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## Actions

# Module:Lang

From Blue Gold Program Wiki

The printable version is no longer supported and may have rendering errors. Please update your browser bookmarks and please use the default browser print function instead.

*Documentation for this module may be created at [Module:Lang/doc](#)*

```
--[=[
```

Lua support for the `{{lang}}`, `{{lang-xx}}`, and `{{transl}}` templates and replacement of various supporting templates.

```
]=]
```

```
require('Module:No globals');
```

```
local initial_style_state;
```

```
-- set by lang_xx_normal() and lang_xx_italic()
```

```
local getArgs = require ('Module:Arguments').getArgs;
```

```
local unicode = require ("Module:Unicode data");
```

```
-- for is_latin() and is_rtl()
```

```
local yesno = require ('Module:Yesno');
```

```
local lang_name_table = mw.loadData ('Module:Language/name/data');
```

```
local synonym_table = mw.loadData ('Module:Lang/ISO 639 synonyms');
```

```
-- ISO 639-2/639-2T code translation to 639-1 code
```

```
local lang_data = mw.loadData ('Module:Lang/data');
```

```
-- language name override and transliteration tool-tip tables
```

```
local namespace = mw.title.getCurrentTitle().namespace;
```

```
-- used for categorization
```

```
local this_wiki_lang = mw.language.getContentLanguage().code;
```

```
-- get this wiki's language
```

```
local maint_cats = {};
```

```
-- maintenance categories go here
```

```
local maint_msgs = {};
```

```
-- and their messages go here
```

```
--[[-----< I S _ S E T >-----  
-----
```

Returns true if argument is set; false otherwise. Argument is 'set' when it exists (not nil) or when it is not an empty string.

```
]]
```

```
local function is_set( var )
```

```
    return not (var == nil or var == '');
```

```
end
```

```
--[[-----< I N V E R T _ I T A L I C S >-----
```

-----

This function attempts to invert the italic markup a args.text by adding/removing leading/trailing italic markup in args.text. Like |italic=unset, |italic=invert disables automatic italic markup. Individual leading/trailing apostrophes are converted to their html numeric entity equivalent so that the new italic markup doesn't become bold markup inadvertently.

Leading and trailing wiki markup is extracted from args.text into separate table elements. Addition, removal, replacement of wiki markup is handled by a string.gsub() replacement table operating only on these separate elements. In the string.gsub() matching pattern, '.\*' matches empty string as well as the three expected wiki markup patterns.

This function expects that markup in args.text is complete and correct; if it is not, oddness may result.

]]

```
local function invert_italics (source)
    local invert_pattern_table = {
-- leading/trailing markup add/remove/replace patterns
        [""]= "\\'",
-- empty string becomes italic markup
        ["\\'"]= "",
-- italic markup becomes empty string
        ["\\'\\'"]= "\\'\\'\\'\\'",
-- bold becomes bold italic
        ["\\'\\'\\'\\'"]= "\\'\\'\\'",
-- bold italic become bold
    };
    local seg = {};

    source = source:gsub ("%f[\\']\\'%f[^\\']", '&#39;');
-- protect single quote marks from being interpreted as bold markup

    seg[1] = source:match ('^(\\'\\'+%f[^\\'])+') or '';
-- get leading markup, if any; ignore single quote
    seg[3] = source:match (''+(%f[\\']\\'\\'+)$') or '';
-- get trailing markup, if any; ignore single quote

    if '' ~= seg[1] and '' ~= seg[3] then
-- extract the 'text'
        seg[2] = source:match ('^\\'\\'+%f[^\\'](.+)%f[\\']\\'\\'+$')
-- from between leading and trailing markup
    elseif '' ~= seg[1] then
        seg[2] = source:match ('^\\'\\'+%f[^\\'](.+)')
-- following leading markup
```

```

elseif ' ' ~= seg[3] then
    seg[2] = source:match ('(.+)%f[\\']\\'\\'+$')
-- preceding trailing markup
else
    seg[2] = source
-- when there is no markup
end

seg[1] = invert_pattern_table[seg[1]] or seg[1];
-- replace leading markup according to pattern table
seg[3] = invert_pattern_table[seg[3]] or seg[3];
-- replace leading markup according to pattern table

return table.concat (seg);
-- put it all back together and done
end

--[[-----< V A L I D A T E _ I T A L I C >-----
-----

```

validates |italic= or |italics= assigned values.

When |italic= is set and has an acceptable assigned value, return the matching css font-style property value or, for the special case 'default', return nil.

When |italic= is not set, or has an unacceptable assigned value, return nil and a nil error message.

When both |italic= and |italics= are set, returns nil and a 'conflicting' error message.

The return value nil causes the calling lang, lang\_xx, or transl function to set args.italic according to the template's defined default ('inherit' for {{lang}}, 'inherit' or 'italic' for {{lang-xx}} depending on the individual template's requirements, 'italic' for {{transl}}) or to the value appropriate to |script=, if set ({{lang}} and {{lang-xx}} only).

Accepted values and the values that this function returns are are:

- nil - when |italic= absent or not set; returns nil
- default - for completeness, should rarely if ever be used; returns nil
- yes - force args.text to be rendered in italic font; returns 'italic'
- no - force args.text to be rendered in normal font; returns 'normal'
- unset - disables font control so that font-style

applied to text is dictated by markup inside or outside the template; returns 'inherit'  
invert - disables font control so that font-style applied to text is dictated by markup outside or inverted inside the template; returns 'invert'

]]

```
local function validate_italic (args)
  local properties = {'yes' = 'italic', 'no' = 'normal', 'unset'
= 'inherit', 'invert' = 'invert', 'default' = nil};
  local count = 0
  for _, arg in pairs {'italic', 'italics', 'i'} do
    if args[arg] then
      count = count + 1
    end
  end
  end

  if count > 1 then
-- return nil and an error message if more than one is set
    return nil, 'only one of &#124;italic=, &#124;italics=, or
&#124;i= can be specified';
  end
  return properties[args.italic or args.italics or args.i], nil;
-- return an appropriate value and a nil error message
end
```

```
--[=[-----< V A L I D A T E _ C A T _ A R G S >-----
-----
```

Default behavior of the {{lang}} and {{lang-xx}} templates is to add categorization when the templates are used in mainspace. This default functionality may be suppressed by setting |nocat=yes or |cat=no. This function selects one of these two parameters to control categorization.

Because having two parameters with 'opposite' names and 'opposite' values is confusing, this function accepts only affirmative values for |nocat= and only negative values for |cat=; in both cases the 'other' sense (and non-sense) is not accepted and the parameter is treated as if it were not set in the template.

Sets args.nocat to true if categorization is to be turned off; to nil if the default behavior should apply.

Accepted values for |nocat= are the text strings:

```
'yes', 'y', 'true', 't', on, '1' -- [[Module:Yesno]]
returns logical true for all of these; false or nil else
for |cat=
'no', 'n', 'false', 'f', 'off', '0' --
```

```
[[Module:Yesno]] returns logical false for all of these; true or nil else  
]=]
```

```
local function validate_cat_args (args)  
    if not (args.nocat or args.cat) then  
-- both are nil, so categorize  
        return;  
    end  
    if false == yesno (args.cat) or true == yesno (args.nocat) then  
        args.nocat = true;  
-- set to true when args.nocat is affirmative; nil else (as if the parameter  
were not set in the template)  
    else  
-- args.nocat is the parameter actually used.  
        args.nocat = nil;  
    end  
end
```

```
--[[-----< I N _ A R R A Y >-----  
-----
```

Whether needle is in haystack

```
]]
```

```
local function in_array ( needle, haystack )  
    if needle == nil then  
        return false;  
    end  
    for n,v in ipairs( haystack ) do  
        if v == needle then  
            return n;  
        end  
    end  
    return false;  
end
```

```
--[[-----< F O R M A T _ I E T F _ T A G >-----  
-----
```

prettify ietf tags to use recommended subtag formats:  
code: lower case  
script: sentence case  
region: upper case  
variant: lower case

```
]]
```

```

local function format_ietf_tag (code, script, region, variant)
    local out = {};

    table.insert (out, code:lower());
    if is_set (script) then
        script = script:lower():gsub ('^%a', string.upper);
        table.insert (out, script);
    end

    if is_set (region) then
        table.insert (out, region:upper());
    end
    if is_set (variant) then
        table.insert (out, variant:lower());
    end
    return table.concat (out, '-');
end

```

```

--[[-----< G E T _ I E T F _ P A R T S >-----
-----

```

extracts and returns IETF language tag parts:

```

    primary language subtag (required) - 2 or 3 character IANA language
code
    script subtag - four character IANA script code
    region subtag - two-letter or three digit IANA region code
    variant subtag - four digit or 5-8 alnum variant code
    private subtag - x- followed by 1-8 alnum private code; only
supported with the primary language tag

```

in any one of these forms

```

    lang                                lang-variant
    lang-script                          lang-script-variant
    lang-region                          lang-region-variant
    lang-script-region                    lang-script-region-variant
    lang-x-private

```

each of lang, script, region, variant, and private, when used, must be valid

Languages with both two- and three-character code synonyms are promoted to the two-character synonym because the IANA registry file omits the synonymous three-character code; we cannot depend on browsers understanding the synonymous three-character codes in the lang= attribute.

For {{lang-xx}} templates, the parameters |script=, |region=, and |variant= are supported (not supported in {{lang}} because those parameters are superfluous to the IETF subtags in |code=)

returns six values; all lower case. Valid parts are returned as themselves; omitted parts are returned as empty strings, invalid

parts are returned as nil; the sixth returned item is an error message (if an error detected) or nil.

see <http://www.rfc-editor.org/rfc/bcp/bcp47.txt> section 2.1

```
]]

local function get_ietf_parts (source, args_script, args_region,
args_variant)
    local code, script, region, variant, private;
-- ietf tag parts

    if not is_set (source) then
        return nil, nil, nil, nil, nil, 'missing language tag';
    end

    local pattern = {
-- table of tables holding acceptable ietf tag patterns and short names of the
-- ietf part captured by the pattern
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%a%a)%-(%d%d%d%d)$', 's', 'r',
'v'}, -- 1 - ll-Ssss-RR-variant (where
variant is 4 digits)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%d%d%d)%-(%d%d%d%d)$', 's', 'r',
'v'}, -- 2 - ll-Ssss-DDD-variant (where
region is 3 digits; variant is 4 digits)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%a%a)%-(%w%w%w%w%w%w%w?%w?%w?)$',
's', 'r', 'v'}, -- 3 - ll-Ssss-RR-variant (where variant is
5-8 alnum characters)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%d%d%d)%-(%w%w%w%w%w%w%w?%w?%w?)$',
's', 'r', 'v'}, -- 4 - ll-Ssss-DDD-variant (where region is 3 digits;
variant is 5-8 alnum characters)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%d%d%d%d)$', 's', 'v'},
-- 5 - ll-Ssss-variant (where variant is 4 digits)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%w%w%w%w%w%w%w?%w?%w?)$', 's', 'v'},
-- 6 - ll-Ssss-variant (where variant is 5-8 alnum characters)
        {'^(%a%a%a?)%-(%a%a)%-(%d%d%d%d)$', 'r', 'v'},
-- 7 - ll-RR-variant (where variant is 4 digits)
        {'^(%a%a%a?)%-(%d%d%d)%-(%d%d%d%d)$', 'r', 'v'},
-- 8 - ll-DDD-variant (where region is 3 digits; variant is 4 digits)
        {'^(%a%a%a?)%-(%a%a)%-(%w%w%w%w%w%w%w?%w?%w?)$', 'r', 'v'},
-- 9 - ll-RR-variant (where variant is 5-8 alnum characters)
        {'^(%a%a%a?)%-(%d%d%d)%-(%w%w%w%w%w%w%w?%w?%w?)$', 'r', 'v'},
-- 10 - ll-DDD-variant (where region is 3 digits; variant is 5-8 alnum
characters)
        {'^(%a%a%a?)%-(%d%d%d%d)$', 'v'},
-- 11 - ll-variant (where variant is 4 digits)
        {'^(%a%a%a?)%-(%w%w%w%w%w%w%w?%w?%w?)$', 'v'},
-- 12 - ll-variant (where variant is 5-8 alnum characters)
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%a%a)$', 's', 'r'},
-- 13 - ll-Ssss-RR
        {'^(%a%a%a?)%-(%a%a%a%a)%-(%d%d%d)$', 's', 'r'},
```



```

-- 14 - ll-Ssss-DDD (region is 3 digits)
      {'^(%a%a%a?)%-(%a%a%a%a)$', 's'},
-- 15 - ll-Ssss
      {'^(%a%a%a?)%-(%a%a)$', 'r'},
-- 16 - ll-RR
      {'^(%a%a%a?)%-(%d%d%d)$', 'r'},
-- 17 - ll-DDD (region is 3 digits)
      {'^(%a%a%a?)$'},
-- 18 - ll
      {'^(%a%a%a?)%-%x%-(%w%w?%w?%w?%w?%w?%w?%w?%w?)$', 'p'},
-- 19 - ll-x-pppppppp (private is 1-8 alnum characters)
      }

      local t = {};
-- table of captures; serves as a translator between captured ietf tag parts
and named variables

      for i, v in ipairs (pattern) do
-- spin through the pattern table looking for a match
          local c1, c2, c3, c4;
-- captures in the 'pattern' from the pattern table go here
          c1, c2, c3, c4 = source:match (pattern[i][1]);
-- one or more captures set if source matches pattern[i])
          if c1 then
-- c1 always set on match
              code = c1;
-- first capture is always code
              t = {
-- fill the table of captures with the rest of the captures
                  [pattern[i][2] or 'x'] = c2,
-- take index names from pattern table and assign sequential captures
                  [pattern[i][3] or 'x'] = c3,
-- index name may be nil in pattern[i] table so "or 'x'" spoofs a name for
this index in this table
                  [pattern[i][4] or 'x'] = c4,
              };
              script = t.s or '';
-- translate table contents to named variables;
              region = t.r or '';
-- absent table entries are nil so set named ietf parts to empty string for
concatenation
              variant= t.v or '';
              private = t.p or '';
              break;
-- and done
          end
      end

      if not code then
          return nil, nil, nil, nil, nil, table.concat ({'unrecognized
language tag: ', source});
-- don't know what we got but it is

```

```

malformed
    end

    code = code:lower();
-- ensure that we use and return lower case version of this
    if not (lang_data.override[code] or lang_name_table.lang[code]) then
        return nil, nil, nil, nil, nil, table.concat ({'unrecognized
language code: ', code});          -- invalid language code, don't know
about the others (don't care?)
    end
    if synonym_table[code] then
-- if 639-2/639-2T code has a 639-1 synonym
        table.insert (maint_cats, table.concat ({'Lang and lang-xx
code promoted to ISO 639-1|', code}));
        table.insert (maint_msgs, table.concat ({'code: ', code, '
promoted to code: ', synonym_table[code]}));
        code = synonym_table[code];
-- use the synonym
    end

    if is_set (script) then
        if is_set (args_script) then
            return code, nil, nil, nil, nil, 'redundant script
tag';          -- both code with script and |script= not
allowed
        end
    else
        script = args_script or '';
-- use args.script if provided
    end

    if is_set (script) then
        script = script:lower();
-- ensure that we use and return lower case version of this
        if not lang_name_table.script[script] then
            return code, nil, nil, nil, nil, table.concat
({'unrecognized script: ', script, ' for code: ', code});          -- language
code ok, invalid script, don't know about the others (don't care?)
        end
    end
    if lang_name_table.suppressed[script] then
-- ensure that code-script does not use a suppressed script
        if in_array (code, lang_name_table.suppressed[script]) then
            return code, nil, nil, nil, nil, table.concat
({'script: ', script, ' not supported for code: ', code});          -- language
code ok, script is suppressed for this code
        end
    end

    if is_set (region) then
        if is_set (args_region) then

```

```

        return code, nil, nil, nil, nil, 'redundant region
tag';        -- both code with region and |region= not
allowed
        end
    else
        region = args_region or '';
-- use args.region if provided
        end

        if is_set (region) then
            region = region:lower();
-- ensure that we use and return lower case version of this
            if not lang_name_table.region[region] then
                return code, script, nil, nil, nil, table.concat
({'unrecognized region: ', region, ' for code: ', code});
            end
        end
        if is_set (variant) then
            if is_set (args_variant) then
                return code, nil, nil, nil, nil, 'redundant variant
tag';        -- both code with variant and |variant= not
allowed
            end
        else
            variant = args_variant or '';
-- use args.variant if provided
            end

            if is_set (variant) then
                variant = variant:lower();
-- ensure that we use and return lower case version of this
                if not lang_name_table.variant[variant] then
-- make sure variant is valid
                    return code, script, region, nil, nil, table.concat
({'unrecognized variant: ', variant});
                end
-- does this duplicate/replace tests in lang() and lang_xx()?
                if is_set (script) then
-- if script set it must be part of the 'prefix'
                    if not in_array (table.concat ({code, '-', script}),
lang_name_table.variant[variant]['prefixes']) then
                        return code, script, region, nil, nil,
table.concat ({'unrecognized variant: ', variant, ' for code-script pair: ',
code, '-', script});
                    end
                else
                    if not in_array (code,
lang_name_table.variant[variant]['prefixes']) then
                        return code, script, region, nil, nil,
table.concat ({'unrecognized variant: ', variant, ' for code: ', code});
                    end
                end
            end
        end
    end
end

```

```

        end
    end
    if is_set (private) then
        private = private:lower();
-- ensure that we use and return lower case version of this
        if not lang_data.override[table.concat ({code, '-x-',
private})] then          -- make sure private tag is valid; note that index
            return code, script, region, nil, nil, table.concat
({'unrecognized private tag: ', private});
        end
    end
    end
    return code, script, region, variant, private, nil;
-- return the good bits; make sure that msg is nil
end

--[[-----< M A K E _ E R R O R _ M S G >-----
-----

assembles an error message from template name, message text, help link, and
error category.

]]

local function make_error_msg (msg, args, template)
    local out = {};
    local category;
    if 'transl' == template then
        category = 'transl';
    else
        category = 'lang and lang-xx'
    end
    table.insert (out, table.concat ({'&#x5B;', args.text or 'undefined',
'&#x5D; '});          -- for error messages output args.text if available
    table.insert (out, table.concat ({'<span style="font-size:100%;
font-style:normal;" class="error">error: {' , template, '}: '});
    table.insert (out, msg);
    table.insert (out, table.concat ({' ([[Category:', category, '
template errors|help]])'}));
    table.insert (out, '</span>');
    if (0 == namespace) and not args.nocat then
-- only categorize in article space
        table.insert (out, table.concat ({'[[Category:', category, '
template errors]])'}));
    end

    return table.concat (out);
end

--[=-----< M A K E _ W I K I L I N K >-----
-----

```

Makes a wikilink; when both link and display text is provided, returns a wikilink in the form [[L|D]]; if only link is provided, returns a wikilink in the form [[L]]; if neither are provided or link is omitted, returns an empty string.

```
]=]
```

```
local function make_wikilink (link, display)
    if is_set (link) then
        if is_set (display) then
            return table.concat ({'[[', link, '|', display,
'']]');
        else
            return table.concat ({'[[', link, ']]'});
        end
    else
        return '';
    end
end
```

```
--[[-----< D I V _ M A R K U P _ A D D >-----
-----
```

adds <i> and </i> tags to list-item text or to implied <p>..</p> text. mixed not supported

```
]]
```

```
local function div_markup_add (text, style)
local implied_p = {};

    if text:find ('^\n[%*;;#]') then
-- look for list markup; list markup must begin at start of text
        if 'italic' == style then
            return mw.ustr.gsub (text, '(\n[%*;;#]+)([^\n]+)',
'%1<i>%2</i>');
-- insert italic markup at each list item
        else
            return text;
        end
    end

    if text:find ('\n+') then
-- look for any number of \n characters in text
        text = text:gsub ('([^\n])\n([^\n])', '%1 %2');
-- replace single newline characters with a space character which mimics
mediawiki

        if 'italic' == style then
            text = text:gsub('[^\n]+', '<p><i>%1</i></p>');
        end
    end
end
```

```

-- insert p and italic markup tags at each implied p (two or more consecutive
'\n\n' sequences)
        else
            text = text:gsub ('^[^\\n]+', '<p>%1</p>');
-- insert p markup at each implied p
            text = text:gsub ('\\n', '');
-- strip newline characters
        end
    end

    return text;
end

```

```

--[[-----< M A K E _ T E X T _ H T M L >-----
-----

```

Add the html markup to text according to the type of content that it is:  
<span> or <i> tags for inline content or  
<div> tags for block content

```

]]

local function make_text_html (code, text, tag, rtl, style, size, language)
    local html = {};
    local style_added = '';

    if text:match ('^%*') then
        table.insert (html, '&#42;');
-- move proto language text prefix outside of italic markup if any; use
numeric entity because plain splat confuses MediaWiki
        text = text:gsub ('^%*', '');
-- remove the splat from the text
    end

    if 'span' == tag then
-- default html tag for inline content
        if 'italic' == style then
-- but if italic
            tag = 'i';
-- change to <i> tags
        end
    else
-- must be div so go
        text = div_markup_add (text, style);
-- handle implied <p>, implied <p> with <i>, and list markup (*;:#) with <i>
    end

    table.insert (html, table.concat ({'<', tag}));
-- open the <i>, <span>, or <div> html tag
    table.insert (html, table.concat ({' lang=""', code, '\\''}));

```

```

-- add language attribute

    if rtl or unicode.is_rtl(text) then
        table.insert (html, ' dir="rtl"');
-- add direction attribute for right to left languages
    end

    if 'normal' == style then
-- when |italic=no
        table.insert (html, ' style=\font-style:normal;');
-- override external markup, if any
        style_added = '\';
-- remember that style attribute added and is not yet closed
    end

    if is_set (size) then
-- when |size=<something>
        if is_set (style_added) then
            table.insert (html, table.concat ({' font-size:',
size, ';' }));
            -- add when style attribute already inserted
        else
            table.insert (html, table.concat ({' style=\font-
size:', size, ';' }));
            -- create style attribute
            style_added = '\';
-- remember that style attribute added and is not yet closed
        end
    end

    if is_set (language) then
        table.insert (html, table.concat ({style_added, ' title=\',
language}));
        --start the title text
        if language:find ('languages') then
            table.insert (html, ' collective text\');
-- for collective languages
        else
            table.insert (html, ' language text\');
-- for individual languages
        end
        table.insert (html, '>');
-- close the opening html tag
    else
        table.insert (html, table.concat ({style_added, '>}));
-- close the style attribute and close opening html tag
    end
    table.insert (html, text);
-- insert the text

    table.insert (html, table.concat ({'</', tag, '>}));
-- close the <i>, <span>, or <div> html tag

    if rtl then

```

```

-- legacy; shouldn't be necessary because all of the rtl text is wrapped
inside an html tag with dir="rtl" attribute
        table.insert (html, '&lrn;');
-- make sure the browser knows that we're at the end of the rtl
    end
    return table.concat (html);
-- put it all together and done
end

--[=[-----< M A K E _ C A T E G O R Y >-----
-----

For individual language, <language>, returns:
    [[Category:Articles containing <language>-language text]]

for English:
    [[Category:Articles containing explicitly cited English-language
text]]
for artificial languages (code: art)
    [[Category:Articles containing constructed-language text]]

for ISO 639-2 collective languages (and for 639-1 bh):
    [[Category:Articles with text from the <language> languages
collective]]

]=]

local function make_category (code, language_name, nocat)
    local cat = {};
    if (0 ~= namespace) or nocat then
-- only categorize in article space
        return '';
-- return empty string for concatenation
    end
    if language_name:find ('languages') then
        return table.concat ({'[[Category:Articles with text from the
', language_name, ' collective]]'});
    end
    table.insert (cat, '[[Category:Articles containing ');
    if 'en' == code then
        table.insert (cat, 'explicitly cited English');
    elseif 'art' == code then
        table.insert (cat, 'constructed')
    else
        table.insert (cat, language_name);
    end
    table.insert (cat, '-language text]]');

    return table.concat (cat);
end

```



```
--[[-----< M A K E _ T R A N S L I T >-----  
-----
```

return translit <i lang=xx-Latn>...</i> where xx is the language code; else  
return empty string

The value |script= is not used in {{transl}} for this purpose; instead it  
uses |code. Because language scripts  
are listed in the {{transl}} switches they are included in the data tables.  
The script parameter is introduced  
at {{Language with name and transliteration}}. If |script= is set, this  
function uses it in preference to code.

To avoid confusion, in this module and the templates that use it, the  
transliteration script parameter is renamed  
to be |translit-script= (in this function, tscript)

This function is used by both lang\_xx() and transl()  
lang\_xx() always provides code, language\_name, and translit; may  
provide tscript; never provides style  
transl() always provides language\_name, translit, and one of code or  
tscript, never both; always provides style

For {{transl}}, style only applies when a language code is provided  
]]

```
local function make_translit (code, language_name, translit, std, tscript,  
style)  
    local title;  
    local tout = {};  
    local title_table = lang_data.translit_title_table;  
    -- table of transliteration standards and the language codes and scripts that  
    apply to those standards  
    if is_set (code) then  
    -- when a language code is provided (always with {{lang-xx}} templates, not  
    always with {{transl}})  
        if not style then  
    -- nil for the default italic style  
            table.insert (tout, "<i lang=\"");  
    -- so use <i> tag  
        else  
            table.insert (tout, table.concat ({'<span  
style=\"font-style:', style, '\" lang=\"'}));    -- non-standard style,  
construct a span tag for it  
        end  
        table.insert (tout, code);  
        table.insert (tout, "-Latn\" title=\"");  
    -- transliterations are always Latin script  
    else  
        table.insert (tout, "<span title=\"");  
    -- when no language code: no lang= attribute, not italic ({{transl}} only)
```

```

        end
        std = std and std:lower();
-- lower case for table indexing
        if not is_set (std) and not is_set (tscript) then
-- when neither standard nor script specified
            table.insert (tout, language_name);
-- write a generic tool tip
            if not language_name:find ('languages') then
-- collective language names (plural 'languages' is part of the name)
                table.insert (tout, '-language')
-- skip this text (individual and macro languages only)
            end
            table.insert (tout, ' romanization');
-- finish the tool tip; use romanization when neither script nor standard
supplied
            elseif is_set (std) and is_set (tscript) then
-- when both are specified
                if title_table[std] then
-- and if standard is legitimate
                    if title_table[std][tscript] then
-- and if script for that standard is legitimate
                        table.insert (tout, table.concat
({title_table[std][tscript:lower()], ' (' ,
lang_name_table.script[tscript][1], ' script) transliteration'}));
add the appropriate text to the tool tip
                    else
                        table.insert (tout,
title_table[std]['default']);
-- use the
default if script not in std table; TODO: maint cat? error message because
script not found for this standard?
                    end
                else
                    return '';
-- invalid standard, setup for error message
                end

            elseif is_set (std) then
-- translit-script not set, use language code
                if not title_table[std] then return ''; end
-- invalid standard, setup for error message
                if title_table[std][code] then
-- if language code is in the table (transl may not provide a language code)
                    table.insert (tout, table.concat
({title_table[std][code:lower()], ' (' , lang_name_table.lang[code][1], '
language) transliteration'}));
-- add the appropriate text to the tool
tip
                else
-- code doesn't match
                    table.insert (tout, title_table[std]['default']);
-- so use the standard's default
                end

```

```

        else
-- here if translit-script set but translit-std not set
            if title_table['no_std'][tscript] then
                table.insert (tout, title_table['no_std'][tscript]);
-- use translit-script if set
            elseif title_table['no_std'][code] then
                table.insert (tout, title_table['no_std'][code]);
-- use language code
            else
                if is_set (tscript) then
                    table.insert (tout, table.concat
({language_name, '-script transliteration'}));          -- write a script tool
tip
                elseif is_set (code) then
                    if not language_name:find ('languages') then
-- collective language names (plural 'languages' is part of the name)
                        table.insert (tout, '-language')
-- skip this text (individual and macro languages only)
                    end
                    table.insert (tout, ' transliteration');
-- finish the tool tip
                else
                    table.insert (tout, ' transliteration');
-- generic tool tip (can we ever get here?)
                end
            end
        end

        table.insert (tout, '>');
        table.insert (tout, translit);
        if is_set (code) and not style then
-- when a language code is provided (always with {{lang-xx}} templates, not
always with {{transl}})
            table.insert (tout, "</i>");
-- close the italic tag
        else
            table.insert (tout, "</span>");
-- no language code so close the span tag
        end
        return table.concat (tout);
end

```

```

--[[-----< V A L I D A T E _ T E X T >-----
-----

```

This function checks the content of args.text and returns empty string if nothing is amiss else it returns an error message. The tests are for empty or missing text and for improper or disallowed use of apostrophe markup.

Italic rendering is controlled by the |italic= template parameter so italic markup should never appear in args.text either as 'itself' or as ''''bold italic'''' unless |italic=unset or |italic=invert.

```
]]

local function validate_text (template, args)
    if not is_set (args.text) then
        return make_error_msg ('no text', args, template);
    end

    if args.text:find ("%f[\\]'\\'\\'\\'%'f[^\\']") or args.text:find
    ("\\'\\'\\'\\'\\'\\'\\'+'") then          -- because we're looking, look for 4
    appostrophes or 6+ appostrophes
        return make_error_msg ('text has malformed markup', args,
    template);
    end

    local style = args.italic;

    if ('unset' ~= style) and ('invert' ~= style) then
        if args.text:find ("%f[\\]'\\'\\'%'f[^\\']") or args.text:find
    ("%f[\\]'\\'\\'\\'\\'%'f[^\\']") then          -- italic but not bold, or bold
    italic
            return make_error_msg ('text has italic markup',
    args, template);
        end
    end
end

--[[-----< R E N D E R _ M A I N T >-----
-----

render mainenance messages and categories

]]

local function render_maint(nocat)
    local maint = {};
    if 0 < #maint_msgs then
-- when there are maintenance messages
        table.insert (maint, table.concat ({'<span class="lang-
comment" style="font-style:normal; display:none; color:#33aa33; margin-
left:0.3em">'}));          -- opening <span> tag
        for _, msg in ipairs (maint_msgs) do
            table.insert (maint, table.concat ({msg, ' '}));
-- add message strings
        end
        table.insert (maint, '</span>');
    end
end
```

```

-- close the span
    end
    if (0 < #maint_cats) and (0 == namespace) and not nocat then
-- when there are maintenance categories; article namespace only
        for _, cat in ipairs (maint_cats) do
            table.insert (maint, table.concat ({'[[Category:',
cat, ']]'}));          -- format and add the categories
        end
    end
    end
    return table.concat (maint);
end

--[[-----< P R O T O _ P R E F I X >-----
-----

for proto languages, text is prefixed with a splat. We do that here as a
flag for make_text_html() so that a splat
will be rendered outside of italic markup (if used). If the first character
in text here is already a splat, we
do nothing

proto_param is boolean or nil; true adds splat prefix regardless of language
name; false removes and / or inhibits
regardless of language name; nil does nothing; presumes that the value in
text is correct but removes extra splac

]]

local function proto_prefix (text, language_name, proto_param)
    if false == proto_param then
-- when forced by |proto=no
        return text:gsub ('^%*', '');
-- return text without splat prefix regardless of language name or existing
splat prefix in text
    elseif (language_name:find ('^Proto%-') or (true == proto_param))
then
        -- language is a proto or forced by |proto=yes
        return text:gsub ('^%*', '*');
-- prefix proto-language text with a splat; also removes duplicate prefixing
splats
    end
    end
    return text:gsub ('^%*+', '*');
-- return text unmolested except multiple splats reduced to one splat
end

--[[-----< H A S _ P O E M _ T A G >-----
-----

looks for a poem strip marker in text; returns true when found; false else

```

auto-italic detection disabled when text has poem stripmarker because it is not possible for this code to know the content that will replace the stripmarker.

```
]]
```

```
local function has_poem_tag (text)
    return text:find ('\127[^\127]*UNIQ%-%-poem%-[%a%d]+%-
QINU[^\127]*\127') and true or false;
end
```

```
--[[-----< HTML _ T A G _ S E L E C T >-----
-----
```

Inspects content of and selectively trims text. Returns text and the name of an appropriate html tag for text.

If text contains:

```
\n\n      text has implied <p>..</p> tags - trim leading and
trailing whitespace and return
```

If text begins with list markup:

```
\n*          unordered
\n;          definition
\n:          definition
\n#          ordered
```

trim all leading whitespace except \n and trim all trailing whitespace

If text contains <poem>...</poem> stripmarker, return text unmodified and choose <div>..</div> tags because the stripmarker is replaced with text wrapped in <div>..</div> tags.

```
]]
```

```
local function html_tag_select (text)
    local tag;
    if has_poem_tag (text) then
-- contains poem stripmarker (we can't know the content of that)
        tag = 'div';
-- poem replacement is in div tags so lang must use div tags
        elseif mw.text.trim (text):find ('\n\n+') then
-- contains implied p tags
            text = mw.text.trim (text);
-- trim leading and trailing whitespace characters
            tag = 'div';
-- must be div because span may not contain p tags (added later by
MediaWiki); poem replacement is in div tags
        elseif text:find ('\n[%*;%#]') then
-- if text has list markup
            text = text:gsub ('^[\\t\\r\\f ]*', ''):gsub ('%s*$', '');
-- trim all whitespace except leading newline character '\n'
```

```

        tag = 'div';
-- must be div because span may not contain ul, dd, dl, ol tags (added later
by MediaWiki)
        else
            text = mw.text.trim (text);
-- plain text
            tag = 'span';
-- so span is fine
        end
        return text, tag;
end

```

```

--[[-----< V A L I D A T E _ P R O T O >-----
-----

```

validates value assigned to |proto=; permitted values are yes and no; yes returns as true, no returns as false, empty string (or parameter omitted) returns as nil; any other value returns as nil with a second return value of true indicating that some other value has been assigned to |proto=

```

]]

```

```

local function validate_proto (proto_param)
    if 'yes' == proto_param then
        return true;
    elseif 'no' == proto_param then
        return false;
    elseif is_set (proto_param) then
        return nil, true;
-- |proto= something other than 'yes' or 'no'
    else
        return nil;
-- missing or empty
    end
end

```

```

--[[-----< L A N G >-----
-----

```

entry point for {{lang}}

there should be no reason to set parameters in the {{lang}} {{#invoke:}}  
<includeonly>{{#invoke:lang|lang}}</includeonly>

parameters are received from the template's frame (parent frame)

```

]]

```

```

local function _lang (args)
    local out = {};
    local language_name;
-- used to make category names
    local subtags = {};
-- IETF subtags script, region, variant, and private
    local code;
-- the language code
    local msg;
-- for error messages
    local tag = 'span';
-- initial value for make_text_html()
    local template = args.template or 'lang';

    if args[1] and args.code then
        return make_error_msg ('conflicting: {{{1}}} and
&#124;code=', args, template);
    else
        args.code = args[1] or args.code;
-- prefer args.code
    end

    if args[2] and args.text then
        return make_error_msg ('conflicting: {{{2}}} and
&#124;text=', args, template);
    else
        args.text = args[2] or args.text;
-- prefer args.text
    end
    msg = validate_text (template, args);
-- ensure that |text= is set
    if is_set (msg) then
-- msg is an already-formatted error message
        return msg;
    end
    args.text, tag = html_tag_select (args.text);
-- inspects text; returns appropriate html tag with text trimmed accordingly

    validate_cat_args (args);
-- determine if categorization should be suppressed

    args.rtl = args.rtl == 'yes';
-- convert to boolean: 'yes' -> true, other values -> false

    args.proto, msg = validate_proto (args.proto);
-- return boolean, or nil, or nil and error message flag
    if msg then
        return make_error_msg (table.concat ({'invalid &#124;proto=:
', args.proto}), args, template);
    end
end

```



```

        code, subtags.script, subtags.region, subtags.variant,
subtags.private, msg = get_ietf_parts (args.code);          -- |script=,
|region=, |variant= not supported because they should be part of args.code
({{1}} in {{lang}})

    if msg then
        return make_error_msg ( msg, args, template);
    end

    args.italic, msg = validate_italic (args);
    if msg then
        return make_error_msg (msg, args, template);
    end

    if nil == args.italic then
-- nil when |italic= absent or not set or |italic=default; args.italic
controls
        if ('latn' == subtags.script) or
-- script is latn
            (this_wiki_lang ~= code and not is_set
(subtags.script) and not has_poem_tag (args.text) and unicode.is_Latin
(args.text)) then -- text not this wiki's language, no script specified and
not in poem markup but is wholly latn script (auto-italics)
                args.italic = 'italic';
-- DEFAULT for {{lang}} templates is upright; but if latn script set for
font-style:italic
            else
                args.italic = 'inherit';
-- italic not set; script not latn; inherit current style
            end
        end
        if is_set (subtags.script) then
-- if script set, override rtl setting
            if in_array (subtags.script, lang_data.rtl_scripts) then
                args.rtl = true;
-- script is an rtl script
            else
                args.rtl = false;
-- script is not an rtl script
            end
        end
    end

    args.code = format_ietf_tag (code, subtags.script, subtags.region,
subtags.variant);          -- format to recommended subtag styles; private
omitted because private

    subtags.private = subtags.private and table.concat ({code, '-x-',
subtags.private}) or nil;          -- assemble a complete private ietf
subtag; args.code does not get private subtag

    if is_set (subtags.private) and lang_data.override[subtags.private]

```

```

then          -- get the language name for categorization
                language_name = lang_data.override[subtags.private][1];
-- first look for private use tag language name
    elseif lang_data.override[code] then
                language_name = lang_data.override[code][1]
-- then language names taken from the override table
    elseif lang_name_table.lang[code] then
                language_name = lang_name_table.lang[code][1];
-- table entries sometimes have multiple names, always take the first one
    end

    if 'invert' == args.italic and 'span' == tag then
-- invert only supported for in-line content
        args.text = invert_italics (args.text)
    end

    args.text = proto_prefix (args.text, language_name, args.proto);
-- prefix proto-language text with a splat

    table.insert (out, make_text_html (args.code, args.text, tag,
args.rtl, args.italic, args.size, language_name));
    table.insert (out, make_category (code, language_name, args.nocat));
    table.insert (out, render_maint(args.nocat));
-- maintenance messages and categories

    return table.concat (out);
-- put it all together and done
end

--[[-----< L A N G >-----
-----

entry point for {{lang}}

there should be no reason to set parameters in the {{lang}} {{#invoke:}}
<includeonly>{{#invoke:lang|lang}}</includeonly>

parameters are received from the template's frame (parent frame)

]]

local function lang (frame)
    local args = getArgs (frame, {
-- this code so that we can detect and handle wiki list markup in text
        valueFunc = function (key, value)
            if 2 == key or 'text' == key then
-- the 'text' parameter; do not trim wite space
                return value;
-- return untrimmed 'text'
            elseif value then

```

```

-- all other values: if the value is not nil
                        value = mw.text.trim (value);
-- trim whitespace
                        if '' ~= value then
-- empty string when value was only whitespace
                        return value;
                        end
                        end
                        return nil;
-- value was empty or contained only whitespace
                        end
-- end of valueFunc
                        });

return _lang (args);
end

```

```

--[[-----< L A N G _ X X >-----
-----

```

For the `{{lang-xx}}` templates, the only parameter required to be set in the template is the language code. All other parameters can, usually should, be written in the template call. For `{{lang-xx}}` templates for languages that can have multiple writing systems, it may be appropriate to set `|script=` as well.

For each `{{lang-xx}}` template choose the appropriate entry-point function so that this function knows the default styling that should be applied to text.

For normal, upright style:

```
<includeonly>{{#invoke:lang|lang_xx_inherit|code=xx}}</includeonly>
```

For italic style:

```
<includeonly>{{#invoke:lang|lang_xx_italic|code=xx}}</includeonly>
```

All other parameters should be received from the template's frame (parent frame)

Supported parameters are:

- |code = (required) the IANA language code
- |script = IANA script code; especially for use with languages that use multiple writing systems
- |region = IANA region code
- |variant = IANA variant code
- |text = (required) the displayed text in language specified by code
- |link = boolean false ('no') does not link code-spcified language name to associated language article
- |rtl = boolean true ('yes') identifies the language specified by code as a right-to-left language

```

|nocat = boolean true ('yes') inhibits normal categorization; error
categories are not affected
|cat = boolean false ('no') opposite form of |nocat=
|italic = boolean true ('yes') renders displayed text in italic font;
boolean false ('no') renders displayed text in normal font; not set renders
according to initial_style_state
|lit = text that is a literal translation of text
|label = 'none' to suppress all labeling (language name, 'translit.',
'lit.')
any other text replaces language-name label -
automatic wikilinking disabled
for those {{lang-xx}} templates that support transliteration (those
templates where |text= is not entirely latn script):
|translit = text that is a transliteration of text
|translit-std = the standard that applies to the transliteration
|translit-script = ISO 15924 script name; falls back to code

```

For {{lang-xx}}, the positional parameters are:

```

{{{1}}}      text
{{{2}}}      transliterated text
{{{3}}}      literal translation text

```

no other positional parameters are allowed

```

]]

```

```

local function _lang_xx (args)
    local out = {};
    local language_name;
-- used to make display text, article links
    local category_name;
-- same as language_name except that it retains any parenthetical
disambiguators (if any) from the data set
    local subtags = {};
-- IETF subtags script, region, and variant
    local code;
-- the language code

    local translit_script_name;
-- name associated with IANA (ISO 15924) script code
    local translit;
    local translit_title;
    local msg;
-- for error messages
    local tag = 'span';
-- initial value for make_text_html()
    local template = args.template or 'lang-xx';

    if args[1] and args.text then
        return make_error_msg ('conflicting: {{{1}}} and
&#124;text=', args, template);
    else

```

```

        args.text = args[1] or args.text;
-- prefer args.text
    end
    msg = validate_text (template, args);
-- ensure that |text= is set, does not contain italic markup and is protected
from improper bolding
    if is_set (msg) then
        return msg;
    end

    args.text, tag = html_tag_select (args.text);
-- inspects text; returns appropriate html tag with text trimmed accordingly

    if args[2] and args.translit then
        return make_error_msg ('conflicting: {{{2}}} and
&#124;translit=', args, template);
    else
        args.translit = args[2] or args.translit
-- prefer args.translit
    end
    if args[3] and (args.translation or args.lit) then
        return make_error_msg ('conflicting: {{{3}}} and &#124;lit=
or &#124;translation=', args, template);
    elseif args.translation and args.lit then
        return make_error_msg ('conflicting: &#124;lit= and
&#124;translation=', args, template);
    else
        args.translation = args[3] or args.translation or args.lit;
-- prefer args.translation
    end

    if args.links and args.link then
        return make_error_msg ('conflicting: &#124;links= and
&#124;link=', args, template);
    else
        args.link = args.link or args.links;
-- prefer args.link
    end

    validate_cat_args (args);
-- determine if categorization should be suppressed

    args.rtl = args.rtl == 'yes';
-- convert to boolean: 'yes' -> true, other values -> false

    code, subtags.script, subtags.region, subtags.variant,
subtags.private, msg = get_ietf_parts (args.code, args.script, args.region,
args.variant);    -- private omitted because private

    if msg then
-- if an error detected then there is an error message

```

```

        return make_error_msg (msg, args, template);
    end
    args.italic, msg = validate_italic (args);
    if msg then
        return make_error_msg (msg, args, template);
    end

    if nil == args.italic then
-- args.italic controls
        if is_set (subtags.script) then
            if 'latn' == subtags.script then
                args.italic = 'italic';
-- |script=Latn; set for font-style:italic
            else
                args.italic = initial_style_state;
-- italic not set; script is not latn; set for font-
style:<initial_style_state>
            end
        else
            args.italic = initial_style_state;
-- here when |italic= and |script= not set; set for font-
style:<initial_style_state>
        end
    end

    if is_set (subtags.script) then
-- if script set override rtl setting
        if in_array (subtags.script, lang_data.rtl_scripts) then
            args.rtl = true;
-- script is an rtl script
        else
            args.rtl = false;
-- script is not an rtl script
        end
    end

    args.proto, msg = validate_proto (args.proto);
-- return boolean, or nil, or nil and error message flag
    if msg then
        return make_error_msg (table.concat ({'invalid &#124;proto=:
', args.proto}), args, template);
    end

    args.code = format_ietf_tag (code, subtags.script, subtags.region,
subtags.variant); -- format to recommended subtag styles
    subtags.private = subtags.private and table.concat ({code, '-x-',
subtags.private}) or nil; -- assemble a complete private ietf
subtag; args.code does not get private subtag

    if is_set (subtags.private) and lang_data.override[subtags.private]
then -- get the language name for categorization
        language_name = lang_data.override[subtags.private][1];

```

```

-- first look for private use tag language name
    elseif lang_data.override[args.code:lower()] then
-- look for whole IETF tag in override table
        language_name = lang_data.override[args.code:lower()][1];
-- args.code:lower() because format_ietf_tag() returns mixed case
    elseif lang_data.override[code] then
-- not there so try basic language code
        language_name = lang_data.override[code][1];
    elseif not is_set (subtags.variant) then
        if lang_name_table.lang[code] then
            language_name = lang_name_table.lang[code][1];
-- table entries sometimes have multiple names, always take the first one
        end
    else
-- TODO: is this the right thing to do: take language display name from
variants table?
        if lang_name_table.variant[subtags.variant] then
-- TODO: there is some discussion at Template talk:Lang about having a label
parameter for use when variant name is not desired among other things
            language_name =
lang_name_table.variant[subtags.variant]['descriptions'][1];      -- table
entries sometimes have multiple names, always take the first one
        end
    end

    category_name = language_name;
-- category names retain IANA parenthetical diambiguators (if any)
    language_name = language_name:gsub ('%s+%b()', '');
-- remove IANA parenthetical disambiguators or qualifiers from names that
have them

    if args.label then
        if 'none' ~= args.label then
            table.insert (out, table.concat ({args.label, ':
' }));          -- custom label
        end
    else
        if 'no' == args.link then
            table.insert (out, language_name);
-- language name without wikilink
        else
            if language_name:find ('languages') then
                table.insert (out, make_wikilink
(language_name));          -- collective language name
uses simple wikilink
            elseif lang_data.article_name[code] then
                table.insert (out, make_wikilink
(lang_data.article_name[code][1], language_name));          -- language name
with wikilink from override data
            else
                table.insert (out, make_wikilink

```

```

(language_name .. ' language', language_name));          -- language name with
wikilink
                end
            end
            table.insert (out, ': ');
-- separator
            end

            if 'invert' == args.italic then
                args.text = invert_italics (args.text)
            end
            args.text = proto_prefix (args.text, language_name, args.proto);
-- prefix proto-language text with a splat

            table.insert (out, make_text_html (args.code, args.text, tag,
args.rtl, args.italic, args.size))

            if is_set (args.translit) and not unicode.is_Latin (args.text) then
-- transliteration (not supported in {{lang}}); not supported when args.text
is wholly latn text (this is an imperfect test)
                table.insert (out, ', ');
-- comma to separate text from translit
                if 'none' ~= args.label then
                    table.insert (out, '<small>');
                    if lang_name_table.script[args['translit-script']]
then
-- when |translit-script= is set, try to
use the script's name
                        translit_script_name =
lang_name_table.script[args['translit-script']][1];
                    else
                        translit_script_name = language_name;
-- fall back on language name
                    end
                    translit_title = mw.title.makeTitle (0, table.concat
({'Romanization of ', translit_script_name}));          -- make a title
object
                    if translit_title.exists and ('no' ~= args.link) then
                        table.insert (out, make_wikilink
('Romanization of ' .. translit_script_name or language_name, 'romanized') ..
':');          -- make a wikilink if there is an article to link to
                    else
                        table.insert (out, 'romanized:');
-- else plain text
                    end
                    table.insert (out, '&nbsp;</small>');
-- close the small tag
                end
                translit = make_translit (args.code, language_name,
args.translit, args['translit-std'], args['translit-script'])
                if is_set (translit) then
                    table.insert (out, translit);

```



```

else
    return make_error_msg (table.concat ({'invalid
translit-std: \'' , args['translit-std'] or '[missing]'}), args, template);
end
end
if is_set (args.translation) then
-- translation (not supported in {{lang}})
table.insert (out, ', ');
if 'none' ~= args.label then
table.insert (out, '<small>');
if 'no' == args.link then
table.insert (out, '<abbr title="literal
translation">lit.</abbr>');
else
table.insert (out, make_wikilink ('Literal
translation', 'lit.'));
end
table.insert (out, "&nbsp;</small>");
end
table.insert (out, table.concat ({'&#39;', args.translation,
'&#39;'}));
-- use html entities to avoid wiki markup confusion
end
table.insert (out, make_category (code, category_name, args.nocat));
table.insert (out, render_maint(args.nocat));
-- maintenance messages and categories

return table.concat (out);
-- put it all together and done
end

--[[-----< L A N G _ X X _ A R G S _ G E T >-----
-----

common function to get args table from {{lang-??}} templates

returns table of args

]]

local function lang_xx_args_get (frame)
local args = getArgs(frame,
{
parentFirst= true,
-- parameters in the template override parameters set in the {{#invoke:}}
valueFunc = function (key, value)
if 1 == key then
-- the 'text' parameter; do not trim wite space
return value;
-- return untrimmed 'text'
elseif value then

```

```

-- all other values: if the value is not nil
                        value = mw.text.trim (value);
-- trim whitespace
                        if '' ~= value then
-- empty string when value was only whitespace
                                return value;
                        end
                end
                return nil;
-- value was empty or contained only whitespace
                end
-- end of valueFunc
        });

        return args;
end

```

```

--[[-----< L A N G _ X X _ I T A L I C >-----
-----

```

Entry point for those {{lang-xx}} templates that call lang\_xx\_italic(). Sets the initial style state to italic.

```

]]

```

```

local function lang_xx_italic (frame)
        local args = lang_xx_args_get (frame);
        initial_style_state = 'italic';
        return _lang_xx (args);
end

```

```

--[[-----< _ L A N G _ X X _ I T A L I C >-----
-----

```

Entry point ffrom another module. Sets the initial style state to italic.

```

]]

```

```

local function _lang_xx_italic (args)
        initial_style_state = 'italic';
        return _lang_xx (args);
end

```

```

--[[-----< L A N G _ X X _ I N H E R I T >-----
-----

```

Entry point for those {{lang-xx}} templates that call lang\_xx\_inherit(). Sets the initial style state to inherit.

```

]]

local function lang_xx_inherit (frame)
    local args = lang_xx_args_get (frame);

    initial_style_state = 'inherit';
    return _lang_xx (args);
end

--[[-----< _ L A N G _ X X _ I N H E R I T >-----
-----

Entry point from another module. Sets the initial style state to inherit.

]]

local function _lang_xx_inherit (args)
    initial_style_state = 'inherit';
    return _lang_xx (args);
end

--[[-----< _ I S _ I E T F _ T A G >-----
-----

Returns true when a language name associated with IETF language tag exists;
nil else. IETF language tag must be valid.

All code combinations supported by {{lang}} and the {{lang-xx}} templates are
supported by this function.

The purpose of this function is to replace {{#ifexist:Template:ISO 639 name
xx|<exists>|<does not exist>}} in
templates that are better served by using
{{#invoke:lang|name_from_tag|<code>}}

Module entry point from another module

]]

local function _is_ietf_tag (tag)
-- entry point when this module is require()d into another
    local c, s, r, v, p, err;
-- code, script, region, private, error message
    c, s, r, v, p, err = get_ietf_parts (tag);
-- disassemble tag into constituent part and validate
    return ((c and not err) and true) or nil;
-- return true when code portion has a value without error message; nil else
end

```

```
--[[-----< I S _ I E T F _ T A G >-----  
-----
```

Module entry point from an `{{#invoke:}}`

```
]]
```

```
local function is_ietf_tag (frame)  
-- entry point from an {{#invoke:Lang|is_ietf_tag|<ietf tag>}}  
    return _is_ietf_tag (frame.args[1]);  
-- frame.args[1] is the ietf language tag  
end
```

```
--[[-----< _ N A M E _ F R O M _ C O D E >-----  
-----
```

Returns language name associated with IETF language tag if valid; empty string else.

All code combinations supported by `{{lang}}` and the `{{lang-xx}}` templates are supported by this function.

Set `invoke's` `|link=` parameter to `yes` to get wikilinked version of the language name.

Module entry point from another module

```
]]
```

```
local function _name_from_tag (args)  
    local subtags = {};  
-- IETF subtags script, region, variant, and private  
    local raw_code = args[1];  
-- save a copy of the input IETF subtag  
    local link = 'yes' == args['link'];  
-- make a boolean  
    local code;  
-- the language code  
    local msg;  
-- gets an error message if IETF language tag is malformed or invalid  
    local language_name = '';  
    code, subtags.script, subtags.region, subtags.variant,  
subtags.private, msg = get_ietf_parts (raw_code);  
    if msg then  
        local template = (args['template'] and table.concat ({{{',  
args['template'], '}}: ')) or ''; -- make template name (if provided  
by the template)  
        return table.concat ({'<span style=\"font-size:100%; font-  
style:normal;\" class=\"error\">error: ', template, msg, '</span>'});  
    end
```

```

        if lang_data.override[raw_code:lower()] then
-- look for whole IETF tag in override table (force lower case)
            language_name = lang_data.override[raw_code:lower()][1];
        elseif lang_data.override[code] then
-- not there so try basic language code in override table
            language_name = lang_data.override[code][1];
        elseif not is_set (subtags.variant) then
            if lang_name_table.lang[code] then
                language_name = lang_name_table.lang[code][1];
-- table entries sometimes have multiple names, always take the first one
            end
        else
-- TODO: is this the right thing to do: take language display name from
variants table?
            if lang_name_table.variant[subtags.variant] then
-- TODO: there is some discussion at Template talk:Lang about having a label
parameter for use when variant name is not desired among other things
                language_name =
lang_name_table.variant[subtags.variant]['descriptions'][1];      -- table
entries sometimes have multiple names, always take the first one
            end
        end

        language_name = language_name:gsub ('%s+%b()', '');
-- remove IANA parenthetical disambiguators or qualifiers from names that
have them

        if link then
-- when |link=yes, wikilink the language name
            if language_name:find ('languages') then
                return make_wikilink (language_name);
-- collective language name uses simple wikilink
            elseif lang_data.article_name[code] then
                return make_wikilink
(lang_data.article_name[code][1], language_name);      -- language name
with wikilink from override data
            else
                return make_wikilink (language_name .. ' language',
language_name);      -- language name with wikilink
            end
        end

        return language_name;

end

--[[-----< N A M E _ F R O M _ C O D E >-----
-----
Module entry point from an {{#invoke:}}

```

```

]]

local function name_from_tag (frame)
-- entry point from an {{#invoke:Lang|name_from_tag|<ietf
tag>|link=<yes>|template=<template name>}}
    return _name_from_tag (frame.args);
-- pass-on the args table, nothing else
end

--[[-----< _ T A G _ F R O M _ N A M E >-----
-----

Returns the ietf language tag associated with the language name. Spelling of
language name must be correct
according to the spelling in the source tables. When a standard language
name has a parenthetical disambiguator,
that disambiguator must be omitted (they are not present in the data name-to-
tag tables).

Module entry point from another module

]]

local function _tag_from_name (args)
-- entry point from another module
    local msg;

    if args[1] and '' ~= args[1] then
        local data = mw.loadData ('Module:Lang/name to tag');
-- get the reversed data tables
        local lang = args[1]:lower();
-- allow any-case for the language name (speeling must till be correct)
        local tag = data.rev_lang_data[lang] or
data.rev_lang_name_table[lang];-- get the code; look first in the override
then in the standard

        if tag then
            return tag;
-- language name found so return tag and done
        else
            msg = 'language: ' .. args[1] .. ' not found'
-- language name not found, error message
        end
    else
        msg = 'missing language name'
-- language name not provided, error message
    end

    local template = '';
    if args.template and '' ~= args.template then

```

```

        template = table.concat ({{{', args['template'], '}}: '});
-- make template name (if provided by the template)
    end
    return table.concat ({'<span style=\"font-size:100%; font-
style:normal;\" class=\"error\">error: ', template, msg, '</span>'});
end

--[[-----< T A G _ F R O M _ N A M E >-----
-----

Module entry point from an {#{invoke:}}

]]

local function tag_from_name (frame)
-- entry point from an {#{invoke:Lang|tag_from_name|<language
name>|link=<yes>|template=<template name>}}
    return _tag_from_name (frame.args);
-- pass-on the args table, nothing else
end

--[[-----< _ T R A N S L >-----
-----

Module entry point from another module

]]

local function _transl (args)
    local title_table = lang_data.translit_title_table;
-- table of transliteration standards and the language codes and scripts that
apply to those standards
    local language_name;
-- language name that matches language code; used for tool tip
    local translit;
-- transliterated text to display
    local script;
-- IANA script
    local msg;
-- for when called functions return an error message

    if is_set (args[3]) then
-- [3] set when {#{transl|code|standard|text}}
        args.text = args[3];
-- get the transliterated text
        args.translit_std = args[2] and args[2]:lower();
-- get the standard; lower case for table indexing

        if not title_table[args.translit_std] then

```

```

        return make_error_msg (table.concat ({'unrecognized
transliteration standard: ', args.translit_std}), args, 'transl');
    end
    else
        if is_set (args[2]) then
-- [2] set when {{transl|code|text}}
            args.text = args[2];
-- get the transliterated text
        else
            if args[1] and args[1]:match ('^%a%a%a?%a?$') then
-- args[2] missing; is args[1] a code or its it the transliterated text?
                return make_error_msg ('no text', args,
'transl');
                -- args[1] is a code so we're
missing text
            else
                args.text = args[1];
-- args[1] is not a code so we're missing that; assign args.text for error
message
                return make_error_msg ('missing language /
script code', args, 'transl');
            end
        end
    end

    if is_set (args[1]) then
-- IANA language code used for html lang= attribute; or ISO 15924 script code
        if args[1]:match ('^%a%a%a?%a?$') then
-- args[1] has correct form?
            args.code = args[1]:lower();
-- use the language/script code; only (2, 3, or 4 alpha characters); lower
case because table indexes are lower case
        else
            return make_error_msg (table.concat ({'unrecognized
language / script code: ', args[1]}), args, 'transl');
            -- invalid
language / script code
        end
    else
        return make_error_msg ('missing language / script code',
args, 'transl');
        -- missing language / script code so
quit
    end

    args.italic, msg = validate_italic (args);
    if msg then
        return make_error_msg (msg, args, 'transl');
    end
    if 'italic' == args.italic then
-- 'italic' when |italic=yes; because that is same as absent or not set and
|italic=default
        args.italic = nil;
-- set to nil;

```



```

end

    if lang_data.override[args.code] then
-- is code a language code defined in the override table?
        language_name = lang_data.override[args.code][1];
    elseif lang_name_table.lang[args.code] then
-- is code a language code defined in the standard language code tables?
        language_name = lang_name_table.lang[args.code][1];
    elseif lang_name_table.script[args.code] then
-- if here, code is not a language code; is it a script code?
        language_name = lang_name_table.script[args.code][1];
        script = args.code;
-- code was an ISO 15924 script so use that instead
        args.code = '';
-- unset because not a language code
    else
        return make_error_msg (table.concat ({'unrecognized language
/ script code: ', args.code}), args, 'transl');        -- invalid language /
script code
    end
-- here only when all parameters passed to make_translit() are valid
    return make_translit (args.code, language_name, args.text,
args.translit_std, script, args.italic);
end

--[[-----< T R A N S L >-----
-----

Module entry point from an {{#invoke:}}

]]

local function transl (frame)
    local args = getArgs(frame);
-- no {{#invoke:}} parameters
    return _transl (args);
end

--[[-----< E X P O R T E D   F U N C T I O N S >-----
-----

]]

return {
    lang = lang,
-- entry point for {{lang}}
    lang_xx_inherit = lang_xx_inherit,
-- entry points for {{lang-??}}
    lang_xx_italic = lang_xx_italic,
    is_ietf_tag = is_ietf_tag,

```

```

        tag_from_name = tag_from_name,
-- returns ietf tag associated with language name
        name_from_tag = name_from_tag,
-- used for template documentation; possible use in ISO 639 name from code
templates
        transl = transl,
-- entry point for {{transl}}

        _lang = _lang,
-- entry points when this module is require()d into other modules
        _lang_xx_inherit = _lang_xx_inherit,
        _lang_xx_italic = _lang_xx_italic,
        _is_ietf_tag = _is_ietf_tag,
        _tag_from_name = _tag_from_name,
        _name_from_tag = _name_from_tag,
        _transl = _transl,
};

```

actions taken to prevent or repair the deterioration of water management infrastructure and to keep the physical components of a water management system in such a state that they can serve their intended function.

Retrieved from "<https://www.bluegoldwiki.com/index.php?title=Module:Lang&oldid=1776>"

## Namespaces

- [Module](#)
- [Discussion](#)

## Variants

This page was last edited on 19 February 2020, at 09:51.

## Blue Gold Program Wiki

The wiki version of the Lessons Learnt Report of the Blue Gold program, documents the experiences of a technical assistance (TA) team working in a development project implemented by the Bangladesh Water Development Board (BWDB) and the Department of Agricultural Extension (DAE) over an eight+ year period from March 2013 to December 2021. The wiki lessons learnt report (LLR) is intended to complement the BWDB and DAE project completion reports (PCRs), with the aim of recording lessons learnt for use in the design and implementation of future interventions in the coastal zone.

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