Project #1: Design an OWL Ontology

This project is due on Wednesday, March 18. It will count for 20% of your overall grade.

Working in teams of two to three people each, you will use Protégé 5.5 to design an OWL 2 DL ontology (or set of ontologies) for an application domain of your choice. Ideally, this domain should be something you know about. Since you are also expected to create a set of instances that demonstrate the use of your ontology, you should also choose a domain that has data (in some form other than RDF) that you can access. Your team is encouraged to meet with me at least once before the project is due in order to make sure that you are on track.

Important Dates:

Team formation	Wed., Feb. 26, 9:50am
Choose domain	Fri., Feb. 28, 11:59am
Submit final ontology	Wed., Mar. 18, 9:50am
Class presentation	Wed., Mar. 18, 9:50am

Team Formation and Domain Choice:
By the beginning of class on Wednesday, Feb. 26, you need to send me an e-mail that lists your team members. By noon on Friday, Feb. 28, you need to e-mail me a short description of your chosen application domain.

Final Ontology:
You will be graded on the breadth of coverage of the domain and completeness and accuracy of your class descriptions. I am expecting that you will describe roughly 50 to 100 classes and properties (if you import other ontologies, I expect you to create 50 to 100 new classes and properties as well). Larger teams will be expected to create more comprehensive ontologies than smaller teams. Your ontologies must be valid OWL or OWL 2 DL ontologies and should make extensive use of the rich modeling constructs of OWL, such as property axioms beyond domain and range, set operators like intersection and union, and property restrictions. You should use a DL reasoner to ensure that your classes are satisfiable and that your ontology does not lead to unintended inferences. You should make use of **rdfs:label** and **rdfs:comment** to document your classes and properties. In addition you should create one or more files that import your ontology (i.e., the instances are not in the same file as the ontology) and which combined contain at least 50 instances that have 5 or more triples each (triples copied from other RDF files do not count). These instances should be based on real data, but can be either entered manually or you can write a program to translate them from other formats to RDF. Where appropriate, you should include **owl:sameAs** statements to link your data to sources in the Linked Open Data cloud. You must have at least 20 such links. Your final ontology (or ontologies) should be in OWL RDF/XML format. Be sure to set an **xml:base** so that the ontologies are location independent. You should submit a ZIP file containing your presentation, your ontology file(s) (.owl) and data files (.owl or .rdf) by e-mail to heflin@cse.lehigh.edu.

Class Presentation:
On Wednesday, Mar. 18, your group must provide a 15 minute presentation to the class that summarizes your ontology. You will be graded on the quality of the presentation and your ability to communicate the main features of your ontology. It is recommended that you prepare a slideshow presentation.

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Grading:

Your grade on the project will be composed of the following components:

Final ontology	60%
Class presentation	30%
Individual grade	10%

The individual grade will be based on team evaluation forms where you will be asked to evaluate the contribution of each member of your team, including yourself.