INTERNAL REASONER

Enhance knowledge

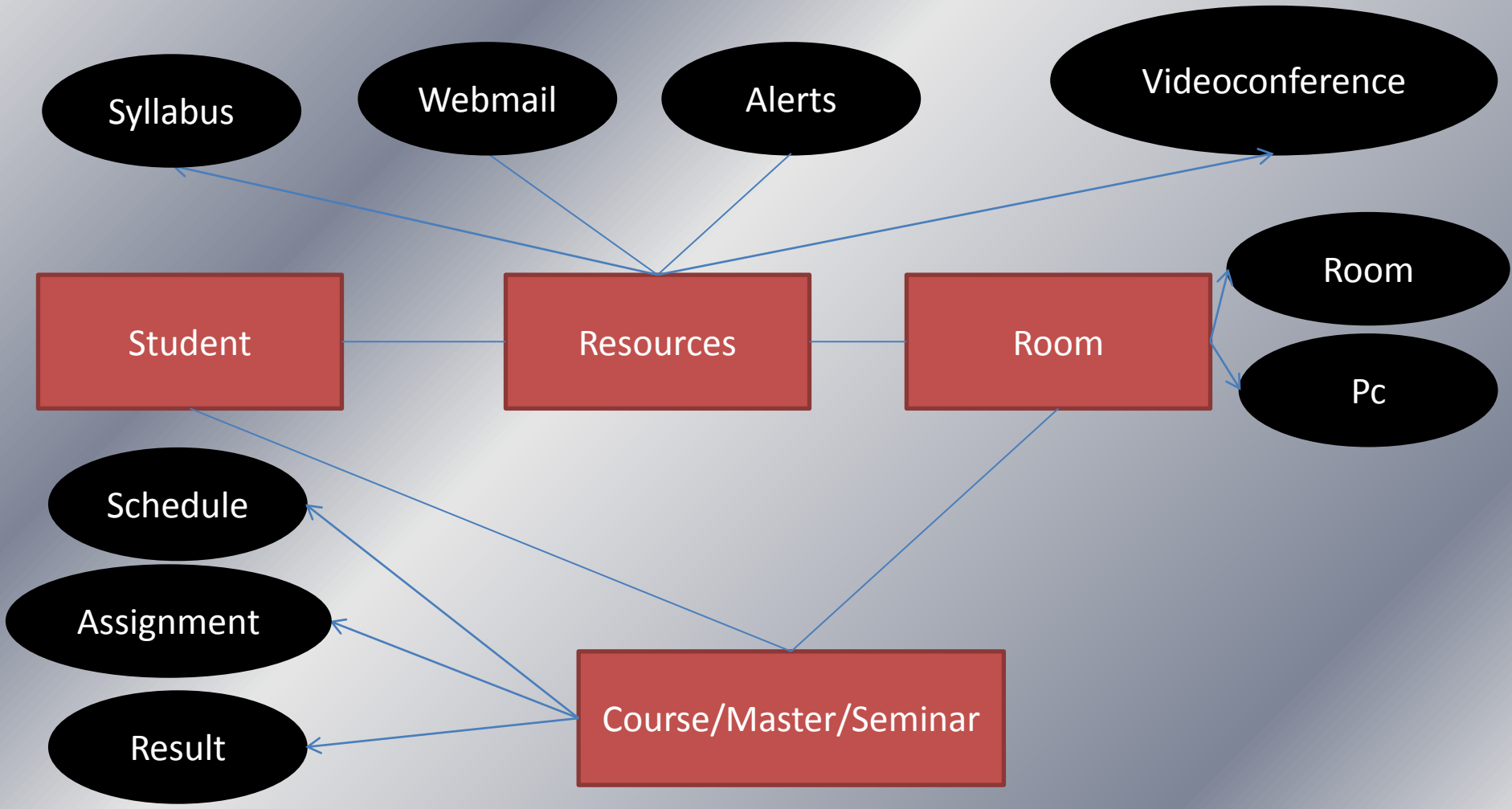
Finding errors

INTRODUCTION

I’m going to talk about reasoners on Protége. The reasoners are used for execute the rules that we are previously defined. For make this presentation more clear I will use my scenario as a example of the next slides.

SCENARIO EXAMPLE

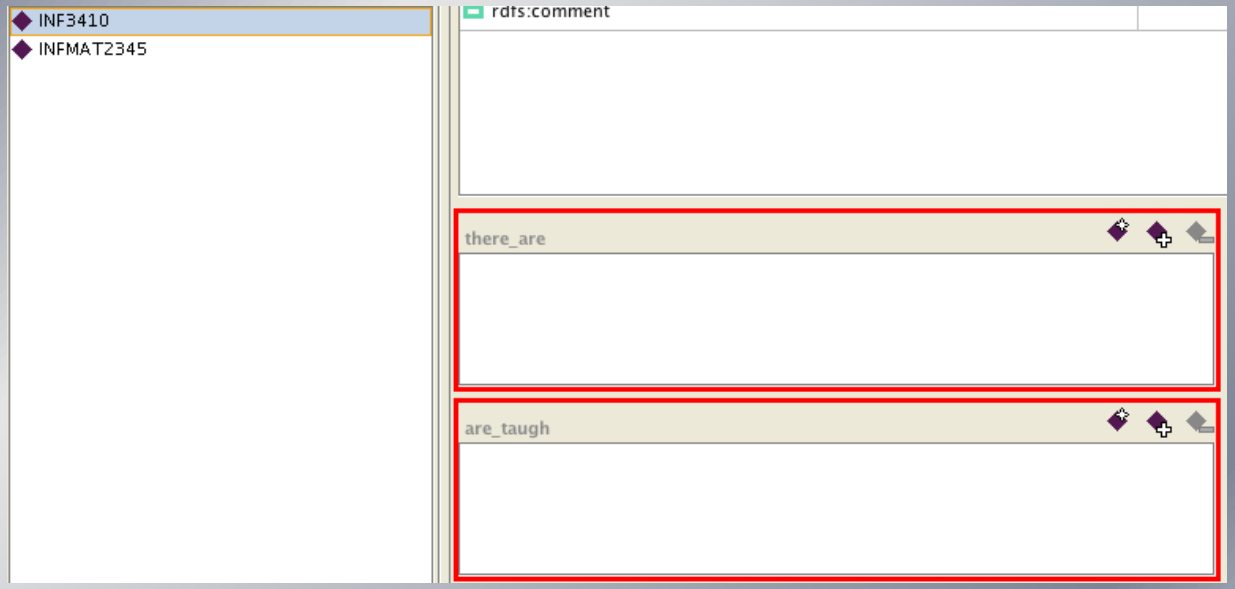
The example it's about a university scenario and here some classes are missing but this enough to see the basics things



EXAMPLE OF A RULE

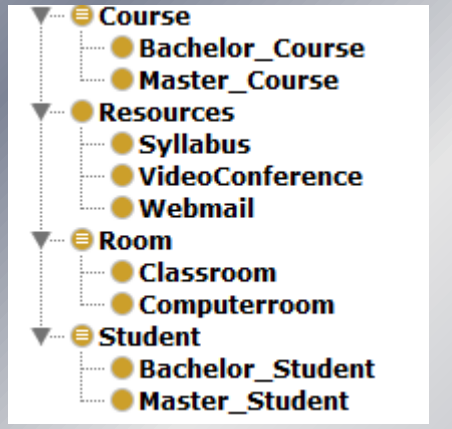
Here is an example of a rule which as result, after execute it on Protégé, will fill out the values on the individuals tab

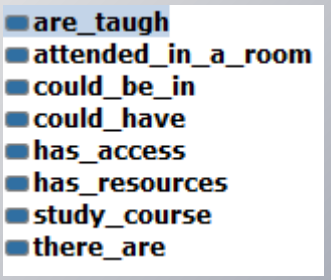
$$Room(?R) \wedge Course(?C) \rightarrow are\_taugh(?R, ?C)$$

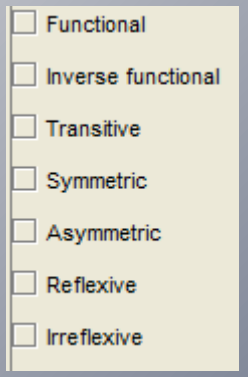


BEFORE WRITE YOUR RULES

Before write the rules, first you must define well the classes, properties, characteristics… summarizing, you must define well the whole ontology for the rule works fine. That will **enhance the knowledge** of our ontology







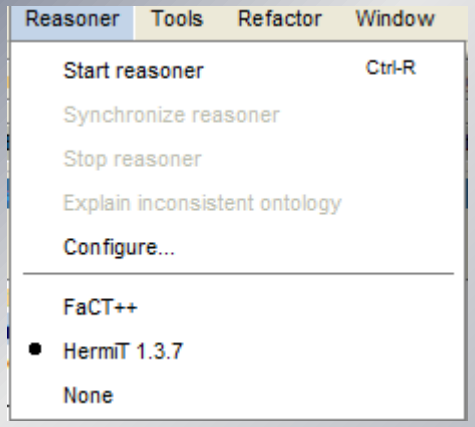
WRITE THE RULES CAREFULLY

Rules editor on Protégé have a syntax corrector but we can have grammar errors writing a rule, for example, using a class that actually don't have the parameters we can show, names of the variables are wrong (we wrote a *S* instead of *C*), or writing a rule without taking into account the properties of the rule; showing repeated values, for example. I recommend to use the *sqrl:select* command for check the results of the rule and could be a way to **find errors** on our rules.

This give us the list of the courses and the correspondent rooms where they are taught.

REASONERS

On Protégé 4.2 exists some reasoners installed by default

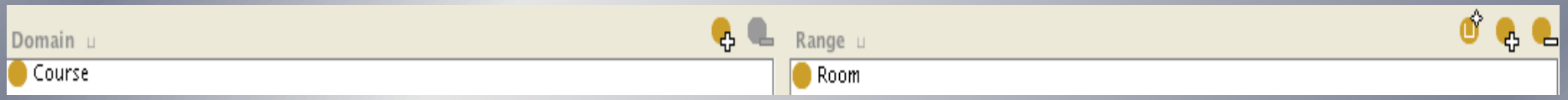


But there are some more, as we saw on the previous lecture, such as Pellet, Jess, KAON2… that can be installed manually as a Protégé plugin. We can remember when we installed Jess on Protégé 3.4.8.

ENHANCE KNOWLEDGE

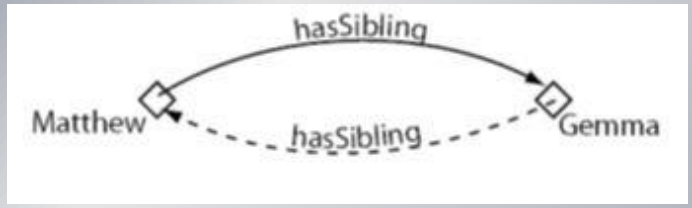
How we define well our ontology; the properties and which classes are related with our properties is fundamental (Domain &Range)

This is an example where the property *“are taught”* is related with the class *Course* and *Room*. So we can read that *A course are taught in a room*



ENHANCE KNOWLEDGE

We should have into account the properties that we defined and not make other relations that could be redundant. For example in a symmetric property is enough to declare the property like this:



So we don’t need to define in the opposite way (Gemma has sibling Matthew) because the symmetric property assume that. So, it’s good to know what every property means.

ENHANCE KNOWLEDGE

Of course, we should have special care with the name of the classes because it's not the same the class *Course, Master Course and Bachelor Course*. We can have misspellings in our ontology if we named classes with similar names:

Master Course, MasterCourse,Mastercourse, Master_Course, Master-Course…

FINDING ERRORS

Although the rule editor have a syntax corrector, we could be wrong writing the grammar of the rule as well as use the class that cannot work for the rule we are defining or maybe could be a problem misspelling the variable of the class. For all those problems, there is a very practical solution which is the *sqrl:select* command. Before execute our rule we can see the results that it will show up with that command, we can use it like this:

And then apply the rule: