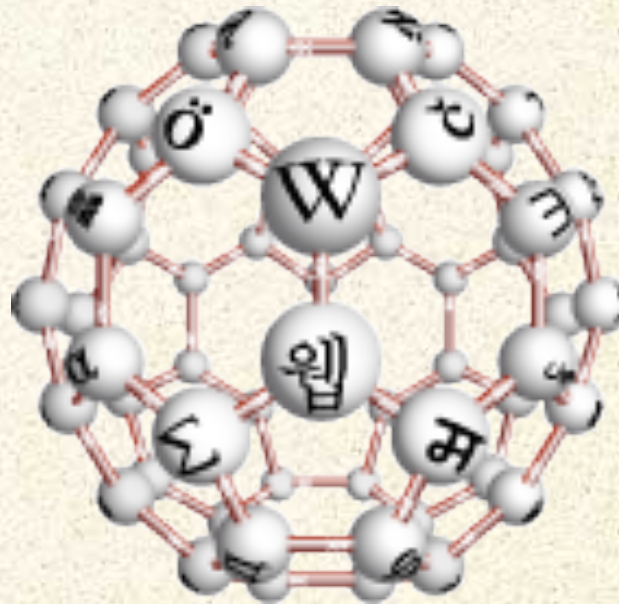


Semantic MediaWiki & Semantic Forms

Semantic Web New York meetup
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Sergey Chernyshev

- Director, Web Systems and Applications at truTV
- 12+ years in web development
- MediaWiki Widgets, Page Object Model (POM)
- <http://www.TechPresentations.org>

Audience survey

Please raise a hand if:

- Know what Wikis are?
- Installed Wiki software?
- Contributed to Wikipedia
(or other public Wiki)?
- Familiar with Semantic Web idea?

TechPresentations.org

- Presentations are cutting edge (well sooner than books)
- Tracks presentations, presenters, companies, topics, conferences, conference series, calls for papers and more
- Feeds: Upcoming conferences, Open calls for papers, Topic presentations (soon), Topic conferences (soon) and etc.

How did I get to use wiki:

- Started as a blog
- Needed more "persistent" project, needed collaboration but didn't know the full scope (I still don't)
- Had some experience with other wiki software (TWiki, WackoWiki, XPoint wiki) for collaboration, agile project documentation and etc.
- Installed MediaWiki

Media Wiki

Most popular **Wiki** software developed by Wikimedia foundation

- **Open Source**, GNU General Public License (GPL)
- PHP + MySQL
- Massively Multilingual, easily extensible (APIs)
- Runs **Wikipedia**, **Wikia**, **WikiTravel**, **AboutUs** and many more
- <http://s23.org/wikistats/> (largest, >11K articles)
 - **31K public sites**, **many** internal (Novell, Intel ...)
 - **26M articles** (6M images, total 111M pages)
 - **15M users** (45K admins)
 - **586M edits**
 - ... long tail must be huge

Semantic MediaWiki extension

Extension to **MediaWiki** software

<http://www.semantic-mediawiki.org/>

Lead by [Markus Krötzsch](#) and [Denny Vrandečić](#)
of [Institut AIFB](#) of Universität Karlsruhe, Germany

Sponsors:

European Union

DocCheck GmbH

HP Labs Palo Alto

Ontoprise GmbH (Halo project funded by Vulcan Inc.)

Adding annotations

Regular page (<http://www.example.com/Man-Month>)

Title: ' 'Mythical Man-Month' '

ISBN: 0201835959

Page with semantic markup

Title: ' '[[**Has Title**::Mythical Man-Month]]' '

ISBN: [[**Has ISBN**::0201835959]]

Creates two "triples":

(Man-Month, Has Title, "Mythical Man-Month")

(Man-Month, Has ISBN, "0201835959")

Semantic templates

Within the page

```
{ {Book
  |Mythical Man-Month
  |ISBN=0201835959
}}
```

Template:Book

```
Title: '''[[Has Title::{{{1}}}]]'''
ISBN: [[Has ISBN::{{{ISBN}}}]]
```


Properties

/Property: <property name> - defines the property (free-text description, data type and how values are displayed).

[[has type::Type:Page]]

Types

- String, Number, Page
- Date, URL, Email
- Geo, Temperature

Custom units

- **[[Corresponds to::1 km, kilometer, kilometers]]**
- **[[Corresponds to::1000 m, meter, meters]]**
- **[[Corresponds to::0.621371192 mile, miles]]**
- **[[display units::km,miles]]**

Semantic queries

- **/Special:Ask**
- inline queries

Custom syntax (not SPARQL), includes formatting: lists, tables, [interactive timelines](#), Maps (using [Semantic Layers](#) extension), custom styles (using templates).

```
{ {#ask: [[Category:Conference]] [[Start Date::+]]
  |? Start Date
  |? End Date
  |? Location
  |format = table
}}
```


Special properties, RDF Export

Special properties

- Allows value, Has type, Provides service

Ontologies and inferencing

- Imported from (external vocabularies, e.g. **foaf:homepage**)
- Equivalent URI (**owl:sameAs**)
- Redirects, Subproperty Of

RDF Export

- `/Special:ExportRDF/<Page_Name>`
- `SMW_dumpRDF.php`
- `SMW_pingSemWeb.php`

Demo

- Page with factbox
- Semantic template 'Conference'
- Semantic queries
- Inline queries, different formsts (timelines, lists, tables, custom)
- Semantic browsing
- RDF Export

Resources

- <http://www.mediawiki.org/>
- <http://www.semantic-mediawiki.org/>
- <http://www.mediawiki.org/wiki/Extension:SemanticMediaWiki>
- semediawiki-user@lists.sourceforge.net
- semediawiki-devel@lists.sourceforge.net
- SVN repository
- <https://bugzilla.wikimedia.org/>

Yaron Koren

- Web developer
- Started working with MediaWiki and Semantic MediaWiki in summer of 2006

Yaron's philosophy of data

- All semantic data should be structured
- All structured data should be semantic (where "semantic" just means "queriable" or "retrievable")
- All details of data storage should be hidden from regular users

In a wiki, this translates to...

- All semantic markup should be contained in templates
- All templates with data should ideally use semantic markup for that data
- Editing of pages that use templates should be done through forms
- Navigating through the data should be possible without any knowledge of the semantic relationships

Thankfully, there's an under-appreciated advantage to using semantic representation

- Because all data and meta-data are stored in the same place, it's very easy to create generic, one-size-fits-all solutions, that work regardless of one's data structure

The semantic MediaWiki extensions

- Semantic MediaWiki - Markus Krötzsch, Denny Vrandečić, Max Völkel - September 2005
- Semantic Forms - Yaron Koren - May 2007
- Semantic Layers - Matt Williamson - September 2007
- Semantic Google Maps - Robert Buzink - September 2007
- Semantic Drilldown - Yaron Koren - December 2007
- Semantic Calendar - Yaron Koren - February 2008
- Data Transfer - Yaron Koren - February 2008

Semantic Forms

- Allows for the creation of forms for adding and editing pages that use templates
- Forms are defined using a mini-scripting language
- Forms are created on-the-fly based on existing data, the form definition and the templates that the form outputs

Semantic Forms

- Also provides "helper forms" for creating forms, templates and properties

Semantic Forms

Used in around 50-80 (educated guess)
wikis around the world at the moment

Semantic Layers, Semantic Google Maps

- Display geographical semantic data using OpenLayers (an open-source API) and Google Maps, respectively

Semantic Drilldown

- Shows a drilldown interface for viewing the wiki's data
- Filters for the drilldown are defined ahead of time, and are based on semantic properties

Semantic Calendar

- Displays semantic date information in a calendar

Data Transfer

- Allows for XML export of page data; may eventually allow for XML import as well
- Somewhat epitomizes the idea of hiding the data structure - even to the outside world, the wiki can appear to be a regular, database-driven website

Referata

- Possibly world's first... okay, possibly world's second semantic wiki farm
- Located at referata.com; lets users create wikis at *wiki-name*.referata.com
- Basic usage is free; feel free to create your own

What now?

Install and Learn more

- <http://www.mediawiki.org/>
- <http://www.semantic-mediawiki.org/>
- [http://www.mediawiki.org/Extension:Semantic Forms](http://www.mediawiki.org/Extension:Semantic_Forms)

Go contribute to some public (Semantic) Wiki!

- <http://www.swnyc.org/>
- <http://www.referata.com/>
- <http://www.techpresentations.org/>

Contact info:

- Sergey Chernyshev: sergey.chernyshev@gmail.com
- Yaron Koren: yaron57@gmail.com

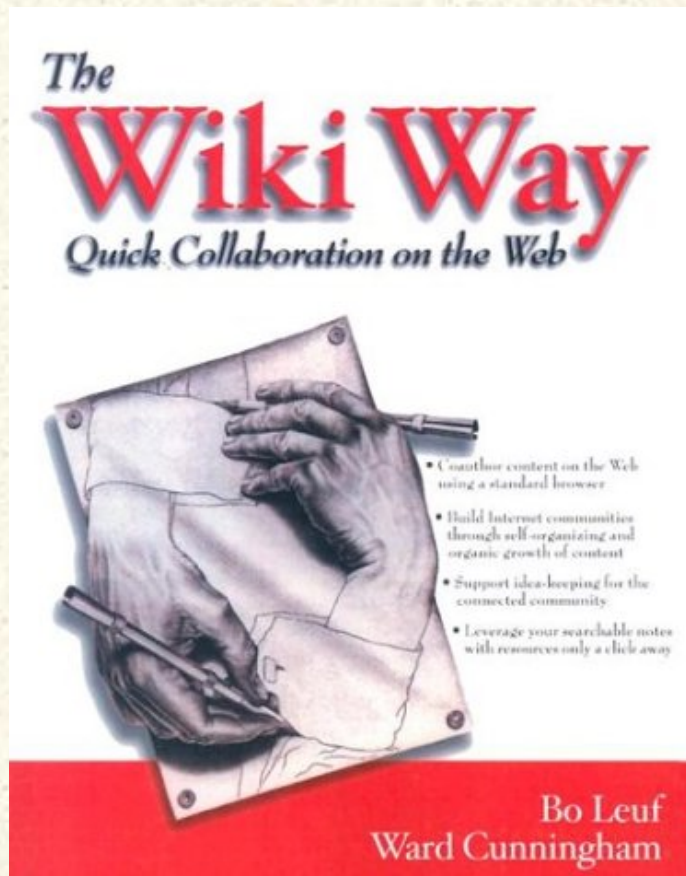
If we'll have more time / additional slides

Books

Wiki Way (2001)

by Bo Leuf and Ward Cunningham

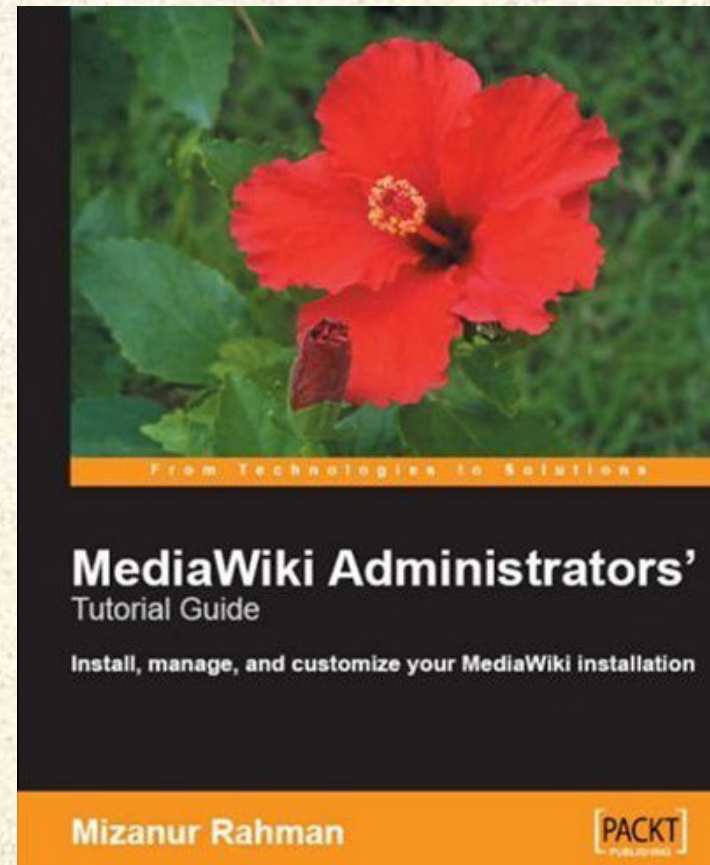
ISBN: 0-201-71499-X



MediaWiki Administrator's Tutorial Guide (2007)

by Mizanur Rahman

ISBN: 0-201-71499-X



MediaWiki syntax

Simple markup syntax that defined both structure and look-n-feel

- = Header 1 =, == Header 2 == ...
- [[Article Name]], [http://swnyc.org/ SW Meetup]
- "**bold**", "*Italic*"
- [[Image:Example.jpg]] [[Category:Example]]
- __NOTOC__, __NOEDITSECTION__

Templates

- `{{Book|Mythical Man-Month|ISBN=0201835959}}`
- `Template:Book`

Title: `' ' {{{1}}}' '`

ISBN: `[[{{{ISBN}}}]]`

MediaWiki syntax (logic)

Parser functions

- `{{lc:Some StRING}}`
- `{{#if:...|...|...}}`
- `{{#widget:Feed
|feedurl=http://techpresentations.com/feed/
|chan=y|num=10|desc=300|date=n|targ=n}}`

Variables

- `{{CURRENTYEAR}}` ...
- `{{SITENAME}}`, `{{PAGENAME}}` ...
- `{{REVISIONID}}` ...
- `{{TALKPAGENAME}}`
- ...