

## Assignment 1

Due: Oct 6, 2015

Subject: Modeling data in semantic web using Protégé / Building an ontology

Develop an ontology for a domain of your choice. It can be in any area you choose. The only requirement is that the domain knowledge should be complex enough to model using ontologies. This means, in the domain you choose, there are many concepts and relationships; data heterogeneity is wide; data volume is high; there are many query types that need to be executed; there is need for reasoning on the existing data to infer new knowledge and use the results in decision support. Good examples are health-related environments (hospitals, research labs, biomedicine facilities, etc.), manufacturing, complex IT and security systems, law-related systems, Internet of Things platforms, and so on.

Submit the following files:

- (RDF/S) Ontology modeling your choice of domain in turtle format (domain\_name.owl)
- Graph model of the ontology (domain\_name.pptx)
- 5 queries (in English) representing the usage of the domain knowledge (queries.txt)

### Notes:

- You must use the latest Protégé software to create the ontology.
- The schema part of your ontology should be reasonably comprehensive; the instance level need not be complete (few examples that represent the above queries are enough).
- The ontology should be consistent and verifiable against a reasoner.
- You must use `rdfs:label` and `rdfs:comment` to document your classes (as many).
- You must at least use the following `rdf/rdfs` class/prop/attr:
  - `rdf:type`, `rdfs:subClassOf`, `rdfs:subPropertyOf`, (one of) `rdf:Bag/Seq/Alt`, `rdf:Statement`, `rdfs:domain`, `rdfs:range`.

Grading:

- Technical completeness: Use of ontology constructs (`rdf`, `rdfs`) %40
- Comprehensiveness: How good the domain is represented (use of classes, properties, ...) %40
- Data: You should have enough representative examples (individuals) %20

Submit your work as a zip/rar file (**asg1-your-name.zip**) by email to [edogdu@](mailto:edogdu@) with subject line "[BiL546] Asg 1"

References:

- [Download](#) Protégé editor
- [Protégé tutorial from CO-ODE project](#)

Late assignment policy: %10 off for each late day after the deadline, and not acceptable after 3 days.