Technische Hochschule Brandenburg
University of Applied Sciences

KAD3W3

A PROJECT FROM THE "ENTERPRISE KNOWLEDGE ENGINEERING" MODULE AT THE UNIVERSITY OF APPLIED SCIENCES BRANDENBURG

Our Project

In cooperation between the German textbook publisher Cornelsen and the Brandenburg University of Applied Sciences, a project called KaD3W3 was launched. Within the project, terms of a manual for the ELVIS Asset Management System were modelled. The model can be compared to a shopping centre, which is structured in floors (2nd floor), departments (shoes) and subdivisions (women's shoes). In other words, a taxonomic, hierarchical structure based on the terms in the manual was created in the project. To put it more precisely: the "ELVIS" domain was modelled. With the help of this domain model, one is able to answer support requests in a higher quality, for example by using the taxonomy within the documentation for full text search. Furthermore, this project laid a foundation for Cornelsen to optimize existing prototypes for an automation of the ELVIS support. This poster discusses the methods and technologies used in the project to achieve these goals, that were used to make this possible will be discussed in detail.

Project Goal

The goal of this project is to make the documentation of a tool like Elvis more accessible by creating a Thesaurus. This can simplify the search for a specific resource or asset. The use and definition of the SKOS concept has facilitated the representation, maintenance, SPARQL query and the extension of the knowledge base.

Methodology

- The approach in the project was similar to a Scrum approach. Since the tasks were divided into several parts and through regular feedback from the customer (Prof. Sasaki and Cornelsen Verlag) a quality assurance could be carried out quickly
- The most important terms from the manual were written in Excel by the project member
- The taxonomy was created
- OpenRefine was used to convert the taxonomy into an RDF turtle file
- Sparql used for queries. Sparql queries are based on rdf files. For sparql queries the Apache-Jena-Fuseki server was used
- Execution of the created webapp
- Vue.js webapp was used to develop website and visualize the sparql queries (see no. 3)
- The GitHub account served as a documentation and versioning system

Project Outcome

As a first partial result a taxonomy (see no. 1) was developed as a knowledge base with the most important terms, term variants (as synonym) as well as generic and subordinate terms of the Elvis system based on the Elvis manual. Thereupon this taxonomy was converted to RDF format and formalized by a SKOS model (see no. 2). Finally it became possible to navigate in the term hierarchy over the generic and sub terms with the help of SPARQL and Heroku (see no. 3) and to find the central, relevant references to the searched topic or problem in the Elvis Manual via a SPARQL query (e.g. prefLabel, altLabel...) using the different synonyms. In general, the project has contributed to the further development of the students' communication skills and has made an important contribution to the training of all participants regarding the use of online media.

Our Tools