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StdTrip: An a priori design
process for publishing Linked
Data

Dissertação de Mestrado

DEPARTAMENTO DE INFORMÁTICA
Postgraduate Program in Informatics

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Dissertation presented to the Postgraduate Program in Informatics of the Departamento de Informática, PUC-Rio as partial fulfillment of the requirements for the degree of Mestre em Informática.

Advisor: Prof. Karin Koogan Breitman

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Abstract

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Open Data is a new approach to promote interoperability of data in the Web. It consists in the publication of information produced, archived and distributed by organizations in formats that allow it to be shared, discovered, accessed and easily manipulated by third party consumers. This approach requires the triplification of datasets, i.e., the conversion of database schemata and their instances to a set of RDF triples. A key issue in this process is deciding how to represent database schema concepts in terms of RDF classes and properties. This is done by mapping database concepts to an RDF vocabulary, used as the base for generating the triples. The construction of this vocabulary is extremely important, because the more standards are reused, the easier it will be to interlink the result to other existing datasets. However, tools available today do not support reuse of standard vocabularies in the triplification process, but rather create new vocabularies. In this thesis, we present the StdTrip process that guides users in the triplification process, while promoting the reuse of standard, RDF vocabularies.

Keywords

Linked Data. Triplification. Ontology Matching. Ontology Reuse. Interoperability.

Resumo

Salas, Percy; Koogan Breitman, Karin. **StdTrip: Um processo de projeto a priori para publicação de “Linked Data”**. Rio de Janeiro, 2011. 74p. Dissertação de Mestrado — Departamento de Informática, Pontifícia Universidade Católica do Rio de Janeiro.

A abordagem de Dados Abertos tem como objetivo promover a interoperabilidade de dados na Web. Consiste na publicação de informações em formatos que permitam seu compartilhamento, descoberta, manipulação e acesso por parte de usuários e outros aplicativos de software. Essa abordagem requer a triplificação de conjuntos de dados, ou seja, a conversão do esquema de bases de dados relacionais, bem como suas instâncias, em triplas RDF. Uma questão fundamental neste processo é decidir a forma de representar conceitos de esquema de banco de dados em termos de classes e propriedades RDF. Isto é realizado através do mapeamento das entidades e relacionamentos para um ou mais vocabulários RDF, usados como base para a geração das triplas. A construção destes vocabulários é extremamente importante, porque quanto mais padrões são utilizados, melhor o grau de interoperabilidade com outros conjuntos de dados. No entanto, as ferramentas disponíveis atualmente não oferecem suporte adequado ao reuso de vocabulários RDF padrão no processo de triplificação. Neste trabalho, apresentamos o processo StdTrip, que guia usuários no processo de triplificação, promovendo o reuso de vocabulários de forma a assegurar interoperabilidade dentro do espaço da Linked Open Data (LOD).

Palavras-chave

Linked Data. Triplification. Alinhamento de Ontologias. Reutilização de Ontologias. Interoperabilidade.

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Ad Majorem Dei Gloriam

San Ignacio de Loyola, (1491 – 1556).