

# CLASSIC (33 points)

Due Date: Open

May 21, 2002

Because it is late in the term, and you are all busy on your projects, I will only ask for a very small assignment over CLASSIC.

You may find NeoClassic<sup>1</sup> for the PC at `~mjm/neoclassic.exe`. Move this binary onto a PC and execute – this runs the command line version of CLASSIC.

## 1 Defining the Basic TBOX

Define the primitive concept of a *Person*<sup>2</sup>. While you are at it define the other primitive concepts *Job* and *Company*. Now define the following roles: *hasJob*, *evaluation*, and *providedBy*

Now define the following defined concepts:

$WorkingPerson \doteq Person \sqcap |hasJob| > 0$

$GoodJob \doteq Job \sqcap evaluation."good"$

$GoodWorker \doteq WorkingPerson \sqcap \forall hasJob.GoodJob$

$Unemployed \doteq Person \sqcap |hasJob| = 0$

$OverWorkedWorker \doteq Person \sqcap |hasJob| > 1$

Define the primitive disjoint covering that a company may be either a *PublicCompany* or a *PrivateCompany*, but not both. Finally attempt to define *ImpossibleCompany*  $\doteq PrivateCompany \sqcap PublicCompany$ .

Verify that *WorkingPerson* subsumes *OverWorkedWorker*.

## 2 Asserting the ABOX

Now create the following individuals:

*Company*(billco)

*Company*(junkpro)

*Company*(vapormore)

*Person*(dilbert)

*Job*(job1)

*Job*(job2)

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<sup>1</sup>For educational purposes only.

<sup>2</sup>Remember that a primitive concept in classic is a *ClassicThing*.

### 3 Extending the TBOX

Define a *DumbCompany* if it is in the set  $\{billco, junkpro\}$ . Define  $DumbJob \doteq Job \sqcap \forall providedBy.DumbCompany$ . Finally define  $FrustratedPerson \doteq Person \sqcap \forall hasJob.DumbJob$ .

### 4 ABOX reasoning

Verify that *dilbert* is currently not *Unemployed*. Close off the *hasJob* role on *dilbert* and see that now he is *Unemployed*. Open the role once more and see that he is not *Unemployed*.

Assert that *job1* is provided by a *DumbCompany* and the evaluation of *job1* is "good" and *dilbert* has *job1*. Close the proper roles and verify that *dilbert* is a *FrustratedPerson* and is a *GoodWorker*.

Assert that *job2* is provided by *vapormore* and the evaluation of *job2* is "poor" and *dilbert* has this job. Verify that now *dilbert* is no longer a *GoodWorker* and he is now an *OverWorkedWorker*.

### 5 Hint...

The following CLASSIC functions are necessary to perform these tasks:

```
createConcept
createRole
createIndividual
printInfo
addToldInformation
closeRole
uncloseRole
```

The concept constructors are those in  $FL^-$  plus *NO*.

### 6 What to hand in...

A total log. You may hand this assignment in anytime up until around mid June - when grades are due. I will send out email when I know the exact due date.