Applying the Sampo-UI Framework for Searching and Visualizing Linked Open Data

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More and more Cultural Heritage (CH) data are available as Linked Open Data (LOD) in SPARQL endpoints. However, a recurring practical problem is how to use such data easily for Digital Humanities (DH) research without deeper knowledge about SPARQL querying and programming skills. This talk presents and demonstrates how this challenge has been tackled in practice using the Sampo-UI framework [6, 8].

Sampo-UI is a JavaScript framework for creating web application or "semantic portals" on top of SPARQL [3] endpoints. Sampo-UI is an open source project and the code is available on Github[3]. It has been used in more than 20 DH "Sampo portals" [5] in use in Finland with up to millions of users, and during the last years in multiple international projects in, for example, Norway, Belgium, the Netherlands, Latvia, and Switzerland [9, 2, 7, 1]. Sampo-UI can be used to implement faceted search and browsing functions [4, 10], data analytic tools, and visualizations. While Sampo-UI has been used mainly in CH applications, it aims to be domain independent.

A new web application can be developed quickly by taking an existing Sampo-UI system as a starting point and 1) by changing its SPARQL endpoint address, 2) by adapting the SPARQL queries according to the metadata model of the new application, and 3) by configuring the available data analytic tools and visualizations as needed. This is possible with only modest SPARQL and programming skills; for a more experienced programmer, it is also possible to extend the framework with novel components and functionalities. Based on the Sampo model [5], the framework separates the user interface from the underlying LOD service and uses only SPARQL API to access the data. This means that Sampo-UI can be used to create applications for open SPARQL endpoints that are not controlled by the application developer [2].

A tool like Sampo-UI can be useful in opening CH data to the general public. Faceted search and interactive visualizations can help all people interested in CH interact with the data without requiring deep technical expertise that, for example, writing your own SPARQL queries or creating visualizations with programming languages would require. However, DH researchers can also benefit from using such applications. Faceted search is a form of exploratory search where users do not necessarily need to know in advance what they want to find, but can find interesting phenomena by refining the search step-by-step. Having

[3] Sampo-UI Github: `https://github.com/SemanticComputing/sampo-ui`

the ability to create visualizations quickly with only a few clicks can also be useful, as that can give a researcher the ability to play around with different ideas without committing a lot of work.

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