Learning Lua

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Wikimania 2016 Hackathon

Lucie-Aimée Kaffee [[User:Frimelle]]

Lua

- open-source scripting language
- fast and lightweight
- not object-oriented but through tables and meta-tables easily adaptable
- dynamic typed language

Scribunto

- On Wikipedia Lua is available through Scribunto
  - MediaWiki extension
- write your own Modules in the *Module* namespace
  - e.g. *Module:AboutTopic*

Datatypes

- nil
- boolean
- number
- userdata
- function
- thread
- string
- table

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- nil
- boolean
- number
- ~~userdata~~
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- ~~thread~~
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- table

Easy module example

- Map all dates of Wikimanias to places
- Get place of Wikimania by year

Module:Wikimania

```lua
local p = {}

  local wikimanias = {
    [2005] = "Frankfurt, Germany",
    [2006] = "Cambridge, Mass., United States",
    [2007] = "Taipei, Taiwan",
    [2008] = "Alexandria, Egypt",
    [2009] = "Buenos Aires, Argentina",
    [2010] = "Gdańsk, Poland",
    [2011] = "Haifa, Israel",
    [2012] = "Washington, D.C., United States",
    [2013] = "Hong Kong, China",
    [2014] = "London, United Kingdom",
    [2015] = "Mexico City, Mexico",
    [2016] = "Esino Lario, Italy"
  }

-- get the place of a Wikimania in a given year
p.getWikimaniaPlace = function( frame )
  return wikimanias[ tonumber(frame.args[1]) ]
end

return p
```
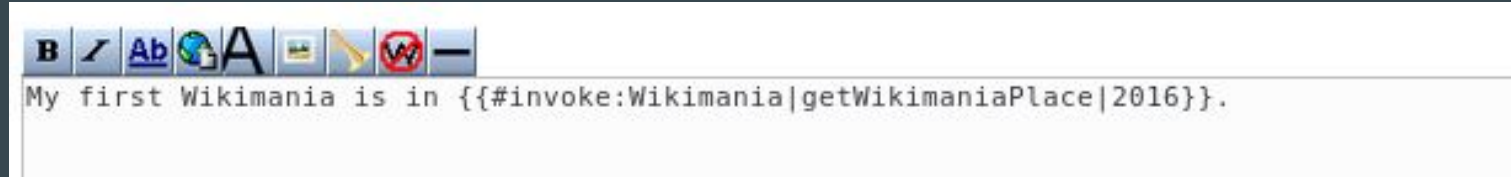
Module:Wikimania

```lua
local wikimanias = {
  [2005] = "Frankfurt, Germany",
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  [2016] = "Esino Lario, Italy"
}
```

Module:Wikimania

```lua
-- get the place of a Wikimania in a given year
p.getWikimaniaPlace = function( frame )
  return wikimanias[ tonumber(frame.args[1]) ]
end
```

Call Module:Wikimania

My first Wikimania is in {{#invoke:Wikimania|getWikimaniaPlace|2016}}.

Module:Wikimania Result

Advanced Module:Wikimania

```lua
local p = {}

 local wikimanias = {
   [2005] = "Frankfurt, Germany",
   [2006] = "Cambridge, Mass., United States",
   [2007] = "Taipei, Taiwan",
   [2008] = "Alexandria, Egypt",
   [2009] = "Buenos Aires, Argentina",
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   [2011] = "Haifa, Israel",
   [2012] = "Washington, D.C., United States",
   [2013] = "Hong Kong, China",
   [2014] = "London, United Kingdom",
   [2015] = "Mexico City, Mexico",
   [2016] = "Esino Lario, Italy"
 }

-- get a place of a Wikimania in a given year
p.getWikimaniaPlace = function( frame )
  return wikimanias[ tonumber(frame.args[1]) ]
end

-- get random Wikimania of the past
p.getRandomPastWikimania = function()
  return wikimanias[ math.random( 2005, 2015 ) ]
end

return p
```

Advanced Module:Wikimania function

```
p.getRandomPastWikimania = function()
  return wikimanias[ math.random( 2005, 2015 ) ]
end
```

Daniel and Hoo cry about this function at night because it doesn't
consider caching on Wikipedia and shouldn't be used this way at all.

Advanced Module:Wikimania Result


```
My first Wikimania is in {{#invoke:Wikimania|getWikimaniaPlace|2016}}.

But I wish I could have also been at the Wikimania in {{#invoke:Wikimania|getRandomPastWikimania}}.
```

Advanced Module:Wikimania Result

User page | Discussion

User:Frimelle

My first Wikimania is in Esino Lario, Italy.

But I wish I could have also been at the Wikimania in London, United Kingdom.

Wikidata functions

- Many options to use Wikidata's data
- Usable on any Wikipedia page

1 mw.wikibase
    1.1 mw.wikibase.getEntity
    1.2 mw.wikibase.getEntityObject
2 mw.wikibase.getEntityUrl
    2.1 mw.wikibase.label
    2.2 mw.wikibase.sitelink
    2.3 mw.wikibase.description
    2.4 mw.wikibase.renderSnak
    2.5 mw.wikibase.renderSnaks
    2.6 mw.wikibase.resolvePropertyId
    2.7 mw.wikibase.getPropertyOrder
    2.8 mw.wikibase.orderProperties
3 mw.wikibase.entity
    3.1 mw.wikibase.entity:getLabel
    3.2 mw.wikibase.entity:getSitelink
    3.3 mw.wikibase.entity:getProperties
    3.4 mw.wikibase.entity:getBestStatements
    3.5 mw.wikibase.entity:formatPropertyValues
    3.6 mw.wikibase.entity.claimRanks

Simple Wikidata example

```lua
local p = {}

-- return the description of a given Wikidata item
p.getDescription = function( frame )
  return mw.wikibase.description( frame.args[1] )
end

return p
```

Module:WikimaniaWD Result

The Wikimania is an {{#invoke:WikimaniaWD|getDescription|Q5856}}.

Module:WikimaniaWD Result

User page   Discussion

User:Frimelle

The Wikimania is an annual series of international conferences for users of the wiki projects operated by the Wikimedia Foundation.

Let's start writing Lua!

Start writing your modules on local MediaWikis or http://en.wikipedia.beta.wmflabs.org/wiki/Main_Page

Manuals

- https://en.wikipedia.org/wiki/Wikipedia:Lua
- https://www.mediawiki.org/wiki/Extension:Scribunto/Lua_reference_manual
- https://www.mediawiki.org/wiki/Extension:Wikibase_Client/Lua#mw.wikibase.entity