

MediaWiki & Semantic MediaWiki tutorial

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- New York City-based software developer
- Wikipedia enthusiast since 2005
- Semantic MediaWiki enthusiast since 2006
- MediaWiki developer and consultant since 2007
- My extensions: Semantic Forms, Semantic Drilldown + 9 more

My MediaWiki consulting company:



(wikiworks.com)

Via WikiWorks, also run the Semantic MediaWiki-based wiki farm Referata, at referata.com.

MediaWiki

- Open-source, PHP-based wiki application
- Created in 2003 for use on Wikipedia
- Rewritten twice since then, most recently by Brion Vibber
- Now maintained by hundreds of developers, some paid by the Wikimedia Foundation, others volunteers

MediaWiki is popular

- Powers most of the major public wikis
- Popular within corporations and organizations as well (is it the most popular? hard to tell)
- Used by Wikia (wikia.com), the most popular wiki farm

MediaWiki wiki-text

==Header 1==

===Header 2=== (etc.)

'*italics*'

''**bold**''

''''**bold and italic**''''

[[Link to wiki-page]]

[[Some page|link with custom text]]

[http://some.url Link to an outside URL]

* bulleted list

numbered list

: indentation

Namespaces

- none (Main) – regular pages
- “User:” - user pages
- “Category:” - category pages
- “File:” - images and other uploaded files
- “Template:” - template pages
- “MediaWiki:” - system messages
- “Special:” - provide functionality; not editable

- “Talk”, “User talk”, “Category talk” etc. - discussion of contents on corresponding page

Categories

Add a page to a category by putting this anywhere in the page (though usually at the bottom):

```
[ [Category: Category name] ]
```


Templates

Pages meant to be transcluded within other pages, and usually called with one or more parameters.

Calling a template:

```
{ { Template name | Param1=Value1 |  
  Param2=Value2 | ... } }
```

```
{ { Template name | Value 1 | Value 2 } }
```

In the template: { { Param1 | } } }

Redirects

```
#REDIRECT [[Actual page]]
```

Useful for synonyms, misspellings, content subsets (like a book redirecting to its author)

Images

To embed an uploaded image in a wiki:

```
[ [File:image name  
|border/frame/frameless/thumb  
|widthpx  
|heightpx  
|left/right/center/none  
|link=  
|alt=  
]]
```

Dynamic elements

Three kinds:

- **Parser functions:** `{ {#function: . . . } }`
- **Tags:** `<tag> . . . </tag>`
- **Magic words:** `{ {MAGICWORD} } ,`
`__MAGICWORD__`

Parser functions

```
{ { #function-name: param1 | param2 | . . . } }
```

Important functions (all defined in
ParserFunctions extension):

`#if`, `#ifeq`, `#switch`, `#sub`, ...

These are especially important in templates.

The “!” template hack:

```
{ { #if: { { {param1 | } } } | . . . { { ! } } . . . } }
```

MediaWiki tags

Look like HTML tags, but they're different!

Important tags:

`<nowiki>`, `<noinclude>`, `<includeonly>`, `<ref>`
(used for citations)

The way to do `'italics'` is
`<nowiki>'like this!'``</nowiki>`

Useful magic words

{ { PAGENAME } } – displays name of current page

___NOTOC___ - hides table of contents

Skins

Main MediaWiki skin is Vector, developed last year by the Wikimedia Foundation – before that, MonoBook was the main skin.

Site admins can set another skin as the default, and create their own.

Users can also choose their skin, in [Special:UserPreferences](#).

MediaWiki is highly customizable

LocalSettings.php is MediaWiki's initialization file – many features can be modified via lines added to that file.

All system messages can be modified – each one has a page in the MediaWiki: namespace.

The sidebar, for instance, is defined by the page MediaWiki:Sidebar.

MediaWiki extensions

MediaWiki has hundreds of extensions, covering many different areas of functionality.

Most extensions have a page on mediawiki.org.

Some crucial extensions

- ParserFunctions - `#if`, etc., plus string operators
- Cite – references
- ConfirmEdit – anti-spam CAPTCHAs
- Widgets – secure embedding of HTML and Javascript
- Replace Text – global search-and-replace
- Semantic MediaWiki!

The Semantic Web

The Semantic Web = lots of triples!

Triple:

Subject Predicate Object

William Shakespeare Has occupation Playwright

RDF and OWL

RDF = Resource Description Framework
- a framework for storing semantic triples

RDF/XML – a file format for storing RDF data

OWL = Web Ontology Language
- a superset of RDF – used to store both data and information about data structure

SPARQL

SPARQL = SPARQL (formerly Simple) Protocol and
RDF Query Language

- standard language for querying and modifying
RDF data

Semantic MediaWiki

A MediaWiki extension, originally developed by Markus Krötzsch, Denny Vrandečić and several others in 2005.

Current main developers: Markus Krötzsch and Jeroen De Dauw.

In use on hundreds of sites, has > 30 spinoff extensions.

Semantic MediaWiki syntax

In any regular page:

```
[ [Property name :: Value ] ]
```

This defines the semantic triple:

Page name Property name Value

SMW special properties

Pre-defined properties in SMW – these include:

Modification date, Has type, Allows value

SMW property types

Each property has its own page, in the “Property:” namespace. There the type and allowed values are defined.

Standard SMW data types:

String, Page, Number, Date, Boolean, Text, URL,
Email, ...

Allowed values defined using “Allows value”.

Viewing a page's semantic data

“Browse properties” link in sidebar – takes you to:

`Special:Browse/Page_name`

Querying SMW data

Two parser functions: `#ask` and `#show` (`#ask` is the main function).

```
{ { #ask: [ [Category:Countries] [Has  
continent::Europe]  
| format=table  
| mainlabel=Name  
| ? Has population] }
```

The `Special:Ask` page is the easiest way to generate a query.

SMW query formats

list, ol, ul, table, template, count,
rss, csv, json, ...

(Many more defined in other SMW-based extensions, like Semantic Result Formats and Semantic Maps)