Chair of Distributed Information Systems
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DiMIS
Distributed and Multimedia Information Systems

Online-Exercises Thu. 10:15 – 11:45 Zoom

Privacy-Preservation Technologies in Information Systems, WS 21/22

Exercise Sheet 06.

Subject: "Sticky Policies, DPV, RDF & Turtle"

Task 1 - Sticky Policies

a) Explain the concept of sticky policies.

b) Give advantages and disadvantages regarding the mentioned concept.

Task 2 - Interoperability

In todays world, Privacy Languages are not supported by popular browsers or services.

a) Give reasons for and against the implementation of Privacy Languages in the real world.

b) Which measures might be able to support the implementation in the future?

Task 3 - DPV

The Data Privacy Vocabulary (DPV) is a RDF graph which structures information related to data privacy. It is under development by the W3C.

a) Explain the benefits the DPV might offer.

b) What is the W3C?

c) Is it possible to extend the DPV with custom privacy categories? (To answer this question, you might need to solve the last task.)

Task 4 - RDF & Turtle

To work with the DPV, it is necessary to get brief insights about the Resource Description Framework (RDF). Generally, RDF documents describe a directed graph, refer for a small example to Figure 1. A directed graph is a set of nodes that are linked by directed edges. RDF was not conceived for the task of structuring documents, but rather for describing general relationships between objects. A central advantage of RDF graphs are the solved problems of syntactic and semantic interoperability. Internally, graphs are usually represented as so called Triples, as every RDF graph can be completely described by its edges. Those parts are called subject, predicate and object (also refer to `https://www.w3.org/TR/rdf-primer/`). Common Serialization formats are Turtle, JSON-LD, and XML.

a) Explain the difference of syntactical and semantic interoperability.

b) Describe the subject, predicate and object given in the graph in Figure 1.

c) Serialize the graphs in Figures 1-3 with Turtle. Also, refer to the official Turtle documentation `https://www.w3.org/TR/turtle/`.

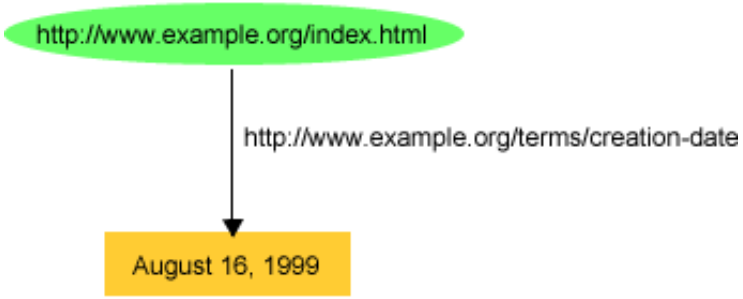

Fig. 1: Graph 1

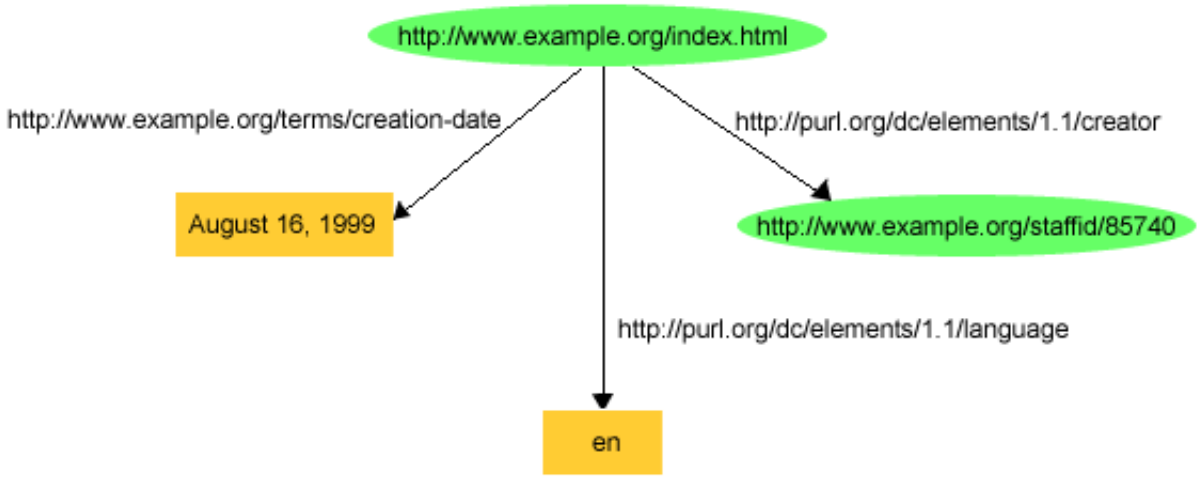

Fig. 2: Graph 2

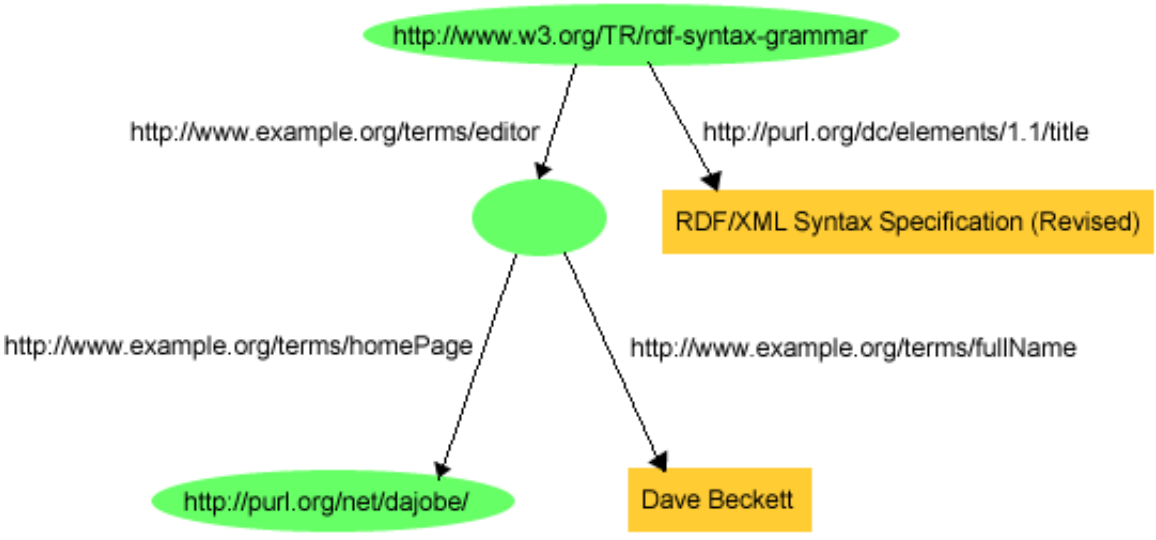

Fig. 3: Graph 3