasub                 |
| N greekOmegaiotasubpsilitonos       | N greekalphaiotasubdasia            |
| N greekOmegaiotasubpsilivaria       | N greekalphaiotasubdasiaperispomeni |
| N greekOmegapsili                   | N greekalphaiotasubdasiatonos       |
| N greekOmegapsiliperispomeni        | N greekalphaiotasubdasiavaria       |
| N greekOmegapsilitonos              | N greekalphaiotasubperispomeni      |
| N greekOmegapsilivaria              | N greekalphaiotasubpsili            |
| N greekOmegatonos                   | N greekalphaiotasubpsiliperispomeni |
| N greekOmegavaria                   | N greekalphaiotasubpsilitonos       |
| N greekOmicron                      | N greekalphaiotasubpsilivaria       |
| N greekOmicrondasia                 | N greekalphaiotasubtonos            |
| N greekOmicrondasiatonos            | N greekalphaiotasubvaria            |
| N greekOmicrondasiavaria            | N greekalphamacron                  |
| N greekOmicronpsili                 | N greekalphaoxia                    |
| N greekOmicronpsilitonos            | N greekalphaperispomeni             |
| N greekOmicronpsilivaria            | N greekalphapsili                   |
| N greekOmicrontonos                 | N greekalphapsiliperispomeni        |
| N greekOmicronvaria                 | N greekalphapsilitonos              |
| N greekPhi                          | N greekalphapsilivaria              |
| N greekPi                           | N greekalphatonos                   |
| N greekPsi                          | N greekalphavaria                   |
| N greekRho                          | N greekalphavrachy                  |
| N greekRhodasia                     | N greekbeta                         |
| N greekSigma                        | N greekchi                          |
| N greekSigmaunate                   | N greekdasia                        |
| N greekTau                          | N greekdasiaperispomeni             |
| N greekTheta                        | N greekdasiatonos                   |
| N greekUpsilon                      | N greekdasiavaria                   |
| N greekUpsilondasia                 | N greekdelta                        |

N greekdialytikaperispomeni  
N greekdialytikatonos  
N greekdialytikavaria  
N greekdigamma  
N greekepsilon  
N greekepsilonalt  
N greekepsilondasia  
N greekepsilondasiatonos  
N greekepsilondasiavaria  
N greekepsilonoxia  
N greekepsilonpsili  
N greekepsilonpsilitonos  
N greekepsilonpsilivaria  
N greekepsilontonos  
N greekepsilonvaria  
N greeketa  
N greeketadasia  
N greeketadasiaaperispomeni  
N greeketadasiatonos  
N greeketadasiaavaria  
N greeketaiotasub  
N greeketaiotasubdasia  
N greeketaiotasubdasiaperispomeni  
N greeketaiotasubdasiatonos  
N greeketaiotasubdasiavaria  
N greeketaiotasubperispomeni  
N greeketaiotasubpsili  
N greeketaiotasubpsiliperispomeni  
N greeketaiotasubpsilitonos  
N greeketaiotasubpsilivaria  
N greeketaiotasubtonos  
N greeketaiotasubvaria  
N greeketaoxia  
N greeketaperispomeni  
N greeketapsili  
N greeketapsiliperispomeni  
N greeketapsilitonos  
N greeketapsilivaria  
N greeketatonos  
N greeketavaria  
N greekfinalsigma  
N greekgamma  
N greekiota  
N greekiotadasia

N greekiotadasiaaperispomeni  
N greekiotadasiatonos  
N greekiotadasiaavaria  
N greekiotadialytika  
N greekiotadialytikaperispomeni  
N greekiotadialytikatonos  
N greekiotadialytikavaria  
N greekiotamacron  
N greekiotaoxia  
N greekiotaperispomeni  
N greekiotapsili  
N greekiotapsiliperispomeni  
N greekiotapsilitonos  
N greekiotapsilivaria  
N greekiotatonos  
N greekiotavaria  
N greekiotavrachy  
N greekkappa  
N greekkoppa  
N greeklambda  
N greekmu  
N greeknu  
N greeknunkoppa  
N greekomega  
N greekomegadasia  
N greekomegadasiaaperispomeni  
N greekomegadasiatonos  
N greekomegadasiaavaria  
N greekomegaiotasub  
N greekomegaiotasubdasia  
N greekomegaiotasubdasiaperispomeni  
N greekomegaiotasubdasiatonos  
N greekomegaiotasubdasiavaria  
N greekomegaiotasubperispomeni  
N greekomegaiotasubpsili  
N greekomegaiotasubpsiliperispomeni  
N greekomegaiotasubpsilitonos  
N greekomegaiotasubpsilivaria  
N greekomegaiotasubtonos  
N greekomegaiotasubvaria  
N greekomegaoxia  
N greekomegaperispomeni  
N greekomegapsili  
N greekomegapsiliperispomeni

|                                |                                    |
|--------------------------------|------------------------------------|
| N greekomegapsilitonos         | N greekupsilondialytikaperispomeni |
| N greekomegapsilivaria         | N greekupsilondialytikatonos       |
| N greekomegatonos              | N greekupsilondialytikavaria       |
| N greekomegavaria              | N greekupsilonmacron               |
| N greekomicron                 | N greekupsilonoxia                 |
| N greekomicrondasia            | N greekupsilonperispomeni          |
| N greekomicrondasiatonos       | N greekupsilonpsili                |
| N greekomicrondasiavaria       | N greekupsilonpsiliperispomeni     |
| N greekomicronoxia             | N greekupsilonpsilitonos           |
| N greekomicronpsili            | N greekupsilonpsilivaria           |
| N greekomicronpsilitonos       | N greekupsilontonos                |
| N greekomicronpsilivaria       | N greekupsilonvaria                |
| N greekomicrontonos            | N greekupsilonvrachy               |
| N greekomicronvaria            | N greekvaria                       |
| N greekoxia                    | N greekxi                          |
| N greekperispomeni             | N greekzeta                        |
| N greekphi                     | N gstroke                          |
| N greekphialt                  | N guilsingleleft                   |
| N greekpi                      | N guilsingleright                  |
| N greekpialt                   | N hairspace                        |
| N greekprosgegrammeni          | N hcaron                           |
| N greekpsi                     | N hcircumflex                      |
| N greekpsili                   | N hebrewAlef                       |
| N greekpsiliperispomeni        | N hebrewAyin                       |
| N greekpsilitonos              | N hebrewBet                        |
| N greekpsilivaria              | N hebrewDalet                      |
| N greekrho                     | N hebrewGimel                      |
| N greekrhoalt                  | N hebrewHe                         |
| N greekrhodasia                | N hebrewHet                        |
| N greekrhopsili                | N hebrewKaf                        |
| N greeksampi                   | N hebrewKaffinal                   |
| N greeksigma                   | N hebrewLamed                      |
| N greeksigmalunate             | N hebrewMem                        |
| N greekstigma                  | N hebrewMemfinal                   |
| N greektau                     | N hebrewNun                        |
| N greektheta                   | N hebrewNunfinal                   |
| N greekthetaalt                | N hebrewPe                         |
| N greektionos                  | N hebrewPefinal                    |
| N greekupsilon                 | N hebrewQof                        |
| N greekupsilondasia            | N hebrewResh                       |
| N greekupsilondasiaperispomeni | N hebrewSamekh                     |
| N greekupsilondasiatonos       | N hebrewShin                       |
| N greekupsilondasiavaria       | N hebrewTav                        |
| N greekupsilondiaeresis        | N hebrewTet                        |

|                            |                       |
|----------------------------|-----------------------|
| N hebrewTsadi              | N ncurl               |
| N hebrewTsadifinal         | N neng                |
| N hebrewVav                | N ngrave              |
| N hebrewYod                | N njligature          |
| N hebrewZayin              | N nobreakspace        |
| N hstroke                  | N ntilde              |
| N iacute                   | N oacute              |
| N ibreve                   | N obreve              |
| N icaron                   | N ocaron              |
| N icircumflex              | N ocircumflex         |
| N ideographichalffillspace | N ocircumflexacute    |
| N ideographicspace         | N ocircumflexdotbelow |
| N idiaeresis               | N ocircumflexgrave    |
| N idotaccent               | N ocircumflexhook     |
| N idotbelow                | N ocircumflextilde    |
| N idoublegrave             | N odiaeresis          |
| N igrave                   | N odiaeresismacron    |
| N ihook                    | N odotaccent          |
| N iinvertedbreve           | N odotaccentmacron    |
| N ijligature               | N odotbelow           |
| N imacron                  | N odoublegrave        |
| N iogonek                  | N oeligature          |
| N itilde                   | N ograve              |
| N jcaron                   | N ohook               |
| N jcircumflex              | N ohorn               |
| N kcaron                   | N ohornacute          |
| N kcommaaccent             | N ohorndotbelow       |
| N khook                    | N ohorngrave          |
| N kkra                     | N ohornhook           |
| N lacute                   | N ohorntilde          |
| N lbar                     | N ohungarumlaut       |
| N lcaron                   | N oinvertedbreve      |
| N lcommaaccent             | N omacron             |
| N lcurl                    | N oneeighth           |
| N ldotmiddle               | N onefifth            |
| N leftguillemot            | N onehalf             |
| N ljligature               | N onequarter          |
| N lstroke                  | N onesixth            |
| N medspace                 | N onesuperior         |
| N nacute                   | N onethird            |
| N napostrophe              | N oogonek             |
| N narrownobreakspace       | N oogonekmacron       |
| N ncaron                   | N ordfeminine         |
| N ncommaaccent             | N ordmasculine        |

|                    |                   |
|--------------------|-------------------|
| N ostroke          | N romanii         |
| N ostrokeacute     | N romaniii        |
| N otilde           | N romaniv         |
| N otildemacron     | N romanix         |
| N paragraphmark    | N romanl          |
| N periodcentered   | N romanm          |
| N perthousand      | N romanv          |
| N phook            | N romanvi         |
| N punctuationspace | N romanvii        |
| N questiondown     | N romanviii       |
| N quotedbl         | N romanx          |
| N quotedblbase     | N romanxi         |
| N quotedblleft     | N romanxii        |
| N quotedblright    | N sacute          |
| N quoteleft        | N scaron          |
| N quoteright       | N scedilla        |
| N quotesingle      | N schwa           |
| N quotesinglebase  | N schwahook       |
| N racute           | N scircumflex     |
| N rcaron           | N scommaaccent    |
| N rcommaaccent     | N sectionmark     |
| N rdoublegrave     | N seveneighths    |
| N registered       | N sixperemspace   |
| N rightguillemot   | N slong           |
| N rinvertedbreve   | N softthyphen     |
| N romanC           | N ssharp          |
| N romanD           | N stligature      |
| N romanI           | N tcaron          |
| N romanII          | N tcedilla        |
| N romanIII         | N tcommaaccent    |
| N romanIV          | N tcurl           |
| N romanIX          | N textAngstrom    |
| N romanL           | N textacute       |
| N romanM           | N textampersand   |
| N romanV           | N textasciicircum |
| N romanVI          | N textasciitilde  |
| N romanVII         | N textat          |
| N romanVIII        | N textbackslash   |
| N romanX           | N textbar         |
| N romanXI          | N textbottomcomma |
| N romanXII         | N textbottomdot   |
| N romanc           | N textbraceleft   |
| N romand           | N textbraceright  |
| N romani           | N textbreve       |



|                     |                    |
|---------------------|--------------------|
| N textbrokenbar     | N textunderscore   |
| N textbullet        | N textyen          |
| N textcaron         | N thook            |
| N textcedilla       | N thorn            |
| N textcelsius       | N threeeighths     |
| N textcent          | N threefifths      |
| N textcircledP      | N threeperemspace  |
| N textcircumflex    | N threequarter     |
| N textcomma         | N threesuperior    |
| N textcurrency      | N trademark        |
| N textdag           | N tstroke          |
| N textddag          | N twofifths        |
| N textdegree        | N twosuperior      |
| N textdiaeresis     | N twothirds        |
| N textdiv           | N uacute           |
| N textdollar        | N ubreve           |
| N textdong          | N ucaron           |
| N textdotaccent     | N ucircumflex      |
| N textellipsis      | N udiaeresis       |
| N texteuro          | N udiaeresisacute  |
| N textfraction      | N udiaeresiscaron  |
| N textgrave         | N udiaeresisgrave  |
| N texthash          | N udiaeresismacron |
| N texthorizontalbar | N udotbelow        |
| N texthungarumlaut  | N udoublegrave     |
| N textthyphen       | N ugrave           |
| N textkelvin        | N uhook            |
| N textlognot        | N uhorn            |
| N textmacron        | N uhornacute       |
| N textmho           | N uhorndotbelow    |
| N textminus         | N uhorngrave       |
| N textmu            | N uhornhook        |
| N textmultiply      | N uhorntilde       |
| N textnumero        | N uhungarumlaut    |
| N textogonek        | N uinvertedbreve   |
| N textohm           | N umacron          |
| N textounce         | N uogonek          |
| N textpercent       | N uring            |
| N textperiod        | N utilde           |
| N textpm            | N wcircumflex      |
| N textring          | N yacute           |
| N textslash         | N ycircumflex      |
| N textsterling      | N ydiaeresis       |
| N texttilde         | N ydotbelow        |

|                         |                                 |
|-------------------------|---------------------------------|
| N ygrave                | N Adieresismacron               |
| N yhook                 | N Adotbelow                     |
| N ymacron               | N Adotmacron                    |
| N ytilde                | N Agrave                        |
| N zacute                | N Ahookabove                    |
| N zcaron                | N Aiecyrillic                   |
| N zdotaccent            | N Ainvertedbreve                |
| N zerowidthnobreakspace | N Alpha                         |
| N zerowidthspace        | N Alphatonos                    |
| N zhook                 | N Amacron                       |
| N zstroke               | N Amonospace                    |
| N zwj                   | N Aogonek                       |
| N zwnj                  | N Aring                         |
| F is_known              | N Aringacute                    |
| D known                 | N Aringbelow                    |
| F load                  | N Atilde                        |
| F make_unicode_vector   | N Aybarmenian                   |
| D math                  | N B                             |
| T names                 | N Bcircle                       |
| T unicodes              | N Bdotaccent                    |
| N A                     | N Bdotbelow                     |
| N AE                    | N Becyrillic                    |
| N AEacute               | N Benarmenian                   |
| N AEmacron              | N Beta                          |
| N Aacute                | N Bhook                         |
| N Abreve                | N Blinebelow                    |
| N Abreveacute           | N Bmonospace                    |
| N Abrevecyrillic        | N Btopbar                       |
| N Abrevedotbelow        | N C                             |
| N Abrevegrave           | N Caarmenian                    |
| N Abrevehookabove       | N Cacute                        |
| N Abrevetilde           | N Ccaron                        |
| N Acaron                | N Ccedilla                      |
| N Acircle               | N Ccedillaacute                 |
| N Acircumflex           | N Ccircle                       |
| N Acircumflexacute      | N Ccircumflex                   |
| N Acircumflexdotbelow   | N Cdot                          |
| N Acircumflexgrave      | N Cdotaccent                    |
| N Acircumflexhookabove  | N Chaarmenian                   |
| N Acircumflextilde      | N Cheabkhasiancyrillic          |
| N Acyrillic             | N Checyrillic                   |
| N Adblgrave             | N Chedescenderabkhasiancyrillic |
| N Adieresis             | N Chedescendercyrillic          |
| N Adieresiscyrillic     | N Chedieresiscyrillic           |

|                             |                        |
|-----------------------------|------------------------|
| N Cheharmenian              | N Ecircumflexbelow     |
| N Chekhakassiancyrillic     | N Ecircumflexdotbelow  |
| N Cheverticalstrokecyrillic | N Ecircumflexgrave     |
| N Chi                       | N Ecircumflexhookabove |
| N Chook                     | N Ecircumflextilde     |
| N Cmonospace                | N Ecyrillic            |
| N Coarmenian                | N Edblgrave            |
| N D                         | N Edieresis            |
| N DZ                        | N Edot                 |
| N DZcaron                   | N Edotaccent           |
| N Daarmenian                | N Edotbelow            |
| N Dafrican                  | N Efcyrillic           |
| N Dcaron                    | N Egrave               |
| N Dcedilla                  | N Eharmenian           |
| N Dcircle                   | N Ehookabove           |
| N Dcircumflexbelow          | N Eightroman           |
| N Dcroat                    | N Einvertedbreve       |
| N Ddotaccent                | N Eiotifiedcyrillic    |
| N Ddotbelow                 | N Elcyrillic           |
| N Decyrillic                | N Elevenroman          |
| N Deicoptic                 | N Emacron              |
| N Delta                     | N Emacronacute         |
| N Deltagreek                | N Emacrongrave         |
| N Dhook                     | N Emcyrillic           |
| N Digammagreek              | N Emonospace           |
| N Djecyrillic               | N Encyrillic           |
| N Dlinebelow                | N Endescendercyrillic  |
| N Dmonospace                | N Eng                  |
| N Dslash                    | N Enghecyrillic        |
| N Dtopbar                   | N Enhookcyrillic       |
| N Dz                        | N Egonek               |
| N Dzcaron                   | N Eopen                |
| N Dzeabkhasiancyrillic      | N Epsilon              |
| N Dzecyrillic               | N Epsilontonos         |
| N Dzhecyrillic              | N Ercyrillic           |
| N E                         | N Ereversed            |
| N Eacute                    | N Ereversedcyrillic    |
| N Ebreve                    | N Escyrillic           |
| N Ecaron                    | N Esdescendercyrillic  |
| N Ecedillabreve             | N Esh                  |
| N Echarmenian               | N Eta                  |
| N Ecircle                   | N Etarmenian           |
| N Ecircumflex               | N Etatonos             |
| N Ecircumflexacute          | N Eth                  |

|                         |                       |
|-------------------------|-----------------------|
| N Etilde                | N H18543              |
| N Etildebelow           | N H18551              |
| N Euro                  | N H22073              |
| N Ezh                   | N HPsquare            |
| N Ezhcaron              | N Haabkhasiancyrillic |
| N Ezhreversed           | N Hadescendercyrillic |
| N F                     | N Hardsigncyrillic    |
| N Fcircle               | N Hbar                |
| N Fdotaccent            | N Hbrevebelow         |
| N Feharmenian           | N Hcedilla            |
| N Feicoptic             | N Hcircle             |
| N Fhook                 | N Hcircumflex         |
| N Fitacyrillic          | N Hdieresis           |
| N Fiveroman             | N Hdotaccent          |
| N Fmonospace            | N Hdotbelow           |
| N Fourroman             | N Hmonospace          |
| N G                     | N Hoarmenian          |
| N GBSquare              | N Horicoptic          |
| N Gacute                | N Hzsquare            |
| N Gamma                 | N I                   |
| N Gammaafrican          | N IAcyrillic          |
| N Gangiacoptic          | N IJ                  |
| N Gbreve                | N IUcyrillic          |
| N Gcaron                | N Iacute              |
| N Gcedilla              | N Ibreve              |
| N Gcircle               | N Icaron              |
| N Gcircumflex           | N Icircle             |
| N Gcommaaccent          | N Icircumflex         |
| N Gdot                  | N Icyrillic           |
| N Gdotaccent            | N Idblgrave           |
| N Gecyrillic            | N Idieresis           |
| N Ghadarmenian          | N Idieresisacute      |
| N Ghemiddlehookcyrillic | N Idieresiscyrillic   |
| N Ghestrokecyrillic     | N Idot                |
| N Gheupturncyrillic     | N Idotaccent          |
| N Ghook                 | N Idotbelow           |
| N Gimarmenian           | N Iebrevecyrillic     |
| N Gjecyrillic           | N Iecyrillic          |
| N Gmacron               | N Ifraktur            |
| N Gmonospace            | N Igrave              |
| N Gsmallhook            | N Ihookabove          |
| N Gstroke               | N Iicyrillic          |
| N H                     | N Iinvertedbreve      |
| N H18533                | N Iishortcyrillic     |

N Imacron  
 N Imacroncyrillic  
 N Imonospace  
 N Iniarmenian  
 N Iocyrlilic  
 N Iogonek  
 N Iota  
 N Iotaafrican  
 N Iotadieresis  
 N Iotatonos  
 N Istroke  
 N Itilde  
 N Itildebelow  
 N Izhitsacyrillic  
 N Izhitsadblgravecyrillic  
 N J  
 N Jaarmenian  
 N Jcircle  
 N Jcircumflex  
 N Jecyrillic  
 N Jheharmenian  
 N Jmonospace  
 N K  
 N KSquare  
 N KSquare  
 N Kabashkircyrillic  
 N Kacute  
 N Kacyrillic  
 N Kadescendercyrillic  
 N Kahookcyrillic  
 N Kappa  
 N Kastrokecyrillic  
 N Kaverticalserokecyrillic  
 N Kcaron  
 N Kcedilla  
 N Kcircle  
 N Kcommaaccent  
 N Kdotbelow  
 N Keharmenian  
 N Kenarmenian  
 N Khacyrillic  
 N Kheicoptic  
 N Khook  
 N Kjecyrillic

N Klinebelow  
 N Kmonospace  
 N Koppacyrillic  
 N Koppagreek  
 N Ksicyrillic  
 N L  
 N LJ  
 N Lacute  
 N Lambda  
 N Lcaron  
 N Lcedilla  
 N Lcircle  
 N Lcircumflexbelow  
 N Lcommaaccent  
 N Ldot  
 N Ldotaccent  
 N Ldotbelow  
 N Ldotbelowmacron  
 N Liwnarmenian  
 N Lj  
 N Ljecyrillic  
 N Llinebelow  
 N Lmonospace  
 N Lslash  
 N M  
 N MSquare  
 N Macute  
 N Mcircle  
 N Mdotaccent  
 N Mdotbelow  
 N Menarmenian  
 N Mmonospace  
 N Mturned  
 N Mu  
 N N  
 N NJ  
 N Nacute  
 N Ncaron  
 N Ncedilla  
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 N Ncommaaccent  
 N Ndotaccent  
 N Ndotbelow

N Nhookleft  
N Nineroman  
N Nj  
N Njecyrillic  
N Nlinebelow  
N Nmonospace  
N Nowarmenian  
N Ntilde  
N Nu  
N O  
N OE  
N Oacute  
N Obarredcyrillic  
N Obarreddieriscyrillic  
N Obreve  
N Ocaron  
N Ocenteredtilde  
N Ocircle  
N Ocircumflex  
N Ocircumflexacute  
N Ocircumflexdotbelow  
N Ocircumflexgrave  
N Ocircumflexhookabove  
N Ocircumflextilde  
N Ocyrillic  
N Odblacute  
N Odblgrave  
N Odieresis  
N Odierescyrillic  
N Odotbelow  
N Ograve  
N Oharmenian  
N Ohm  
N Ohookabove  
N Ohorn  
N Ohornacute  
N Ohorndotbelow  
N Ohorngrave  
N Ohornhookabove  
N Ohorntilde  
N Ohungarumlaut  
N Oi  
N Oinvertedbreve  
N Omacron

N Omacronacute  
N Omacrongrave  
N Omega  
N Omegacyrillic  
N Omegagreek  
N Omegaroundcyrillic  
N Omegatitlocyrillic  
N Omegatonos  
N Omicron  
N Omicrontonos  
N Omonospace  
N Oneroman  
N Oogonek  
N Oogonekmacron  
N Open  
N Oslash  
N Oslashacute  
N Ostrokeacute  
N Otcyrillic  
N Otilde  
N Otildeacute  
N Otildedieresis  
N P  
N Pacute  
N Pcircle  
N Pdotaccent  
N Pecyrillic  
N Peharmenian  
N Pemiddlehookcyrillic  
N Phi  
N Phook  
N Pi  
N Piwrarmenian  
N Pmonospace  
N Psi  
N Psicyrillic  
N Q  
N Qcircle  
N Qmonospace  
N R  
N Raarmenian  
N Racute  
N Rcaron  
N Rcedilla

|                          |                       |
|--------------------------|-----------------------|
| N Rcircle                | N SF400000            |
| N Rcommaaccent           | N SF410000            |
| N Rdblgrave              | N SF420000            |
| N Rdotaccent             | N SF430000            |
| N Rdotbelow              | N SF440000            |
| N Rdotbelowmacron        | N SF450000            |
| N Reharmerian            | N SF460000            |
| N Rfraktur               | N SF470000            |
| N Rho                    | N SF480000            |
| N Rinvertedbreve         | N SF490000            |
| N Rlinebelow             | N SF50000             |
| N Rmonospace             | N SF500000            |
| N Rsmallinverted         | N SF510000            |
| N Rsmallinvertedsuperior | N SF520000            |
| N S                      | N SF530000            |
| N SF010000               | N SF540000            |
| N SF020000               | N SF60000             |
| N SF030000               | N SF70000             |
| N SF040000               | N SF80000             |
| N SF050000               | N SF90000             |
| N SF060000               | N Sacute              |
| N SF070000               | N Sacutedotaccent     |
| N SF080000               | N Sampigreek          |
| N SF090000               | N Scaron              |
| N SF10000                | N Scarondotaccent     |
| N SF100000               | N Scedilla            |
| N SF110000               | N Schwa               |
| N SF190000               | N Schwacyrillic       |
| N SF20000                | N Schwadiesiscyrillic |
| N SF200000               | N Scircle             |
| N SF210000               | N Scircumflex         |
| N SF220000               | N Scommaaccent        |
| N SF230000               | N Sdotaccent          |
| N SF240000               | N Sdotbelow           |
| N SF250000               | N Sdotbelowdotaccent  |
| N SF260000               | N Seharmerian         |
| N SF270000               | N Sevenroman          |
| N SF280000               | N Shaarmenian         |
| N SF30000                | N Shacyrillic         |
| N SF360000               | N Shchacyrillic       |
| N SF370000               | N Sheicoptic          |
| N SF380000               | N Shhacyrillic        |
| N SF390000               | N Shimacoptic         |
| N SF40000                | N Sigma               |

N Sixroman  
N Smonospace  
N Softsigncyrillic  
N Stigmagreek  
N T  
N Tau  
N Tbar  
N Tcaron  
N Tcedilla  
N Tcircle  
N Tcircumflexbelow  
N Tcommaaccent  
N Tdotaccent  
N Tdotbelow  
N Tecyrillic  
N Tedescendercyrillic  
N Tenroman  
N Tetsecyrillic  
N Theta  
N Thook  
N Thorn  
N Threeroman  
N Tiwnarmenian  
N Tlinebelow  
N Tmonospace  
N Toarmenian  
N Tonefive  
N Tonesix  
N Tonetwo  
N Tretroflexhook  
N Tsecyrillic  
N Tshcyrillic  
N Twelveroman  
N Tworoman  
N U  
N Uacute  
N Ubreve  
N Ucaron  
N Ucircle  
N Ucircumflex  
N Ucircumflexbelow  
N Ucyrillic  
N Udblacute  
N Udblgrave

N Udieresis  
N Udieresisacute  
N Udieresisbelow  
N Udieresiscaron  
N Udieresiscyrillic  
N Udieresisgrave  
N Udieresismacron  
N Udotbelow  
N Ugrave  
N Uhookabove  
N Uhorn  
N Uhornacute  
N Uhorndotbelow  
N Uhorngrave  
N Uhornhookabove  
N Uhorntilde  
N Uhungarumlaut  
N Uhungarumlautcyrillic  
N Uinvertedbreve  
N Ukcyrillic  
N Umacron  
N Umacroncyrillic  
N Umacrondieresis  
N Umonospace  
N Uogonek  
N Upsilon  
N Upsilon1  
N Upsilonacutehooksymbolgreek  
N Upsilonafrican  
N Upsilondieresis  
N Upsilondieresishooksymbolgreek  
N Upsilonhooksymbol  
N Upsilonontonos  
N Uring  
N Ushortcyrillic  
N Ustraightcyrillic  
N Ustraightstrokecyrillic  
N Utilde  
N Utildeacute  
N Utildebelow  
N V  
N Vcircle  
N Vdotbelow  
N Vecyrillic



N Vewarmenian  
 N Vhook  
 N Vmonospace  
 N Voarmenian  
 N Vtilde  
 N W  
 N Wacute  
 N Wcircle  
 N Wcircumflex  
 N Wdieresis  
 N Wdotaccent  
 N Wdotbelow  
 N Wgrave  
 N Wmonospace  
 N X  
 N Xcircle  
 N Xdieresis  
 N Xdotaccent  
 N Xeharmenian  
 N Xi  
 N Xmonospace  
 N Y  
 N Yacute  
 N Yatcyrillic  
 N Ycircle  
 N Ycircumflex  
 N Ydieresis  
 N Ydotaccent  
 N Ydotbelow  
 N Yericyrillic  
 N Yerudieresiscyrillic  
 N Ygrave  
 N Yhook  
 N Yhookabove  
 N Yiarmenian  
 N Yicyrillic  
 N Yiwnarmenian  
 N Ymonospace  
 N Ytilde  
 N Yusbigcyrillic  
 N Yusbigiotifiedcyrillic  
 N Yuslittlecyrillic  
 N Yuslittleiotifiedcyrillic  
 N Z

N Zaarmenian  
 N Zacute  
 N Zcaron  
 N Zcircle  
 N Zcircumflex  
 N Zdot  
 N Zdotaccent  
 N Zdotbelow  
 N Zecyrillic  
 N Zedescendercyrillic  
 N Zedieresiscyrillic  
 N Zeta  
 N Zhearmenian  
 N Zhebrevecyrillic  
 N Zhecyrillic  
 N Zhedescendercyrillic  
 N Zhedieresiscyrillic  
 N Zlinebelow  
 N Zmonospace  
 N Zstroke  
 N a  
 N aabengali  
 N aacute  
 N aadeva  
 N aagujarati  
 N aagurmukhi  
 N aamatragurmukhi  
 N aarusquare  
 N aavowelsignbengali  
 N aavowelsigndeva  
 N aavowelsigngujarati  
 N abbreviationmarkarmenian  
 N abbreviationsigndeva  
 N abengali  
 N abopomofo  
 N abreve  
 N abreveacute  
 N abrevecyrillic  
 N abrevedotbelow  
 N abrevegrave  
 N abrevehookabove  
 N abrevetilde  
 N acaron  
 N acircle

|                        |             |
|------------------------|-------------|
| N acircumflex          | N afii10033 |
| N acircumflexacute     | N afii10034 |
| N acircumflexdotbelow  | N afii10035 |
| N acircumflexgrave     | N afii10036 |
| N acircumflexhookabove | N afii10037 |
| N acircumflextilde     | N afii10038 |
| N acute                | N afii10039 |
| N acutebelowcmb        | N afii10040 |
| N acutecmb             | N afii10041 |
| N acutecomb            | N afii10042 |
| N acutedeva            | N afii10043 |
| N acutelowmod          | N afii10044 |
| N acutetonecmb         | N afii10045 |
| N acyrillic            | N afii10046 |
| N adblgrave            | N afii10047 |
| N addakgurmukhi        | N afii10048 |
| N adeva                | N afii10049 |
| N adieresis            | N afii10050 |
| N adieresiscyrillic    | N afii10051 |
| N adieresismacron      | N afii10052 |
| N adotbelow            | N afii10053 |
| N adotmacron           | N afii10054 |
| N ae                   | N afii10055 |
| N aeacute              | N afii10056 |
| N aekorean             | N afii10057 |
| N aemacron             | N afii10058 |
| N afii00208            | N afii10059 |
| N afii08941            | N afii10060 |
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| N afii10018            | N afii10062 |
| N afii10019            | N afii10065 |
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| N afii10021            | N afii10067 |
| N afii10022            | N afii10068 |
| N afii10023            | N afii10069 |
| N afii10024            | N afii10070 |
| N afii10025            | N afii10071 |
| N afii10026            | N afii10072 |
| N afii10027            | N afii10073 |
| N afii10028            | N afii10074 |
| N afii10029            | N afii10075 |
| N afii10030            | N afii10076 |
| N afii10031            | N afii10077 |
| N afii10032            | N afii10078 |

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|-------------|-------------|
| N afii10079 | N afii301   |
| N afii10080 | N afii57381 |
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| N afii10082 | N afii57392 |
| N afii10083 | N afii57393 |
| N afii10084 | N afii57394 |
| N afii10085 | N afii57395 |
| N afii10086 | N afii57396 |
| N afii10087 | N afii57397 |
| N afii10088 | N afii57398 |
| N afii10089 | N afii57399 |
| N afii10090 | N afii57400 |
| N afii10091 | N afii57401 |
| N afii10092 | N afii57403 |
| N afii10093 | N afii57407 |
| N afii10094 | N afii57409 |
| N afii10095 | N afii57410 |
| N afii10096 | N afii57411 |
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| N afii10098 | N afii57413 |
| N afii10099 | N afii57414 |
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| N afii10103 | N afii57418 |
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| N afii10106 | N afii57421 |
| N afii10107 | N afii57422 |
| N afii10108 | N afii57423 |
| N afii10109 | N afii57424 |
| N afii10110 | N afii57425 |
| N afii10145 | N afii57426 |
| N afii10146 | N afii57427 |
| N afii10147 | N afii57428 |
| N afii10148 | N afii57429 |
| N afii10193 | N afii57430 |
| N afii10194 | N afii57431 |
| N afii10195 | N afii57432 |
| N afii10196 | N afii57433 |
| N afii10846 | N afii57434 |
| N afii208   | N afii57440 |
| N afii299   | N afii57441 |
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| N afii57443 | N afii57678 |
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| N afii57452 | N afii57686 |
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| N afii57513 | N afii57795 |
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| N afii57672 | N afii57929 |
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| N afii57674 | N afii61289 |
| N afii57675 | N afii61352 |
| N afii57676 | N afii61573 |
| N afii57677 | N afii61574 |

|                             |                             |
|-----------------------------|-----------------------------|
| N afii61575                 | N alefqamatshebrew          |
| N afii61664                 | N aleph                     |
| N afii63167                 | N allequal                  |
| N afii64937                 | N alpha                     |
| N agrave                    | N alphanos                  |
| N agujarati                 | N amacron                   |
| N agurmukhi                 | N amospace                  |
| N ahiragana                 | N ampersand                 |
| N ahookabove                | N ampersandmonospace        |
| N aibengali                 | N amsquare                  |
| N aibopomofo                | N anbopomofo                |
| N aideva                    | N angbopomofo               |
| N aiecyrillic               | N angkhanthai               |
| N aigujarati                | N angle                     |
| N aigurmukhi                | N anglebracketleft          |
| N aimatragurmukhi           | N anglebracketleftvertical  |
| N ainarabic                 | N anglebracketright         |
| N ainfinalarabic            | N anglebracketrightvertical |
| N aininitialarabic          | N angleleft                 |
| N ainmedialarabic           | N angleright                |
| N ainvertedbreve            | N angstrom                  |
| N aivowelsignbengali        | N anoteleia                 |
| N aivowelsigndeva           | N anudattadeva              |
| N aivowelsigngujarati       | N anusvarabengali           |
| N akatakana                 | N anusvaradeva              |
| N akatakanahalfwidth        | N anusvaragujarati          |
| N akorean                   | N aogonek                   |
| N alef                      | N apaatosquare              |
| N alefarabic                | N aparen                    |
| N alefdageshhebrew          | N apostrophearmenian        |
| N aleffinalarabic           | N apostrophemod             |
| N alefhamzaabovearabic      | N apple                     |
| N alefhamzaabovefinalarabic | N approaches                |
| N alefhamzabelowarabic      | N approxequal               |
| N alefhamzabelowfinalarabic | N approxequalorimage        |
| N alefhebrew                | N approximatelyequal        |
| N aleflamedhebrew           | N araeakorean               |
| N alefmaddaabovearabic      | N araeakorean               |
| N alefmaddaabovefinalarabic | N arc                       |
| N alefmaksuraarabic         | N arighthalfring            |
| N alefmaksurafinalarabic    | N aring                     |
| N alefmaksurainitialarabic  | N aringacute                |
| N alefmaksuramedialarabic   | N aringbelow                |
| N alefpatahhebrew           | N arrowboth                 |

|                        |                           |
|------------------------|---------------------------|
| N arrowdashdown        | N asmallkatakana          |
| N arrowdashleft        | N asmallkatakanahalfwidth |
| N arrowdashright       | N asterisk                |
| N arrowdashup          | N asteriskaltonearabic    |
| N arrowdblboth         | N asteriskarabic          |
| N arrowdbldown         | N asteriskmath            |
| N arrowdblleft         | N asteriskmonospace       |
| N arrowdblright        | N asterisksmall           |
| N arrowdblup           | N asterism                |
| N arrowdown            | N asymptoticallyequal     |
| N arrowdownleft        | N at                      |
| N arrowdownright       | N atilde                  |
| N arrowdownwhite       | N atmonospace             |
| N arrowheaddownmod     | N atsmall                 |
| N arrowheadleftmod     | N aturned                 |
| N arrowheadrightmod    | N aubengali               |
| N arrowheadupmod       | N aubopomofo              |
| N arrowleft            | N audeva                  |
| N arrowleftdbl         | N augujarati              |
| N arrowleftdblstroke   | N augurmukhi              |
| N arrowleftoverright   | N aulengthmarkbengali     |
| N arrowleftwhite       | N aumatragurmukhi         |
| N arrowright           | N auvowelsignbengali      |
| N arrowrightdblstroke  | N auvowelsigndeva         |
| N arrowrightheavy      | N auvowelsigngujarati     |
| N arrowrightoverleft   | N avagrahadeva            |
| N arrowrightwhite      | N aybarmenian             |
| N arrowtableft         | N ayin                    |
| N arrowtabright        | N ayinaltonehebrew        |
| N arrowup              | N ayinhebrew              |
| N arrowupdn            | N b                       |
| N arrowupdnbse         | N babengali               |
| N arrowupdownbase      | N backslash               |
| N arrowupleft          | N backslashmonospace      |
| N arrowupleftofdown    | N badeva                  |
| N arrowupright         | N bagujarati              |
| N arrowupwhite         | N bagurmukhi              |
| N asciicircum          | N bahiragana              |
| N asciicircummonospace | N bahtthai                |
| N asciitilde           | N bakatakana              |
| N asciitildemonospace  | N bar                     |
| N ascript              | N barmonospace            |
| N ascriptturned        | N bbopomofo               |
| N asmallhiragana       | N bcircle                 |

|                                       |                                |
|---------------------------------------|--------------------------------|
| N bdotaccent                          | N blackrightpointingpointer    |
| N bdotbelow                           | N blackrightpointingtriangle   |
| N beamedsixteenthnotes                | N blacksmallsquare             |
| N because                             | N blacksmilingface             |
| N becyrillic                          | N blacksquare                  |
| N beharabic                           | N blackstar                    |
| N behfinalarabic                      | N blackupperlefttriangle       |
| N behinitialarabic                    | N blackupperrighttriangle      |
| N behiragana                          | N blackuppointingsmalltriangle |
| N behmedialarabic                     | N blackuppointingtriangle      |
| N behmeeminitialarabic                | N blank                        |
| N behmeemisolatedarabic               | N blinebelow                   |
| N behnoonfinalarabic                  | N block                        |
| N bekatakana                          | N bmonospace                   |
| N benarmenian                         | N bobaimaithai                 |
| N bet                                 | N bohiragana                   |
| N beta                                | N bokatakana                   |
| N betasymbolgreek                     | N bparen                       |
| N betdagesh                           | N bqsquare                     |
| N betdageshhebrew                     | N braceleft                    |
| N bethebrew                           | N braceleftmonospace           |
| N betrafehebrew                       | N braceleftsmall               |
| N bhabengali                          | N braceleftvertical            |
| N bhadeva                             | N braceright                   |
| N bhagujarati                         | N bracerightmonospace          |
| N bhagurmukhi                         | N bracerightsmall              |
| N bhook                               | N bracerightvertical           |
| N bihiragana                          | N bracketleft                  |
| N bikatakana                          | N bracketleftmonospace         |
| N bilabialclick                       | N bracketright                 |
| N bindigurmukhi                       | N bracketrightmonospace        |
| N birusquare                          | N breve                        |
| N blackcircle                         | N brevebelowcmb                |
| N blackdiamond                        | N brevecmb                     |
| N blackdownpointingtriangle           | N breveinvertedbelowcmb        |
| N blackleftpointingpointer            | N breveinvertedcmb             |
| N blackleftpointingtriangle           | N breveinverteddoublecmb       |
| N blacklenticularbracketleft          | N bridgebelowcmb               |
| N blacklenticularbracketleftvertical  | N bridgeinvertedbelowcmb       |
| N blacklenticularbracketright         | N brokenbar                    |
| N blacklenticularbracketrightvertical | N bstroke                      |
| N blacklowerlefttriangle              | N btopbar                      |
| N blacklowerrighttriangle             | N buhiragana                   |
| N blackrectangle                      | N bukatakana                   |

|                        |                                 |
|------------------------|---------------------------------|
| N bullet               | N checkmark                     |
| N bulletininverse      | N checyrillic                   |
| N bulletoperator       | N chedescenderabkhasiancyrillic |
| N bullseye             | N chedescendercyrillic          |
| N c                    | N chedieresiscyrillic           |
| N caarmenian           | N cheharmenian                  |
| N cabengali            | N chekhakassiancyrillic         |
| N cacute               | N cheverticalstrokecyrillic     |
| N cadeva               | N chi                           |
| N cagujarati           | N chieuchacirclekorean          |
| N cagurmukhi           | N chieuchaparenkorean           |
| N calsquare            | N chieuchcirclekorean           |
| N candrabindubengali   | N chieuchkorean                 |
| N candrabinducmb       | N chieuchparenkorean            |
| N candrabindudeva      | N chochangthai                  |
| N candrabindugujarati  | N chochanthai                   |
| N capslock             | N chochingthai                  |
| N careof               | N chochoethai                   |
| N caron                | N chook                         |
| N caronbelowcmb        | N cieucacirclekorean            |
| N caroncmb             | N cieucaparenkorean             |
| N carriagereturn       | N cieuccirclekorean             |
| N cbopomofo            | N cieuckorean                   |
| N ccaron               | N cieucparenkorean              |
| N ccedilla             | N cieucuparenkorean             |
| N ccedillaacute        | N circle                        |
| N ccircle              | N circlemultiply                |
| N ccircumflex          | N circleot                      |
| N ccurl                | N circleplus                    |
| N cdot                 | N circlepostalmark              |
| N cdotaccent           | N circlewithlefthalfblack       |
| N cdsquare             | N circlewithrighthalfblack      |
| N cedilla              | N circumflex                    |
| N cedillacmb           | N circumflexbelowcmb            |
| N cent                 | N circumflexcmb                 |
| N centigrade           | N clear                         |
| N centmonospace        | N clickalveolar                 |
| N chaarmenian          | N clickdental                   |
| N chabengali           | N clicklateral                  |
| N chadeva              | N clickretroflex                |
| N chagujarati          | N club                          |
| N chagurmukhi          | N clubsuitblack                 |
| N chbopomofo           | N clubsuitwhite                 |
| N cheabkhasiancyrillic | N cmcubedsquare                 |



|                          |                               |
|--------------------------|-------------------------------|
| N cmonospace             | N controlGS                   |
| N cmsquaredsquare        | N controlHT                   |
| N coarmenian             | N controlLF                   |
| N colon                  | N controlNAK                  |
| N colonmonetary          | N controlRS                   |
| N colonmonospace         | N controlSI                   |
| N colonsign              | N controlSO                   |
| N colonsmall             | N controlSOT                  |
| N colontriangularhalfmod | N controlSTX                  |
| N colontriangularmod     | N controlSUB                  |
| N comma                  | N controlSYN                  |
| N commaabovecmb          | N controlUS                   |
| N commaaboveverhtcmb     | N controlVT                   |
| N commaarabic            | N copyright                   |
| N commaarmenian          | N cornerbracketleft           |
| N commamonospace         | N cornerbracketlefthalfwidth  |
| N commareversedabovecmb  | N cornerbracketleftvertical   |
| N commareversedmod       | N cornerbracketright          |
| N commasmall             | N cornerbracketrighthalfwidth |
| N commaturnedabovecmb    | N cornerbracketrightvertical  |
| N commaturnedmod         | N corporationsquare           |
| N compass                | N cosquare                    |
| N congruent              | N coverkgsquare               |
| N contourintegral        | N cparen                      |
| N control                | N cruzeiro                    |
| N controlACK             | N cstretched                  |
| N controlBEL             | N curlyand                    |
| N controlBS              | N curlyor                     |
| N controlCAN             | N currency                    |
| N controlCR              | N d                           |
| N controlDC1             | N daarmenian                  |
| N controlDC2             | N dabengali                   |
| N controlDC3             | N dadarabic                   |
| N controlDC4             | N dadeva                      |
| N controlDEL             | N dadfinalarabic              |
| N controlDLE             | N dadinitialarabic            |
| N controlEM              | N dadmedialarabic             |
| N controlENQ             | N dagesh                      |
| N controlEOT             | N dageshhebrew                |
| N controlESC             | N dagger                      |
| N controlETB             | N daggerdbl                   |
| N controlETX             | N dagujarati                  |
| N controlFF              | N dagurmukhi                  |
| N controlFS              | N dahiragana                  |

|                                |                                       |
|--------------------------------|---------------------------------------|
| N dakatakana                   | N dblintegral                         |
| N dalarabic                    | N dbllowline                          |
| N dalet                        | N dbllowlinecmb                       |
| N daletdagesh                  | N dbloverlinecmb                      |
| N daletdageshhebrew            | N dblprimemod                         |
| N dalethatafpatah              | N dblverticalbar                      |
| N dalethatafpatahhebrew        | N dblverticallineabovecmb             |
| N dalethatafsegol              | N dbopomofo                           |
| N dalethatafsegolhebrew        | N dbsquare                            |
| N dalethebrew                  | N dcaron                              |
| N dalethiriq                   | N dcedilla                            |
| N dalethiriqhebrew             | N dcircle                             |
| N daletholam                   | N dcircumflexbelow                    |
| N daletholamhebrew             | N dcroat                              |
| N daletpatah                   | N ddabengali                          |
| N daletpatahhebrew             | N ddadeva                             |
| N daletqamats                  | N ddagujarati                         |
| N daletqamatshebrew            | N ddagurmukhi                         |
| N daletqubuts                  | N ddalarabic                          |
| N daletqubutshebrew            | N ddalfinalarabic                     |
| N daletsegol                   | N dddhadeva                           |
| N daletsegolhebrew             | N ddhabengali                         |
| N daletsheva                   | N ddhadeva                            |
| N daletshevahebrew             | N ddhagujarati                        |
| N dalettser                    | N ddhagurmukhi                        |
| N dalettserhebrew              | N ddotaccent                          |
| N dalfinalarabic               | N ddotbelow                           |
| N dammaarabic                  | N decimalseparatorarabic              |
| N dammalowarabic               | N decimalseparatorpersian             |
| N dammatanaltonearabic         | N decyrillic                          |
| N dammatanarabic               | N degree                              |
| N danda                        | N dehihebrew                          |
| N dargahebrew                  | N dehiragana                          |
| N dargalefthebrew              | N deicoptic                           |
| N dasiapneumatacyrilliccmb     | N dekatakana                          |
| N dblanglebracketleft          | N deletelleft                         |
| N dblanglebracketleftvertical  | N deleteright                         |
| N dblanglebracketright         | N delta                               |
| N dblanglebracketrightvertical | N delteturned                         |
| N dblarchinvertedbelowcmb      | N denominatorminusonenumeratorbengali |
| N dblarrowleft                 | N dezhang                             |
| N dblarrowright                | N dhabengali                          |
| N dbldanda                     | N dhadeva                             |
| N dblgravecmb                  | N dhagujarati                         |

N dhagurmukhi  
N dhook  
N dialytikatonos  
N dialytikatonoscmb  
N diamond  
N diamondsuitwhite  
N dieresis  
N dieresisbelowcmb  
N dieresiscomb  
N dieresis-tonos  
N dihiragana  
N dikatakana  
N dittomark  
N divide  
N divides  
N divisionslash  
N djecyrillic  
N dkshade  
N dlinebelow  
N dlsquare  
N dmacron  
N dmonospace  
N dnblock  
N dochadathai  
N dodekthai  
N dohiragana  
N dokatakana  
N dollar  
N dollarmonospace  
N dollarsmall  
N dong  
N dorusquare  
N dotaccent  
N dotaccentcmb  
N dotbelowcmb  
N dotbelowcomb  
N dotkatakana  
N dotlessi  
N dotlessj  
N dotlessjstrokehook  
N dotmath  
N dottedcircle  
N doubleyodpatah  
N doubleyodpatahhebrew

N downtackbelowcmb  
N downtackmod  
N dparen  
N dtail  
N dtopbar  
N duhiragana  
N dukatakana  
N dz  
N dzaltone  
N dzcaron  
N dzcurl  
N dzeabkhasiancyrillic  
N dzecyrillic  
N dzhecyrillic  
N e  
N eacute  
N earth  
N ebengali  
N ebopomofo  
N ebreve  
N ecandradeva  
N ecandragujarati  
N ecandravowelsigndeva  
N ecandravowelsigngujarati  
N ecaron  
N ecedillabreve  
N echarmenian  
N echiwnarmenian  
N ecircle  
N ecircumflex  
N ecircumflexacute  
N ecircumflexbelow  
N ecircumflexdotbelow  
N ecircumflexgrave  
N ecircumflexhookabove  
N ecircumflextilde  
N ecyrillic  
N edblgrave  
N edeva  
N edieresis  
N edot  
N edotaccent  
N edotbelow  
N eegurmukhi

|                               |                        |
|-------------------------------|------------------------|
| N eematragurmukhi             | N ellipsis             |
| N efcyrillic                  | N ellipsisvertical     |
| N egrave                      | N emacron              |
| N egujarati                   | N emacronacute         |
| N eharmenian                  | N emacrongrave         |
| N ehbopomofo                  | N emcyrillic           |
| N ehiragana                   | N emdash               |
| N ehookabove                  | N emdashvertical       |
| N eibopomofo                  | N emonospace           |
| N eight                       | N emphasismarkarmenian |
| N eightarabic                 | N emptyset             |
| N eightbengali                | N enbopomofo           |
| N eightcircle                 | N encyrillic           |
| N eightcircleinversesansserif | N endash               |
| N eightdeva                   | N endashvertical       |
| N eightteencircle             | N endescendercyrillic  |
| N eighteenparen               | N eng                  |
| N eighteenperiod              | N engbopomofo          |
| N eightgujarati               | N enghecyrillic        |
| N eightgurmukhi               | N enhookcyrillic       |
| N eighthackarabic             | N enspace              |
| N eighthangzhou               | N eogonek              |
| N eighthnotebeamed            | N eokorean             |
| N eightideographicparen       | N eopen                |
| N eightinferior               | N eopenclosed          |
| N eightmonospace              | N eopenreversed        |
| N eightparen                  | N eopenreversedclosed  |
| N eightperiod                 | N eopenreversedhook    |
| N eightpersian                | N eparen               |
| N eightroman                  | N epsilon              |
| N eightsuperior               | N epsilonontonos       |
| N eightthai                   | N equal                |
| N einvertedbreve              | N equalmonospace       |
| N eiotifiedcyrillic           | N equalsmall           |
| N ekatakana                   | N equalsuperior        |
| N ekatakanahalfwidth          | N equivalence          |
| N ekonkargurmukhi             | N erbopomofo           |
| N ekorean                     | N ercyrillic           |
| N elcyrillic                  | N ereversed            |
| N element                     | N ereversedcyrillic    |
| N elevencircle                | N escyrillic           |
| N elevenparen                 | N esdescendercyrillic  |
| N elevenperiod                | N esh                  |
| N elevenroman                 | N eshcurl              |

|                           |                              |
|---------------------------|------------------------------|
| N eshortdeva              | N fdotaccent                 |
| N eshortvowelsigndeva     | N feharabic                  |
| N eshreversedloop         | N feharmenian                |
| N eshsquatreversed        | N fehfinalarabic             |
| N esmallhiragana          | N fehinitialarabic           |
| N esmallkatakana          | N fehmedialarabic            |
| N esmallkatakanahalfwidth | N feicoptic                  |
| N estimated               | N female                     |
| N eta                     | N ff                         |
| N etarmenian              | N ffi                        |
| N etatonos                | N ffl                        |
| N eth                     | N fi                         |
| N etilde                  | N fifteencircle              |
| N etildebelow             | N fifteenparen               |
| N etnahtafoukhhebrew      | N fifteenperiod              |
| N etnahtafoukhlefthebrew  | N figuredash                 |
| N etnahtahebrew           | N filledbox                  |
| N etnahtalefthebrew       | N filledrect                 |
| N eturned                 | N finalkaf                   |
| N eukorean                | N finalkafdagesh             |
| N euro                    | N finalkafdageshhebrew       |
| N evowelsignbengali       | N finalkafhebrew             |
| N evowelsigndeva          | N finalkafqamats             |
| N evowelsingujarati       | N finalkafqamatshebrew       |
| N exclam                  | N finalkafsheva              |
| N exclamarmenian          | N finalkafshevahebrew        |
| N exclamdbl               | N finalmem                   |
| N exclamdown              | N finalmemhebrew             |
| N exclammonospace         | N finalnun                   |
| N existential             | N finalnunhebrew             |
| N ezh                     | N finalpe                    |
| N ezhcaron                | N finalpehebrew              |
| N ezhcurl                 | N finaltsadi                 |
| N ezhreversed             | N finaltsadihebrew           |
| N ezhtail                 | N firsttonechinese           |
| N f                       | N fisheye                    |
| N fadeva                  | N fitacyrillic               |
| N fagurmukhi              | N five                       |
| N fahrenheit              | N fivearabic                 |
| N fathaarabic             | N fivebengali                |
| N fathalowarabic          | N fivecircle                 |
| N fathatanarabic          | N fivecircleinversesansserif |
| N fbopomofo               | N fivedeva                   |
| N fcircle                 | N fiveeighths                |

N fivegujarati  
 N fivegurmukhi  
 N fivehackarabic  
 N fivehangzhou  
 N fiveideographicparen  
 N fiveinferior  
 N fivemonospace  
 N fiveparen  
 N fiveperiod  
 N fivepersian  
 N fiveroman  
 N fivesuperior  
 N fivethai  
 N fl  
 N florin  
 N fmonospace  
 N fmsquare  
 N fofanthai  
 N fofathai  
 N fongmanthai  
 N forall  
 N four  
 N fourarabic  
 N fourbengali  
 N fourcircle  
 N fourcircleinversesansserif  
 N fourdeva  
 N fourgujarati  
 N fourgurmukhi  
 N fourhackarabic  
 N fourhangzhou  
 N fourideographicparen  
 N fourinferior  
 N fourmonospace  
 N fournumeratorbengali  
 N fourparen  
 N fourperiod  
 N fourpersian  
 N fourroman  
 N foursuperior  
 N fourteencircle  
 N fourteenparen  
 N fourteenperiod  
 N fourthai

N fourthtonechinese  
 N fparen  
 N fraction  
 N franc  
 N g  
 N gabengali  
 N gacute  
 N gadeva  
 N gafarabic  
 N gaffinalarabic  
 N gafinitialarabic  
 N gafmedialarabic  
 N gagujarati  
 N gagurmukhi  
 N gahiragana  
 N gakatakana  
 N gamma  
 N gammalatinsmall  
 N gammasuperior  
 N gangiacoptic  
 N gbopomofo  
 N gbreve  
 N gcaron  
 N gcedilla  
 N gcircle  
 N gcircumflex  
 N gcommaaccent  
 N gdot  
 N gdotaccent  
 N gecyrillic  
 N gehiragana  
 N gekatakana  
 N geometricallyequal  
 N gereshaccenthebrew  
 N gereshhebrew  
 N gereshmuqdamhebrew  
 N germanbls  
 N gershayimaccenthebrew  
 N gershayimhebrew  
 N getamark  
 N ghabengali  
 N ghadarmenian  
 N ghadeva  
 N ghagujarati

|                               |                          |
|-------------------------------|--------------------------|
| N ghagurmukhi                 | N greater                |
| N ghainarabic                 | N greaterequal           |
| N ghainfinalarabic            | N greaterequalorless     |
| N ghaininitialarabic          | N greatermonospace       |
| N ghainmedialarabic           | N greaterorequivalent    |
| N ghemiddlehookcyrillic       | N greaterorless          |
| N ghestrokecyrillic           | N greateroverequal       |
| N gheupturncyrillic           | N greater-small          |
| N ghadeva                     | N gscript                |
| N ghagurmukhi                 | N gstroke                |
| N ghook                       | N guhiragana             |
| N ghz-square                  | N guillemot-left         |
| N gihiragana                  | N guillemot-right        |
| N gikatakana                  | N guilsingl-left         |
| N gimarmenian                 | N guilsingl-right        |
| N gimel                       | N gukatakana             |
| N gimeldagesh                 | N guramusquare           |
| N gimeldageshhebrew           | N gysquare               |
| N gimelhebrew                 | N h                      |
| N gjecyrillic                 | N haabkhasiancyrillic    |
| N glottalinvertedstroke       | N haaltonearabic         |
| N glottalstop                 | N habengali              |
| N glottalstopinverted         | N hadescendercyrillic    |
| N glottalstopmod              | N hadeva                 |
| N glottalstopreversed         | N hagu-jarati            |
| N glottalstopreversedmod      | N hagurmukhi             |
| N glottalstopreversedsuperior | N haharabic              |
| N glottalstopstroke           | N hahfinalarabic         |
| N glottalstopstrokereversed   | N hahinitialarabic       |
| N gmacron                     | N hahiragana             |
| N gmonospace                  | N hahmedialarabic        |
| N gohiragana                  | N haitusquare            |
| N gokatakana                  | N hakatakana             |
| N gparen                      | N hakatakanahalfwidth    |
| N gpasquare                   | N halantgurmukhi         |
| N gradient                    | N hamzaarabic            |
| N grave                       | N hamzadammaarabic       |
| N gravebelowcmb               | N hamzadammatanarabic    |
| N gravecmb                    | N hamzafathaarabic       |
| N gravecomb                   | N hamzafathatanarabic    |
| N gravedeva                   | N hamzalowarabic         |
| N gravelowmod                 | N hamzalowkasraarabic    |
| N gravemonospace              | N hamzalowkasratanarabic |
| N gravetonecmb                | N hamzasukunarabic       |

|                            |                               |
|----------------------------|-------------------------------|
| N hangulfiller             | N hehaltonearabic             |
| N hardsigncyrillic         | N heharabic                   |
| N harpoonleftbarbup        | N hehebrew                    |
| N harpoonrightbarbup       | N hehfinalalttonearabic       |
| N hasquare                 | N hehfinalalttwoarabic        |
| N hatafpatah               | N hehfinalarabic              |
| N hatafpatah16             | N hehhamzaabovefinalarabic    |
| N hatafpatah23             | N hehhamzaaboveisolatedarabic |
| N hatafpatah2f             | N hehinitialalttonearabic     |
| N hatafpatahhebrew         | N hehinitialarabic            |
| N hatafpatahnarrowhebrew   | N hehiragana                  |
| N hatafpatahquarterhebrew  | N hehmedialalttonearabic      |
| N hatafpatahwidehebrew     | N hehmedialarabic             |
| N hatafqamats              | N heiseierasquare             |
| N hatafqamats1b            | N hekatakana                  |
| N hatafqamats28            | N hekatakanahalfwidth         |
| N hatafqamats34            | N hekutaarusquare             |
| N hatafqamatshebrew        | N henghook                    |
| N hatafqamatsnarrowhebrew  | N herutusquare                |
| N hatafqamatsquarterhebrew | N het                         |
| N hatafqamatswidehebrew    | N hethebrew                   |
| N hatafsegol               | N hhook                       |
| N hatafsegol17             | N hhooksuperior               |
| N hatafsegol24             | N hieuhacirclekorean          |
| N hatafsegol30             | N hieuhaparenkorean           |
| N hatafsegolhebrew         | N hieuhcirclekorean           |
| N hatafsegolnarrowhebrew   | N hieuhkorean                 |
| N hatafsegolquarterhebrew  | N hieuhparenkorean            |
| N hatafsegolwidehebrew     | N hihiragana                  |
| N hbar                     | N hikatakana                  |
| N hbopomofo                | N hikatakanahalfwidth         |
| N hbrevebelow              | N hiriq                       |
| N hcedilla                 | N hiriq14                     |
| N hcircle                  | N hiriq21                     |
| N hcircumflex              | N hiriq2d                     |
| N hdieresis                | N hiriqhebrew                 |
| N hdotaccent               | N hiriqnarrowhebrew           |
| N hdotbelow                | N hiriqqarterhebrew           |
| N he                       | N hiriqwidehebrew             |
| N heart                    | N hlinebelow                  |
| N heartsuitblack           | N hmonospace                  |
| N heartsuitwhite           | N hoarmenian                  |
| N hedagesh                 | N hohipthai                   |
| N hedageshhebrew           | N hohiragana                  |



|                           |                                  |
|---------------------------|----------------------------------|
| N hokatakana              | N icyrillic                      |
| N hokatakanahalfwidth     | N idblgrave                      |
| N holam                   | N ideographearthcircle           |
| N holam19                 | N ideographfirecircle            |
| N holam26                 | N ideographicallianceparen       |
| N holam32                 | N ideographicallparen            |
| N holamhebrew             | N ideographiccentrecircle        |
| N holamnarrowhebrew       | N ideographicclose               |
| N holamquarterhebrew      | N ideographiccomma               |
| N holamwidehebrew         | N ideographiccommaleft           |
| N honokhukthai            | N ideographiccongratulationparen |
| N hookabovecomb           | N ideographiccorrectcircle       |
| N hookcmb                 | N ideographicearthparen          |
| N hookpalatalizedbelowcmb | N ideographicenterpriseparen     |
| N hookretroflexbelowcmb   | N ideographicexcellentcircle     |
| N hoonsquare              | N ideographicfestivalparen       |
| N horicoptic              | N ideographicfinancialcircle     |
| N horizontalbar           | N ideographicfinancialparen      |
| N horncmb                 | N ideographicfireparen           |
| N hotsprings              | N ideographichaveparen           |
| N house                   | N ideographichighcircle          |
| N hparen                  | N ideographiciterationmark       |
| N hsuperior               | N ideographiclaborcircle         |
| N hturned                 | N ideographiclaborparen          |
| N huhiragana              | N ideographicleftcircle          |
| N huiitosquare            | N ideographiclowcircle           |
| N hukatakana              | N ideographicmedicinecircle      |
| N hukatakanahalfwidth     | N ideographicmetalparen          |
| N hungarumlaut            | N ideographicmoonparen           |
| N hungarumlautcmb         | N ideographicnameparen           |
| N hv                      | N ideographicperiod              |
| N hyphen                  | N ideographicprintcircle         |
| N hyphenmonospace         | N ideographicreachparen          |
| N hyphensmall             | N ideographicrepresentparen      |
| N hyphentwo               | N ideographicresourceparen       |
| N i                       | N ideographicrightcircle         |
| N iacute                  | N ideographicsecretcircle        |
| N iacyrillic              | N ideographicselfparen           |
| N ibengali                | N ideographicsocietyparen        |
| N ibopomofo               | N ideographicspace               |
| N ibreve                  | N ideographicspecialparen        |
| N icaron                  | N ideographicstockparen          |
| N icircle                 | N ideographicstudyparen          |
| N icircumflex             | N ideographicsunparen            |

N ideographicsuperviseparen  
N ideographicwaterparen  
N ideographicwoodparen  
N ideographiczero  
N ideographmetalcircle  
N ideographmooncircle  
N ideographnamecircle  
N ideographsuncircle  
N ideographwatercircle  
N ideographwoodcircle  
N ideva  
N idieresis  
N idieresisacute  
N idieresis Cyrillic  
N idotbelow  
N iebrev Cyrillic  
N iecyrillic  
N ieungacirclekorean  
N ieungaparenkorean  
N ieungcirclekorean  
N ieungkorean  
N ieungparenkorean  
N igrave  
N igujarati  
N igurmukhi  
N ihiragana  
N ihookabove  
N iibengali  
N iicyrillic  
N iideva  
N iigujarati  
N iigurmukhi  
N iimatragurmukhi  
N iinvertedbreve  
N iishortcyrillic  
N iivowelsignbengali  
N iivowelsigndeva  
N iivowelsigngujarati  
N ij  
N ikatakana  
N ikatakanahalfwidth  
N ikorean  
N ilde  
N iluyhebrew

N imacron  
N imacroncyrillic  
N imageorapproximatelyequal  
N imatragurmukhi  
N imonospace  
N increment  
N infinity  
N iniarmenian  
N integral  
N integralbottom  
N integralbt  
N integraltp  
N intersection  
N intisquare  
N invbullet  
N invcircle  
N invsmileface  
N iocyrlilic  
N iogonek  
N iota  
N iotadieresis  
N iotadieresisstons  
N iotalatin  
N iotatonos  
N iparen  
N irigurmukhi  
N ismallhiragana  
N ismallkatakana  
N ismallkatakanahalfwidth  
N issharbengali  
N istroke  
N iterationhiragana  
N iterationkatakana  
N itilde  
N itildebelow  
N iubopomofo  
N iucyrillic  
N ivowelsignbengali  
N ivowelsigndeva  
N ivowelsigngujarati  
N izhitsacyrillic  
N izhitsadblgravecyrillic  
N j

|                        |                                  |
|------------------------|----------------------------------|
| N jaarmenian           | N kagurmukhi                     |
| N jabengali            | N kahiragana                     |
| N jadeva               | N kahookcyrillic                 |
| N jagujarati           | N kakatakana                     |
| N jagurmukhi           | N kakatakanahalfwidth            |
| N jbopomofo            | N kappa                          |
| N jcaron               | N kappasymbolgreek               |
| N jcircle              | N kapyeounmieumkorean            |
| N jcircumflex          | N kapyeounphieuphkorean          |
| N jcrossettail         | N kapyeounpieupkorean            |
| N jdotlessstroke       | N kapyeounssangpieupkorean       |
| N jecyrillic           | N karoriisquare                  |
| N jeemarabic           | N kashidaautoarabic              |
| N jeemfinalarabic      | N kashidaautonosidebearingarabic |
| N jeeminitialarabic    | N kasmallkatakana                |
| N jeemmedialarabic     | N kasquare                       |
| N jeharabic            | N kasraarabic                    |
| N jehfinalarabic       | N kasratanarabic                 |
| N jhabengali           | N kastrokecyrillic               |
| N jhadeva              | N katahiraprolongmarkhalfwidth   |
| N jhagujarati          | N kaverticallstrokecyrillic      |
| N jhagurmukhi          | N kbopomofo                      |
| N jheharmenian         | N kcalsquare                     |
| N jis                  | N kcaron                         |
| N jmonospace           | N kcedilla                       |
| N jparen               | N kcircle                        |
| N jsuperior            | N kcommaaccent                   |
| N k                    | N kdotbelow                      |
| N kabashkircyrillic    | N keharmonian                    |
| N kabengali            | N kehiragana                     |
| N kacute               | N kekatakana                     |
| N kacyrillic           | N kekatakanahalfwidth            |
| N kadesccendercyrillic | N kenarmenian                    |
| N kadeva               | N kesmallkatakana                |
| N kaf                  | N kgreenlandic                   |
| N kafarabic            | N khabengali                     |
| N kafdagesh            | N khacyrillic                    |
| N kafdageshhebrew      | N khadeva                        |
| N kaffinalarabic       | N khagujarati                    |
| N kafhebrew            | N khagurmukhi                    |
| N kafinitialarabic     | N khaharabic                     |
| N kafmedialarabic      | N khahfinalarabic                |
| N kafrafehebrew        | N khahinitialarabic              |
| N kagujarati           | N khahmedialarabic               |

|                        |                                   |
|------------------------|-----------------------------------|
| N kheicoptic           | N kpasquare                       |
| N khhadeva             | N ksicyrillic                     |
| N khhagurmukhi         | N ktsquare                        |
| N khieukhacirclekorean | N kturned                         |
| N khieukhaparenkorean  | N kuhiragana                      |
| N khieukhcirclekorean  | N kukatakana                      |
| N khieukhkorean        | N kukatakanahalfwidth             |
| N khieukhparenkorean   | N kvsquare                        |
| N khokhaithai          | N kwsquare                        |
| N khokhonthai          | N l                               |
| N khokhuatthai         | N labengali                       |
| N khokhwaithai         | N lacute                          |
| N khomutthai           | N ladeva                          |
| N khook                | N lagujarati                      |
| N khorakhangthai       | N lagurmukhi                      |
| N khzsquare            | N lakkhangyaothai                 |
| N khiragana            | N lamaleffinalarabic              |
| N kikatakana           | N lamalefhamzaabovefinalarabic    |
| N kikatakanahalfwidth  | N lamalefhamzaaboveisolatedarabic |
| N kiroguramusquare     | N lamalefhamzabelowfinalarabic    |
| N kiromeetorusquare    | N lamalefhamzabelowisolatedarabic |
| N kirosquare           | N lamalefisolatedarabic           |
| N kiyeokacirclekorean  | N lamalefmaddaabovefinalarabic    |
| N kiyeokaparenkorean   | N lamalefmaddaaboveisolatedarabic |
| N kiyeokcirclekorean   | N lamarabic                       |
| N kiyeokkorean         | N lambda                          |
| N kiyeokparenkorean    | N lambdastroke                    |
| N kiyeoksioskorean     | N lamed                           |
| N kjecyrillic          | N lameddagesh                     |
| N klinebelow           | N lameddageshhebrew               |
| N klsquare             | N lamedhebrew                     |
| N kmcubedsquare        | N lamedholam                      |
| N kmonospace           | N lamedholamdagesh                |
| N kmsquaredsquare      | N lamedholamdageshhebrew          |
| N kohiragana           | N lamedholamhebrew                |
| N kohmsquare           | N lamfinalarabic                  |
| N kokaithai            | N lamhahinitialarabic             |
| N kokatakana           | N laminitialarabic                |
| N kokatakanahalfwidth  | N lamjeeminitialarabic            |
| N kooposquare          | N lamkhahinitialarabic            |
| N koppacyrillic        | N lamlamhehisolatedarabic         |
| N koreanstandardsymbol | N lammedialarabic                 |
| N koroniscmb           | N lammeemhahinitialarabic         |
| N kparen               | N lammeeminitialarabic            |

N lammeenjeeminitialarabic  
 N lammeemkhahinitialarabic  
 N largecircle  
 N lbar  
 N lbelt  
 N lbopomofo  
 N lcaron  
 N lcedilla  
 N lcircle  
 N lcircumflexbelow  
 N lcommaaccent  
 N ldot  
 N ldotaccent  
 N ldotbelow  
 N ldotbelowmacron  
 N leftangleabovecmb  
 N lefttackbelowcmb  
 N less  
 N lessequal  
 N lessequalorgreater  
 N lessmonospace  
 N lessorequivalent  
 N lessorgreater  
 N lessoverequal  
 N lesssmall  
 N lezh  
 N lfblock  
 N lhookretroflex  
 N lira  
 N liwnarmenian  
 N lj  
 N ljecyrillic  
 N lladeva  
 N llagujarati  
 N llinebelow  
 N llladeva  
 N llvocalicbengali  
 N llvocalicdeva  
 N llvocalicvowelsignbengali  
 N llvocalicvowelsigndeva  
 N lmiddletilde  
 N lmonospace  
 N lmsquare  
 N lochulathai

N logicaland  
 N logicalnot  
 N logicalnotreversed  
 N logicalor  
 N lolingthai  
 N longs  
 N lowlinecenterline  
 N lowlinecmb  
 N lowlinedashed  
 N lozenge  
 N lparen  
 N lslash  
 N lsquare  
 N ltshade  
 N luthai  
 N lvocalicbengali  
 N lvocalicdeva  
 N lvocalicvowelsignbengali  
 N lvocalicvowelsigndeva  
 N lxsquare  
 N m  
 N mabengali  
 N macron  
 N macronbelowcmb  
 N macroncmb  
 N macronlowmod  
 N macronmonospace  
 N macute  
 N madeva  
 N magujarati  
 N magurmukhi  
 N mahapakhhebrew  
 N mahapakhlefthebrew  
 N mahiragana  
 N maichattawathai  
 N maiekthai  
 N maihanakatthai  
 N maitaikhuthai  
 N maithothai  
 N maitrithai  
 N maiyamokthai  
 N makatakana  
 N makatakanahalfwidth  
 N male

|                              |                       |
|------------------------------|-----------------------|
| N mansyonsquare              | N mikatakana          |
| N maqafhebrew                | N mikatakanahalfwidth |
| N mars                       | N minus               |
| N masoracirclehebrew         | N minusbelowcmb       |
| N masquare                   | N minuscircle         |
| N mbopomofo                  | N minusmod            |
| N mbsquare                   | N minusplus           |
| N mcircle                    | N minute              |
| N mcubedsquare               | N miribaarusquare     |
| N mdotaccent                 | N mirisquare          |
| N mdotbelow                  | N mlonglegturned      |
| N meemarabic                 | N mlsquare            |
| N meemfinalarabic            | N mmcubedsquare       |
| N meeminitialarabic          | N mmonospace          |
| N meemmedialarabic           | N mmsquaredsquare     |
| N meemmeeminitialarabic      | N mohiragana          |
| N meemmeemisolatedarabic     | N mohmsquare          |
| N meetorusquare              | N mokatakana          |
| N mehiragana                 | N mokatakanahalfwidth |
| N meizierasquare             | N molsquare           |
| N mekatakana                 | N momathai            |
| N mekatakanahalfwidth        | N moverssquare        |
| N mem                        | N moverssquaredsquare |
| N memdagesh                  | N mparen              |
| N memdageshhebrew            | N mpasquare           |
| N memhebrew                  | N mssquare            |
| N menarmenian                | N mturned             |
| N merkhahhebrew              | N mu                  |
| N merkhakefulahebrew         | N mul                 |
| N merkhakefulalefthebrew     | N muasquare           |
| N merkhalefthebrew           | N muchgreater         |
| N mhook                      | N muchless            |
| N mhzsquare                  | N mufsquare           |
| N middledotkatakanahalfwidth | N mugreek             |
| N middot                     | N mugsquare           |
| N mieumacirclekorean         | N muhiragana          |
| N mieumaparenkorean          | N mukatakana          |
| N mieumcirclekorean          | N mukatakanahalfwidth |
| N mieumkorean                | N mulsquare           |
| N mieumpansioskorean         | N multiply            |
| N mieumparenkorean           | N mumsquare           |
| N mieumpieupkorean           | N munahhebrew         |
| N mieumsioskorean            | N munahlefthebrew     |
| N mhiragana                  | N musicalnote         |

|                       |                              |
|-----------------------|------------------------------|
| N musicalnotedbl      | N nieunacirclekorean         |
| N musicflatsign       | N nieunaparenkorean          |
| N musicsharpsign      | N nieuncieuckorean           |
| N mussquare           | N nieuncirclekorean          |
| N muvsquare           | N nieunhieuhkorean           |
| N muwsquare           | N nieunkorean                |
| N vmegasquare         | N nieunpansioskorean         |
| N mvsquare            | N nieunparenkorean           |
| N mwmegasquare        | N nieunsioskorean            |
| N mwsquare            | N nieuntikeutkorean          |
| N n                   | N nhiragana                  |
| N nabengali           | N nikatakana                 |
| N nabla               | N nikatakanahalfwidth        |
| N nacute              | N nikhahitthai               |
| N nadeva              | N nine                       |
| N nagujarati          | N ninearabic                 |
| N nagurmukhi          | N ninebengali                |
| N nahiragana          | N ninecircle                 |
| N nakatakana          | N ninecircleinversesansserif |
| N nakatakanahalfwidth | N ninedeva                   |
| N napostrophe         | N ninegujarati               |
| N nasquare            | N ninegurmukhi               |
| N nbopomofo           | N ninehackarabic             |
| N nbspace             | N ninehangzhou               |
| N ncaron              | N nineideographicparen       |
| N ncedilla            | N nineinferior               |
| N ncircle             | N ninemonospace              |
| N ncircumflexbelow    | N nineparen                  |
| N ncommaaccent        | N nineperiod                 |
| N ndotaccent          | N ninepersian                |
| N ndotbelow           | N nineroman                  |
| N nehiragana          | N ninesuperior               |
| N nekatakana          | N nineteencircle             |
| N nekatakanahalfwidth | N nineteenparen              |
| N newsheqelsign       | N nineteenperiod             |
| N nfsquare            | N ninethai                   |
| N ngabengali          | N nj                         |
| N ngadeva             | N njecyrillic                |
| N ngagujarati         | N nkatakana                  |
| N ngagurmukhi         | N nkatakanahalfwidth         |
| N ngonguthai          | N nlegrightlong              |
| N nhiragana           | N nlinebelow                 |
| N nhookleft           | N nmonospace                 |
| N nhookretroflex      | N nmsquare                   |

|                          |                            |
|--------------------------|----------------------------|
| N nnabengali             | N nuhiragana               |
| N nnadeva                | N nukatakana               |
| N nnagujarati            | N nukatakanahalfwidth      |
| N nnagurmukhi            | N nuktabengali             |
| N nnnadeva               | N nuktradeva               |
| N nohiragana             | N nuktagujarati            |
| N nokatakana             | N nuktagurmukhi            |
| N nokatakanahalfwidth    | N numbersign               |
| N nonbreakingspace       | N numbersignmonospace      |
| N nonenthai              | N numbersignsmall          |
| N nonuthai               | N numeralsigngreek         |
| N noonarabic             | N numeralsignlowergreek    |
| N noonfinalarabic        | N numero                   |
| N noonghunnaarabic       | N nun                      |
| N noonghunnafinalarabic  | N nundagesh                |
| N noonhehinitialarabic   | N nundageshhebrew          |
| N nooninitialarabic      | N nunhebrew                |
| N noonjeeminitialarabic  | N nvsquare                 |
| N noonjeemisolatedarabic | N nwsquare                 |
| N noonmedialarabic       | N nyabengali               |
| N noonmeeminitialarabic  | N nyadeva                  |
| N noonmeemisolatedarabic | N nyagujarati              |
| N noonnoonfinalarabic    | N nyagurmukhi              |
| N notcontains            | N o                        |
| N notelement             | N oacute                   |
| N notelementof           | N oangthai                 |
| N notequal               | N obarred                  |
| N notgreater             | N obarredcyrillic          |
| N notgreaternorequal     | N obarreddieresiscyrillic  |
| N notgreaternorless      | N obengali                 |
| N notidentical           | N obopomofo                |
| N notless                | N obreve                   |
| N notlessnorequal        | N ocandradeva              |
| N notparallel            | N ocandragujarati          |
| N notprecedes            | N ocandravowelsigndeva     |
| N notsubset              | N ocandravowelsigngujarati |
| N notsucceeds            | N ocaron                   |
| N notsuperset            | N ocircle                  |
| N nowarmenian            | N ocircumflex              |
| N nparen                 | N ocircumflexacute         |
| N nssquare               | N ocircumflexdotbelow      |
| N nsuperior              | N ocircumflexgrave         |
| N ntilde                 | N ocircumflexhookabove     |
| N nu                     | N ocircumflextilde         |



N ocyrillic  
N odblacute  
N odblgrave  
N odeva  
N odieresis  
N odieresiscyrillic  
N odotbelow  
N oe  
N oekorean  
N ogonek  
N ogonekcmb  
N ograve  
N ogujarati  
N oharmerian  
N ohiragana  
N ohookabove  
N ohorn  
N ohornacute  
N ohorndotbelow  
N ohorngrave  
N ohornhookabove  
N ohorntilde  
N ohungarumlaut  
N oi  
N oinvertedbreve  
N okatakana  
N okatakanahalfwidth  
N okorean  
N olehebrew  
N omacron  
N omacronacute  
N omacrongrave  
N omdeva  
N omega  
N omegal  
N omegacyrillic  
N omegalatincloded  
N omegaroundcyrillic  
N omegatitlocyrillic  
N omegatonos  
N omgujarati  
N omicron  
N omicrontonos  
N omonospace

N one  
N onearabic  
N onebengali  
N onecircle  
N onecircleinversesansserif  
N onedeva  
N onedotenleader  
N oneeighth  
N onegujarati  
N onegurmukhi  
N onehackarabic  
N onehalf  
N onehangzhou  
N oneideographicparen  
N oneinferior  
N onemonospace  
N onenumeratorbengali  
N oneparen  
N oneperiod  
N onepersian  
N onequarter  
N oneroman  
N onesuperior  
N onethai  
N onethird  
N oogonek  
N oogonekmacron  
N oogurmukhi  
N oomatragurmukhi  
N oopen  
N oparen  
N openbullet  
N option  
N ordfeminine  
N ordmasculine  
N orthogonal  
N oshortdeva  
N oshortvowelsigndeva  
N oslash  
N oslashacute  
N osmallhiragana  
N osmallkatakana  
N osmallkatakanahalfwidth  
N ostrokeacute

|                             |                        |
|-----------------------------|------------------------|
| N otcyrillic                | N parenrightsmall      |
| N otilde                    | N parenrightsuperior   |
| N otildeacute               | N parenrightvertical   |
| N otildedieresis            | N partialdiff          |
| N oubopomofo                | N paseqhebrew          |
| N overline                  | N pashtahebrew         |
| N overlinecenterline        | N pasquare             |
| N overlinecmb               | N patah                |
| N overlinedashed            | N patah11              |
| N overlinedblwavy           | N patah1d              |
| N overlinewavy              | N patah2a              |
| N overscore                 | N patahhebrew          |
| N ovowelsignbengali         | N patahnarrowhebrew    |
| N ovowelsigndeva            | N patahquarterhebrew   |
| N ovowelsigngujarati        | N patahwidehebrew      |
| N p                         | N pazerhebrew          |
| N paampssquare              | N pbopomofo            |
| N paasentosquare            | N pcircle              |
| N pabengali                 | N pdotaccent           |
| N pacute                    | N pe                   |
| N padeva                    | N pecyrillic           |
| N pagedown                  | N pedagesh             |
| N pageup                    | N pedageshhebrew       |
| N pagujarati                | N peezisquare          |
| N pagurmukhi                | N pefinaldageshhebrew  |
| N pahiragana                | N peharabic            |
| N paiyannoithai             | N peharmenian          |
| N pakatakana                | N pehebrew             |
| N palatalizationcyrilliccmb | N pehfinalarabic       |
| N palochkacyrillic          | N pehinitialarabic     |
| N pansioskorean             | N pehiragana           |
| N paragraph                 | N pehmedialarabic      |
| N parallel                  | N pekatakana           |
| N parenleft                 | N pemiddlehookcyrillic |
| N parenleftalttonearabic    | N perafehebrew         |
| N parenleftinferior         | N percent              |
| N parenleftmonospace        | N percentarabic        |
| N parenleftsmall            | N percentmonospace     |
| N parenleftsuperior         | N percentsmall         |
| N parenleftvertical         | N period               |
| N parenright                | N periodarmenian       |
| N parenrightalttonearabic   | N periodcentered       |
| N parenrightinferior        | N periodhalfwidth      |
| N parenrightmonospace       | N periodmonospace      |

|                          |                            |
|--------------------------|----------------------------|
| N periodsmall            | N plusminus                |
| N perispomenigreekcmb    | N plusmod                  |
| N perpendicular          | N plusmonospace            |
| N perthousand            | N plussmall                |
| N peseta                 | N plussuperior             |
| N pfsquare               | N pmonospace               |
| N phabengali             | N pmsquare                 |
| N phadeva                | N pohiragana               |
| N phagujarati            | N pointingindexdownwhite   |
| N phagurmukhi            | N pointingindexleftwhite   |
| N phi                    | N pointingindexrightwhite  |
| N phil                   | N pointingindexupwhite     |
| N phieuphacirclekorean   | N pokatakana               |
| N phieuphaparenkorean    | N poplathai                |
| N phieuphcirclekorean    | N postalmark               |
| N phieuphkorean          | N postalmarkface           |
| N phieuphparenkorean     | N pparen                   |
| N philatin               | N precedes                 |
| N phinthuthai            | N prescription             |
| N phisymbolgreek         | N primemod                 |
| N phook                  | N primereversed            |
| N phophanthai            | N product                  |
| N phophungthai           | N projective               |
| N phosamphaothai         | N prolongedkana            |
| N pi                     | N propellor                |
| N pieupacirclekorean     | N propersubset             |
| N pieupaparenkorean      | N propersuperset           |
| N pieupcieuckorean       | N proportion               |
| N pieupcirclekorean      | N proportional             |
| N pieupkiyeokkorean      | N psi                      |
| N pieupkorean            | N psicyrillic              |
| N pieupparenkorean       | N psilipneumatacyrilliccmb |
| N pieupsioskiyeokkorean  | N pssquare                 |
| N pieupsioskorean        | N puhiragana               |
| N pieupsiosstikeutkorean | N pukatakana               |
| N pieupthieuthkorean     | N pvsquare                 |
| N pieuptikeutkorean      | N pwsquare                 |
| N pihiragana             | N q                        |
| N pikatakana             | N qadeva                   |
| N pisymbolgreek          | N qadmahebrew              |
| N piwrarmenian           | N qafarabic                |
| N plus                   | N qaffinalarabic           |
| N plusbelowcmb           | N qafinitiarabic           |
| N pluscircle             | N qafmedialarabic          |

|                            |                         |
|----------------------------|-------------------------|
| N qamats                   | N qoftserehebrew        |
| N qamats10                 | N qparen                |
| N qamats1a                 | N quarternote           |
| N qamats1c                 | N qubuts                |
| N qamats27                 | N qubuts18              |
| N qamats29                 | N qubuts25              |
| N qamats33                 | N qubuts31              |
| N qamatsde                 | N qubutshebrew          |
| N qamatshebrew             | N qubutsnarrowhebrew    |
| N qamatsnarrowhebrew       | N qubutsquarterhebrew   |
| N qamatsqatanhebrew        | N qubutswidehebrew      |
| N qamatsqatannarrowhebrew  | N question              |
| N qamatsqatanquarterhebrew | N questionarabic        |
| N qamatsqatanwidehebrew    | N questionarmenian      |
| N qamatsquarterhebrew      | N questiondown          |
| N qamatwidehebrew          | N questiongreek         |
| N qarneyparahebrew         | N questionmonospace     |
| N qbopomofo                | N quotedbl              |
| N qcircle                  | N quotedblbase          |
| N qhook                    | N quotedblleft          |
| N qmonospace               | N quotedblmonospace     |
| N qof                      | N quotedblprime         |
| N qofdagesh                | N quotedblprimereversed |
| N qofdageshhebrew          | N quotedblright         |
| N qofhatafpatah            | N quoteleft             |
| N qofhatafpatahhebrew      | N quoteleftreversed     |
| N qofhatafsegol            | N quotereversed         |
| N qofhatafsegolhebrew      | N quoteright            |
| N qofhebrew                | N quoterightn           |
| N qofhiriq                 | N quotesinglbase        |
| N qofhiriqhebrew           | N quotesingle           |
| N qofholam                 | N quotesinglemonospace  |
| N qofholamhebrew           | N r                     |
| N qofpatah                 | N raarmenian            |
| N qofpatahhebrew           | N rabengali             |
| N qofqamats                | N racute                |
| N qofqamatshebrew          | N radeva                |
| N qofqubuts                | N radical               |
| N qofqubutshebrew          | N radoverssquare        |
| N qofsegol                 | N radoverssquaresquare  |
| N qofsegolhebrew           | N radsquare             |
| N qofsheva                 | N rafe                  |
| N qofshevahebrew           | N rafehebrew            |
| N qoftsere                 | N ragujarati            |

|                           |                          |
|---------------------------|--------------------------|
| N ragurmukhi              | N reshqubutshebrew       |
| N rahiragana              | N reshsegol              |
| N rakatakana              | N reshsegolhebrew        |
| N rakatakanahalfwidth     | N reshsheva              |
| N ralowerdiagonalbengali  | N reshshevahebrew        |
| N ramiddlediagonalbengali | N reshtsere              |
| N ramshorn                | N reshtserehebrew        |
| N ratio                   | N reversedtilde          |
| N rbopomofo               | N reviahebrew            |
| N rcaron                  | N reviamugrashhebrew     |
| N rcedilla                | N revlogicalnot          |
| N rcircle                 | N rfishhook              |
| N rcommaaccent            | N rfishhookreversed      |
| N rdblgrave               | N rhabengali             |
| N rdotaccent              | N rhadeva                |
| N rdotbelow               | N rho                    |
| N rdotbelowmacron         | N rhook                  |
| N referencemark           | N rhookturned            |
| N reflexsubset            | N rhookturnedsuperior    |
| N reflexsuperset          | N rhosymbolgreek         |
| N registered              | N rhotichookmod          |
| N reharabic               | N rieulacirclekorean     |
| N reharmenian             | N rieulaparenkorean      |
| N rehfinalarabic          | N rieulcirclekorean      |
| N rehiragana              | N rieulhieuhkorean       |
| N rehyehaleflamarabic     | N rieulkiyeokkorean      |
| N rekatakana              | N rieulkiyeoksioskorean  |
| N rekatakanahalfwidth     | N rieulkorean            |
| N resh                    | N rieulmieumkorean       |
| N reshdageshebrew         | N rieulpansioskorean     |
| N reshhatafpatah          | N rieulparenkorean       |
| N reshhatafpatahhebrew    | N rieulphieuphkorean     |
| N reshhatafsegol          | N rieulpieupkorean       |
| N reshhatafsegolhebrew    | N rieulpieupsioskorean   |
| N reshhebrew              | N rieulsioskorean        |
| N reshhiriq               | N rieulthieuthkorean     |
| N reshhiriqhebrew         | N rieultikeutkorean      |
| N reshholam               | N rieulyeorinhieuhkorean |
| N reshholamhebrew         | N rightangle             |
| N reshpatah               | N righttackbelowcmb      |
| N reshpatahhebrew         | N righttriangle          |
| N reshqamats              | N rihiragana             |
| N reshqamatshebrew        | N rikatakana             |
| N reshqubuts              | N rikatakanahalfwidth    |

|                              |                                   |
|------------------------------|-----------------------------------|
| N ring                       | N rvocalicvowelsignbengali        |
| N ringbelowcmb               | N rvocalicvowelsigndeva           |
| N ringcmb                    | N rvocalicvowelsigngujarati       |
| N ringhalfleft               | N s                               |
| N ringhalfleftarmenian       | N sabengali                       |
| N ringhalfleftbelowcmb       | N sacute                          |
| N ringhalfleftcentered       | N sacutedotaccent                 |
| N ringhalfright              | N sadarabic                       |
| N ringhalfrightbelowcmb      | N sadeva                          |
| N ringhalfrightcentered      | N sadfinalarabic                  |
| N rinvertedbreve             | N sadinitialarabic                |
| N rittorusquare              | N sadmedialarabic                 |
| N rlinebelow                 | N sagujarati                      |
| N rlongleg                   | N sagurmukhi                      |
| N rlonglegturned             | N sahiragana                      |
| N rmonospace                 | N sakatakana                      |
| N rohiragana                 | N sakatakanahalfwidth             |
| N rokatakana                 | N sallallahoualayhewasallamarabic |
| N rokatakanahalfwidth        | N samekh                          |
| N roruathai                  | N samekhdagesh                    |
| N rparen                     | N samekhdageshhebrew              |
| N rrabengali                 | N samekhhebrew                    |
| N rradeva                    | N saraaathai                      |
| N rragurmukhi                | N saraaethai                      |
| N rreharabic                 | N saraaimaimalaithai              |
| N rrehfinalarabic            | N saraaimaimuanthai               |
| N rrvocalicbengali           | N saraamthai                      |
| N rrvocalicdeva              | N saraathai                       |
| N rrvocalicgujarati          | N saraethai                       |
| N rrvocalicvowelsignbengali  | N saraiithai                      |
| N rrvocalicvowelsigndeva     | N saraithai                       |
| N rrvocalicvowelsigngujarati | N saraothai                       |
| N rtblock                    | N sarauethai                      |
| N rturned                    | N sarauethai                      |
| N rturnedsuperior            | N sarauthai                       |
| N ruhiragana                 | N sarauuthai                      |
| N rukatakana                 | N sbopomofo                       |
| N rukatakanahalfwidth        | N scaron                          |
| N rupeemarkbengali           | N scarondotaccent                 |
| N rupeesignbengali           | N scedilla                        |
| N ruthai                     | N schwa                           |
| N rvocalicbengali            | N schwacyrillic                   |
| N rvocalicdeva               | N schwadiesiscyrillic             |
| N rvocalicgujarati           | N schwahook                       |

|                               |                         |
|-------------------------------|-------------------------|
| N scircle                     | N sevenhackarabic       |
| N scircumflex                 | N sevenhangzhou         |
| N scommaaccent                | N sevenideographicparen |
| N sdotaccent                  | N seveninferior         |
| N sdotbelow                   | N sevenmonospace        |
| N sdotbelowdotaccent          | N sevenparen            |
| N seagullbelowcmb             | N sevenperiod           |
| N second                      | N sevenpersian          |
| N secondtonechinese           | N sevenroman            |
| N section                     | N sevensuperior         |
| N seenarabic                  | N seventeencircle       |
| N seenfinalarabic             | N seventeenparen        |
| N seeninitialarabic           | N seventeenperiod       |
| N seenmedialarabic            | N seventhai             |
| N segol                       | N sfthyphen             |
| N segoll3                     | N shaarmenian           |
| N segollf                     | N shabengali            |
| N segol2c                     | N shacyrillic           |
| N segolhebrew                 | N shaddaarabic          |
| N segolnarrowhebrew           | N shaddadammaarabic     |
| N segolquarterhebrew          | N shaddadammatanarabic  |
| N segoltahebrew               | N shaddafathaarabic     |
| N segolwidehebrew             | N shaddafathatanarabic  |
| N seharmonian                 | N shaddakasraarabic     |
| N sehiragana                  | N shaddakasratanarabic  |
| N sekatakana                  | N shade                 |
| N sekatakanahalfwidth         | N shadedark             |
| N semicolon                   | N shadelight            |
| N semicolonarabic             | N shademedium           |
| N semicolonmonospace          | N shadeva               |
| N semicolonsmall              | N shagujarati           |
| N semivoicedmarkkana          | N shagurmukhi           |
| N semivoicedmarkkanahalfwidth | N shalshethebrew        |
| N sentisquare                 | N shbopomofo            |
| N sentosquare                 | N shchacyrillic         |
| N seven                       | N sheenarabic           |
| N sevenarabic                 | N sheenfinalarabic      |
| N sevenbengali                | N sheeninitialarabic    |
| N sevencircle                 | N sheenmedialarabic     |
| N sevencircleinversesansserif | N sheicoptic            |
| N sevendeva                   | N sheqel                |
| N seveneighths                | N sheqelhebrew          |
| N sevengujarati               | N sheva                 |
| N sevengurmukhi               | N sheval15              |

|                           |                                     |
|---------------------------|-------------------------------------|
| N sheva15                 | N six                               |
| N sheva22                 | N sixarabic                         |
| N sheva2e                 | N sixbengali                        |
| N shevahebrew             | N sixcircle                         |
| N shevanarrowhebrew       | N sixcircleinversesansserif         |
| N shevaquarterhebrew      | N sixdeva                           |
| N shevawidehebrew         | N sixgujarati                       |
| N shhacyrillic            | N sixgurmukhi                       |
| N shimacoptic             | N sixhackarabic                     |
| N shin                    | N sixhangzhou                       |
| N shindagesh              | N sixideographicparen               |
| N shindageshhebrew        | N sixinferior                       |
| N shindageshshindot       | N sixmonospace                      |
| N shindageshshindothebrew | N sixparen                          |
| N shindageshsindot        | N sixperiod                         |
| N shindageshsindothebrew  | N sixpersian                        |
| N shindothebrew           | N sixroman                          |
| N shinhebrew              | N sixsuperior                       |
| N shinshindot             | N sixteencircle                     |
| N shinshindothebrew       | N sixteencurrencydenominatorbengali |
| N shinsindot              | N sixteenparen                      |
| N shinsindothebrew        | N sixteenperiod                     |
| N shook                   | N sixthai                           |
| N sigma                   | N slash                             |
| N sigma1                  | N slashmonospace                    |
| N sigmafinal              | N slong                             |
| N sigmaunatesymbolgreek   | N slongdotaccent                    |
| N sihiragana              | N smileface                         |
| N sikatakana              | N smonospace                        |
| N sikatakanahalfwidth     | N sofupasuhebrew                    |
| N siluqhebrew             | N softthyphen                       |
| N siluqlefthebrew         | N softsigncyrillic                  |
| N similar                 | N sohiragana                        |
| N sindothebrew            | N sokatakana                        |
| N siosacirclekorean       | N sokatakanahalfwidth               |
| N siosaparenkorean        | N soliduslongoverlaycmb             |
| N sioscieuckorean         | N solidusshortoverlaycmb            |
| N sioscirclekorean        | N sorusithai                        |
| N sioskiyeokkorean        | N sosalathai                        |
| N sioskorean              | N sosoithai                         |
| N siosnieunkorean         | N sosuathai                         |
| N siosparenkorean         | N space                             |
| N siospieupkorean         | N spacehackarabic                   |
| N siostikeutkorean        | N spade                             |



|                                   |                          |
|-----------------------------------|--------------------------|
| N spadesuitblack                  | N sukatakana             |
| N spadesuitwhite                  | N sukatakanahalfwidth    |
| N sparen                          | N sukunarabic            |
| N squarebelowcmb                  | N summation              |
| N squarecc                        | N sun                    |
| N squarecm                        | N superset               |
| N squarediagonalcrosshatchfill    | N supersetnotequal       |
| N squarehorizontalfill            | N supersetorequal        |
| N squarekg                        | N svsquare               |
| N squarekm                        | N syowuierasquare        |
| N squarekmcapital                 | N t                      |
| N squareln                        | N tabengali              |
| N squarelog                       | N tackdown               |
| N squaremg                        | N tackleft               |
| N squaremil                       | N tadeva                 |
| N squaremm                        | N tagujarati             |
| N squaremsquared                  | N tagurmukhi             |
| N squareorthogonalcrosshatchfill  | N taharabic              |
| N squareupperlefttolowerrightfill | N tahfinalarabic         |
| N squareupperighttolowerleftfill  | N tahinitialarabic       |
| N squareverticalfill              | N tahiragana             |
| N squarewhitewithsmallblack       | N tahmedialarabic        |
| N srsquare                        | N taisyouerasquare       |
| N ssabengali                      | N takatakana             |
| N ssadeva                         | N takatakanahalfwidth    |
| N ssagujarati                     | N tatweelarabic          |
| N ssangcieuckorean                | N tau                    |
| N ssanghieuhkorean                | N tav                    |
| N ssangieungkorean                | N tavadages              |
| N ssangkiyeokkorean               | N tavadagesh             |
| N ssangnieunkorean                | N tavadageshhebrew       |
| N ssangpieupkorean                | N tavhebrew              |
| N ssangsioskorean                 | N tbar                   |
| N ssangtikeutkorean               | N tbopomofo              |
| N sterling                        | N tcaron                 |
| N sterlingmonospace               | N tccurl                 |
| N strokelongoverlaycmb            | N tcedilla               |
| N strokeshortoverlaycmb           | N tcheharabic            |
| N subset                          | N tchehfinalarabic       |
| N subsetnotequal                  | N tchehinitialarabic     |
| N subsetorequal                   | N tchehmedialarabic      |
| N succeeds                        | N tchehmeeminitialarabic |
| N suchthat                        | N tcircle                |
| N suhiragana                      | N tcircumflexbelow       |

|                         |                               |
|-------------------------|-------------------------------|
| N tcommaaccent          | N thalfinalarabic             |
| N tdieresis             | N thanthakhatthai             |
| N tdotaccent            | N theharabic                  |
| N tdotbelow             | N thehfinalarabic             |
| N tecyrillic            | N thehinitialarabic           |
| N tedescendercyrillic   | N thehmedialarabic            |
| N teharabic             | N thereexists                 |
| N tehfinalarabic        | N therefore                   |
| N tehhahinitialarabic   | N theta                       |
| N tehhahisolatedarabic  | N thetal                      |
| N tehinitialarabic      | N thetasymbolgreek            |
| N tehiragana            | N thieuthacirclekorean        |
| N tehjeeminitialarabic  | N thieuthaparenkorean         |
| N tehjeemisolatedarabic | N thieuthcirclekorean         |
| N tehmarbutaarabic      | N thieuthkorean               |
| N tehmarbutafinalarabic | N thieuthparenkorean          |
| N tehmedialarabic       | N thirteencircle              |
| N tehmeeminitialarabic  | N thirteenparen               |
| N tehmeemisolatedarabic | N thirteenperiod              |
| N tehnoonfinalarabic    | N thonangmonthothai           |
| N tekatakana            | N thook                       |
| N tekatakanahalfwidth   | N thophuthaothai              |
| N telephone             | N thorn                       |
| N telephoneblack        | N thothahanthai               |
| N telishagedolahebrew   | N thothanthai                 |
| N telishaqetanahebrew   | N thothongthai                |
| N tencircle             | N thothungthai                |
| N tenideographicparen   | N thousandcyrillic            |
| N tenparen              | N thousandsseparatorarabic    |
| N tenperiod             | N thousandsseparatorpersian   |
| N tenroman              | N three                       |
| N tesh                  | N threearabic                 |
| N tet                   | N threebengali                |
| N tetdagesh             | N threecircle                 |
| N tetdageshhebrew       | N threecircleinversesansserif |
| N tethebrew             | N threedeva                   |
| N tetsecyrillic         | N threeeighths                |
| N tevirhebrew           | N threegujarati               |
| N tevirlefthebrew       | N threegurukhi                |
| N thabengali            | N threehackarabic             |
| N thadeva               | N threehangzhou               |
| N thagujarati           | N threeideographicparen       |
| N thagurmukhi           | N threeinferior               |
| N thalarabic            | N threemonospace              |

N threenumeratorbengali  
N threeparen  
N threeperiod  
N threepersian  
N threequarters  
N threeroman  
N threesuperior  
N threethai  
N thzsquare  
N tihiragana  
N tikatakana  
N tikatakanahalfwidth  
N tikeutacirclekorean  
N tikeutaparenkorean  
N tikeutcirclekorean  
N tikeutkorean  
N tikeutparenkorean  
N tilde  
N tildebelowcmb  
N tildecmb  
N tildecomb  
N tildedoublecmb  
N tildeoperator  
N tildeoverlaycmb  
N tildeverticalcmb  
N timescircle  
N tipehahebrew  
N tipehalefthebrew  
N tippigurmukhi  
N titlocyrilliccmb  
N tiwnarmenian  
N tlinebelow  
N tmonospace  
N toarmenian  
N tohiragana  
N tokatakana  
N tokatakanahalfwidth  
N tonebarextrahighmod  
N tonebarextralowmod  
N tonebarhighmod  
N tonebarlowmod  
N tonebarmidmod  
N tonefive  
N tonesix

N tonetwo  
N tonos  
N tonsquare  
N topatakthai  
N tortoiseshellbracketleft  
N tortoiseshellbracketleftsmall  
N tortoiseshellbracketleftvertical  
N tortoiseshellbracketright  
N tortoiseshellbracketrightsmall  
N tortoiseshellbracketrightvertical  
N totaothai  
N tpalatalhook  
N tparen  
N trademark  
N tetroflexhook  
N triagdn  
N triaglf  
N triagrt  
N triagup  
N ts  
N tsadi  
N tsadidagesh  
N tsadidageshhebrew  
N tsadihebrew  
N tsecyrillic  
N tsere  
N tsere12  
N tsere1e  
N tsere2b  
N tserehebrew  
N tserenarrowhebrew  
N tserequarterhebrew  
N tserewidehebrew  
N tshecyrillic  
N ttabengali  
N ttadeva  
N ttagujarati  
N ttagurmukhi  
N tteharabic  
N ttehfinalearabic  
N ttehinitialarabic  
N ttehmedialarabic  
N tthabengali  
N tthadeva

|                             |                         |
|-----------------------------|-------------------------|
| N tthagujarati              | N ubengali              |
| N tthagurmukhi              | N ubopomofo             |
| N tturned                   | N ubreve                |
| N tuhiragana                | N ucaron                |
| N tukatakana                | N ucircle               |
| N tukatakanahalfwidth       | N ucircumflex           |
| N tusmallhiragana           | N ucircumflexbelow      |
| N tusmallkatakana           | N ucyrillic             |
| N tusmallkatakanahalfwidth  | N udattadeva            |
| N twelvecircle              | N udblacute             |
| N twelveparen               | N udblgrave             |
| N twelveperiod              | N udeva                 |
| N twelveroman               | N udieresis             |
| N twentycircle              | N udieresisacute        |
| N twentyparen               | N udieresisbelow        |
| N twentyperiod              | N udieresiscaron        |
| N two                       | N udieresiscyrillic     |
| N twoarabic                 | N udieresisgrave        |
| N twobengali                | N udieresismacron       |
| N twocircle                 | N udotbelow             |
| N twocircleinversesansserif | N ugrave                |
| N twodeva                   | N ugujarati             |
| N twodotenleader            | N ugurmukhi             |
| N twodotleader              | N uhiragana             |
| N twodotleadervertical      | N uhookabove            |
| N twogujarati               | N uhorn                 |
| N twogurmukhi               | N uhornacute            |
| N twohackarabic             | N uhorndotbelow         |
| N twohangzhou               | N uhorngrave            |
| N twoideographicparen       | N uhornhookabove        |
| N twoinferior               | N uhorntilde            |
| N twomonospace              | N uhungarumlaut         |
| N twonumeratorbengali       | N uhungarumlautcyrillic |
| N twoparen                  | N uinvertedbreve        |
| N twoperiod                 | N ukatakana             |
| N twopersian                | N ukatakanahalfwidth    |
| N tworoman                  | N ukcyrillic            |
| N twostroke                 | N ukorean               |
| N twosuperior               | N umacron               |
| N twothai                   | N umacroncyrillic       |
| N twothirds                 | N umacrondieresis       |
| N u                         | N umatragurmukhi        |
| N uacute                    | N umonospace            |
| N ubar                      | N underscore            |

|                           |                           |
|---------------------------|---------------------------|
| N underscoredbl           | N vav                     |
| N underscoremonospace     | N vavdagesh               |
| N underscorevertical      | N vavdagesh65             |
| N underscorewavy          | N vavdageshhebrew         |
| N union                   | N vavhebrew               |
| N universal               | N vavholam                |
| N uogonek                 | N vavholamhebrew          |
| N uparen                  | N vavvavhebrew            |
| N upblock                 | N vavyodhebrew            |
| N upperdothebrew          | N vcircle                 |
| N upsilon                 | N vdotbelow               |
| N upsilondieresis         | N vecyrillic              |
| N upsilondieresistonos    | N veharabic               |
| N upsilonlatin            | N vehfinalarabic          |
| N upsilontonos            | N vehinitialarabic        |
| N uptackbelowcmb          | N vehmedialarabic         |
| N uptackmod               | N vekatakana              |
| N uragurmukhi             | N venus                   |
| N uring                   | N verticalbar             |
| N ushortcyrillic          | N verticallineabovecmb    |
| N usmallhiragana          | N verticallinebelowcmb    |
| N usmallkatakana          | N verticallinelowmod      |
| N usmallkatakanahalfwidth | N verticallinemod         |
| N ustraightcyrillic       | N vewarmenian             |
| N ustraightstrokecyrillic | N vhook                   |
| N utilde                  | N vikatakana              |
| N utildeacute             | N viramabengali           |
| N tildebelow              | N viramadeva              |
| N uubengali               | N viramagujarati          |
| N uudeva                  | N visargabengali          |
| N uugujarati              | N visargadeva             |
| N uugurmukhi              | N visargagujarati         |
| N uumatragurmukhi         | N vmonospace              |
| N uvowelsignbengali       | N voarmenian              |
| N uvowelsigndeva          | N voicediterationhiragana |
| N uvowelsigngujarati      | N voicediterationkatakana |
| N uvowelsignbengali       | N voicedmarkkana          |
| N uvowelsigndeva          | N voicedmarkkanahalfwidth |
| N uvowelsigngujarati      | N vokatakana              |
| N v                       | N vparen                  |
| N vadeva                  | N vtilde                  |
| N vagujarati              | N vturned                 |
| N vagurmukhi              | N vuhiragana              |
| N vakatakana              | N vukatakana              |

|   |                                  |
|---|----------------------------------|
| N w                                       | N whiterightpointingtriangle     |
| N wacute                                  | N whitesmallsquare               |
| N waekorean                               | N whitesmilingface               |
| N wahiragana                              | N whitesquare                    |
| N wakatakana                              | N whitestar                      |
| N wakatakanahalfwidth                     | N whitetelephone                 |
| N wakorean                                | N whitetortoiseshellbracketleft  |
| N wasmallhiragana                         | N whitetortoiseshellbracketright |
| N wasmallkatakana                         | N whiteuppointingsmalltriangle   |
| N wattosquare                             | N whiteuppointingtriangle        |
| N wavedash                                | N wihiragana                     |
| N wavyunderscorevertical                  | N wikatakana                     |
| N wawarabic                               | N wikorean                       |
| N wawfinalarabic                          | N wmonospace                     |
| N wawhamzaabovearabic                     | N wohiragana                     |
| N wawhamzaabovefinalarabic                | N wokatakana                     |
| N wbsquare                                | N wokatakanahalfwidth            |
| N wcircle                                 | N won                            |
| N wcircumflex                             | N wonmonospace                   |
| N wdieresis                               | N wowaenthai                     |
| N wdotaccent                              | N wparen                         |
| N wdotbelow                               | N wring                          |
| N wehiragana                              | N wsuperior                      |
| N weierstrass                             | N wturned                        |
| N wekatakana                              | N wynn                           |
| N wekorean                                | N x                              |
| N weokorean                               | N xabovecmb                      |
| N wgrave                                  | N xbopomofo                      |
| N whitebullet                             | N xcircle                        |
| N whitecircle                             | N xdieresis                      |
| N whitecircleinverse                      | N xdotaccent                     |
| N whitecornerbracketleft                  | N xeharmenian                    |
| N whitecornerbracketleftvertical          | N xi                             |
| N whitecornerbracketright                 | N xmonospace                     |
| N whitecornerbracketrightvertical         | N xparen                         |
| N whitediamond                            | N xsuperior                      |
| N whitediamondcontainingblacksmalldiamond | N y                              |
| N whitedownpointingsmalltriangle          | N yaadosquare                    |
| N whitedownpointingtriangle               | N yabengali                      |
| N whiteleftpointingsmalltriangle          | N yacute                         |
| N whiteleftpointingtriangle               | N yadeva                         |
| N whitelenticularbracketleft              | N yaekorean                      |
| N whitelenticularbracketright             | N yagujarati                     |
| N whiterightpointingsmalltriangle         | N yagurmukhi                     |

|                              |                             |
|------------------------------|-----------------------------|
| N yahiragana                 | N yiarmenian                |
| N yakatakana                 | N yicyrillic                |
| N yakatakanahalfwidth        | N yikorean                  |
| N yakorean                   | N yinyang                   |
| N yamakkanthai               | N yiwarmenian               |
| N yasmallhiragana            | N ymonospace                |
| N yasmallkatakana            | N yod                       |
| N yasmallkatakanahalfwidth   | N yoddagesh                 |
| N yatcyrillic                | N yoddageshhebrew           |
| N ycircle                    | N yodhebrew                 |
| N ycircumflex                | N yodyodhebrew              |
| N ydieresis                  | N yodyodpatahhebrew         |
| N ydotaccent                 | N yohiragana                |
| N ydotbelow                  | N yoikorean                 |
| N yeharabic                  | N yokatakana                |
| N yehbarreearabic            | N yokatakanahalfwidth       |
| N yehbarreefinalarabic       | N yokorean                  |
| N yehfinalarabic             | N yosmallhiragana           |
| N yehhamzaabovearabic        | N yosmallkatakana           |
| N yehhamzaabovefinalarabic   | N yosmallkatakanahalfwidth  |
| N yehhamzaaboveinitialarabic | N yotgreek                  |
| N yehhamzaabovemedialarabic  | N yoyaekorean               |
| N yehinitialarabic           | N yoyakorean                |
| N yehmedialarabic            | N yoyakthai                 |
| N yehmeeminitialarabic       | N yoyingthai                |
| N yehmeemisolatedarabic      | N yparen                    |
| N yehnoonfinalarabic         | N ypogegrammeni             |
| N yehthreedotsbelowarabic    | N ypogegrammenigreekcmb     |
| N yekorean                   | N yr                        |
| N yen                        | N yring                     |
| N yenmonospace               | N ysuperior                 |
| N yeokorean                  | N ytilde                    |
| N yeorinhieuhkorean          | N yturned                   |
| N yerahbenyomohebrew         | N yuhiragana                |
| N yerahbenyomolefthebrew     | N yuikorean                 |
| N yericyrillic               | N yukatakana                |
| N yerudieresiscyrillic       | N yukatakanahalfwidth       |
| N yesieungkorean             | N yukorean                  |
| N yesieungpansioskorean      | N yusbigcyrillic            |
| N yesieungsioskorean         | N yusbigiotifiedcyrillic    |
| N yetivhebrew                | N yuslittlecyrillic         |
| N ygrave                     | N yuslittleiotifiedcyrillic |
| N yhook                      | N yusmallhiragana           |
| N yhookabove                 | N yusmallkatakana           |

N yusmallkatakanahalfwidth  
 N yuyekorean  
 N yuyeokorean  
 N yyabengali  
 N yyadeva  
 N z  
 N zaarmenian  
 N zacute  
 N zadeva  
 N zagurmukhi  
 N zaharabic  
 N zahfinalarabic  
 N zahinitialarabic  
 N zahiragana  
 N zahmedialarabic  
 N zainarabic  
 N zainfinalarabic  
 N zakatakana  
 N zaqefgadolhebrew  
 N zaqefqatanhebrew  
 N zarqahebrew  
 N zayin  
 N zayindagesh  
 N zayindageshhebrew  
 N zayinhebrew  
 N zbopomofo  
 N zcaron  
 N zcircle  
 N zcircumflex  
 N zcurl  
 N zdot  
 N zdotaccent  
 N zdotbelow  
 N zecyrillic  
 N zedescendercyrillic  
 N zedieresiscyrillic  
 N zehiragana  
 N zekatakana  
 N zero  
 N zeroarabic  
 N zerobengali  
 N zerodeva  
 N zerogujarati  
 N zerogurmukhi

N zerohackarabic  
 N zeroinferior  
 N zeromonospace  
 N zeropersian  
 N zerosuperior  
 N zerothai  
 N zerowidthjoiner  
 N zerowidthnonjoiner  
 N zerowidthspace  
 N zeta  
 N zhbopomofo  
 N zhearmenian  
 N zhebrevecyrillic  
 N zhecyrillic  
 N zhedescendercyrillic  
 N zhedieresiscyrillic  
 N zhiragana  
 N zikatakana  
 N zinorhebrew  
 N zlinebelow  
 N zmonospace  
 N zohiragana  
 N zokatakana  
 N zparen  
 N zretroflexhook  
 N zstroke  
 N zuhiragana  
 N zukatakana

N version

|                         |            |
|-------------------------|------------|
| <b>enhanceid</b>        | function   |
| <b>expansions</b>       | data table |
| <b>formats</b>          | data table |
| <b>getalternate</b>     | function   |
| <b>getdiscexpansion</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  
 T multiple



- F opentype
- T substitution
- F opentype
- goodies**                      table
- D colorschemes
- T data
- T dejavu-math
- S author
- S comment
- S copyright
- B initialized
- T mathematics
- T alternates
- T dotless
- S comment
- S feature
- N value
- T kerns
- S name
- S version
- D designsizes
- D filenames
- F getcompositions
- T list
- F load
- F prepare\_features
- F register
- F registerpostprocessor
- F report
- T suffixes

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**hashes**                      table

- D characters
- D csnames
- D descriptions
- D dynamics
- D emwidths
- D exheights
- D extensibles
- D features
- D identifiers
- D italics
- D lastmathids
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- D modes
- D originals
- D parameters
- T processes
- D properties
- D quads
- D resources
- T setdynamics
- T shapes
- D spaces
- D spacings
- D unicodes
- D variants
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- F addextraprivate
- F addprivate
- F dimenfactor
- F expandglyph
- F fontpatternhassize
- F getcoloredglyphs
- F getdigitwidth
- F getparameters
- F getprivatecharornode
- F getprivatenode
- F getprivates
- F getprivateslot
- F hasprivate
- F indextoslot
- F name
- F nametoslot
- F setdigitwidth
- F splitfontpattern
- F tochar

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- F characters
- F descriptions
- F glyphs

**loggers**                      table

- F add\_placeholders
- D category\_to\_placeholder
- F format
- F onetimemessage

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F register
F reportdefinedfonts
F reportusedfeatures
mappings           table
F addtounicode
F fromunicode16
F loadfile
F loadline
F makenameparser
T overloads
T IJ
  N mess
  S name
  T unicode
T f_f
  N mess
  S name
  T unicode
T f_f_i
  N mess
  S name
  T unicode
T f_f_l
  N mess
  S name
  T unicode
T f_i
  N mess
  S name
  T unicode
T f_j
  S name
  T unicode
T f_k
  S name
  T unicode
T f_l
  N mess
  S name
  T unicode
T i_j
  N mess
  S name
  T unicode

```

```

F reset
F tounicode
F tounicode16
F tounicode16sequence
metapost           table
F boundingbox
F boxtomp
F draw
F fill
F maxbounds
F output
F paths
F widthline
F zeroline
mp                 table
  D cache
  B inline
  N version
names              data table
nulldata           data table
protrusions       data table
readers            table
  F afm
  F check_lua
  F check_tfm
  F lua
  F ofm
  F opentype
  F otf
  F pfb
  D sequence
  F tfm
  F ttc
  F ttf
  F woff
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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
- setdiscexpansion**    function
- 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
  - F uselibrary
- tables**                table
  - D data
  - F savefont
  - F saveoriginal
- tracers**                table
- treatments**            table
  - F applyfixes
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  - S filename
  - F ignoredfile
  - F report
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- typefaces**            table

# functions (context)

**dummy** function

# graphics (context)

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F calculatemultipar

F fetchmultipar

F pair

F path

F point

## gzip (extra lua)

**close**    function  
**lines**    function  
**load**    function

**open**    function  
**save**    function  
**suffix**  function

## img (basic tex)

|                       |          |
|-----------------------|----------|
| <b>boxes</b>          | function |
| <b>check</b>          | function |
| <b>checksize</b>      | function |
| <b>clone</b>          | function |
| <b>copy</b>           | function |
| <b>immediatewrite</b> | function |
| <b>keys</b>           | function |
| <b>new</b>            | function |
| <b>node</b>           | function |

|                  |          |
|------------------|----------|
| <b>ofindex</b>   | function |
| <b>package</b>   | function |
| <b>print</b>     | function |
| <b>scan</b>      | function |
| <b>serialize</b> | function |
| <b>totable</b>   | function |
| <b>types</b>     | function |
| <b>write</b>     | function |

# interactions (context)

**attachments** data table

**fields** table

F clone

F define

F defineset

F insert

**general** table

F getidentity

F setupidentity

**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

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**linkedslists** data table

**pages** table

F setpagetransition

F setupcanvas

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F setcloseddocument

F setclosepage

F setopendocument

F setopenpage

**renderings** data table

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# interfaces (context)

|                             |            |                             |
|-----------------------------|------------|-----------------------------|
| <b>addvalidkeys</b>         | function   | F MPpardata                 |
| <b>cachedsetups</b>         | data table | F MPplus                    |
| <b>cachedsetup</b>          | function   | F MPpos                     |
| <b>checkedspecification</b> | function   | F MPposset                  |
| <b>complete</b>             | data table | F MPr                       |
| <b>constants</b>            | data table | F MPrest                    |
| <b>corenamespaces</b>       | data table | F MPrs                      |
| <b>currentinterface</b>     | string     | F MPul                      |
| <b>currentresponse</b>      | string     | F MPur                      |
| <b>definecommand</b>        | function   | F MPw                       |
| <b>defined</b>              | function   | F MPwhd                     |
| <b>doifelsemessage</b>      | function   | F MPx                       |
| <b>elements</b>             | data table | F MPxy                      |
| <b>formats</b>              | data table | F MPxywhd                   |
| <b>getcheckedparameters</b> | function   | F MPy                       |
| <b>getmessage</b>           | function   | F Romannumerals             |
| <b>getnamespace</b>         | function   | F abjadnodotnumerals        |
| <b>getsetupstring</b>       | function   | F abjadnumerals             |
| <b>hashedsetups</b>         | data table | F adaptfontfeature          |
| <b>implement</b>            | function   | F addcounter                |
| <b>interfacedcommand</b>    | function   | F addfeature                |
| <b>interfaces</b>           | table      | F addgrapheme               |
| <b>invalidkey</b>           | function   | F addlinklistelement        |
| <b>message</b>              | function   | F addreplacements           |
| <b>namespaces</b>           | table      | F addtocolumnset            |
| F define                    |            | F addtojavascriptpreamble   |
| F list                      |            | F addtolist                 |
| <b>registernamespace</b>    | function   | F addvalidinterfacekeys     |
| <b>scanners</b>             | table      | F allinputpaths             |
| F Alphabetic                |            | F alphabetic                |
| F Character                 |            | F analyzefloatmethod        |
| F Characters                |            | F analyzeitemgroup          |
| F MPLIBconvertoutlinetext   |            | F analyzelist               |
| F MPc                       |            | F analyzeregister           |
| F MPd                       |            | F applypattern              |
| F MPH                       |            | F applytobox                |
| F MPll                      |            | F applytofirstcharacter     |
| F MPLr                      |            | F assignbuffer              |
| F MPLs                      |            | F autofinishstructurelevels |
| F MPn                       |            | F autonextspace             |
| F MPp                       |            | F autonextstructurelevel    |

|                             |                          |
|-----------------------------|--------------------------|
| F autose setups             | F btxlastofrange         |
| F autostarttext             | F btxlistvariant         |
| F autostoptext              | F btxloaddefinitionfile  |
| F averagecharwidth          | F btxloadjournallist     |
| F bitmapimage               | F btxloadreplacementfile |
| F blockcolumnset            | F btxoneorrange          |
| F boxtostring               | F btxpreparelistentries  |
| F bposcolumn                | F btxremapauthor         |
| F bposcolumnregistered      | F btxsavedataset         |
| F btxabbreviatedjournal     | F btxsavejournallist     |
| F btxaddentry               | F btxsetdataset          |
| F btxaddjournal             | F btxsetentry            |
| F btxauthor                 | F btxsetregister         |
| F btxauthorfield            | F btxsetspecification    |
| F btxauthorortoregister     | F btxsingularorplural    |
| F btxcollectlistentries     | F btxtoregister          |
| F btxcurrentfirstnames      | F btxusedataset          |
| F btxcurrentinitials        | F btxuservariable        |
| F btxcurrentjuniors         | F buildtextaccent        |
| F btxcurrentsurnames        | F character              |
| F btxcurrentvons            | F characters             |
| F btxdetail                 | F chardescription        |
| F btxdirect                 | F checkcolumnset         |
| F btxdoif                   | F checkcountersetup      |
| F btxdoifelse               | F checkedconversion      |
| F btxdoifelsecombiinlist    | F checkedpagefloat       |
| F btxdoifelsesameasprevious | F checkinjector          |
| F btxdoifelseuservariable   | F checkinterfacechain    |
| F btxdoifnot                | F checktwopassdata       |
| F btxexpandedjournal        | F chemicalcomponent      |
| F btxfetchlistentries       | F chinesenumerals        |
| F btxfield                  | F cleanfontname          |
| F btxfieldname              | F cleanupbox             |
| F btxfieldtype              | F cleanuplayers          |
| F btxfirstofrange           | F clonefield             |
| F btxflush                  | F collectfloat           |
| F btxflushlistcombi         | F collecthelp            |
| F btxflushlistentry         | F colorcomponents        |
| F btxflushmarked            | F columnsetcurrentcolumn |
| F btxflushpages             | F columnsetgoto          |
| F btxfoundname              | F columnsetnoto          |
| F btxfoundtype              | F concatcommalist        |
| F btxhandlecite             | F consultfloat           |
| F btxhandlenocite           | F convertbtxdatasettoxml |

|                          |                              |
|--------------------------|------------------------------|
| F converteddimen         | F definefontfeature          |
| F convertmpstopdf        | F definefontsolution         |
| F copyboxfromcache       | F definehyphenationfeatures  |
| F copyposition           | F defineinsertion            |
| F cos                    | F defineintermediatecolor    |
| F cosd                   | F definelabels               |
| F countervalue           | F definelanguage             |
| F counttwopassdata       | F definelinefiller           |
| F currentcomponent       | F definelinkedlist           |
| F currentdate            | F definemarking              |
| F currentdesignsize      | F definemetafont             |
| F currentenvironment     | F definemultitonecolorglobal |
| F currentpostthyphenchar | F definenamespace            |
| F currentprehyphenchar   | F definenote                 |
| F currentproduct         | F defineparallel             |
| F currentproject         | F defineparbuilder           |
| F currentreferenceorder  | F defineprocesscolordummy    |
| F currentsectiontolist   | F defineprocesscolorglobal   |
| F datasetvariable        | F defineprocesscolorlocal    |
| F dayname                | F defineprogram              |
| F decimals               | F definereference            |
| F decrementcounter       | F defineregister             |
| F decrementedcounter     | F definerule                 |
| F decrementsubcounter    | F definesectionlevels        |
| F defineaccents          | F defineshift                |
| F defineattribute        | F definesnapmethod           |
| F definebreakpoint       | F definespotcolorglobal      |
| F definebreakpoints      | F definestructureblock       |
| F definecharacterspacing | F definestructureset         |
| F definechemical         | F definetransparency         |
| F definecolumnset        | F definetransparencyglobal   |
| F defineconversion       | F definetwopasslist          |
| F definecounter          | F definetypeface             |
| F definedlayoutcomponent | F defineviewerlayer          |
| F definefallbackfamily   | F depthnumber                |
| F definefield            | F digits_normal              |
| F definefieldset         | F digits_reverse             |
| F definefilefallback     | F directboxfromcache         |
| F definefilesynonym      | F directcopyboxfromcache     |
| F definefont_one         | F disableautofontscript      |
| F definefont_two         | F disabledirectives          |
| F definefontcolorpalette | F disableexperiments         |
| F definefontfamily       | F disablejobsave             |
| F definefontfamilypreset | F disableparbuilder          |

F disableregime  
F disablespellchecking  
F disablestatetriggering  
F disablestream  
F disabletrackers  
F discardfromlist  
F doanalyzeframedbox  
F doifcommon  
F doifcounter  
F doifelseblack  
F doifelsebuffer  
F doifelsecharinfont  
F doifelsecommon  
F doifelsecontinewithfile  
F doifelseconverter  
F doifelsecounter  
F doifelsecurrentfonthasfeature  
F doifelsedrawingblack  
F doifelsefieldcategory  
F doifelsefiledefined  
F doifelsefileexist  
F doifelsefirstchar  
F doifelsefontpresent  
F doifelseinelement  
F doifelseinputfile  
F doifelseinset  
F doifelseintwopassdata  
F doifelseleapyear  
F doifselisthasentry  
F doifselisthasnumber  
F doifselisthaspage  
F doifselisthastitle  
F doifselocfile  
F doifelsemarking  
F doifelsemessage  
F doifelseobject  
F doifelseobjectreference  
F doifelseolderversion  
F doifelseoverlapping  
F doifelseparallel  
F doifelseparentfile  
F doifelsepathexist  
F doifelseposition  
F doifelsepositiononpage

F doifelsepositionsonsamepage  
F doifelsepositionsonthispage  
F doifelsepositionsused  
F doifelserangeonpage  
F doifelserereference  
F doifelserightttoleftinbox  
F doifelsesame  
F doifelsestackedfloats  
F doifelsesynonymshown  
F doifelsesynonymused  
F doifelseurldefined  
F doifelseutfmathabove  
F doifelseutfmathaccent  
F doifelseutfmathbelow  
F doifelseutfmathfiller  
F doifelsevisualizer  
F doiffieldsetelse  
F doifinset  
F doifnotcommon  
F doifnotcounter  
F doifnotecontent  
F doifnoteonsamepageasprevious  
F doifnotinset  
F doifnotsame  
F doifposition  
F doifsame  
F doprocesstypescriptfile  
F doreshapeframedbox  
F dosaveposition  
F dosavepositionplus  
F dosavepositionwhd  
F dosetposition  
F dosetpositionbox  
F dosetpositionplus  
F dosetpositionstrut  
F dosetpositionwhd  
F dostarttextfile  
F dostoptextfile  
F elapsedtime  
F enableasciimode  
F enableautofences  
F enableautofontscript  
F enablebackgroundalign  
F enablebackgroundboxes

|                           |                                 |
|---------------------------|---------------------------------|
| F enablecolor             | F figure_flush_registered_pages |
| F enablecolorintents      | F figure_identify               |
| F enablecrlf              | F figure_include                |
| F enabledirectives        | F figure_mergegoodies           |
| F enableexperiments       | F figure_nof_registered_pages   |
| F enablefontcolorsschemes | F figure_pop                    |
| F enableinteraction       | F figure_push                   |
| F enablelinefillers       | F figure_register_page          |
| F enableparbuilder        | F figure_reset                  |
| F enableregime            | F figure_scale                  |
| F enablerules             | F figurefilename                |
| F enableshifts            | F figurefilepath                |
| F enablespellchecking     | F figurefiletype                |
| F enablestatetriggering   | F figurerequest                 |
| F enablestream            | F figuresetdimensions           |
| F enabletrackers          | F figurestatus                  |
| F enabletransparency      | F figureused                    |
| F enableutf               | F filterdefaultreference        |
| F enhancelinkedlist       | F filterreference               |
| F enhancelist             | F finalizebox                   |
| F enhancereference        | F findregisterinternal          |
| F enhanceregister         | F findtwopassdata               |
| F eposcolumn              | F finishcolumnsetflush          |
| F eposcolumnregistered    | F finishexport                  |
| F erasebuffer             | F firstcountervalue             |
| F execute                 | F firstinset                    |
| F expandcurrentreference  | F firstsubcountervalue          |
| F exportformdata          | F flushcolumnsetareas           |
| F exportreferences        | F flushcolumnsetcolumn          |
| F extendregister          | F flushcolumnsetrest            |
| F extensiblecode          | F flushfloat                    |
| F fakeword                | F flushlabeledfloat             |
| F featureattribute        | F flushnotes                    |
| F featurelist             | F flushpageinjectionsafter      |
| F feedback                | F flushpageinjectionsbefore     |
| F fetchallmarks           | F flushpostponedblocks          |
| F fetchmultipar           | F flushpostponednotes           |
| F fetchmultishape         | F flushstream                   |
| F fetchonemark            | F flushstreamcopy               |
| F fetchposboxes           | F fontchar                      |
| F fetchtwomarks           | F fontcharbyindex               |
| F figure_check            | F fontcollectionclone           |
| F figure_done             | F fontcollectiondefine          |
| F figure_dummy            | F fontcollectionprepare         |

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|----------------------------------|------------------------------|
| F fontcollectionregister         | F getobjectdimensions        |
| F fontcollectionreport           | F getobjectreference         |
| F fontcollectionreset            | F getobjectreferencepage     |
| F fontlookupgetkey               | F getprivatechar             |
| F fontlookupgetkeyofindex        | F getprivateglyphslot        |
| F fontlookupinitialize           | F getprivatemathchar         |
| F fontlookupnoffound             | F getprivateslot             |
| F forceendjob                    | F getprogram                 |
| F forcequitjob                   | F getrandomdimen             |
| F formatcolor                    | F getrandomfloat             |
| F formatgray                     | F getrandomnumber            |
| F from                           | F getrandomseed              |
| F frule                          | F getreadfilename            |
| F getbidimode                    | F getsetupstring             |
| F getbodyfontsizes               | F getsomefullstructurenumber |
| F getboxfromcache                | F getsomestructurenumber     |
| F getbuffer                      | F getspecificstructuretitle  |
| F getbufferctxlua                | F getstructurelevel          |
| F getbuffermkvi                  | F getstructurenumber         |
| F getcheckedinterfaceparameters  | F getsubstring               |
| F getcurrentprefixspec           | F gettexbuffer               |
| F getcurrentreferencemetadata    | F gettwopassdata             |
| F getdefaultfieldvalue           | F gettwopassdatalist         |
| F getdocumentargument            | F geturl                     |
| F getdocumentfilename            | F getvisual                  |
| F getelementtag                  | F hboxto vbox                |
| F getfieldcategory               | F helpaction                 |
| F getfile                        | F helpreference              |
| F getfirstcharacter              | F hexstringtonumber          |
| F getfirsttwopassdata            | F horizontalcode             |
| F getfloatvariable               | F hour                       |
| F getfullstructurenumber         | F hyphenatedlist             |
| F getinternalcachedlistreference | F hyphenatedurl              |
| F getinternallistreference       | F immediatemessage           |
| F getlasttwopassdata             | F incrementcounter           |
| F getmarking                     | F incrementedcounter         |
| F getmathdomain                  | F incrementsubcounter        |
| F getmathitalics                 | F initializejob              |
| F getmessage                     | F initializemathdomain       |
| F getmpextensions                | F initializemathitalics      |
| F getmprandomnumber              | F initializestream           |
| F getnaturaldimensions           | F initializetexdirectives    |
| F getnaturalwd                   | F initializetextrackers      |
| F getnotestate                   | F injectcurrentreference     |

|                              |                              |
|------------------------------|------------------------------|
| F injectcurrentreferencehtdp | F locatefilepath             |
| F injectreference            | F locfilename                |
| F inlinechemical             | F lower                      |
| F inputfilebarename          | F lpdf_adddocumentcolorspace |
| F inputfilename              | F lpdf_adddocumenttextgstate |
| F inputfilerealsuffix        | F lpdf_adddocumentpattern    |
| F inputfilesuffix            | F lpdf_adddocumentshade      |
| F insertattachment           | F lpdf_addtocatalog          |
| F insertcomment              | F lpdf_addtoinfo             |
| F insertfield                | F lpdf_addtonames            |
| F insertionnumber            | F lpdf_addtopageattributes   |
| F insertrenderingwindow      | F lpdf_addtopageresources    |
| F installedlanguages         | F lpdf_addtopagesattributes  |
| F installtexdirective        | F lpdf_collectedresources    |
| F installtextracker          | F lpdf_color                 |
| F jobfilefullname            | F luascript                  |
| F jobfilename                | F luathread                  |
| F jobfilesuffix              | F lxmlid                     |
| F languagenumber             | F markcontent                |
| F lastcountervalue           | F markingnumber              |
| F lastsubcountervalue        | F markingtitle               |
| F lchexnumber                | F markinjector               |
| F lchexnumbers               | F markregionbox              |
| F leapyear                   | F markregionboxcorrected     |
| F linenumbersstageone        | F markregionboxtagged        |
| F linenumbersstagetwo        | F markvisualfonts            |
| F listgroupindex             | F mathfraction               |
| F listlabel                  | F mathrenderset              |
| F listlocation               | F message                    |
| F listnamespaces             | F metapostescaped            |
| F listprefixednumber         | F metapostformatted          |
| F listprefixedpage           | F metapostgraphformat        |
| F listrealpage               | F minute                     |
| F listsize                   | F mixcleanup                 |
| F listtitle                  | F mixfinalize                |
| F listuserdata               | F mixflushlist               |
| F loadexamodes               | F mixflushrest               |
| F loadfontgoodies            | F mixgetsplit                |
| F loadluamodule              | F mixsetsplit                |
| F loadmapfile                | F mixstate                   |
| F loadmapline                | F molecule                   |
| F loadspellchecklist         | F month                      |
| F loadtypescriptfile         | F monthmnem                  |
| F loadvisualizer             | F monthname                  |

|                              |                           |
|------------------------------|---------------------------|
| F mpcolor                    | F overloaderror           |
| F mpflushliteral             | F overloadlowercase       |
| F mpflushreset               | F overloaduppercase       |
| F mpgettext                  | F pageofinternal          |
| F mpgraphic                  | F pagestaterealpage       |
| F mpoptions                  | F parpos                  |
| F mppopvariables             | F pdfrotation             |
| F mppushvariables            | F pdfstartmatrix          |
| F mprunset                   | F pdfstartmirroring       |
| F mpruntab                   | F pdfstartrotation        |
| F mprunvar                   | F pdfstartscaling         |
| F mpsetclippath              | F pdfstopmatrix           |
| F mpsetoutercolor            | F pdfstopmirroring        |
| F mpsetsxsy                  | F pdfstoprotation         |
| F mpsettext                  | F pdfstopscaling          |
| F mptexget                   | F percentageof            |
| F mptexreset                 | F pgfxcolorspec           |
| F mptexset                   | F pickupbuffer            |
| F mptexsetfrombuffer         | F pickupmarkedcontent     |
| F namedstructureuservariable | F pickuppunctuation       |
| F namedstructurevariable     | F placeparallel           |
| F naturalwd                  | F popfloat                |
| F nbfs                       | F pophyphenation          |
| F negatedcolorcomponent      | F popitaliccorrection     |
| F nextcountervalue           | F poplist                 |
| F nextparallel               | F poppath                 |
| F nextsubcountervalue        | F poprandomseed           |
| F nofconversions             | F popreferenceprefix      |
| F nofdays                    | F popregime               |
| F nofstackedfloats           | F popsectionblock         |
| F notedeltapage              | F postponeotes            |
| F noteinternal               | F prefixedconverted       |
| F notelistindex              | F prepareMPvariable       |
| F noteprefixednumber         | F preparecolumnsetflush   |
| F notetitle                  | F presetmathalternate     |
| F ntimes                     | F presetsymbollist        |
| F number                     | F presettabulate          |
| F numbers                    | F previouscountervalue    |
| F octnumber                  | F previoussubcountervalue |
| F octstringtonumber          | F processbodyfontsizes    |
| F operatingsystem            | F processbuffer           |
| F ordinal                    | F processcolorcomponents  |
| F outputfilename             | F processedfile           |
| F overloadbookmark           | F processedfiles          |



|                           |                                |
|---------------------------|--------------------------------|
| F processfile             | F registerhyphenationexception |
| F processfilemany         | F registerhyphenationpattern   |
| F processfilenone         | F registeritemgroup            |
| F processfileonce         | F registerlanguagefeatures     |
| F processjob              | F registerlinenumbering        |
| F processlist             | F registermaintextcolor        |
| F processregister         | F registermpyfile              |
| F processsplit            | F registernamedlua             |
| F processsynonyms         | F registernamespace            |
| F profilebox              | F registerobject               |
| F purefontname            | F registerpattern              |
| F pushfloat               | F registerpostponedblock       |
| F pushhyphenation         | F registerreferencedobject     |
| F pushitaliccorrection    | F registerrendering            |
| F pushlist                | F registersection              |
| F pushpath                | F registershownsynonym         |
| F pushrandomseed          | F registerstructureprocessor   |
| F pushreferenceprefix     | F registersynonym              |
| F pushregime              | F registerunit                 |
| F pushsectionblock        | F registerusedsynonym          |
| F pushstream              | F registeruserdata             |
| F putboxincache           | F relatemarking                |
| F putincolumnset          | F renderingvar                 |
| F rawcharacter            | F replacefeature               |
| F rawcountervalue         | F replacepospxywhd             |
| F rawdate                 | F reportstructure              |
| F rawsetupstring          | F resavefloat                  |
| F rawsubcountervalue      | F resetboxesincache            |
| F referencepagedetail     | F resetcharacteralign          |
| F referencepagestate      | F resetcolumnset               |
| F referencerealpage       | F resetcounter                 |
| F registerattachment      | F reseteffect                  |
| F registerbackendsymbol   | F resetfeature                 |
| F registerbodyfontsize    | F resetfontfeature             |
| F registerbookmark        | F resetfontsolution            |
| F registerbuttons         | F resetinjector                |
| F registercolorintent     | F resetitaliccorrection        |
| F registercolumnsetarea   | F resetmapfiles                |
| F registeredviewerlayer   | F resetmarking                 |
| F registerfigurepattern   | F resetmathattributes          |
| F registerfiguresuffix    | F resetmathitalics             |
| F registerfontalternative | F resetnullfont                |
| F registerfontfamily      | F resetparallel                |
| F registerhelp            | F resetpath                    |

|                            |                              |
|----------------------------|------------------------------|
| F resetprevdepth           | F setbreakpoints             |
| F resetreference           | F setcharacteralign          |
| F resetscript              | F setcharactercasing         |
| F resetshowsynonyms        | F setcharactercleaning       |
| F resetstructureprocessor  | F setcharacterkerning        |
| F resetsubcounter          | F setcharacterspacing        |
| F resettimer               | F setcharacterstripping      |
| F resettrackers            | F setcloseddocumentaction    |
| F resetusedsynonyms        | F setclosepageaction         |
| F restartcounter           | F setcolormodel              |
| F restartsubcounter        | F setcolumnsetarea           |
| F restorecounter           | F setcolumnsetlines          |
| F restorecurrentattributes | F setcolumnsetproperties     |
| F restorenote              | F setcolumnsetstart          |
| F restoreobject            | F setcounter                 |
| F reuserandomseed          | F setdataset                 |
| F revivefeature            | F setdestinationattribute    |
| F romannumerals            | F setdigitsmanipulation      |
| F rounded                  | F setdirection               |
| F ruby                     | F setdocumentargument        |
| F runbuffer                | F setdocumentcommandline     |
| F runcontextjob            | F setdocumentctxfile         |
| F safechar                 | F setdocumentdefaultargument |
| F savebuffer               | F setdocumentenvironments    |
| F savecounter              | F setdocumentfilename        |
| F savecurrentattributes    | F setdocumentfilenames       |
| F savedlistnumber          | F setdocumentmodes           |
| F savedlistprefixednumber  | F setdocumentmodules         |
| F savedlisttitle           | F seteffect                  |
| F savefloat                | F setelementuserproperties   |
| F savefont                 | F setextrafontkerns          |
| F savemargindata           | F setfieldcalculationset     |
| F savenote                 | F setfigurelookuporder       |
| F savepagedata             | F setfigurepaths             |
| F savepageinjections       | F setfirstline               |
| F saveparallel             | F setfontfeature             |
| F savespecificfloat        | F setfontofid                |
| F savestructureblock       | F setfontsolution            |
| F savetaggedtwopassdata    | F setformat                  |
| F savetwopassdata          | F setformsmethod             |
| F savevariable             | F setsizecolumnset           |
| F second                   | F setsizecolumnspan          |
| F selectstructureblock     | F sethyphenatedurlcharacters |
| F setactivecatcodes        | F sethyphenationfeatures     |

|                            |                          |
|----------------------------|--------------------------|
| F sethyphenationmethod     | F setprofile             |
| F setinitial               | F setrandomseed          |
| F setinitialsectionblock   | F setrealign             |
| F setinjector              | F setrealspaces          |
| F setinnerreferencemethod  | F setreferencearguments  |
| F setinsertionlocation     | F setreferenceoperation  |
| F setinterfaceconstant     | F setregionbox           |
| F setinterfaceelement      | F setregionboxtagged     |
| F setinterfacemessage      | F setregistermethod      |
| F setinterfacemessages     | F setreplacements        |
| F setinterfacevariable     | F setruby                |
| F setinternalreference     | F setscript              |
| F setitaliccorrection      | F setsectionblock        |
| F setjavascriptpreamble    | F setsectionentry        |
| F setjobcomment            | F setstructureblockstate |
| F setlanguageexceptions    | F setstructurelevel      |
| F setlanguagesynonym       | F setstructurenumber     |
| F setlettercatcodes        | F setsubcounter          |
| F setmapfile               | F settagaspect           |
| F setmapline               | F settagcombination      |
| F setmarking               | F settagdelimitedsymbol  |
| F setmathalphabet          | F settagfigure           |
| F setmathalternate         | F settaggedmetadata      |
| F setmathattribute         | F settaghighlight        |
| F setmathdirection         | F settagitem             |
| F setmathdomain            | F settagitemgroup        |
| F setmathitalics           | F settaglist             |
| F setmathstyle             | F settagnotation         |
| F setmpextensions          | F settagnotationsymbol   |
| F setnaturalwd             | F settagproperty         |
| F setnegative              | F settagproperty_b       |
| F setnextinternalreference | F settagproperty_n       |
| F setnextreferenceorder    | F settagregister         |
| F setnotestate             | F settagsorting          |
| F setopendocumentaction    | F settagssentencesymbol  |
| F setopenpageaction        | F settagssynonym         |
| F setowncounter            | F settagtablecell        |
| F setownsubcounter         | F settagtabulatecell     |
| F setpagecolormodel        | F setupbookmarks         |
| F setpagestate             | F setupcanvas            |
| F setpagestaterealpageno   | F setupcharacterspacing  |
| F setpagetransition        | F setupexport            |
| F setparbuilder            | F setupfontexpansion     |
| F setpdfcompression        | F setupfontprotrusion    |

|                         |                             |
|-------------------------|-----------------------------|
| F setupidentity         | F startregime               |
| F setupinsertion        | F startruby                 |
| F setupitaliccorrection | F startsectionlevel         |
| F setuplinenumbers      | F startstream               |
| F setuserinterface      | F starttag                  |
| F setvalidinterfacekeys | F starttag_c                |
| F setvisual             | F starttag_d                |
| F setvisualfont         | F starttag_u                |
| F visuallayer           | F starttext                 |
| F visuals               | F startviewerlayer          |
| F setsizecolumnset      | F step                      |
| F setxmpfile            | F stopactualtext            |
| F showassignerror       | F stopchemical              |
| F showattributes        | F stopcolorset              |
| F showcounter           | F stopcomponent             |
| F showdebuginfo         | F stopenvironment           |
| F showdirectives        | F stopfontsolution          |
| F showdiscretionaries   | F stopparbuilder            |
| F showexperiments       | F stopproduct               |
| F showhyphenatedinlist  | F stopproject               |
| F showhyphenationtrace  | F stopregime                |
| F showinjector          | F stopsectionlevel          |
| F showjustification     | F stopstream                |
| F showlogcategories     | F stoptag                   |
| F showmessage           | F stoptext                  |
| F showtrackers          | F stopviewerlayer           |
| F sin                   | F storejavascriptcode       |
| F sind                  | F storejavascriptpreamble   |
| F specifiedfont         | F storenote                 |
| F specifiedfontsize     | F storeregister             |
| F specifiedfontspec     | F strdp                     |
| F splitfilename         | F strhd                     |
| F spotcolorname         | F strht                     |
| F spotcolorparent       | F strip                     |
| F spotcolorvalue        | F structureautocatcodedget  |
| F startactualtext       | F structurecatcodedget      |
| F startchemical         | F structuregivencatcodedget |
| F startcolorset         | F structurenumber           |
| F startcomponent        | F structuretitle            |
| F startenvironment      | F structureuservariable     |
| F startfontsolution     | F structurevariable         |
| F startparbuilder       | F strwd                     |
| F startproduct          | F subcountervalue           |
| F startproject          | F subcountervalues          |

|                          |                         |
|--------------------------|-------------------------|
| F subsubcountervalues    | F usecomponent          |
| F subtractfeature        | F useenvironment        |
| F synccolor              | F usefigurebase         |
| F synccolorclone         | F usefile               |
| F synccolorcount         | F usejavascriptpreamble |
| F synchronizemarking     | F usejavascriptscripts  |
| F synchronizestream      | F useluafile            |
| F synonymmeaning         | F useluafileonce        |
| F synonymname            | F useluamodule          |
| F systemlog              | F usemodules            |
| F tagmfunctionlab        | F usepath               |
| F tagmfunctiontxt        | F useproduct            |
| F tan                    | F useproject            |
| F tand                   | F usesubpath            |
| F texdefinition_one      | F usesymbols            |
| F texdefinition_two      | F usetexfile            |
| F textime                | F usetexfileonce        |
| F thefirstcharacter      | F useurl                |
| F themaxboxwidth         | F usexmlfile            |
| F theremainingcharacters | F usexmlfileonce        |
| F tochar                 | F usezipfile            |
| F transparencycomponents | F utfchar               |
| F triggerpagebuilder     | F utfmathclass          |
| F truefilename           | F utfmathcommand        |
| F truefontname           | F utfmathcommandabove   |
| F type                   | F utfmathcommandbelow   |
| F typebuffer             | F utfmathcommandfiller  |
| F typefile               | F utfmathfiller         |
| F uchar                  | F utfmathstretch        |
| F uchexnumber            | F vboxlisttohbox        |
| F uchexnumbers           | F verbose               |
| F undefinechemical       | F vspacing              |
| F unicodechar            | F vspacingcollapse      |
| F unihex                 | F vspacingcollapseonly  |
| F unit_normal            | F vspacingdefine        |
| F unit_reverse           | F vspacingsetamount     |
| F unloadlanguage         | F vspacingsnap          |
| F upper                  | F way                   |
| F useMPLibrary           | F weekday               |
| F useanyfile             | F weekdayname           |
| F useanyfileonce         | F writestatus           |
| F usecldfilename         | F x_table_c             |
| F usecldfilenameonce     | F x_table_cleanup       |
| F usecolors              | F x_table_construct     |

|                                     |                        |
|-------------------------------------|------------------------|
| F x_table_create                    | F xmldoifelseselfempty |
| F x_table_finish_row                | F xmldoifelsetext      |
| F x_table_flush                     | F xmldoifempty         |
| F x_table_init_construct            | F xmldoifnot           |
| F x_table_init_reflow_height        | F xmldoifnotempty      |
| F x_table_init_reflow_height_option | F xmldoifnotselfempty  |
| F x_table_init_reflow_width         | F xmldoifnottext       |
| F x_table_init_reflow_width_option  | F xmldoifselfempty     |
| F x_table_next_row                  | F xmldoiftext          |
| F x_table_next_row_option           | F xmlelement           |
| F x_table_r                         | F xmlfilter            |
| F x_table_reflow_height             | F xmlfilterlist        |
| F x_table_reflow_width              | F xmlfirst             |
| F x_table_set_construct             | F xmlflush             |
| F x_table_set_reflow_height         | F xmlflushcontext      |
| F x_table_set_reflow_width          | F xmlflushlinewidth    |
| F xmladdindex                       | F xmlflushpure         |
| F xmlaftersetup                     | F xmlflushsetups       |
| F xmlall                            | F xmlflushspacewise    |
| F xmlappendsetup                    | F xmlflushstext        |
| F xmlapplyselectors                 | F xmlfunction          |
| F xmlatt                            | F xmlgetindex          |
| F xmlattdef                         | F xmlinclude           |
| F xmlattribute                      | F xmlincludeoptions    |
| F xmlattributedef                   | F xmlinclusion         |
| F xmlbadinclusions                  | F xmlinclusions        |
| F xmlbeforesetup                    | F xmlindex             |
| F xmlchainatt                       | F xmlinlineverbatim    |
| F xmlchainattdef                    | F xmlinstalldirective  |
| F xmlchecknamespace                 | F xmllast              |
| F xmlcommand                        | F xmllastatt           |
| F xmlconcat                         | F xmllastmatch         |
| F xmlconcatrange                    | F xmlload              |
| F xmlcontext                        | F xmlloadbuffer        |
| F xmlcount                          | F xmlloaddata          |
| F xmldelete                         | F xmlloaddirectives    |
| F xmldirect                         | F xmlloadentities      |
| F xmldirectives                     | F xmlmain              |
| F xmldirectivesafter                | F xmlmatch             |
| F xmldirectivesbefore               | F xmlname              |
| F xmldisplayverbatim                | F xmlnamespace         |
| F xmldoif                           | F xmlnonamespace       |
| F xmldoifelse                       | F xmlpath              |
| F xmldoifelseempty                  | F xmlpos               |

|                       |                         |            |
|-----------------------|-------------------------|------------|
| F xmlprependsetup     | F xmltobuffer           |            |
| F xmlpure             | F xmltobufferverbose    |            |
| F xmlraw              | F xmltofile             |            |
| F xmlrawtex           | F xmltoparameters       |            |
| F xmlrefatt           | F xmlverbatim           |            |
| F xmlregisters        | F xmlwithindex          |            |
| F xmlremapname        | F year                  |            |
| F xmlremapnamespace   | <b>setconstant</b>      | function   |
| F xmlremovesetup      | <b>setcount</b>         | function   |
| F xmlresetinjectors   | <b>setdimen</b>         | function   |
| F xmlresetsetups      | <b>setelement</b>       | function   |
| F xmlsave             | <b>setformat</b>        | function   |
| F xmlsetcommandtonone | <b>setmacro</b>         | function   |
| F xmlsetcommandtotext | <b>setmessage</b>       | function   |
| F xmlsetentity        | <b>setmessages</b>      | function   |
| F xmlsetinjectors     | <b>settranslation</b>   | function   |
| F xmlsetsetup         | <b>setupstrings</b>     | data table |
| F xmlsnippet          | <b>setuserinterface</b> | function   |
| F xmlstartraw         | <b>setvalidkeys</b>     | function   |
| F xmlstarttiming      | <b>setvariable</b>      | function   |
| F xmlstopraw          | <b>showmessage</b>      | function   |
| F xmlstoptiming       | <b>storedscanners</b>   | data table |
| F xmlstrip            | <b>strings</b>          | table      |
| F xmlstripanywhere    | <b>syntax</b>           | data table |
| F xmlstripnolines     | <b>tolist</b>           | function   |
| F xmlstripped         | <b>translations</b>     | data table |
| F xmlstrippednolines  | <b>usednamespaces</b>   | data table |
| F xmltag              | <b>variables</b>        | data table |
| F xmltexentity        | <b>writestatus</b>      | function   |
| F xmltext             |                         |            |

## io (basic lua)

|                      |                     |                      |                     |
|----------------------|---------------------|----------------------|---------------------|
| <b>ask</b>           | function            | <b>output</b>        | overloaded function |
| <b>bytes</b>         | function            | <b>pathseparator</b> | string              |
| <b>characters</b>    | function            | <b>popen</b>         | overloaded function |
| <b>close</b>         | function            | <b>read</b>          | function            |
| <b>copydata</b>      | function            | <b>readall</b>       | function            |
| <b>exists</b>        | function            | <b>readnumber</b>    | function            |
| <b>fileseparator</b> | string              | <b>readstring</b>    | function            |
| <b>flush</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>noflines</b>      | function            | <b>type</b>          | function            |
| <b>open</b>          | overloaded function | <b>write</b>         | function            |



# job (context)

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

|                 |                  |          |
|-----------------|------------------|----------|
| F paragraph     | <b>save</b>      | function |
| F parindent     | <b>structure</b> | table    |
| F position      | D collected      |          |
| F r             | T components     |          |
| F region        | T tobesaved      |          |
| F replace       | T branches       |          |
| F rightskip     | S name           |          |
| F set           | S type           |          |
| F setall        | <b>variables</b> | table    |
| F setregionbox  | D checksums      |          |
| D tobesaved     | D collected      |          |
| F upperleft     | F getchecksum    |          |
| F upperright    | F makechecksum   |          |
| S used          | F restore        |          |
| F width         | F save           |          |
| F x             | F setchecksum    |          |
| F xy            | D tobesaved      |          |
| F y             | <b>version</b>   | number   |
| <b>register</b> |                  |          |
|                 |                  | function |

## lang (basic tex)

|                          |          |
|--------------------------|----------|
| <b>clean</b>             | function |
| <b>clear_hyphenation</b> | function |
| <b>clear_patterns</b>    | function |
| <b>exceptions</b>        | function |
| <b>gethjcode</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>posttexhyphenchar</b> | function |
| <b>posthyphenchar</b>    | function |
| <b>preexhyphenchar</b>   | function |
| <b>prehyphenchar</b>     | function |
| <b>sethjcode</b>         | function |

# languages (context)

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

B enables

T methods

F found

N threshold

F load

# layouts (context)

|               |              |                         |
|---------------|--------------|-------------------------|
| <b>status</b> | table        | F leftorrightpageaction |
|               | F isleftpage |                         |

## lfs (extra lua)

|                   |                     |                          |                     |
|-------------------|---------------------|--------------------------|---------------------|
| <b>attributes</b> | overloaded function | <b>mkdirs</b>            | function            |
| <b>chdir</b>      | overloaded function | <b>readlink</b>          | overloaded function |
| <b>currentdir</b> | function            | <b>rmdir</b>             | overloaded function |
| <b>dir</b>        | overloaded function | <b>setmode</b>           | overloaded function |
| <b>isdir</b>      | overloaded function | <b>shortname</b>         | overloaded function |
| <b>isfile</b>     | overloaded function | <b>symlinkattributes</b> | overloaded function |
| <b>lock</b>       | function            | <b>touch</b>             | overloaded function |
| <b>lock_dir</b>   | overloaded function | <b>unlock</b>            | function            |
| <b>mkdir</b>      | overloaded function |                          |                     |

## libraries (context)

**basiclua** data table

**basictex** data table

**builtin** data table

**extralua** data table

**extratex** data table

**functions** data table

**globals** data table



# lmx (context)

|                          |          |
|--------------------------|----------|
| <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>showdebuginfo</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>categories</b>   | function |
| <b>direct</b>       | function |
| <b>disable</b>      | function |
| <b>enable</b>       | function |
| <b>exporters</b>    | table    |
| <b>extendbanner</b> | function |
| <b>flush</b>        | function |
| <b>help</b>         | function |
| <b>messenger</b>    | function |
| <b>new</b>          | function |
| <b>newline</b>      | function |
| <b>poptarget</b>    | function |
| <b>pushtarget</b>   | function |
| <b>report</b>       | function |
| <b>reportbanner</b> | function |
| <b>reporter</b>     | function |
| <b>reporters</b>    | table    |
| F banner            |          |
| F export            |          |
| F help              |          |
| F info              |          |
| F lines             |          |
| F version           |          |
| <b>reportline</b>   | function |

|                          |          |
|--------------------------|----------|
| <b>reportlines</b>       | function |
| <b>setformats</b>        | function |
| <b>setformatters</b>     | function |
| <b>setlogfile</b>        | function |
| <b>setmessenger</b>      | function |
| <b>setprocessor</b>      | function |
| <b>setprogram</b>        | function |
| <b>settarget</b>         | function |
| <b>settimedlog</b>       | function |
| <b>settranslations</b>   | function |
| <b>show</b>              | function |
| <b>show_close</b>        | function |
| <b>show_load</b>         | function |
| <b>show_open</b>         | function |
| <b>simple</b>            | function |
| <b>simpleline</b>        | function |
| <b>simplelines</b>       | function |
| <b>start_page_number</b> | function |
| <b>status</b>            | function |
| <b>stop_page_number</b>  | function |
| <b>subdirect</b>         | function |
| <b>subreport</b>         | function |
| <b>system</b>            | function |
| <b>texerrormessage</b>   | function |
| <b>writer</b>            | function |

# lpdf (context)

|                                 |            |                                  |            |
|---------------------------------|------------|----------------------------------|------------|
| <b>action</b>                   | function   | <b>finalizedocument</b>          | function   |
| <b>adddocumentcolorspace</b>    | function   | <b>finalizepage</b>              | function   |
| <b>adddocumenttextgstate</b>    | function   | <b>finishtransparencycode</b>    | function   |
| <b>adddocumentpattern</b>       | function   | <b>flushobject</b>               | function   |
| <b>adddocumentshade</b>         | function   | <b>flushstreamfileobject</b>     | function   |
| <b>addtocatalog</b>             | function   | <b>flushstreamobject</b>         | function   |
| <b>addtoinfo</b>                | function   | <b>formats</b>                   | data table |
| <b>addtonames</b>               | function   | <b>frompdfdoc</b>                | function   |
| <b>addtopageattributes</b>      | function   | <b>fromsixteen</b>               | function   |
| <b>addtopageresources</b>       | function   | <b>gethpos</b>                   | function   |
| <b>addtopagesattributes</b>     | function   | <b>getmatrix</b>                 | function   |
| <b>addtxmpinfo</b>              | function   | <b>getpos</b>                    | function   |
| <b>annotationspecification</b>  | function   | <b>getvpos</b>                   | function   |
| <b>array</b>                    | function   | <b>graycode</b>                  | function   |
| <b>boolean</b>                  | function   | <b>hasmatrix</b>                 | function   |
| <b>border</b>                   | function   | <b>id</b>                        | function   |
| <b>checkedkey</b>               | function   | <b>injecttxmpinfo</b>            | function   |
| <b>checkedvalue</b>             | function   | <b>inserttxmpinfo</b>            | function   |
| <b>circularshade</b>            | function   | <b>layerreference</b>            | function   |
| <b>cmykcode</b>                 | function   | <b>limited</b>                   | function   |
| <b>collectedresources</b>       | function   | <b>linearshade</b>               | function   |
| <b>color</b>                    | function   | <b>nametree</b>                  | function   |
| <b>colorspace</b>               | function   | <b>null</b>                      | function   |
| <b>colorspaceconstants</b>      | data table | <b>number</b>                    | function   |
| <b>colorspec</b>                | function   | <b>pagereference</b>             | function   |
| <b>colorvalue</b>               | function   | <b>patternstream</b>             | function   |
| <b>colorvalues</b>              | function   | <b>pdfcolor</b>                  | function   |
| <b>constant</b>                 | function   | <b>pdftimestamp</b>              | function   |
| <b>delayedobject</b>            | function   | <b>permitdetail</b>              | function   |
| <b>destinationspecification</b> | function   | <b>protectresources</b>          | boolean    |
| <b>dictionary</b>               | function   | <b>rectangle</b>                 | function   |
| <b>docstring</b>                | function   | <b>reference</b>                 | function   |
| <b>epdf</b>                     | table      | <b>registerannotation</b>        | function   |
| F contenttotext                 |            | <b>registerdestination</b>       | function   |
| F expand                        |            | <b>registerdocumentfinalizer</b> | function   |
| F expanded                      |            | <b>registerpagefinalizer</b>     | function   |
| F getpagecontent                |            | <b>registerpattern</b>           | function   |
| F getstructure                  |            | <b>reserveobject</b>             | function   |
| F load                          |            | <b>rgbcode</b>                   | function   |
| F unload                        |            | <b>rotationcm</b>                | function   |
| <b>escaped</b>                  | function   | <b>setdates</b>                  | function   |

|                             |          |                           |          |
|-----------------------------|----------|---------------------------|----------|
| <b>settime</b>              | function | <b>tosixteen</b>          | function |
| <b>settrailerid</b>         | function | <b>transform</b>          | function |
| <b>shareobject</b>          | function | <b>transparency</b>       | function |
| <b>shareobjectreference</b> | function | <b>transparencycode</b>   | function |
| <b>spotcode</b>             | function | <b>transparencygroups</b> | table    |
| <b>stream</b>               | function | B none                    |          |
| <b>string</b>               | function | <b>transparencyvalue</b>  | function |
| <b>timestamp</b>            | function | <b>unicode</b>            | function |
| <b>toeight</b>              | function | <b>verbose</b>            | function |
| <b>topdfdoc</b>             | function |                           |          |

## lpeg (basic lua)

|                     |          |                              |            |
|---------------------|----------|------------------------------|------------|
| <b>B</b>            | function | <b>finder</b>                | function   |
| <b>C</b>            | function | <b>firstofsplit</b>          | function   |
| <b>Carg</b>         | function | <b>frontstripper</b>         | function   |
| <b>Cb</b>           | function | <b>instrchecker</b>          | function   |
| <b>Cc</b>           | function | <b>is_lpeg</b>               | function   |
| <b>Cf</b>           | function | <b>keeper</b>                | function   |
| <b>Cg</b>           | function | <b>locale</b>                | function   |
| <b>Cmt</b>          | function | <b>match</b>                 | function   |
| <b>Cp</b>           | function | <b>oneof</b>                 | function   |
| <b>Cs</b>           | function | <b>patterns</b>              | data table |
| <b>Ct</b>           | function | <b>pcode</b>                 | function   |
| <b>P</b>            | function | <b>print</b>                 | function   |
| <b>R</b>            | function | <b>ptree</b>                 | function   |
| <b>S</b>            | function | <b>replacer</b>              | function   |
| <b>UP</b>           | function | <b>secondofsplit</b>         | function   |
| <b>UR</b>           | function | <b>setmaxstack</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>counter</b>      | function | <b>utfchartabletopattern</b> | function   |
| <b>endstripper</b>  | function | <b>version</b>               | function   |

# ltn12 (extra lua)

**BLOCKSIZE** number

**filter** table

F chain

F cycle

**pump** table

F all

F step

**sink** table

F chain

F error

F file

F null

F simplify

F table

**source** table

F cat

F chain

F empty

F error

F file

F rewind

F simplify

F string

# lua (basic tex)

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

# luatex (context)

**cleanuptempfiles**      function  
**registerdumpactions**    function  
**registerpageactions**    function  
**registerstartactions**   function

**registerstopactions**    function  
**registertempfile**       function  
**starttime**               number



## lxml (context)

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

|                         |          |                      |            |
|-------------------------|----------|----------------------|------------|
| <b>root</b>             | function | <b>startraw</b>      | function   |
| <b>save</b>             | function | <b>startunesaped</b> | function   |
| <b>serialize</b>        | function | <b>stopraw</b>       | function   |
| <b>setaction</b>        | function | <b>stopunesaped</b>  | function   |
| <b>setcdata</b>         | function | <b>store</b>         | function   |
| <b>setcommandtonone</b> | function | <b>strip</b>         | function   |
| <b>setcommandtotext</b> | function | <b>stripped</b>      | function   |
| <b>setsetup</b>         | function | <b>tag</b>           | function   |
| <b>snippet</b>          | function | <b>text</b>          | function   |
| <b>sorters</b>          | table    | <b>tobuffer</b>      | function   |
| F add                   |          | <b>tofile</b>        | function   |
| F compare               |          | <b>toparameters</b>  | function   |
| F flush                 |          | <b>toverbatim</b>    | function   |
| F reset                 |          | <b>verbatim</b>      | function   |
| F show                  |          | <b>withindex</b>     | function   |
| F sort                  |          | <b>xmltexhandler</b> | data table |
| <b>splitid</b>          | function |                      |            |

## math (basic lua)

|                    |          |                      |          |
|--------------------|----------|----------------------|----------|
| <b>abs</b>         | function | <b>log</b>           | function |
| <b>acos</b>        | function | <b>max</b>           | function |
| <b>asin</b>        | function | <b>min</b>           | function |
| <b>atan</b>        | function | <b>mod</b>           | function |
| <b>atan2</b>       | function | <b>modf</b>          | function |
| <b>ceil</b>        | function | <b>odd</b>           | function |
| <b>ceiling</b>     | function | <b>pi</b>            | number   |
| <b>cos</b>         | function | <b>pow</b>           | function |
| <b>cosd</b>        | function | <b>rad</b>           | function |
| <b>cosh</b>        | function | <b>random</b>        | function |
| <b>deg</b>         | function | <b>randomseed</b>    | function |
| <b>div</b>         | function | <b>round</b>         | function |
| <b>even</b>        | function | <b>setrandomseed</b> | function |
| <b>exp</b>         | function | <b>sin</b>           | function |
| <b>floor</b>       | function | <b>sind</b>          | function |
| <b>fmod</b>        | function | <b>sinh</b>          | function |
| <b>frexp</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 |

# mathematics (context)

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

## mbox (context)

|                      |          |
|----------------------|----------|
| <b>parse</b>         | function |
| <b>parse_from</b>    | function |
| <b>parse_header</b>  | function |
| <b>parse_headers</b> | function |

|                      |          |
|----------------------|----------|
| <b>parse_message</b> | function |
| <b>split_headers</b> | function |
| <b>split_mbox</b>    | function |
| <b>split_message</b> | function |

## md5 (extra lua)

**HEX**      function

**crypt**    function

**dec**      function

**decrypt** function

**exor**     function

**hex**      function

**sum**      function

**sumhexa** function

# metapost (context)

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

|                      |          |                      |          |
|----------------------|----------|----------------------|----------|
| <b>resetlastlog</b>  | function | F get                |          |
| <b>resetplugins</b>  | function | F reset              |          |
| <b>runscript</b>     | function | F set                |          |
| <b>scripterror</b>   | function | F setfrombuffer      |          |
| <b>setextensions</b> | function | <b>texerrors</b>     | boolean  |
| <b>setoutercolor</b> | function | <b>texexp</b>        | function |
| <b>settext</b>       | function | <b>texttextsdata</b> | function |
| <b>setvariable</b>   | function | <b>theclippath</b>   | function |
| <b>showlog</b>       | boolean  | <b>totable</b>       | function |
| <b>simple</b>        | function | <b>unload</b>        | function |
| <b>svformat</b>      | function | <b>untagvariable</b> | function |
| <b>tex</b>           | table    | <b>variables</b>     | 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

**stuff** function

**unb64** function

**unqp** function

**wrap** function

**wrapt** table

F base64

F default

F quoted-printable

F text

**wrp** function

## mp (context)

|                             |          |                            |          |
|-----------------------------|----------|----------------------------|----------|
| <b>BackSpace</b>            | function | <b>OuterMarginWidth</b>    | function |
| <b>BaselineSkip</b>         | function | <b>OverlayDepth</b>        | function |
| <b>BodyFontSize</b>         | function | <b>OverlayHeight</b>       | function |
| <b>BottomDistance</b>       | function | <b>OverlayLineWidth</b>    | function |
| <b>BottomHeight</b>         | function | <b>OverlayOffset</b>       | function |
| <b>BottomSpace</b>          | function | <b>OverlayWidth</b>        | function |
| <b>CurrentColumn</b>        | function | <b>PageDepth</b>           | function |
| <b>CurrentHeight</b>        | function | <b>PageFraction</b>        | function |
| <b>CurrentWidth</b>         | function | <b>PageNumber</b>          | function |
| <b>CutSpace</b>             | function | <b>PageOffset</b>          | function |
| <b>EmWidth</b>              | function | <b>PaperBleed</b>          | function |
| <b>ExHeight</b>             | function | <b>PaperHeight</b>         | function |
| <b>FooterDistance</b>       | function | <b>PaperWidth</b>          | function |
| <b>FooterHeight</b>         | function | <b>PrintPaperHeight</b>    | function |
| <b>HSize</b>                | function | <b>PrintPaperWidth</b>     | function |
| <b>HeaderDistance</b>       | function | <b>RealPageNumber</b>      | function |
| <b>HeaderHeight</b>         | function | <b>RightEdgeDistance</b>   | function |
| <b>InPageBody</b>           | function | <b>RightEdgeWidth</b>      | function |
| <b>InnerEdgeDistance</b>    | function | <b>RightMarginDistance</b> | function |
| <b>InnerEdgeWidth</b>       | function | <b>RightMarginWidth</b>    | function |
| <b>InnerMarginDistance</b>  | function | <b>SpineWidth</b>          | function |
| <b>InnerMarginWidth</b>     | function | <b>StrutDepth</b>          | function |
| <b>LastPageNumber</b>       | function | <b>StrutHeight</b>         | function |
| <b>LayoutColumnDistance</b> | function | <b>TextHeight</b>          | function |
| <b>LayoutColumnWidth</b>    | function | <b>TextWidth</b>           | function |
| <b>LayoutColumns</b>        | function | <b>TopDistance</b>         | function |
| <b>LeftEdgeDistance</b>     | function | <b>TopHeight</b>           | function |
| <b>LeftEdgeWidth</b>        | function | <b>TopSkip</b>             | function |
| <b>LeftMarginDistance</b>   | function | <b>TopSpace</b>            | function |
| <b>LeftMarginWidth</b>      | function | <b>VSize</b>               | function |
| <b>LineHeight</b>           | function | <b>_f_</b>                 | function |
| <b>MakeupHeight</b>         | function | <b>boolean</b>             | function |
| <b>MakeupWidth</b>          | function | <b>dataset</b>             | function |
| <b>NOfColumns</b>           | function | <b>datasets</b>            | table    |
| <b>NOfPages</b>             | function | <b>F load</b>              |          |
| <b>NamedColor</b>           | function | <b>defaultcolormodel</b>   | function |
| <b>OnOddPage</b>            | function | <b>format</b>              | function |
| <b>OnRightPage</b>          | function | <b>formatted</b>           | function |
| <b>OuterEdgeDistance</b>    | function | <b>get</b>                 | table    |
| <b>OuterEdgeWidth</b>       | function | <b>F boolean</b>           |          |
| <b>OuterMarginDistance</b>  | function | <b>F number</b>            |          |

|                         |          |                      |          |
|-------------------------|----------|----------------------|----------|
| <code>F numeric</code>  |          | <b>quadruple</b>     | function |
| <code>F string</code>   |          | <b>quoted</b>        | function |
| <b>get_outline_text</b> | function | <b>report</b>        | function |
| <b>graphformat</b>      | function | <b>size</b>          | function |
| <b>n</b>                | function | <b>tb_dimensions</b> | function |
| <b>numeric</b>          | function | <b>triplet</b>       | function |
| <b>pair</b>             | function | <b>tt_dimensions</b> | function |
| <b>path</b>             | function | <b>tt_initialize</b> | function |
| <b>print</b>            | function |                      |          |

## mplib (extra tex)

|                    |          |                     |                     |
|--------------------|----------|---------------------|---------------------|
| <b>fields</b>      | function | <b>get_numeric</b>  | function            |
| <b>finder</b>      | function | <b>get_string</b>   | function            |
| <b>finders</b>     | table    | <b>new</b>          | overloaded function |
| <b>F file</b>      |          | <b>pen_info</b>     | function            |
| <b>get_boolean</b> | function | <b>preprocessed</b> | function            |
| <b>get_number</b>  | function | <b>version</b>      | function            |

# noads (context)

|                 |       |                      |            |
|-----------------|-------|----------------------|------------|
| <b>handlers</b> | table |                      | F unscript |
| F alternates    |       |                      | F variants |
| F autofences    |       | <b>process</b>       | function   |
| F classes       |       | <b>processnested</b> | function   |
| F collapse      |       | <b>processors</b>    | table      |
| F domains       |       | T autofences         |            |
| F families      |       | T collapse           |            |
| F italics       |       | F mlist_to_hlist     |            |
| F makeup        |       | T relocate           |            |
| F relocate      |       | T render             |            |
| F render        |       | T resize             |            |
| F resize        |       | T unscript           |            |
| F showtree      |       | <b>processouter</b>  | function   |
| F tags          |       |                      |            |

## node (basic tex)

|                              |          |                        |
|------------------------------|----------|------------------------|
| <b>check_discretionaries</b> | function | F has_glyph            |
| <b>check_discretionary</b>   | function | F hpack                |
| <b>copy</b>                  | function | F insert_after         |
| <b>copy_list</b>             | function | F insert_before        |
| <b>count</b>                 | function | F is_char              |
| <b>current_attr</b>          | function | F is_direct            |
| <b>dimensions</b>            | function | F is_glyph             |
| <b>direct</b>                | table    | F is_node              |
| F check_discretionaries      |          | F is_zero_glue         |
| F check_discretionary        |          | F kerning              |
| F copy                       |          | F last_node            |
| F copy_list                  |          | F length               |
| F count                      |          | F ligaturing           |
| F current_attr               |          | F new                  |
| F dimensions                 |          | F protect_glyph        |
| F effective_glue             |          | F protect_glyphs       |
| F end_of_math                |          | F protrusion_skippable |
| F find_attribute             |          | F rangedimensions      |
| F first_glyph                |          | F remove               |
| F flush_list                 |          | F set_attribute        |
| F flush_node                 |          | F set_properties_mode  |
| F flush_properties_table     |          | F setboth              |
| F free                       |          | F setbox               |
| F get_attribute              |          | F setchar              |
| F get_properties_table       |          | F setdisc              |
| F getboth                    |          | F setfield             |
| F getbox                     |          | F setglue              |
| F getchar                    |          | F setleader            |
| F getdisc                    |          | F setlink              |
| F getfield                   |          | F setlist              |
| F getfont                    |          | F setnext              |
| F getglue                    |          | F setprev              |
| F getid                      |          | F setproperty          |
| F getleader                  |          | F setsubtype           |
| F getlist                    |          | F slide                |
| F getnext                    |          | F tail                 |
| F getprev                    |          | F todirect             |
| F getproperty                |          | F tonode               |
| F getsubtype                 |          | F tostring             |
| F has_attribute              |          | F traverse             |
| F has_field                  |          | F traverse_char        |

|                               |          |                             |          |
|-------------------------------|----------|-----------------------------|----------|
| F traverse_id                 |          | <b>is_node</b>              | function |
| F unprotect_glyphs            |          | <b>is_zero_glue</b>         | function |
| F unset_attribute             |          | <b>kerning</b>              | function |
| F usedlist                    |          | <b>last_node</b>            | function |
| F vpack                       |          | <b>length</b>               | function |
| F write                       |          | <b>ligaturing</b>           | function |
| <b>effective_glue</b>         | function | <b>mlist_to_hlist</b>       | function |
| <b>end_of_math</b>            | function | <b>new</b>                  | function |
| <b>family_font</b>            | function | <b>next</b>                 | function |
| <b>fields</b>                 | function | <b>prev</b>                 | function |
| <b>find_attribute</b>         | function | <b>protect_glyph</b>        | function |
| <b>first_glyph</b>            | function | <b>protect_glyphs</b>       | function |
| <b>flush_list</b>             | function | <b>protrusion_skippable</b> | function |
| <b>flush_node</b>             | function | <b>rangedimensions</b>      | function |
| <b>flush_properties_table</b> | function | <b>remove</b>               | function |
| <b>free</b>                   | function | <b>set_attribute</b>        | function |
| <b>get_attribute</b>          | function | <b>set_properties_mode</b>  | function |
| <b>get_properties_table</b>   | function | <b>setboth</b>              | function |
| <b>getboth</b>                | function | <b>setfield</b>             | function |
| <b>getchar</b>                | function | <b>setglue</b>              | function |
| <b>getdisc</b>                | function | <b>setlink</b>              | function |
| <b>getfield</b>               | function | <b>setnext</b>              | function |
| <b>getfont</b>                | function | <b>setprev</b>              | function |
| <b>getglue</b>                | function | <b>setproperty</b>          | function |
| <b>getid</b>                  | function | <b>slide</b>                | function |
| <b>getleader</b>              | function | <b>subtype</b>              | function |
| <b>getlist</b>                | function | <b>subtypes</b>             | function |
| <b>getnext</b>                | function | <b>tail</b>                 | function |
| <b>getprev</b>                | function | <b>tostring</b>             | function |
| <b>getproperty</b>            | function | <b>traverse</b>             | function |
| <b>getsubtype</b>             | function | <b>traverse_char</b>        | function |
| <b>has_attribute</b>          | function | <b>traverse_id</b>          | function |
| <b>has_field</b>              | function | <b>type</b>                 | function |
| <b>has_glyph</b>              | function | <b>types</b>                | function |
| <b>hpack</b>                  | function | <b>unprotect_glyphs</b>     | function |
| <b>id</b>                     | function | <b>unset_attribute</b>      | function |
| <b>insert_after</b>           | function | <b>usedlist</b>             | function |
| <b>insert_before</b>          | function | <b>vpack</b>                | function |
| <b>is_char</b>                | function | <b>whatsits</b>             | function |
| <b>is_glyph</b>               | function | <b>write</b>                | function |

## nodes (context)

|                              |            |                               |            |
|------------------------------|------------|-------------------------------|------------|
| <b>accentcodes</b>           | data table | <b>first_glyph</b>            | function   |
| <b>aligned</b>               | function   | <b>firstcharacter</b>         | function   |
| <b>append</b>                | function   | <b>firstcharinbox</b>         | function   |
| <b>apply</b>                 | function   | <b>firstdirinbox</b>          | function   |
| <b>astable</b>               | function   | <b>firstglyph</b>             | function   |
| <b>basepoints</b>            | function   | <b>flush</b>                  | function   |
| <b>boundarycodes</b>         | data table | <b>flush_list</b>             | function   |
| <b>boxes</b>                 | table      | <b>flush_node</b>             | function   |
| F dimensions                 |            | <b>free</b>                   | function   |
| F direct                     |            | <b>fullhpack</b>              | function   |
| F reset                      |            | <b>getbox</b>                 | function   |
| F restore                    |            | <b>getchar</b>                | function   |
| F save                       |            | <b>getdisc</b>                | function   |
| <b>builders</b>              | table      | <b>getfield</b>               | function   |
| F buildpage_filter           |            | <b>getfont</b>                | function   |
| F vpack_filter               |            | <b>getglue</b>                | function   |
| <b>check_discretionaries</b> | function   | <b>getid</b>                  | function   |
| <b>codes</b>                 | data table | <b>getleader</b>              | function   |
| <b>concat</b>                | function   | <b>getlist</b>                | function   |
| <b>copy</b>                  | function   | <b>getnext</b>                | function   |
| <b>copy_list</b>             | function   | <b>getprev</b>                | function   |
| <b>copy_node</b>             | function   | <b>getskip</b>                | function   |
| <b>count</b>                 | function   | <b>getsubtype</b>             | function   |
| <b>current_attr</b>          | function   | <b>gluecodes</b>              | data table |
| <b>delete</b>                | function   | <b>glyphcodes</b>             | data table |
| <b>destinations</b>          | table      | <b>glyphdir_is_equal</b>      | data table |
| N attribute                  |            | <b>glyphdir_is_opposite</b>   | data table |
| T done                       |            | <b>glyphdir_is_orthogonal</b> | data table |
| F handler                    |            | <b>handlers</b>               | table      |
| T stack                      |            | F accessibility               |            |
| <b>dimensionfields</b>       | data table | F alignbackgrounds            |            |
| <b>dimensions</b>            | function   | F backgrounds                 |            |
| <b>dir_is_pop</b>            | data table | F characters                  |            |
| <b>dir_negation</b>          | data table | F checkforleaks               |            |
| <b>disccodes</b>             | data table | F checkglyphs                 |            |
| <b>discretionarycodes</b>    | data table | F cleanupbox                  |            |
| <b>effective_glue</b>        | function   | F cleanuppage                 |            |
| <b>end_of_math</b>           | function   | F export                      |            |
| <b>fencecodes</b>            | data table | F finalize                    |            |
| <b>fields</b>                | function   | F migrate                     |            |
| <b>fillcodes</b>             | data table | F protectglyphs               |            |



|                                |            |                        |            |
|--------------------------------|------------|------------------------|------------|
| F stripping                    |            | <b>leadercodes</b>     | data table |
| F unprotectglyphs              |            | <b>leftmarginwidth</b> | function   |
| <b>has_attribute</b>           | function   | <b>ligaturing</b>      | function   |
| <b>has_field</b>               | function   | <b>linefillers</b>     | table      |
| <b>has_glyph</b>               | function   | D data                 |            |
| <b>hpack</b>                   | function   | F define               |            |
| <b>idstousing</b>              | function   | F enable               |            |
| <b>ignorablefields</b>         | data table | F handler              |            |
| <b>injections</b>              | table      | <b>lines</b>           | table      |
| F copy                         |            | T boxed                |            |
| F getligaindex                 |            | F register             |            |
| F getthreshold                 |            | F setup                |            |
| F handler                      |            | F stage_one            |            |
| F installnewkern               |            | F stage_two            |            |
| F isspace                      |            | D data                 |            |
| F keepcounts                   |            | F finalize             |            |
| F reset                        |            | F number               |            |
| F resetcounts                  |            | N scratchbox           |            |
| F setcursive                   |            | <b>link</b>            | function   |
| F setkern                      |            | <b>linked</b>          | function   |
| F setligaindex                 |            | <b>list</b>            | function   |
| F setmark                      |            | <b>listablefields</b>  | data table |
| F setpair                      |            | <b>listcodes</b>       | data table |
| F setspacekerns                |            | <b>listtutf</b>        | function   |
| <b>insert_after</b>            | function   | <b>load</b>            | function   |
| <b>insert_before</b>           | function   | <b>locate</b>          | function   |
| <b>insert_list_after</b>       | function   | <b>margincodes</b>     | data table |
| <b>installattributehandler</b> | function   | <b>marginkerncodes</b> | data table |
| <b>is_char</b>                 | function   | <b>markers</b>         | table      |
| <b>is_direct</b>               | function   | F get                  |            |
| <b>is_display_math</b>         | function   | <b>mathcodes</b>       | data table |
| <b>is_glyph</b>                | function   | <b>maxboxwidth</b>     | function   |
| <b>is_mirrored</b>             | data table | <b>mlist_to_hlist</b>  | function   |
| <b>is_node</b>                 | function   | <b>new</b>             | function   |
| <b>is_nut</b>                  | function   | <b>noadcodes</b>       | data table |
| <b>is_rotated</b>              | data table | <b>noadoptions</b>     | table      |
| <b>is_zero_glue</b>            | function   | N axis                 |            |
| <b>ischar</b>                  | function   | N exact                |            |
| <b>isglyph</b>                 | function   | N left                 |            |
| <b>kerncodes</b>               | data table | N middle               |            |
| <b>kerning</b>                 | function   | N no_axis              |            |
| <b>keys</b>                    | table      | N right                |            |
| T whatsit                      |            | N set                  |            |
| <b>last_node</b>               | function   | N unused_1             |            |

N unused\_2

**nodecodes**

**nopts**

**nuts**

F append  
F apply  
F applyvisuals  
F check\_discretionaries  
F concat  
F copy  
F copy\_list  
F copy\_node  
F copy\_properties  
F copyvisual  
F count  
F current\_attr  
F delete  
F dimensions  
F effective\_glue  
F end\_of\_math  
F first\_glyph  
F firstcharacter  
F firstcharinbox  
F firstglyph  
F flush  
F flush\_list  
F flush\_node  
F free  
F fullhpack  
F getattr  
F getattribute  
F getboth  
F getbox  
F getchar  
F getdisc  
F getfield  
F getfont  
F getglue  
F getid  
F getleader  
F getlist  
F getnext  
F getprev  
F getprop

data table

function

table

F getskip  
F getsubtype  
F has\_attribute  
F has\_field  
F has\_glyph  
F hpack  
F insert\_after  
F insert\_before  
F insert\_list\_after  
F is\_char  
F is\_direct  
F is\_display\_math  
F is\_glyph  
F is\_node  
F is\_nut  
F is\_zero\_glue  
F ischar  
F isglyph  
F kerning  
F last\_node  
F leftmarginwidth  
F ligaturing  
F link  
F linked  
F locate  
F mlist\_to\_hlist  
F nestedtracedslide  
F new  
T pool  
F baselineskip  
F boundary  
F cleanup  
F disc  
F emptyrule  
F fontkern  
F glue  
F gluespec  
F glyph  
F hlist  
F italickern  
F kern  
F latelua  
F lateluafunction  
F leftmarginkern

|                        |                      |
|------------------------|----------------------|
| F leftskip             | F rangedimensions    |
| F lineskip             | F rawprop            |
| F negatedglue          | F reference          |
| F noad                 | F rehpack            |
| F pdfannotation        | F remove             |
| F pdfdestination       | F repackhlist        |
| F pdfdirectliteral     | F replace            |
| F pdfliteral           | F rightmarginwidth   |
| F pdforiginliteral     | F set_attribute      |
| F pdfpageliteral       | F setattr            |
| F pdfrawliteral        | F setattribute       |
| F pdfrestore           | F setattributes      |
| F pdfsave              | F setboth            |
| F pdfsetmatrix         | F setbox             |
| F penalty              | F setchar            |
| F register             | F setdisc            |
| F rightmarginkern      | F setfield           |
| F rightskip            | F setglue            |
| F rule                 | F setleader          |
| F shrink               | F setlink            |
| F special              | F setlist            |
| F stretch              | F setnext            |
| F temp                 | F setprev            |
| F textdir              | F setprop            |
| F usage                | F setsubtype         |
| F userattributes       | F setunsetattributes |
| T userids              | F setvisual          |
| N margins.inline       | F setvisuals         |
| N property             | F slide              |
| N splitters.one        | F somepenalty        |
| N splitters.two        | F somespace          |
| F userlist             | F splitbox           |
| F userlua              | F tail               |
| F usernumber           | F takebox            |
| F userrule             | F takelist           |
| F userstring           | F theprop            |
| F usertokens           | F tonode             |
| F vlist                | F tonodes            |
| F wordboundary         | F tonut              |
| F zeroglue             | F tosequence         |
| F prepend              | F toString           |
| F protect_glyph        | F tracedslide        |
| F protect_glyphs       | F traverse           |
| F protrusion_skippable | F traverse_char      |

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

|                           |            |                             |            |
|---------------------------|------------|-----------------------------|------------|
| <b>remove</b>             | function   | <b>somepenalty</b>          | function   |
| <b>repackhlist</b>        | function   | <b>spacespace</b>           | function   |
| <b>replace</b>            | function   | <b>splitbox</b>             | function   |
| <b>report</b>             | function   | <b>stripdiscretionaries</b> | function   |
| <b>rightmarginwidth</b>   | function   | <b>stripping</b>            | table      |
| <b>rulecodes</b>          | data table | T glyphs                    |            |
| <b>rules</b>              | table      | F set                       |            |
| D data                    |            | <b>striprange</b>           | function   |
| F define                  |            | <b>tail</b>                 | function   |
| F enable                  |            | <b>takebox</b>              | function   |
| F handler                 |            | <b>tasks</b>                | table      |
| T ruleactions             |            | F actions                   |            |
| F draw                    |            | F appendaction              |            |
| F fill                    |            | F disableaction             |            |
| F mp                      |            | F disablegroup              |            |
| F stroke                  |            | F enableaction              |            |
| F userrule                |            | F enablegroup               |            |
| <b>save</b>               | function   | F freeze                    |            |
| <b>serialize</b>          | function   | F freezegroup               |            |
| <b>serializebox</b>       | function   | F new                       |            |
| <b>set_attribute</b>      | function   | F prependaction             |            |
| <b>setattributes</b>      | function   | F removeaction              |            |
| <b>setbox</b>             | function   | F replaceaction             |            |
| <b>setboxtonaturalwd</b>  | function   | F restart                   |            |
| <b>setfield</b>           | function   | F setaction                 |            |
| <b>setglue</b>            | function   | F showactions               |            |
| <b>setunsetattributes</b> | function   | F table                     |            |
| <b>shifts</b>             | table      | <b>texmdir_is_equal</b>     | data table |
| D data                    |            | <b>texmdir_is_is</b>        | data table |
| F define                  |            | <b>texmdir_is_opposite</b>  | data table |
| F enable                  |            | <b>texmdir_is_parallel</b>  | data table |
| F handler                 |            | <b>tobasepoints</b>         | function   |
| <b>show</b>               | function   | <b>tocentimeters</b>        | function   |
| <b>showboxes</b>          | function   | <b>tociceros</b>            | function   |
| <b>showcodes</b>          | function   | <b>todidots</b>             | function   |
| <b>showlist</b>           | function   | <b>todimen</b>              | function   |
| <b>showsimplelist</b>     | function   | <b>toinches</b>             | function   |
| <b>skipcodes</b>          | data table | <b>tomillimeters</b>        | function   |
| <b>slide</b>              | function   | <b>tonewciceros</b>         | function   |
| <b>snapshots</b>          | table      | <b>tonewdidots</b>          | function   |
| F getparameters           |            | <b>tonode</b>               | function   |
| F getsamples              |            | <b>tonodes</b>              | function   |
| F resetsamples            |            | <b>tonut</b>                | function   |
| F takesample              |            | <b>topicas</b>              | function   |

|                       |          |                         |            |
|-----------------------|----------|-------------------------|------------|
| <b>topoints</b>       | function | F stop                  |            |
| <b>toscaledpoints</b> | function | T transparencies        |            |
| <b>tosequence</b>     | function | F reset                 |            |
| <b>tostring</b>       | function | F set                   |            |
| <b>totable</b>        | function | F setlist               |            |
| <b>totree</b>         | function | <b>traverse</b>         | function   |
| <b>toutf</b>          | function | <b>traverse_char</b>    | function   |
| <b>tracers</b>        | table    | <b>traverse_id</b>      | function   |
| T characters          |          | <b>typesetters</b>      | table      |
| F collect             |          | F hbox                  |            |
| F equal               |          | F hpack                 |            |
| F start               |          | F tohbox                |            |
| F string              |          | F tohpack               |            |
| F unicodes            |          | F tonodes               |            |
| T colors              |          | F tovbox                |            |
| F reset               |          | F tovpack               |            |
| F set                 |          | F vpack                 |            |
| F setlist             |          | <b>unprotect_glyphs</b> | function   |
| F fontchar            |          | <b>unset_attribute</b>  | function   |
| T frequencies         |          | <b>unsetattribute</b>   | function   |
| F register            |          | <b>unsetattributes</b>  | function   |
| T pool                |          | <b>usedlist</b>         | function   |
| T nodes               |          | <b>usercodes</b>        | data table |
| F rule                |          | <b>vianodes</b>         | function   |
| T nuts                |          | <b>vianuts</b>          | function   |
| F rule                |          | <b>visualizebox</b>     | function   |
| F resetproperties     |          | <b>visualizers</b>      | table      |
| F rule                |          | F box                   |            |
| F setlist             |          | F handler               |            |
| F setproperties       |          | F markfonts             |            |
| F start               |          | F setfont               |            |
| T steppers            |          | F setlayer              |            |
| F check               |          | F setvisual             |            |
| F codes               |          | <b>vpack</b>            | function   |
| F features            |          | <b>whatcodes</b>        | data table |
| F font                |          | <b>whatsitcodes</b>     | data table |
| F glyphs              |          | <b>whatsitters</b>      | table      |
| F message             |          | T getters               |            |
| F messages            |          | T dimensions            |            |
| F nofsteps            |          | T width                 |            |
| F register            |          | T setters               |            |
| F reset               |          | T dimensions            |            |
| F start               |          | T width                 |            |
| F stop                |          | <b>write</b>            | function   |

## number (context)

|                       |            |                       |          |
|-----------------------|------------|-----------------------|----------|
|                       | function   | <b>tocentimeters</b>  | function |
| <b>basepoints</b>     | function   | <b>tociceros</b>      | function |
| <b>bit</b>            | function   | <b>tocontext</b>      | function |
| <b>bits</b>           | function   | <b>todidots</b>       | function |
| <b>clearbit</b>       | function   | <b>todimen</b>        | function |
| <b>dimenfactors</b>   | data table | <b>toevenhex</b>      | function |
| <b>formatted</b>      | function   | <b>toinches</b>       | function |
| <b>hasbit</b>         | function   | <b>tomillimeters</b>  | function |
| <b>maxdimen</b>       | number     | <b>tonewciceros</b>   | function |
| <b>nopts</b>          | function   | <b>tonewdidots</b>    | function |
| <b>percent</b>        | function   | <b>tonumberf</b>      | function |
| <b>points</b>         | function   | <b>tonumberg</b>      | function |
| <b>pts</b>            | function   | <b>topics</b>         | function |
| <b>setbit</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>toset</b>          | function |
| <b>tobasepoints</b>   | function   | <b>valid</b>          | function |
| <b>tobitstring</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 |



## 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>resolvers</b>     | table               |
| <b>binsuffixes</b>  | table               | <b>F bits</b>        |                     |
| <b>clock</b>        | function            | <b>resultof</b>      | function            |
| <b>converttime</b>  | function            | <b>runtime</b>       | function            |
| <b>date</b>         | function            | <b>selfdir</b>       | string              |
| <b>difftime</b>     | function            | <b>setenv</b>        | overloaded function |
| <b>env</b>          | data table          | <b>setlocale</b>     | overloaded function |
| <b>exec</b>         | overloaded function | <b>sleep</b>         | function            |
| <b>execute</b>      | overloaded function | <b>spawn</b>         | overloaded function |
| <b>exit</b>         | function            | <b>time</b>          | function            |
| <b>fulltime</b>     | function            | <b>times</b>         | function            |
| <b>getenv</b>       | overloaded function | <b>timezone</b>      | function            |
| <b>gettimeofday</b> | function            | <b>tmpdir</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>platform</b>     | string              | <b>which</b>         | function            |

## package (basic lua)

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

# 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)

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

# pdfscanner (context)

**scan** function

# physics (context)

**units** table

F registerunit

D tables

## profiler (extra lua)

**pause**    function  
**resume**   function

**start**    function  
**stop**     function

# publications (context)

|                             |            |              |
|-----------------------------|------------|--------------|
| <b>addtexentry</b>          | function   | S author     |
| <b>analyze</b>              | function   | T categories |
| <b>anywhere</b>             | function   | T article    |
| <b>authorcache</b>          | data table | S category   |
| <b>authorcollapsers</b>     | data table | T extra      |
| <b>authorhashers</b>        | table      | T fields     |
| F invertedshort             |            | S author     |
| F normal                    |            | S editor     |
| F normalinverted            |            | S journal    |
| F normalshort               |            | S keywords   |
| F short                     |            | S number     |
| <b>authormap</b>            | data table | S pages      |
| <b>authortoregister</b>     | function   | S title      |
| <b>casters</b>              | table      | S volume     |
| F author                    |            | S year       |
| F keyword                   |            | T optional   |
| F pagenumber                |            | T required   |
| F range                     |            | T sets       |
| <b>checkeddataset</b>       | function   | T author     |
| <b>citevariants</b>         | table      | T virtual    |
| F author                    |            | T book       |
| F authornum                 |            | S category   |
| F authoryear                |            | T extra      |
| F authoryears               |            | T fields     |
| F category                  |            | S address    |
| F default                   |            | S author     |
| F entry                     |            | S edition    |
| F index                     |            | S editor     |
| F keywords                  |            | S keywords   |
| F num                       |            | S number     |
| F page                      |            | S publisher  |
| F short                     |            | S subtitle   |
| F tag                       |            | S title      |
| F textnum                   |            | S volume     |
| F year                      |            | S year       |
| <b>collected</b>            | data table | T optional   |
| <b>components</b>           | table      | T required   |
| F author                    |            | T sets       |
| <b>concatstate</b>          | function   | T author     |
| <b>converttoxml</b>         | function   | T editionset |
| <b>currentspecification</b> | table      | T 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       | <b>enhancers</b>       | table      |
| S author       | F details              |            |
| S institution  | F order                |            |
| S organization | F suffixes             |            |
| S subtitle     | <b>finder</b>          | function   |
| S title        | <b>firstofrange</b>    | function   |
| S year         | <b>found</b>           | function   |
| T optional     | <b>get</b>             | function   |
| T required     | <b>getcasted</b>       | function   |
| T sets         | <b>getdetail</b>       | function   |
| T authors      | <b>getdirect</b>       | function   |
| T virtual      | <b>getfaster</b>       | function   |
| S comment      | <b>getfield</b>        | function   |
| S copyright    | <b>getfuzzy</b>        | function   |
| T fields       | <b>getindex</b>        | function   |
| S name         | <b>inspectors</b>      | data table |
| T types        | <b>journals</b>        | table      |
| S author       | F abbreviated          |            |
| S editor       | F add                  |            |
| S keywords     | F expanded             |            |
| S number       | F load                 |            |
| S page         | F save                 |            |
| S pages        | <b>lastofrange</b>     | function   |
| S volume       | <b>lists</b>           | table      |
| S version      | F collectentries       |            |
| D virtual      | F combiinlist          |            |

|                            |          |                           |          |
|----------------------------|----------|---------------------------|----------|
| F fetchentries             |          | <b>okay</b>               | function |
| F filterall                |          | <b>oneorange</b>          | function |
| F flushcombi               |          | <b>parenttag</b>          | function |
| F flushentry               |          | <b>permitted</b>          | function |
| T methods                  |          | <b>refman_to_btx</b>      | function |
| F dataset                  |          | <b>resolvedname</b>       | function |
| F force                    |          | <b>save</b>               | function |
| F global                   |          | <b>search</b>             | function |
| F local                    |          | <b>setcategory</b>        | function |
| F nofregistered            |          | <b>setspecification</b>   | function |
| F prepareentries           |          | <b>singularorplural</b>   | function |
| F register                 |          | <b>sortedentries</b>      | function |
| F sameasprevious           |          | <b>sortmethods</b>        | table    |
| T sorters                  |          | T authoryear              |          |
| F cite                     |          | T sequence                |          |
| F dataset                  |          | <b>specifications</b>     | table    |
| F default                  |          | T default                 |          |
| F index                    |          | S author                  |          |
| F list                     |          | S comment                 |          |
| F reference                |          | S copyright               |          |
| F short                    |          | S name                    |          |
| F used                     |          | S version                 |          |
| F uservariable             |          | D virtual                 |          |
| <b>listvariants</b>        | table    | <b>splitauthor</b>        | function |
| F default                  |          | <b>splitoneauthor</b>     | function |
| F index                    |          | <b>statistics</b>         | table    |
| F num                      |          | N nofbytes                |          |
| F page                     |          | N nofdatasets             |          |
| F short                    |          | N nofdefinitions          |          |
| F tag                      |          | N nofshortcuts            |          |
| <b>load</b>                | function | <b>tables</b>             | table    |
| <b>loadbibdata</b>         | function | D implicits               |          |
| <b>loaddefinitionfile</b>  | function | D origins                 |          |
| <b>loaders</b>             | table    | D privates                |          |
| F bbl                      |          | D sets                    |          |
| F bib                      |          | D specials                |          |
| F buffer                   |          | D types                   |          |
| F endnote                  |          | D virtuals                |          |
| F lua                      |          | <b>tags</b>               | function |
| F refman                   |          | <b>tracers</b>            | table    |
| F registercleaner          |          | F showdatasetauthors      |          |
| F xml                      |          | F showdatasetcompleteness |          |
| <b>loadreplacementfile</b> | function | F showdatasetfields       |          |
| <b>new</b>                 | function | F showentry               |          |

|                     |       |                    |          |
|---------------------|-------|--------------------|----------|
| F showfields        |       | <b>usedataset</b>  | function |
| F showhashedauthors |       | <b>usedentries</b> | function |
| F showtables        |       | <b>writers</b>     | table    |
| F showvariants      |       | F author           |          |
| <b>typesetters</b>  | table | F keyword          |          |
| F author            |       | F pagenumber       |          |
| F string            |       | F range            |          |

## regimes (context)

|                   |          |
|-------------------|----------|
| <b>cleanup</b>    | function |
| <b>disable</b>    | function |
| <b>enable</b>     | function |
| <b>fromregime</b> | function |
| <b>pop</b>        | function |

|                  |          |
|------------------|----------|
| <b>process</b>   | function |
| <b>push</b>      | function |
| <b>toregime</b>  | function |
| <b>translate</b> | function |

## resolvers (context)

|                                     |            |                                |            |
|-------------------------------------|------------|--------------------------------|------------|
| <b>allprefixes</b>                  | function   | <b>findtexfile</b>             | function   |
| <b>appendhash</b>                   | function   | <b>findwildcardfile</b>        | function   |
| <b>automount</b>                    | function   | <b>findwildcardfiles</b>       | function   |
| <b>automounted</b>                  | table      | <b>formatofsuffix</b>          | function   |
| <b>booleanvariable</b>              | function   | <b>formatofvariable</b>        | function   |
| <b>cacheversion</b>                 | string     | <b>formats</b>                 | data table |
| <b>checkedvariable</b>              | function   | <b>generators</b>              | data table |
| <b>cleanedpathlist</b>              | function   | <b>get_from_content</b>        | function   |
| <b>cleanpath</b>                    | function   | <b>getenv</b>                  | function   |
| <b>cleanpathlist</b>                | function   | <b>getownpath</b>              | function   |
| <b>concatinators</b>                | data table | <b>getreadfilename</b>         | function   |
| <b>configbanner</b>                 | string     | <b>hashers</b>                 | data table |
| <b>criticalvars</b>                 | data table | <b>homedir</b>                 | string     |
| <b>dangerous</b>                    | data table | <b>inputstack</b>              | table      |
| <b>datastate</b>                    | function   | <b>installinputfilehandler</b> | function   |
| <b>defaultsuffixes</b>              | table      | <b>installinputlinehandler</b> | function   |
| <b>dowithfilesandreport</b>         | function   | <b>instance</b>                | table      |
| <b>dowithfilesintree</b>            | function   | D data                         |            |
| <b>dowithpath</b>                   | function   | B diskcache                    |            |
| <b>dowithvariable</b>               | function   | D environment                  |            |
| <b>env</b>                          | function   | D expansions                   |            |
| <b>executers</b>                    | table      | D fakepaths                    |            |
| <b>expandbraces</b>                 | function   | D files                        |            |
| <b>expandedpathfromlist</b>         | function   | B force_suffixes               |            |
| <b>expandedpathlist</b>             | function   | D found                        |            |
| <b>expandedpathlistfromvariable</b> | function   | D foundintrees                 |            |
| <b>expandpath</b>                   | function   | D hashed                       |            |
| <b>expandpathfromvariable</b>       | function   | D hashes                       |            |
| <b>expansion</b>                    | function   | D lists                        |            |
| <b>extendtexmfvariable</b>          | function   | B loaderror                    |            |
| <b>filtered_from_content</b>        | function   | D order                        |            |
| <b>find_file</b>                    | function   | D pathlists                    |            |
| <b>find_files</b>                   | function   | T pathstack                    |            |
| <b>findbinfile</b>                  | function   | B remember                     |            |
| <b>findctxfile</b>                  | function   | B renewcache                   |            |
| <b>finders</b>                      | data table | B renewtree                    |            |
| <b>findfile</b>                     | function   | B savelists                    |            |
| <b>findfiles</b>                    | function   | D setups                       |            |
| <b>findgivenfile</b>                | function   | D specification                |            |
| <b>findgivenfiles</b>               | function   | D variables                    |            |
| <b>findpath</b>                     | function   | <b>jobpath</b>                 | function   |

|                      |            |                               |            |
|----------------------|------------|-------------------------------|------------|
| <b>jobs</b>          | table      | <b>registerextrapath</b>      | function   |
| F currentcomponent   |            | <b>registerfile</b>           | function   |
| F currentenvironment |            | <b>registerfilehash</b>       | function   |
| F currentproduct     |            | <b>registerintrees</b>        | function   |
| F currentproject     |            | <b>registermethod</b>         | function   |
| F justacomponent     |            | <b>registerzipfile</b>        | function   |
| D processors         |            | <b>relations</b>              | data table |
| F productcomponent   |            | <b>renew</b>                  | function   |
| F usefile            |            | <b>repath</b>                 | function   |
| <b>joinpath</b>      | function   | <b>reset</b>                  | function   |
| <b>load</b>          | function   | <b>resetextrapath</b>         | function   |
| <b>loadbinfile</b>   | function   | <b>resetmemstream</b>         | function   |
| <b>loaders</b>       | data table | <b>resetresolve</b>           | function   |
| <b>loadlualib</b>    | function   | <b>resolve</b>                | function   |
| <b>loadtexfile</b>   | function   | <b>savers</b>                 | data table |
| <b>loadtime</b>      | function   | <b>scandata</b>               | function   |
| <b>locateformat</b>  | function   | <b>scanfiles</b>              | function   |
| <b>locators</b>      | data table | <b>schemes</b>                | table      |
| <b>luacnfname</b>    | string     | T cleaners                    |            |
| <b>luacnfspec</b>    | string     | F md5                         |            |
| <b>luacnfstate</b>   | string     | F none                        |            |
| <b>macros</b>        | table      | F strip                       |            |
| F convertfile        |            | F cleanname                   |            |
| F decodecomment      |            | F fetchstring                 |            |
| F enablecomment      |            | F fetchtable                  |            |
| F encodecomment      |            | F install                     |            |
| F preprocessed       |            | <b>setdynamic</b>             | function   |
| F processmk          |            | <b>setenv</b>                 | function   |
| F processmkvi        |            | <b>setinstance</b>            | function   |
| F version            |            | <b>setmemstream</b>           | function   |
| <b>maxreadlevel</b>  | number     | <b>showpath</b>               | function   |
| <b>methodhandler</b> | function   | <b>simplescanfiles</b>        | function   |
| <b>newinstance</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>suffixes</b>               | data table |
| <b>popextrapath</b>  | function   | <b>suffixmap</b>              | data table |
| <b>poppath</b>       | function   | <b>suffixofformat</b>         | function   |
| <b>prefixes</b>      | data table | <b>texdatablob</b>            | function   |
| <b>prependhash</b>   | function   | <b>toppath</b>                | function   |
| <b>pushextrapath</b> | function   | <b>unexpandedpath</b>         | function   |
| <b>pushpath</b>      | function   | <b>unexpandedpathlist</b>     | function   |

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

## sandbox (context)

|                       |          |
|-----------------------|----------|
| <b>binaryhandler</b>  | function |
| <b>disablerunners</b> | function |
| <b>enable</b>         | function |
| <b>filehandlerone</b> | function |
| <b>filehandlertwo</b> | function |
| <b>finalizer</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>registerroot</b>      | function |
| <b>registerrunner</b>    | function |
| <b>report</b>            | function |
| <b>run</b>               | function |
| <b>runhandler</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

**categorytonumber**   data table

**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

**handlers**           data table

**hash**              table

**injectors**          data table

**installdataset**    function

**installmethod**    function

**numbertocategory** data table

**numbertodataset** data table

**numbertohandler** data table

**reset**             function

**set**                function

**splitters**          data table

## set (context)

**contains**    function

**create**     function

**tolist**     function

**tonumber**   function

**totable**    function

# socket (extra lua)

**BLOCKSIZE** number  
**\_DEBUG** boolean  
**\_SETSIZE** number  
**bind** function  
**choose** function  
**connect** function  
**connect4** function  
**connect6** function  
**dns** table

F getaddrinfo  
F gethostname  
F getnameinfo  
F tohostname  
F toip

**ftp** table

S PASSWORD  
N PORT  
N TIMEOUT  
S USER  
F command  
F get  
F open  
F put

**gettime** function

**headers** table

T canonic  
S accept  
S accept-charset  
S accept-encoding  
S accept-language  
S accept-ranges  
S action  
S age  
S allow  
S alternate-recipient  
S arrival-date  
S authorization  
S bcc  
S cache-control  
S cc  
S comments

S connection  
S content-description  
S content-disposition  
S content-encoding  
S content-id  
S content-language  
S content-length  
S content-location  
S content-md5  
S content-range  
S content-transfer-encoding  
S content-type  
S date  
S diagnostic-code  
S dsn-gateway  
S etag  
S expect  
S expires  
S final-log-id  
S final-recipient  
S from  
S host  
S if-match  
S if-modified-since  
S if-none-match  
S if-range  
S if-unmodified-since  
S in-reply-to  
S keywords  
S last-attempt-date  
S last-modified  
S location  
S max-forwards  
S message-id  
S mime-version  
S original-envelope-id  
S original-recipient  
S pragma  
S proxy-authenticate  
S proxy-authorization  
S range

S received  
 S received-from-mta  
 S references  
 S referer  
 S remote-mta  
 S reply-to  
 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

**http**      **table**

N PORT  
 N TIMEOUT  
 S USERAGENT  
 F open  
 F request

**newtry**      **function**

**protect**      **function**  
**select**      **function**  
**sink**      **function**  
**sinkt**      **table**

F close-when-done  
 F default  
 F http-chunked  
 F keep-open

**skip**      **function**  
**sleep**      **function**  
**smtp**      **table**

S DOMAIN  
 N PORT  
 S SERVER  
 N TIMEOUT  
 S ZONE  
 F message  
 F open  
 F send

**source**      **function**  
**sourcet**      **table**

F by-length  
 F default  
 F http-chunked  
 F until-closed

**tcp**      **function**  
**tcp6**      **function**  
**tp**      **table**

N TIMEOUT  
 F connect

**try**      **function**  
**udp**      **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

**setlanguage**      function

**sort**                function

**splitters**         table

    F utf

**strip**              function

**tracers**           data table

**update**            function

## statistics (context)

|                       |          |                      |          |
|-----------------------|----------|----------------------|----------|
| <b>checkfmtstatus</b> | function | <b>resettiming</b>   | function |
| <b>elapsed</b>        | function | <b>runtime</b>       | function |
| <b>elapsedindeed</b>  | function | <b>savefmtstatus</b> | function |
| <b>elapsedseconds</b> | function | <b>show</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)

**list**                    function  
**resetmessages**    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>optionalquoted</b>  | function |
| <b>autosingle</b>     | function | <b>quote</b>           | function |
| <b>booleanstring</b>  | function | <b>quoted</b>          | function |
| <b>byte</b>           | function | <b>rep</b>             | function |
| <b>bytepairs</b>      | function | <b>replacenewlines</b> | function |
| <b>bytes</b>          | function | <b>reverse</b>         | function |
| <b>char</b>           | function | <b>split</b>           | function |
| <b>characterpairs</b> | function | <b>splitlines</b>      | function |
| <b>characters</b>     | function | <b>splitup</b>         | function |
| <b>checkedsplit</b>   | function | <b>strip</b>           | function |
| <b>collapsespaces</b> | function | <b>sub</b>             | function |
| <b>count</b>          | function | <b>tformat</b>         | function |
| <b>dump</b>           | function | <b>toHEX</b>           | function |
| <b>escapedpattern</b> | function | <b>toboollean</b>      | function |
| <b>explode</b>        | function | <b>tobytes</b>         | function |
| <b>find</b>           | function | <b>tocontext</b>       | function |
| <b>format</b>         | function | <b>todec</b>           | function |
| <b>formatter</b>      | function | <b>todimen</b>         | function |
| <b>formatters</b>     | function | <b>tohex</b>           | function |
| <b>fullstrip</b>      | function | <b>tonodes</b>         | function |
| <b>gmatch</b>         | function | <b>topattern</b>       | function |
| <b>gsub</b>           | function | <b>totable</b>         | function |
| <b>is_boolean</b>     | function | <b>toutf</b>           | function |
| <b>is_empty</b>       | function | <b>tracedchar</b>      | function |
| <b>itself</b>         | function | <b>tracedchars</b>     | table    |
| <b>len</b>            | function | <b>unquote</b>         | function |
| <b>limit</b>          | function | <b>unquoted</b>        | function |
| <b>longtostring</b>   | function | <b>upper</b>           | function |
| <b>lower</b>          | function | <b>utfcharacters</b>   | function |
| <b>match</b>          | function | <b>utfvalues</b>       | function |
| <b>nspace</b>         | table    | <b>valid</b>           | function |

# structures (context)

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

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

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

F setreferencerealpage

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 untex

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 prepare

F process

F setmethod

F sort

F store

D tobesaved

F unique

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 load

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 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 filter
- F finalize
- F flush
- F isshown
- F isused
- F meaning
- F prepare
- F process
- F register
- F registershown
- F registerused
- F resetshown
- F resetused
- F sort
- F synonym
- D tobesaved

**tags** table

- F elementtag
- F finishexport
- F getid
- F handler
- D labels
- F last
- F lastinchain
- F locatedtag
- T patterns
- U splitter
- D properties
- F registermetadata
- F restart
- F setaspect
- F setattributeflash
- F setcombination
- F setfigure
- F sethighlight
- F setitem
- F setitemgroup
- F setlist
- F setnotation
- F setnotationsymbol
- F setproperty
- F setregister
- F setsorting
- F setsynonym
- F settablecell
- F settabulatecell
- F settagdelimitedsymbol
- F settagssubsentencesymbol
- F setupexport
- F setuserproperties
- D specifications
- F start
- F stop
- F strip
- D taglist
- T usewithcare
- T images

## table (basic lua)

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



## tex (basic tex)

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

|                     |          |                         |            |
|---------------------|----------|-------------------------|------------|
| <b>set</b>          | function | <b>skip</b>             | table      |
| <b>setattribute</b> | function | <b>sp</b>               | function   |
| <b>setbox</b>       | function | <b>splitbox</b>         | function   |
| <b>setcatcode</b>   | function | <b>sprint</b>           | function   |
| <b>setcount</b>     | function | <b>systemmodes</b>      | data table |
| <b>setdelcode</b>   | function | <b>takebox</b>          | function   |
| <b>setdimen</b>     | function | <b>texcatcodes</b>      | number     |
| <b>setglue</b>      | function | <b>toks</b>             | table      |
| <b>setlccode</b>    | function | <b>tpacatcodes</b>      | number     |
| <b>setlist</b>      | function | <b>tpbcatcodes</b>      | number     |
| <b>setmath</b>      | function | <b>tprint</b>           | function   |
| <b>setmathcode</b>  | function | <b>trackers</b>         | data table |
| <b>setmuglue</b>    | function | <b>triggerbuildpage</b> | function   |
| <b>setmuskip</b>    | function | <b>txtcatcodes</b>      | number     |
| <b>setnest</b>      | function | <b>type</b>             | function   |
| <b>setsfcode</b>    | function | <b>uccode</b>           | table      |
| <b>setskip</b>      | function | <b>uniform_rand</b>     | function   |
| <b>settoks</b>      | function | <b>uniformdeviate</b>   | function   |
| <b>setuccode</b>    | function | <b>uprint</b>           | function   |
| <b>sfcode</b>       | table    | <b>useboxresource</b>   | function   |
| <b>shipout</b>      | function | <b>vrbcatcodes</b>      | number     |
| <b>show_context</b> | function | <b>write</b>            | function   |

## texconfig (basic tex)

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

## texio (basic tex)

**setescape** function  
**write** function

**write\_nl** function

# tokens (context)

**astable**      function  
**bgroup**      userdata  
**bits**        table

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

**collectors** table

T data  
F defaultwords  
F dowithwords  
F flush  
F install  
F register  
T registered  
F show  
F test

**compile**      function  
**constant**    function  
**converters** table

S toboolean  
S todimen  
S toglue  
S tonumber  
S tostring

**defined**      function  
**egroup**      userdata  
**getters**      table

F box  
F count  
F dimen  
F glue  
F skip  
F token

**hbox**        userdata  
**istoken**     function  
**letter**      function  
**letters**     function  
**other**       function  
**pickup**      function  
**printlist**   function  
**scanners**    table

F boolean  
F code  
F conditional  
F count  
F csname  
F dimen  
F dimension  
F glue  
F integer  
F keyword  
F list  
F lxmlid  
F number  
F scanclose  
F scanopen  
F skip  
F string  
F token  
F tokens  
F toks  
F word

**scantable**    function  
**setters**      table  
F box

|                        |                |
|------------------------|----------------|
| F count                | F conditional  |
| F dimen                | F count        |
| F glue                 | F csname       |
| F macro                | F dimen        |
| F skip                 | F dimension    |
| <b>shortcuts</b> table | F glue         |
| T bits                 | F integer      |
| N active               | F keyword      |
| N alignment            | F list         |
| N begingroup           | F lxmldid      |
| N character            | F number       |
| N close                | F scanclose    |
| N comment              | F scanopen     |
| N endgroup             | F skip         |
| N endofline            | F string       |
| N escape               | F token        |
| N ignore               | F tokens       |
| N invalid              | F toks         |
| N letter               | F word         |
| N mathshift            | F scannumber   |
| N open                 | F scanopen     |
| N other                | F scanstring   |
| N parameter            | F scanword     |
| N space                | F toboolean    |
| N subscript            | F todimen      |
| N superscript          | T tokens       |
| N whitespace           | F astable      |
| N close                | U bgroup       |
| F inspect              | T collectors   |
| N open                 | F defaultwords |
| F report               | F dowithwords  |
| F scanboolean          | F flush        |
| F scanclose            | F install      |
| F scancode             | F register     |
| F scanconditional      | F show         |
| F scanscsname          | F test         |
| F scandimen            | F compile      |
| F scandimension        | F constant     |
| F scaninteger          | T converters   |
| F scankeyword          | S toboolean    |
| F scanlist             | S todimen      |
| T scanners             | S toglue       |
| F boolean              | S tonumber     |
| F code                 | S tostring     |

|             |                   |          |
|-------------|-------------------|----------|
| F defined   | N open            |          |
| U egroup    | F report          |          |
| T getters   | F scanboolean     |          |
| F box       | F scanclose       |          |
| F count     | F scancode        |          |
| F dimen     | F scanconditional |          |
| F glue      | F scansname       |          |
| F skip      | F scandimen       |          |
| F token     | F scandimension   |          |
| U hbox      | F scaninteger     |          |
| F istoken   | F scankeyword     |          |
| F letter    | F scanlist        |          |
| F letters   | F scannumber      |          |
| F other     | F scanopen        |          |
| F pickup    | F scanstring      |          |
| F printlist | F scanword        |          |
| F scantable | F toboolean       |          |
| T setters   | F todimen         |          |
| F box       | F tonumber        |          |
| F count     | F tostring        |          |
| F dimen     | U vbox            |          |
| F glue      | U vtop            |          |
| F macro     | F tonumber        |          |
| F skip      | F tostring        |          |
| T shortcuts | <b>vbox</b>       | userdata |
| N close     | <b>vtop</b>       | userdata |
| F inspect   |                   |          |

# tracers (context)

|                  |          |                     |          |
|------------------|----------|---------------------|----------|
| <b>count</b>     | function | <b>primitive</b>    | function |
| <b>cs</b>        | function | <b>printerror</b>   | function |
| <b>dimen</b>     | function | <b>printwarning</b> | function |
| <b>knownlist</b> | function | <b>showlines</b>    | function |
| <b>lists</b>     | table    | <b>strings</b>      | table    |
| T context        |          | S undefined         |          |
| T internals      |          | <b>toks</b>         | function |
| T scratch        |          | <b>type</b>         | function |
| <b>name</b>      | 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>dumphashtofile</b> | function   | <b>savehash</b> | function |
| <b>enable</b>         | function   | <b>show</b>     | function |
| <b>list</b>           | function   | <b>value</b>    | function |
| <b>name</b>           | string     |                 |          |

# typesetters (context)

## **alignments** table

F handler  
F set

## **breakpoints** table

F define  
F handler  
D mapping  
T methods  
T numbers  
F set  
F setreplacement

## **cases** table

T actions  
F handler  
F register  
F set

## **characteralign** table

F handler  
F resetcharacteralign  
F setcharacteralign

## **characters** table

F handler  
T methods  
F replacensp  
F replacenspaces

## **checkers** table

F handler  
F reset  
F set

## **cleaners** table

F handler  
F set

## **digits** table

T actions  
F handler  
F set

## **directions** table

F getfences  
F getglobal  
F getmethod  
F handler

T handlers  
F installhandler  
F processmath  
F set  
F setcolor  
F setmath  
F tomode

## **firstlines** table

T actions  
F default  
F line  
F word  
F handler  
F set

## **fontkerns** table

F handler

## **initials** table

T actions  
F default  
F addanchortoline  
F addtoline  
F calculatedelta  
F checkline  
F handler  
F moveinline  
F normalize  
F set

## **injectors** table

F check  
T list  
F mark  
F reset  
F set  
F show

## **italics** table

F enablemath  
F enabletext  
F forcevariant  
F handler  
F reset  
F set

## **kerns**                      table

D factors  
F handler  
F keepligature  
B keptogether  
D mapping  
F set

## **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 handler  
F moveinline  
F normalize  
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

## **wrappers**                      table

F handler

## **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

# unicode (extra lua)

## ascii table

F byte  
F char  
F dump  
F find  
F format  
F gfind  
F gmatch  
F gsub  
F len  
F lower  
F match  
F rep  
F reverse  
F sub  
F upper

## grapheme table

F byte  
F char  
F dump  
F find  
F format  
F gfind  
F gmatch  
F gsub  
F len  
F lower  
F match  
F rep  
F reverse  
F sub  
F upper

## latin1 table

F byte  
F char  
F dump  
F find  
F format  
F gfind  
F gmatch  
F gsub

F len  
F lower  
F match  
F rep  
F reverse  
F sub  
F upper

## utf8 table

F byte  
F char  
F characters  
F chrln  
F count  
F dump  
F filetype  
F find  
F format  
F gfind  
F gmatch  
F gsub  
F is\_valid  
F len  
F length  
F lower  
F magic  
F match  
F remapper  
F rep  
F replacer  
F reverse  
F split  
F splitlines  
F sub  
F substituter  
F tocodes  
F toeight  
F toentities  
F tostring  
F totable  
F upper  
F ustring

F utf16\_to\_utf8\_be  
F utf16\_to\_utf8\_be\_t  
F utf16\_to\_utf8\_le  
F utf16\_to\_utf8\_le\_t  
F utf16\_to\_utf8\_t  
F utf32\_to\_utf8\_be  
F utf32\_to\_utf8\_be\_t  
F utf32\_to\_utf8\_le  
F utf32\_to\_utf8\_le\_t

F utf32\_to\_utf8\_t  
F utf8\_to\_utf16  
F utf8\_to\_utf16\_be  
F utf8\_to\_utf16\_le  
F utf8\_to\_utf8\_t  
F values  
F xstring

## url (context)

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

|                    |          |
|--------------------|----------|
| <b>hascheme</b>    | function |
| <b>query</b>       | function |
| <b>split</b>       | function |
| <b>toquery</b>     | function |
| <b>unescapeget</b> | 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 readcardinal
- F readcardinal1
- F readcardinal2
- F readcardinal2le
- F readcardinal3
- F readcardinal3le
- F readcardinal4
- F readcardinal4le
- F readchar
- F readfixed4
- F readinteger
- F readinteger1
- F readinteger2
- F readinteger2le
- F readinteger3
- F readinteger3le
- F readinteger4
- F readinteger4le
- F readstring
- F readtag
- F setposition
- F size
- F skip
- F skiplong
- F skipshort
- F writebyte

- F writecardinal2
- F writecardinal4
- F writestring

## formatters                    table

- F formatcolumns
- F list
- F stripzeros

## garbagecollector                    table

- F check
- N criterium
- B enabled

## lua                    table

- B alwaysstripcode
- F compile
- F loadedluacode
- F loadstripped
- N nofstrippedbytes
- N nofstrippedchunks
- F registerfinalizer
- B stripcode
- T strippedchunks
- F strippedloadstring
- T suffixes
- S lua
- S luc
- S lui
- S luj
- S luv
- S tma
- S tmc
- S tua
- S tuc

## packers                    table

- F hashed
- F new
- F pack
- F simplehashed
- F strip
- F unpack
- N version

## parsers                    table

|   |  |
|---|--|
| F add_settings_to_array   | T modern-variable,latin-modern-variable-designsize,latin-modern-variable |
| F arguments_to_table  | B latin-modern-variable  |
| F array_to_string   | B latin-modern-variable-designsize                                       |
| F csvsplitter   | B modern-variable  |
| F getparameters   | T modernvariable,modern-variable   |
| F groupedsplitat  | B modern-variable  |
| F hash_to_string  | B modernvariable   |
| T hashes  | T modernvariablelight,modern-variable-light                              |
| T settings_to_set   | B modern-variable-light  |
| T max,fit,broad,auto  | B modernvariablelight  |
| B auto  | T serif,sans,mono  |
| B broad   | B mono   |
| B fit   | B sans   |
| B max   | B serif  |
| T modern,latin-modern   | T text,hidden,paper,page,leftpage,rightpage                              |
| B latin-modern  | B hidden   |
| B modern  | B leftpage   |
| T modern,latin-modern,modern-variable,latin-modern-variable,modern-variable-light,modern-variable-light                     | T modern-condensed,latin-modern-condensed                                |
| B latin-modern  | B paper  |
| B latin-modern-condensed  | B rightpage  |
| B latin-modern-variable   | B text   |
| B modern  | F iterator   |
| B modern-condensed  | F keq_to_hash  |
| B modern-variable   | F listitem   |
| T modern,latin-modern-designsize,latin-modern   | F make_settings_to_hash_pattern  |
| B latin-modern  | F mergehashes  |
| B latin-modern-designsize   | F options_to_array   |
| B modern  | F options_to_hash  |
| T modern,modern-base  | T patterns   |
| B modern  | U settings_to_array  |
| B modern-base   | U settings_to_hash_a   |
| T modern-condensed,latin-modern-condensed-designsize,latin-modern-condensed,latin-modern-light-condensed,latin-modern-light | U settings_to_hash_b   |
| B latin-modern-condensed  | U settings_to_hash_c   |
| B latin-modern-condensed-designsize   | U unittotex  |
| B latin-modern-light-condensed  | F process_stripped_settings  |
| B modern-condensed  | F rfc4180splitter  |
| B modern-light-condensed  | F runtime  |
| T modern-light,latin-modern-light-designsize,latin-modern-light   | F settings_to_array  |
| B latin-modern-light  | F settings_to_array_obey_fences  |
| B latin-modern-light-designsize   | F settings_to_array_with_repeat  |
| B modern-light  | F settings_to_hash   |
| T modern-mono,modern-base-mono  | F settings_to_hash_strict  |
| B modern-base-mono  | F settings_to_hash_tolerant  |
| B modern-mono   | F settings_to_numbers  |



|                              |                 |                       |              |
|------------------------------|-----------------|-----------------------|--------------|
| F settings_to_set            |                 | F setinitializer      |              |
| F simple_hash_to_string      |                 | F sparse              |              |
| F splitmethod                |                 | <b>streams</b>        | <b>table</b> |
| F splitthousands             |                 | F close               |              |
| F stepper                    |                 | F getposition         |              |
| F stripped_settings_to_array |                 | F look                |              |
| F unittotex                  |                 | F open                |              |
| F unittoxml                  |                 | F read2dot14          |              |
| <b>report</b>                | <b>function</b> | F readbyte            |              |
| <b>sequencers</b>            | <b>table</b>    | F readbytes           |              |
| F appendaction               |                 | F readcardinal        |              |
| F appendgroup                |                 | F readcardinal1       |              |
| F compile                    |                 | F readcardinal2       |              |
| F disableaction              |                 | F readcardinal3       |              |
| F disablegroup               |                 | F readcardinal4       |              |
| F enableaction               |                 | F readchar            |              |
| F enablegroup                |                 | F readfixed4          |              |
| D functions                  |                 | F readinteger         |              |
| F localize                   |                 | F readinteger1        |              |
| F new                        |                 | F readinteger2        |              |
| F nodeprocessor              |                 | F readinteger4        |              |
| F prependaction              |                 | F readstring          |              |
| F prependgroup               |                 | F setposition         |              |
| F removeaction               |                 | F size                |              |
| F replaceaction              |                 | F skip                |              |
| F setkind                    |                 | F skipbytes           |              |
| F tostring                   |                 | F skiplong            |              |
| <b>setters</b>               | <b>table</b>    | F skipshort           |              |
| F disable                    |                 | <b>strings</b>        | <b>table</b> |
| F enable                     |                 | F collapsecrlf        |              |
| F initialize                 |                 | T formatters          |              |
| F list                       |                 | F add                 |              |
| F new                        |                 | F new                 |              |
| F register                   |                 | F newrepeater         |              |
| F report                     |                 | F nice                |              |
| F reset                      |                 | T striplinepatterns   |              |
| F show                       |                 | U collapse            |              |
| <b>stacker</b>               | <b>table</b>    | U prune               |              |
| F new                        |                 | U prune and collapse  |              |
| <b>storage</b>               | <b>table</b>    | U prune and no empty  |              |
| F allocate                   |                 | U retain              |              |
| F checked                    |                 | U retain and collapse |              |
| F mark                       |                 | U retain and no empty |              |
| F marked                     |                 | F striplines          |              |

|                    |                     |              |
|--------------------|---------------------|--------------|
| F striplong        | F insertbeforevalue |              |
| F tabtospace       | F migratetable      |              |
| T tracers          | F removevalue       |              |
| <b>tables</b>      | F replacevalue      |              |
|                    | <b>templates</b>    | <b>table</b> |
| F accesstable      | F load              |              |
| F definedtable     | F replace           |              |
| F definetable      | F replacer          |              |
| F encapsulate      | F resolve           |              |
| F insertaftervalue |                     |              |

## vf (context)

|               |          |
|---------------|----------|
| <b>char</b>   | function |
| <b>down</b>   | function |
| <b>fontid</b> | function |
| <b>image</b>  | function |
| <b>node</b>   | function |
| <b>nop</b>    | function |

|                |          |
|----------------|----------|
| <b>pop</b>     | function |
| <b>push</b>    | function |
| <b>right</b>   | function |
| <b>rule</b>    | function |
| <b>special</b> | function |

## 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   |                        |            |

## xml (context)

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

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

|                           |          |                            |          |
|---------------------------|----------|----------------------------|----------|
| <b>lpathcached</b>        | function | <b>save</b>                | function |
| <b>lpathcalls</b>         | function | <b>selection</b>           | function |
| <b>lshow</b>              | function | <b>separate</b>            | function |
| <b>makestandalone</b>     | function | <b>serialize</b>           | function |
| <b>match</b>              | function | <b>setcdata</b>            | function |
| <b>name</b>               | function | <b>setcomment</b>          | function |
| <b>newhandlers</b>        | function | <b>sethandlersfunction</b> | function |
| <b>nodesettostring</b>    | function | <b>setinjectors</b>        | function |
| <b>originalload</b>       | function | <b>setproperty</b>         | function |
| <b>package</b>            | function | <b>settings</b>            | function |
| <b>parent</b>             | function | <b>specialcodes</b>        | table    |
| <b>parsedentitylpeg</b>   | userdata | S "                        |          |
| <b>pihandlers</b>         | table    | S #                        |          |
| F injector                |          | S \$                       |          |
| F tex                     |          | S %                        |          |
| <b>placeholders</b>       | table    | S &                        |          |
| F unknown_any_entity      |          | S '                        |          |
| F unknown_dec_entity      |          | S <                        |          |
| F unknown_hex_entity      |          | S >                        |          |
| <b>position</b>           | function | S \                        |          |
| <b>privatecodes</b>       | table    | S {                        |          |
| <b>privatetoken</b>       | function | S                          |          |
| <b>process</b>            | function | S }                        |          |
| <b>process_attributes</b> | function | S ~                        |          |
| <b>process_elements</b>   | function | <b>specialhandler</b>      | table    |
| <b>processattributes</b>  | function | <b>sprint</b>              | function |
| <b>profiled</b>           | table    | <b>string</b>              | function |
| <b>raw</b>                | function | <b>strip</b>               | function |
| <b>registerentity</b>     | function | <b>strip_whitespace</b>    | function |
| <b>registers</b>          | function | <b>stripelement</b>        | function |
| <b>reindex</b>            | function | <b>stripleadingspaces</b>  | function |
| <b>remap_name</b>         | function | <b>table</b>               | function |
| <b>remap_namespace</b>    | function | <b>text</b>                | function |
| <b>remap_tag</b>          | function | <b>textonly</b>            | function |
| <b>remapname</b>          | function | <b>texttocdata</b>         | function |
| <b>remapnamespace</b>     | function | <b>tocdata</b>             | function |
| <b>remaptag</b>           | function | <b>toelement</b>           | function |
| <b>renamespace</b>        | function | <b>tostring</b>            | function |
| <b>reparsedentitylpeg</b> | userdata | <b>totable</b>             | function |
| <b>replace</b>            | function | <b>toxml</b>               | function |
| <b>replace_element</b>    | function | <b>tprint</b>              | function |
| <b>resetinjectors</b>     | function | <b>traverse</b>            | function |
| <b>resolvens</b>          | function | <b>unescaped</b>           | function |
| <b>root</b>               | function | <b>unescapedentitylpeg</b> | userdata |

**unprivatized**  
**unspecialized**  
**withelement**

function  
function  
function

**withelements**  
**wrap**  
**xmlns**

function  
function  
table



## zip (extra lua)

**archives**

table

**close**

function

**closearchive**

function

**open**

overloaded function

**openarchive**

function

**openfile**

function

**registeredfiles**

table

**type**

function

## zlib (extra lua)

|                    |          |
|--------------------|----------|
| <b>adler32</b>     | function |
| <b>compress</b>    | function |
| <b>compressobj</b> | function |
| <b>crc32</b>       | function |

|                      |          |
|----------------------|----------|
| <b>decompress</b>    | function |
| <b>decompressobj</b> | function |
| <b>version</b>       | function |