Lego-Note: To Generate Semantic Web Content by Graphic Tagging

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Abstract. Lego-Note is an open source, browser-based semantic application inspired by folksonomy. Different from the other keyword-based, flat tagging systems, Lego-Note is featured by enriched graphic tagging based on a RDF model. The paper presents the implementation details of Lego-Note. The demonstration and source code can be found at https://sourceforge.net/projects/dom-sensus.

1 Introduction

Folksonomy like del.icio.us has proved a great success in recent years and gains more and more attention as a promising data source of the Semantic Web[1][2][3]. The Lego-Note presented in this paper attempts to extend the expression capability of folksonomy system, make it easier to obtain the semantic annotations, and thus to enhance the users experience further. To this end, Lego-Note is featured by:

- Tagging into the web page instead of the whole only
- Organizing tags in the form of labelled graphs
- Defining a RDF model of the graphic tagging[1].

2 Implementation

In this section, we describe the system functions and implementation details in terms of how a user might experience it.

The user goes to the web site of Lego-Note and starts browsing with the embedded browser. Right after the "GO" button is clicked, a piece of AJAX Extended [2] code is activated and sends the URL to a proxy server. The proxy server implemented in PHP then initials the request, and sends the returned page content back in the form of JavaScript Object Notation (JSON) . Here, the "cross domain" security restriction which prevents the user from tagging into the web content is evaded with the help of AJAX Extended.

[1] http://dom-sensus.sourceforge.net/
[2] http://ajaxextended.com/

After the returned content is rendered by the embedded browser, the user can either check the tag graphs made by the other users or add tags of himself. The tags take the form of the labelled graph. The node of the graph is a tag to the current page, which either points to the whole page, or to the selected content inside the page. The named edge which connects two nodes represents the user defined relation between two tags. An SVG based graphic editor which provides the basic graph manipulations such as adding, moving and deleting nodes and edges is implemented. The user can save his tag graph locally or share it publicly by saving to the Lego-Note server. The communication of saving and fetching the tag graphs is also implemented with AJAX. The server side functions are implemented with PHP and MySQL.

Untill now, the user can browse and tag any web page by entering a URL in the embedded browser. In order to preserve the user's browsing experience, link-following surfing is provided. This means when any link is clicked, the request should be captured and sent to the proxy server so that the next web page get loaded free of "the same domain restriction" as well. In Lego-Note this function is realized with JavaScript Behavior package[3].

Besides, to support the tag based browsing, a graph layout algorithm is provided by two JavaScript packages named graph.js[4] and prototype[5].

3 Discussion and Future Work

Although Lego-Note tries it best to be hardware and OS independent, the various web browsers (e.g. Firefox and IE) and SVG viewers make it a time-consuming work to support all of them. At present, Lego-Note only works with IE (above version 5.0) and Adobe SVG viewer 3.0.

The project is carried out under our observation and perspective on the folksonomy and Semantic Web. The target is to lower the barrier for the Semantic Web content production via the improved tagging system, and to provide us an infrastructure and data source for further researches like ontology mapping and negotiation. From the view of an application, Lego-Note is still an on-going project in its early stage, much more functions should be added.

References

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