Homework 4 (Due at 11:59pm on 2015/02/13)

The purpose of this assignment is to become familiar with ontology management using Protégé, understand description logics and the services a reasoner provides.
.
Download and install Protégé:

> http://protege.stanford.edu/products.php#desktop-protege

on your preferred platform.

1. Warmup

Do the Protégé OWL tutorial:

http://protegewiki.stanford.edu/wiki/Protege4Pizzas10Minutes

2. Explore the inferences performed by the DL reasoner

Load the people ontology (http://owl.man.ac.uk/2006/07/sssw/people.owl) using the "Open OWL ontology from URI" option (Or copying the file locally. You may want to take a look at the file itself).

Each question is worth 10 points.

1. What's the definition of mad_cow? Give both the formal definition and an explanation in your own words.

2. What constraints does mad_cow inherit from its superclasses?

3. Do you see any problem with that definition? Why?

Start a reasoner. (The default Hermit 1.3.8.3 in the Reasoner tab is fine)

4. What happened to the definition of mad_cow?
Hint: check also the Class hierarchy (inferred) tab

5. What happened to the giraffe class? Why?

6. List all the person instances.
Hint: use the DL Query tab.

7. Give a complete description of the instance Mick.

8. List all the descendant classes of pet owner.

9. How many "pets" must a person have to be considered an animal-lover?

10. Do all the "pets" of an animal-lover need to be animals?

Submission
Students should use blackboard's digital drop box (blackboard.usc.edu) to submit their homework. We will NOT accept any other kinds of submissions like email or hardcopy.

- Solution.txt should contain the solutions for all the 10 problems.
- Submit Solution.txt in a folder using our naming convention:
(LastName_FirstName_HW4) and zip it before submitting. Please follow the naming convention strictly.