Semantic Webtechnology
Research Proposal Final Project

Mart Busger op Vollenbroek   S2174634
Olivier Louwaars   S2814714
Xianchao Zeng   S2930587

Introduction

While looking at the slides introducing the final project for Semantic Webtechnology, several project ideas were introduced to us. Project A was the project which seemed most interesting for us, so we tried to find a topic within the domain of extending / improving multilingual DBpedia. When we were looking for ways to improve or extend DBpedia from the English to other languages like Dutch or German, we found out that DBpedia entities are actually already quite complete. DBpedia properties, however, are not that complete yet, so there much potential there to improve and / or extend DBpedia there.

Topic & research questions

DBpedia properties also have properties of their own and while those subproperties are already mapped in the English DBpedia, in other languages they are poorly mapped or sometimes not mapped at all. The problem with this is that the property itself exists in multiple languages, but does not 'know' that of itself. Hence, changing the value in one language does not change it in the rest. Therefore, we want to extend and map these subproperties in DBpedia for other languages than English.

For the topic of our final project, we formulated these research questions.
- How can ontologies and their methods in different languages be tied together (mapped)?
- How is DBpedia being mapped, and how can we use these methods to contribute?
- How do we conduct and analyze the evaluation for mapping the multilingual properties for a DBpedia ontology?

Literature background

- DBpedia - A Large-scale, Multilingual Knowledge Base Extracted from Wikipedia
  http://semantic-web-journal.net/system/files/swj499.pdf
  [This article gives a completed introduction to the extraction framework, mapping methodology, usage statistics of multilingual DBpedia.]

- DBpedia: A Multilingual Cross-Domain Knowledge Base
  http://www.lrec-conf.org/proceedings/lrec2012/pdf/570_Paper.pdf
  [This article describes the general DBpedia knowledge base and extended data sets that specifically aim at supporting computational linguistics tasks.]

- Cross-lingual Property Alignment for DBpedia ontology using Triple Conceptualization
  http://semanticweb.kaist.ac.kr/home/images/3/3f/Cross-lingual_Property_Alignment_for_DBpedia_ontology_using_Triple_Conceptualization.pdf
  [This article describes property mappings between different lingual datasets, and a preliminary evaluation in DBpedia datasets using triple-conceptualization approach by suggesting *type* information of instances in triples represented as vector.]