Knowledge Graphs, Description Logics and Reasoning on Data

C. Bourgaux, M. Thomazo
Course Organization

Lecturers

- Camille Bourgaux, CNRS researcher at ENS
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- Michaël Thomazo, Inria researcher at ENS
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Schedule and location

- Monday morning (8:30-11:45)
- From January 13th to March 16th, except March 2nd
- Exam: March 23rd
- Not always in the same room, check for each course
Course Organization

Material

- Slides will be made available at: https://www.di.ens.fr/camille.bourgaux/teaching/IASD-KGDL/index.html
- References will be given at the beginning of each course
  - If you have trouble accessing them (paywall,...), email us
- For some courses, a computer will be needed
  - Please install Protégé (do not use WebProtégé): http://protege.stanford.edu/
Outline of the Course

1. Knowledge graphs and ontologies
   ▶ Reminders on RDF, SPARQL
   ▶ Goal of this course: Accessing data through an ontology
   ▶ Ontology formalisms

2. Ontological reasoning
   ▶ Classical reasoning tasks
   ▶ Satisfiability for $\mathcal{ALC}$
   ▶ Classification for $\mathcal{EL}$

3. Ontology-based query answering: The basics
   ▶ Ontology based data access
   ▶ Decidability issues
   ▶ Chase
   ▶ Query rewriting

4. OBQA: Advanced topics
   ▶ Inconsistency handling
   ▶ Reasoning on annotated knowledge graphs
   ▶ Existential rules as query language