

OWL

Petr Křemen

March 14, 2014

1 Exercises – OWL and SWRL

In Protégé 4.3, create a new ontology that imports the UOB ontology at <http://www.informatik.uni-ulm.de/ki/abobench/UOB/dl620/univ-bench-dl.owl>.

Ex. 1 — What is the meaning of this class description ?

```
(:takesCourse only :GraduateCourse) and (:takesCourse exactly 2 owl:Thing) and (:isAdvisedBy some (:teacherOf only not :UndergraduateCourse))
```

Ex. 2 — Define the class of all students, that take just undergraduate courses. Define the undergraduate course first.

Ex. 3 — Add basic information about the OSW course (the course name, teachers, yourself as a student), w.r.t the existing vocabulary. Explicitly state that you are creators of the knowledge.

Ex. 4 — Specify that each Professor is either an `:AssociateProfessor`, `:AssistantProfessor`, `:FullProfessor`, or `:VisitingProfessor`. These four types of professor should be considered mutually exclusive.

Ex. 5 — Define the salary limit for a Professor to GBP 70000 - 80000 annually) and create an instance of professor with salary GBP 100000. Define the necessary vocabulary.

Ex. 6 — Define the class of all students that take courses only taught by their advisors.

Ex. 7 — Specify that an email address identifies a person it belongs to, i.e. two people having the same email address are considered to be identical.

Ex. 8 — Define a new class `:List` as an ordered collection, together with its new object properties `:hasFirst`, `:hasNext`, `:contains`. Axiomatize each of these properties correctly, s.t. `:contains` is automatically inferred from the others.

Ex. 9 — Check consistency of the resulting ontology by the Pellet reasoner.