

# Scribunto

What do converted templates look like?

# String templates

- Prior to Scribunto, we have three “functions” for string processing

`{{#ifeq:str1|str2|if-true|if-false}}`

- Return *if-true* or *if-false*, depending on whether `str1` and `str2` are the same.

`{{padleft:string|len}}`

- This will add characters to *string* if it's shorter than *len*.

`{{padleft:|len|string}}`

- This will truncate *string* to *len* characters, if it is longer.
- You can build a lot on this, with some work...

# String templates - strlen

- How do you measure the length of a string with only “pad”, “truncate”, and “test equality” operations?
- You truncate to each possible length and check for equality.
- But remember that templates don't handle loops or recursion, either. So you have to unroll the loop.
- Yes, people ***actually did this.***

# Enwiki's Template:Str len, simplified

```
{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}|500}}  
| 500  
| {{str len/core  
|{{{1|}}}  
| {{str len/core  
|{{{1|}}}  
| {{str len/core  
|{{{1|}}}  
| | hundreds  
}}| tens  
}}| ones  
}}  
}}
```

- For performance, it calculates the ones, tens, and hundreds digits separately.

# Enwiki's Template:Str len/core, Just the part for the ones digit

```
{{{2|}}}{  
#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}4 }}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}6 }}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}8 }}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}9 }}  
| 9  
| 8  
}}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}7 }}  
| 7  
| 6  
}}  
}}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}5 }}  
| 5  
| 4  
}}  
}}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}2 }}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}3 }}  
| 3  
| 2  
}}  
| {{{#ifeq: {{{1|}}} | {{padleft:{{{1|}}}| {{{2|}}}1 }}  
| 1  
| 0  
}}  
}}  
}}
```

- {{{1|}}} is the string, {{{2|}}} is the high digits of the length.
- Binary search:
  - If padding to length xx4 is equal to the original string, then it must be xx4-xx9
    - If padding to length xx6 is equal to the original string, then it must be xx6-xx9
      - If padding to length xx8 is equal to the original string, then it must be xx8 or xx9.
        - So pad to xx9, and return xx8 or xx9 depending on if that's equal too.
      - Otherwise, it must be xx6 or xx7
        - So pad to xx7, and return xx6 or xx7
    - Otherwise it must be xx4-xx5
      - So pad to xx5, and return xx4 or xx5 depending.
  - Otherwise it must be xx0-xx3
    - Etc...
- The tens and hundreds are similar, although for performance they do a linear search for 0-4 before doing a binary search for 5-9.

# Strlen in Scribunto

- So what does it look like in Scribunto?
- `Template:String len`
- `Module:String`

```
{{#invoke:String|len|s={{1|}}}}
```

```
local p = {}  
  
function p.len( frame )  
    return mw.ustring.len( frame.args.s )  
end  
  
return p
```

- That's it!
- Although someone has made the module on enwiki more complicated, because they want to support either trimming or not trimming whitespace from the string.
- That example was a bit silly, since string length is built into Scribunto.

# A more complicated example

`{{On this day}}`

- Used on an article's talk page to display a note that the article was featured in the “On this day...” section of the English Wikipedia's main page.
- If a page is featured multiple times, the one template displays multiple notes, by taking multiple date parameters (“date1”, “date2”, etc).
- Some pages are featured a lot. Teachers' Day, for example, is featured 13 times a year since different countries celebrate it on different dates. Which means it has been featured **102 times** since 2004.

# Template:On this day

```
{{tmbox
|small = {{{small|}}}
|image = [[Image:Nuvola apps date.svg|45px]]
|text = A fact from this article was featured on Wikipedia's [[Main
Page]] in the '''[[Wikipedia:Selected anniversaries|On this day...]]'''
section on <!--
-->{{On this day/link|date={{date1|}}|oldid={{oldid1|}}|and=|
demo={{demo|}}}}<!--
-->{{On this day/link|date={{date2|}}|oldid={{oldid2|}}|
and=&#32;and&#32;|next={{oldid3|}}|demo={{demo|}}}}<!--
-->{{On this day/link|date={{date3|}}|oldid={{oldid3|}}|
next={{oldid4|}}|demo={{demo|}}}}<!--
.
.
.
-->{{On this day/link|date={{date99|}}|oldid={{oldid99|}}|
next={{oldid100|}}|demo={{demo|}}}}<!--
-->{{On this day/link|date={{date100|}}|oldid={{oldid100|}}|
next={{oldid101|}}|demo={{demo|}}}}<!--
-->.
}}
```



# Template:On this day/link

```
{{#if:{{{olddid|}}}|{{#if:{{{next|}}}|, &#32;|{{{and|, and&#32;}}}}| [{{fullurl:Wikipedia:Selected anniversaries/{{#time:F j|{{{date}}}}} |olddid={{{olddid}}}}| {{#formatdate:{{{date}}}|mdy}}]{{#if:{{{demo|}}}| [[Category:Selected anniversaries ({{#time:F Y|{{{date}}}})]| {{PAGENAME}}]]}}}}
```

# Module:On this day

```
function p.showDates( frame )
  local args = frame:getParent().args
  local ret = {}
  local page = mw.title.getCurrentTitle().text
  local fmt = '[//en.wikipedia.org/wiki/Wikipedia:Selected_anniversaries/%s?oldid=%s %s]'
  if not args.demo then
    fmt = fmt .. '[[Category:Selected anniversaries (%s)|%s]]'
  end
  local lang = mw.getContentLanguage()
  local i = 1
  while true do
    local date = args['date' .. i] or ''
    local oldid = args['oldid' .. i] or ''
    if oldid == '' then
      break
    end
    ret[i] = string.format( fmt,
      lang:formatDate( 'F_j', date ),
      oldid,
      lang:formatDate( 'F j, Y', date ),
      lang:formatDate( 'F Y', date ),
      page
    )
    i = i + 1
  end
  i = #ret
  if i > 1 then
    ret[i] = 'and ' .. ret[i]
  end
  return table.concat( ret, i > 2 and ', ' or ' ' )
end
```

Gets all the arguments from the calling template

Replaces Template:On this day/link

Loops through all the “date” parameters, no matter how many there are!

Adds the “and” and joins with commas as appropriate at the end, instead of having to decide inside each call to Template:On this day/link

# Template:On this day, with Lua

```
{{tmbox
|small = {{{small|}}}
|image = [[Image:Nuvola apps date.svg|45px]]
|text  = A fact from this article was featured on
Wikipedia's [[Main Page]] in the '''[[Wikipedia:Selected
anniversaries|On this day...]]''' section on
{{#invoke:Template:On this day|showDates}}
}}
```

- The current version on the English Wikipedia uses some more Lua code to count the number of “date” parameters specified, so it can display “A fact was featured 102 times” with the very long list of dates hidden behind a JavaScript collapsible box.

# Other templates

- Citation templates!
  - Still being worked on
  - Still complex, but much easier to read
  - Already several times faster than the old templates, and probably could be optimized
- Convert template
  - Instead of huge numbers of subtemplates, will store conversion data in a submodule
  - The new `mw.loadData()` function is ideal for this purpose