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Browsing Linked Data with Fenfire

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ABSTRACT

A wealth of information has recently become available as browsable RDF data on the Web, but the selection of client applications to interact with this Linked Data remains limited. We show how to browse Linked Data with Fenfire, a Free and Open Source Software RDF browser and editor that employs a graph view and focuses on an engaging and interactive browsing experience. This sets Fenfire apart from previous table- and outline-based Linked Data browsers.

1. INTRODUCTION

Linked Data [1] is Semantic Web data that emphasises the graph of relations between resources while recognising that the data comes from Semantic Web documents that need to be retrievable using standard conventions. Domain-specific applications can crawl Linked Data to pull together and display information from various sources. However, there is a need for generic Linked Data browsers as well, as they help data producers to check what they publish and data consumers to check what is available.

One generic Linked Data browser is Tabulator [2], but it does not provide a graph view. Karger and schraefel provide insights on why graph views often are not the best views of Semantic Web data [4], but they acknowledge that graph views have a high “cool factor” and a niche. We consider a case that lies in this niche: we want to show the graph data as directly as possible. We apply a Free and Open Source Software rich desktop application, Fenfire¹, and its graph view to Linked Data browsing because unlike other browsers, this is a visually appealing, engaging and interactive demonstration of the Semantic Web’s capabilities. A graph view is a good way to explore a web of information, and it is close to the nature of Linked Data as a heterogeneous, web-like environment with little high-level structure.

In the following, we demonstrate how the Fenfire applica-

¹<http://fenfire.org/>

tion provides a useful Linked Data browsing experience, go through an example, describe the implementation and conclude with some future directions.

2. BROWSING EXPERIENCE

The Fenfire application is a generic RDF browser and editor with features useful for Linked Data browsing. The user interface employs the conventional graph representation of the RDF data model. To make the visualisations scalable in the number of nodes in the graph and to focus on one thing at a time, only one central node and its surroundings are displayed concurrently. It is possible to switch between two views implemented based on the concept: a simple list view of objects associated with the focused subject (say, a container), and the generic graph view from Fentwine [3].

A browsing session starts from some URI which is retrieved for a document with RDF data. This URI will be the initial focus unless the document has a `foaf:primaryTopic` defined, in which case the primary topic URI will be chosen as the initial focus.

For the surroundings, the generic graph view shows to the left of the focus all triples that have the focus as an object, and to the right all triples that have the focus as a subject. Each triple is shown as a predicate connecting the subject to the object. This view is applied recursively to each displayed node until, with distance, the graph fades away to the background. If the node has an `rdfs:label`, it is displayed instead of the URI.

Graph navigation can be done entirely via keyboard by rotating the surrounding nodes around the centre and moving focus to the node immediately to the left or right of the centre. While there is limited space for the surrounding nodes, all nodes can be navigated to via the rotation.

To enable browsing of Linked Data, Fenfire dereferences the URI of the focused node and retrieves any `rdfs:seeAlso` related to this node whenever instructed to do so. For example, in Figure 1 a user has loaded the FOAF profile of one person, followed a `foaf:knows` link to another person and retrieved the FOAF profile of this person.

As an important alleviation of incompletely linked data, Fenfire adds triples asserting that the graph retrieved contains information about all of its disconnected components.

