

Semantic Wiki for Research Groups

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The content published on Web is constantly growing and Web is becoming difficult to process. Aim of the Semantic Web is to solve these problems.

Linked Data initiative can be described as a set of the best practices for sharing and publishing information on the Semantic Web. This is in particular, relevant to researchers who can more effectively interconnect if they publish their content semantized. One of the paths to semantics utilization is the replacement of traditional wiki systems with semantic wiki systems.

The first semantic wiki system was created in 2004 [1]. Many new semantic wiki systems were created since then, but there are still some open issues, which we are facing [2]. Not all semantic wikis allow RDF import, so ontologies cannot be edited by user. Semantic wikis use URI of a page as dereferenced URI, which cannot be modified in the future. It is not problem on websites of encyclopedic type, but it is problem when we want to create deeply nested menu structure with more pages for one entity. Although many semantic wikis try to help user with content creation, neither seems to assist with semantic extraction from text.

Our motivation is to improve existing wiki at our university taking into account specific needs of academic research groups, especially our group - PeWe. PeWe uses this wiki for its presentation and also to self-organize members.

Our method consists of several parts. At the beginning we analyse the structure of wiki content. Then we propose templates, which help user with writing repeated blocks of text with similar structure. Templates are divided by topic and by granularity from simple to advanced templates. Filling the templates helps user to keep the same text structure and to auto generate semantics.

It ensures, that the created text has properly defined semantics, because values filled in fields are inserted in accordance with pre-defined ontologies. Our method uses a triplet editor to give user the ability to change or add new semantics. Each semantic triplet has an attached ID. We use this ID in markup to connect text with semantic triplets. These triplets are stored outside of the markup - in semantic database Sesame. Since each wiki page has many revisions and allows creating multiple page parts, for

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the key value for context triplet field our method uses concatenation of page ID with revision ID and page part ID. Application for browsing semantics is independent and thus, we are not facing issues when the URI of wiki page is simultaneously dereferenced URI.

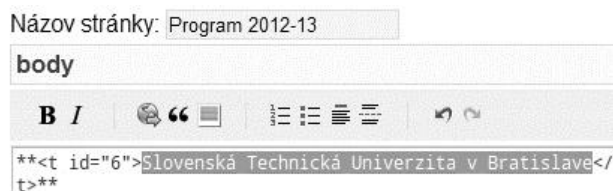


Figure 1. Markdown semantic marks

Second part of our method is generating semantic bibliography reference, because creation of correctly ISO 690 reference is not easy task. Digital libraries usually don't offer ISO 690 reference string. Mostly they offer BibTex format, which our method is parsing. The scenario is following:

1. User fill in some information about publication – DOI, authors, or title
2. Webservice send query to Google in format *site:<digital library site name> <searched string>*
3. Then it take the first result, expecting that it is the result with the best relevance
4. Webservice load the page in background and download BibTex data about publication
5. Then it converts BibTex format to ISO 690 reference string.
6. User need to confirm the correctness.

We evaluate application with qualitative methods. Our hypothesis is that usability of application with new semantic extension is not too worse. We analyse the trade-off between the state without semantics – copyasting markdown and with new extension - templates with semantics.

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