INF558
Bufan Zeng
3/7/2018

Homework 7 Report

Task 3:

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

-cow and (eats some (brain and (part_of some sheep)))
which means "A mad cow is a cow that has been eating the brains of sheep."

2. What constraints does mad_cow inherit from its superclasses?

-animal and (eats only (not (animal))) and (eats only (not (part_of some animal)))
-eats some owl:Thing

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

It inherits the property of vegetarian, which doesn't eat animal. However, its definition says it eat the sheep brain, which is contradiction.

Task 4:

1. What happened to the definition of mad_cow? Compare with result when not using reasoner. (Hint: check also the class hierarchy (inferred) tab)

The reasoner adds "owl:Nothing" under the formal definition. A "owl:Nothing" class was added in class hierarchy tab.

2. What happened to the giraffe class? Compare with result when not using reasoner.

The reasoner adds a vegetarian superclass to it. Also the vegetarian's definition in the "Anonymous ancestor".

3. Which classes do Tom and Minnie belong to? Compare with result when not using reasoner. (Hint: Minnie has_pet Tom)

Without reasoner, Tom belongs to "owl:Thing", Minnie belongs to "elderly" "female".
With reasoner, Tom also belongs to "cat" "pet" classes and Minnie also belongs to "old lady" class.

4. List all the person instances.

Fred

Joe
Kevin
Walt

5. Give a complete description of the instance Mick. Which classes do Daily Mirror belong to? Compare with result when not using reasoner.

Without reasoner, Mick belongs to "male" and Daily Mirror belongs to "owl:Thing".
With reasoner, Mick also belongs to "dog owner" and "white van man" classes; Daily Mirror also belongs to "tabloid" class.

6. List all the descendant classes of pet owner.

animal lover
cat owner
dog owner

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

3

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

Yes, since the range of "has_pet" is animal

9. Is "old lady" need to be a person?

Yes, it's definition restricts it to be a person