Semantic Web

Assignment 1

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Some of the tasks may require you to do additional research extending the lecture. Please keep the citation rules in mind.

For all the assignment questions that require you to write a code, make sure to include the code in the answer sheet, along with a separate python file. Where screen shots are required, please add them in the answers directly and not as separate files.

Team Name: XXXX
Team Members: XXXX

1 Short Questions. True or False

1. The Semantic Web replaces the traditional HTML-based Web.

2. HTML does not separate between layout and content.

3. XML tags make the semantics of the information explicit

4. “Apple" in the context of a company name and "apple" in the context of fruit, have the same semantics but different syntax.

5. All URIs are also URL.

6. XML tags are enough to make the semantics of the information explicit.

2 Exploring DBPedia

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.

What is the relationship between the resource dbpedia:Bundesautobahn 10 and dbpedia:Thermal radiation? Go to DBpedia and look up the URI of Bundesautobahn 10 (https://dbpedia.org/page/Bundesautobahn_10). Browse the data available and navigate through it until you reach the resource "Thermal radiation". Write down in the table below all the URIs that a software program needs to access to go from "Berlin" to "Thermal radiation".

	Source URI	Property URI	Target URI
1			
2			
3			

3 Programming Task

Implement a simple HTTP client in Python that performs HTTP GET on a given URI. You can use `requests` library for this task. Your client should try to access a web resource that is given as an argument, print out the status code1 and the content retrieved as the response. Use your program to perform HTTP GET against the following resources and fill in the status codes:

`https://dbpedia.org/resource/Hermann_Knoblauch` Status code:
`https://dbpedia.org/person/Hermann_Knoblauch` Status code:

Important Notes

Submission

- Solutions have to be submitted to the OLAT repository Submission in the respected folder.
- The name of the group and the names of all participating students with matriculation numbers must be listed on each submission.
- Solution format: all solutions as *one* PDF document. Programming code has to be submitted as Python code to the OLAT repository. Upload *all* `.py` 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

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LaTeX

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