

Master Thesis

Theme: Database/ Ontology based systems
Supervisor: M.Sc. Md. Imran Hossain, Prof. Dr.-Ing. Wolfgang Reinhardt
Posting:

A comparative evaluation between semantic web based knowledge modeling and relational database for a web based data repository

The Geographic Information Science and Technology Body of Knowledge (GI S&T BoK) was first published in 2006 by the University Consortium for Geographic Information Science (UCGIS) as a text book with a hierarchical structure. It is a collection of textual listing for GI S&T domain that points out all possible areas of GI S&T and categorized under 10 different knowledge areas. The usage of GI S&T BoK is now well explored and the recent trend is to convert it to a dynamic repository from the traditional paper based version so that it could be regularly updated in a participatory way and could be used by different user communities for different usages. Few researchers already developed small prototypes/systems in this regards based on either relational databases or semantic web. But the pros and cons for both systems with regards to the BoK storage and functionalities is still not well studied. Therefore, the main aim of this research is to evaluate both systems for BoK with regards to some functionality and to suggest the best suitable one. The comparative study has to be done using open source software products. Therefore, it is recommended to use Apache Jena for semantic web and MySQL/PostgreSQL as relational database for the comparative evaluation.

Master Thesis (6 months)

- Reviewing the dynamic environment/functionalities to be offered by BoK
- Development of evaluation criteria
- Evaluate Semantic Web and Relational Database based on BoK functionalities and evaluation criteria through practical testing.

Prerequisites:

Basic knowledge about:

- Data modeling
- Relational database
- Semantic web
- Programming (Java, VB.Net or other)

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