Semantic Web Technologies
Organization

Heiko Paulheim
Hello

• Prof. Dr. Heiko Paulheim
  – Chair for Data Science

• Research Interests:
  – Knowledge Graphs on the Web and their Applications
  – Data Quality and Data Cleaning on Knowledge Graphs
  – Using Knowledge Graphs in Data Mining
  – Societal Impact of Artificial Intelligence

• Room: B6 26, B0.22
• Consultation: Tuesdays 9-10
  – Please make an appointment with Bianca Lermer upfront
• Heiko will teach the lectures
Hello

• M.Sc. Sven Hertling
• Graduate Research Associate
• Research Interests:
  – Semantic Technologies / Semantic Web
  – Linked Data
  – Knowledge Graphs
• eMail: sven@informatik.uni-mannheim.de
• Sven will teach the *Python* exercises and co-supervise the team projects.
Introduction and Course Outline

• Administration
• Introduction
  – Vision of the Semantic Web
  – Building blocks of the Semantic Web
  – Technical foundations
Course Organization

• Lecture
  – Semantic Web standards and languages
  – Programming for the semantic web
  – Creating semantic web data
• Exercise
  – Understand semantic web principles, play with real data
• Project Work
  – teams of 3-4 students build a Semantic Web application
  – teams may choose their own data sets and tasks
    (in addition, we will propose some pointers for ideas)
  – write summary about project, present project results
  – not graded, but mandatory
• Final exam
  – final grades are only based on written exam
Course Organization

• Registration
  – you have registered via Portal2
  – there is a waiting list
  – if you decide not to attend, please write to Ms. Czanderle
Course Contents and Schedule

- Today: Introduction
- 16.09.19: Knowledge Representation with RDF
- 23.09.19: Simple ontologies with RDF Schema
- 30.09.19: Linked Open Data, Programming the Semantic Web
- 07.10.19: SPARQL, Intro to student projects
- 14.10.19: Knowledge Graphs
- 21.10.19: Complex Ontologies with OWL
- 28.10.19: Reasoning with complex ontologies
- 04.11.19: Ontology engineering, top level ontologies
- 11.11.19: Semantic Web Data Quality and Interlinking
- 18.11.19: Rule languages and non-standard Semantic Web languages
- 25.11.19: Project Presentations
- 02.12.19: Project Presentations
Deadlines

• Submission of project work proposal
  – Sunday, October 13th 23:59

• Submission of final project work report
  – Sunday, November 24th, 23:59
Course Organization

• Lecture Webpage: Slides, Announcements, Web Links
  – hint: look at version tags of slides!

• Additional Material

• Time and Location
  – Exercise: Friday, 12.00 - 13.30, Room B6 A1.04
Further Reading and Software

- Follow the links on the website
  - Most material is available online

- Programming environment
  - JENA framework (Java)
  - RDFlib (Python)

- Ontology engineering environment
  - Protégé
  - http://protege.stanford.edu/
Warning

• This lecture contains
  – cartoons
  – Java and Python code
  – some digressions to philosophy

• Having said that:
  – have fun! :-)
Questions?