

Exercise sheet

Recuperación de Información

Semantic Web and Web Services

1) **Create your own FOAF file** and publish it on your Web page!

You can take <http://www.polleres.net/foaf.rdf> as an example, or create a template from <http://www.ldodds.com/foaf/foaf-a-matic>

Use some properties of the foaf-vocabulary which are NOT used in the example file or auto-generated by FOAF-A-MATIC, be creative! Your FOAF file is your “Semantic Web homepage! ;-)

2) Test and verify your FOAF-File with the W3C **RDF-Validator**

<http://www.w3.org/RDF/Validator/> and send me the generated graph!

3) Link to some of your friends or course mates using the **foaf:knows** and **rdfs:seeAlso** properties... you are building a social network!

4) Now write and test some **SPARQL** queries on this data! Send me the query and query results! (You can use e.g. the online SPARQL engine at

<http://xmlarmyknife.org/docs/rdf/sparql/>

a) very easy: Select all names of people that axel knows. (from my foaf-file)

b) easy: Select all names of people that axel knows. (from my foaf-file) OR people that you know (from your own foaf:file) (Hint: You will need UNION for this!)

c) medium: Select all names of friends of my friends!

(Hint: You will need to traverse linked rdf files with the GRAPH keyword which are linked via the rdfs:seeAlso property!)

d) Hard: Select all friends of your fiends which are not among your direct friends!

(Hint: you will need some OPTIONAL and FILTERs for this!)

e) Invent 5 more useful queries!

5) **Write a Web Service client** (easy) in your preferred programming language which calls a Web service you find at XMethods (<http://www.xmethods.net>). You could use for instance AXIS/Java/Eclipse, as shown in the lecture, or wsdlpull (<http://wsdlpull.sourceforge.net/>), if you prefer to write a C++ client.

6) **Write a Web Service client** (harder) in your preferred programming language which sends queries to the SPARQL service available at xmlarmyknife.org and outputs the results in tabular form.

The Base URL of the query service is: <http://xmlarmyknife.org/api/rdf/sparql/query>

And it implements the WSDL description defined by the SPARQL protocol document:

<http://www.w3.org/TR/rdf-sparql-protocol/sparql-protocol-query.wsdl>