Semantic Web

Assignment 1

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Please submit your solutions via OLAT. Always list all group members contributing to the solution. Do not plagiarize from others!

For all the assignment questions that require you to write code, make sure to include the code in the answer sheet along with a separate file.

Please mention your team names here:

Team Name: XXXX

1.
2.

1 Semantic Web Layer Cake (5 points)

1.1 (2.5 points)

Please indicate for each of the following statements whether they are true or false.

☐ true	☐ false	"Jaguar" in the context of cars and "Jaguar" in the context of animals have the same syntax but different semantics.
☐ true	☐ false	The Semantic Web replaces the traditional HTML-based Web.
☐ true	☐ false	XML data carries formal semantics.
☐ true	☐ false	All URIs are also URL.
☐ true	☐ false	New vocabularies can be defined by only using RDF.

1.2 (2.5 points)

Complete the following sentences, which refer to building blocks of the Semantic Web layer cake.

URIs are used for

XML is used for

RDF is used for

RDF-S and OWL are used for

SPARQL is used for

2 Programming: DBPedia Access (5 points)

DBPedia (http://dbpedia.org) is a well-known graph accessible on the web in which RDF resources are connected to each other via RDF predicates.

2.1 (3 points)

Implement a simple HTTP client in Python that performs HTTP GET on a given URI. You can use the https://requests.readthedocs.io/en/master/ library for this task.

Your client should try to access a web resource that is given as an argument, print out the status code[1] and the content retrieved as the response.

RDF resources may be looked up via HTTP. Use your program to perform HTTP GET against the following resources and fill in the status codes:

http://dbpedia.org/person/Ada_Lovelace http://dbpedia.org/resource/Ada_Lovelace	

For each resource, briefly explain the meaning of its status code. Please also submit the source code of your program.

```
1: # Put your python code for Task 2.1 here
```

2.2 (2 points)

What is the relationship between the resource dbpedia:Chocolate and dbpedia:Aztec_Empire? Go to DBpedia and look at the URI of Chocolate (http://dbpedia.org/resource/Chocolate). Browse the data available and navigate through it until you reach the resource "Aztec_Empire". Inform in the table below all the URIs that a software program needs to access to go from "Chocolate" to "Aztec_Empire".

Source URI	Property URI	Target URI

[1] http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol#Status_codes

Important Notes

Submission

- Solutions have to be submitted via OLAT
- The name of the group and the names of all participating students must be listed on each submission.
- Solution format: all solutions as *one* PDF document. Programming code has to be submitted in a separate file in OLAT. Upload *all* `code` files of your program! Use `UTF-8` as the file encoding. *Other encodings will not be taken into account!*
- Check that your code compiles without errors.
- Make sure your code is formatted to be easy to read.
  - Make sure you code has consistent indentation.
  - Make sure you comment and document your code adequately in English.
  - Choose consistent and intuitive names for your identifiers.
- Do *not* use any accents, spaces or special characters in your filenames.

Acknowledgment

This pdfLaTeX template was adapted by Jun Sun based on the LuaLaTeX version by Lukas Schmelzeisen.

LaTeX

Use `pdflatex assignment_X.tex` to build your PDF.