COMP9322
# Software Service Design and Engineering

S1 – 2019

Explore an Ontology in Protégé

This exercise is an introduction to Protégé, which will provide simple instructions on how to import and inspect an ontology to understand different entities and relationships, before creating custom ontologies that link entities from external ontologies.

1. Open Protégé in your desktop. It will create an empty ontology with a sample IRI. Now you are going to import an ontology available online through a known URL.
2. For this exercise we are using the FIBO production ontology available at the URL : https://spec.edmcouncil.org/fibo/ontology/master/latest/AboutFIBOProd.rdf
3. There are two ways you can do this:
    a. Download the .rdf file into your local computer and go to Protégé main menu File -> Open and select the file you downloaded.
    b. Directly provide the URL to Protégé by going to main menu and select Open from URL-> Copy the URL above into URI text box and click OK, as shown in the figure below.
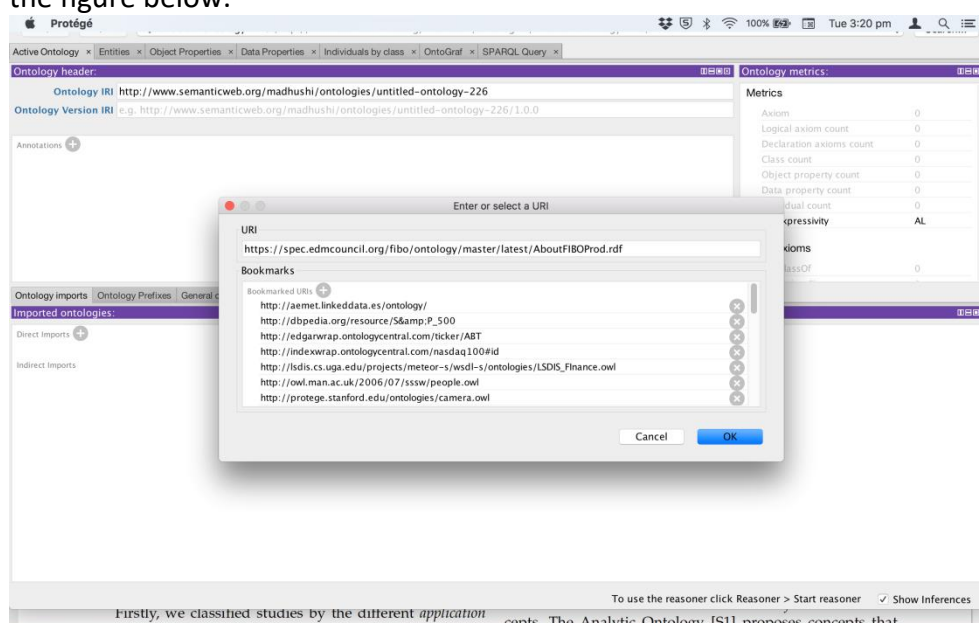

4. This will load the FIBO ontology into Protégé. Be patient as there are lot of associated ontologies with FIBO that takes time to be extracted online.

5. While the ontology is loading multiple prompts may appear, requesting you to manually resolve dependencies, when they cannot be accessed online. This may due to a broken URI. For this exercise please ignore the prompt by clicking "NO".
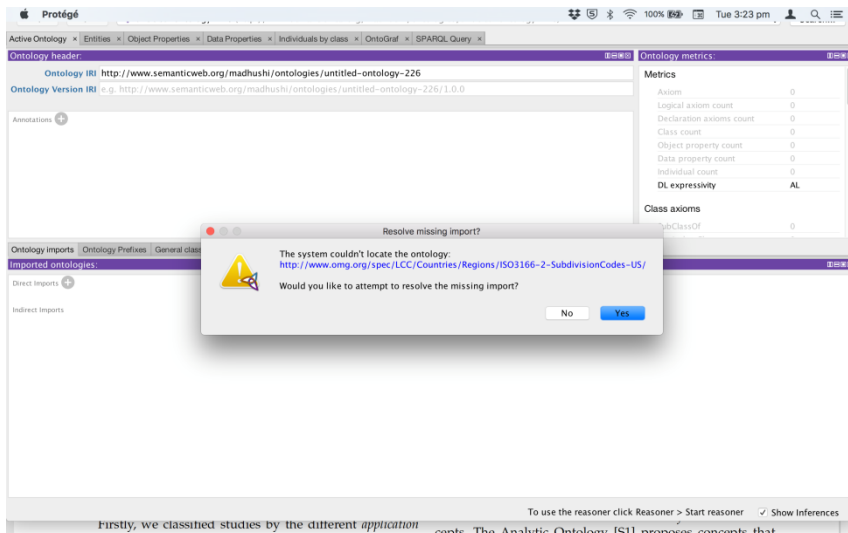
Note: To resolve this missing imports if needed, you have to manually search the respective ontology and add into the ontology. This will not be necessary in this exercise.

6. Once import is complete you will have the ontology ready for exploration. To observe the "Classes" defined in Protégé, go to "Entities" tab and expand the class hierarchy as shown below.

7. Currency is an important concept in financial domain. Try to locate the "currency" class and you can study details around that such as "Class Annotation", "Class Usage" and "Description" in different views as shown in the diagram below.
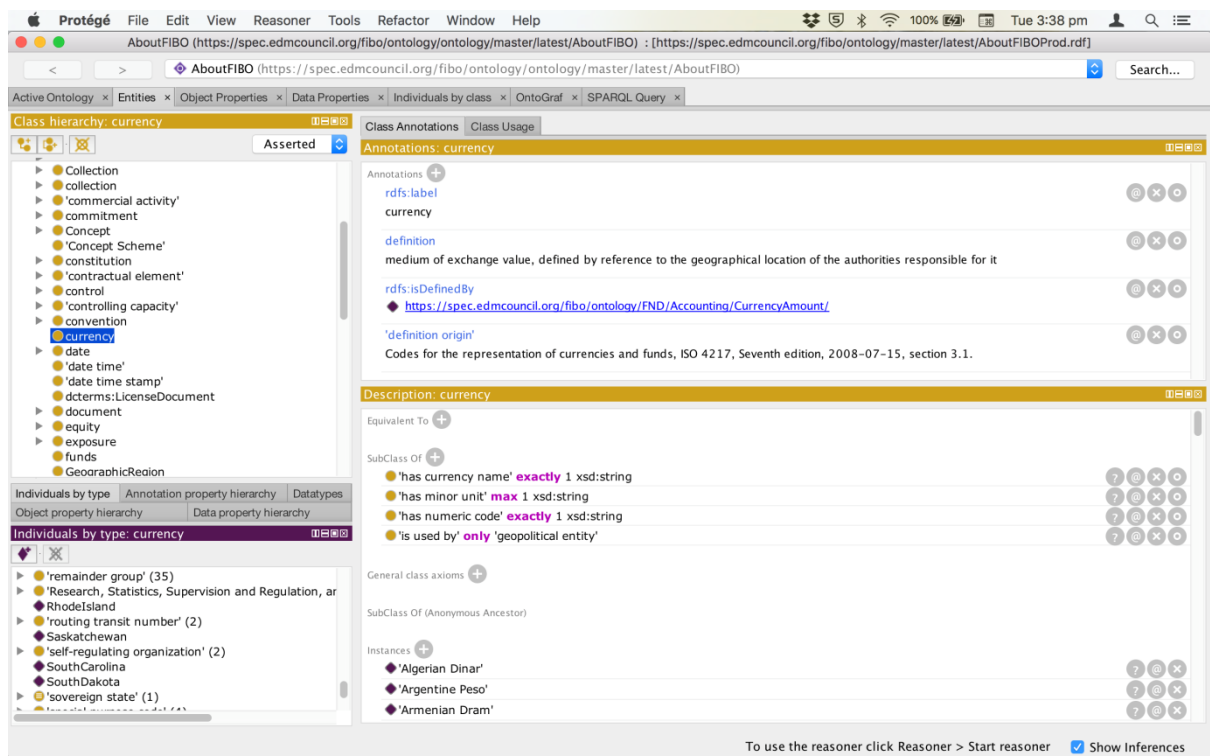
Observe the label and definition under the 'Annotations' view and instances under 'Description' view for the "currency" class.

8. You can observe different data properties related to currency such as "has currency name" and "has currency tag" under "Data Properties" tab. Following example shows the "has currency name".
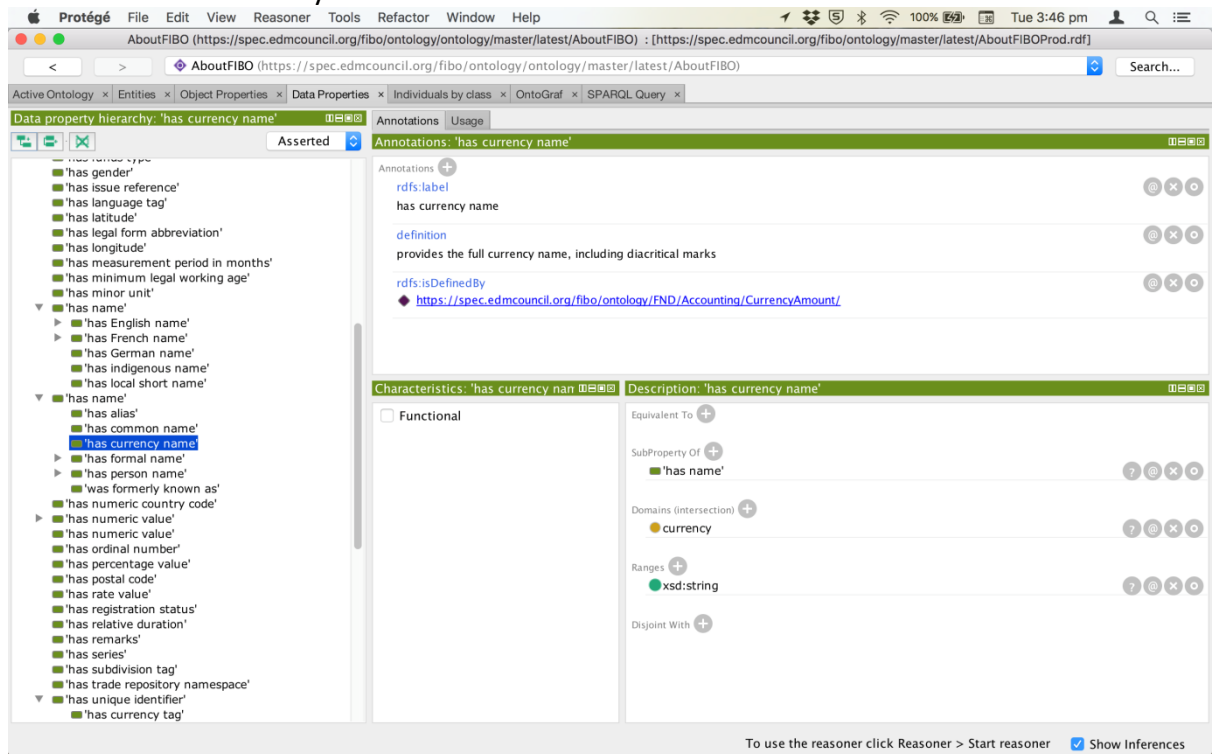

9. You can observe different object properties (relationships) related to currency such as "has currency" under "Object Properties" tab. Following example shows the "has currency" which has the "monetary amount" class as **Domain** and "currency" as the **Range**. You can revisit "Entities" tab to find more details about "monetary amount".
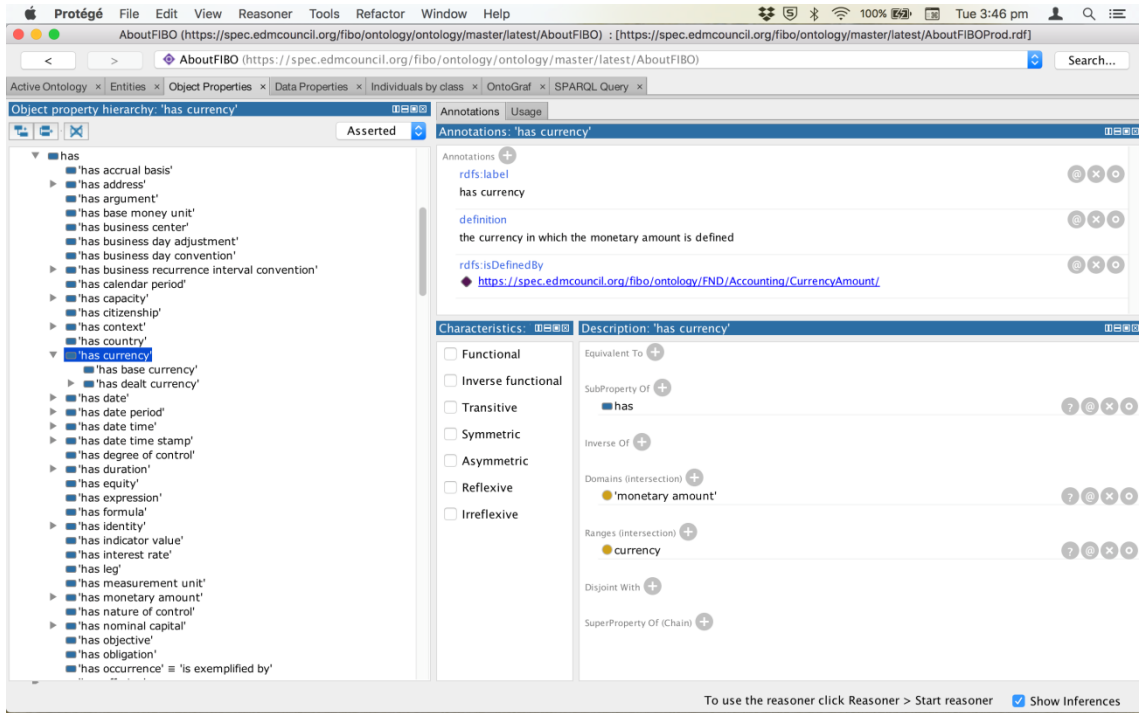
10. As you have noticed, there are large number of classes their properties defined within the ontology. If you want to find any entity quickly you can use the "Search.." button provided Right to the ontology URI on top.
Shown below is the result for the search term "currency" and the results are categorized by location they appear in the ontology (within class definition, as domain, range etc.).
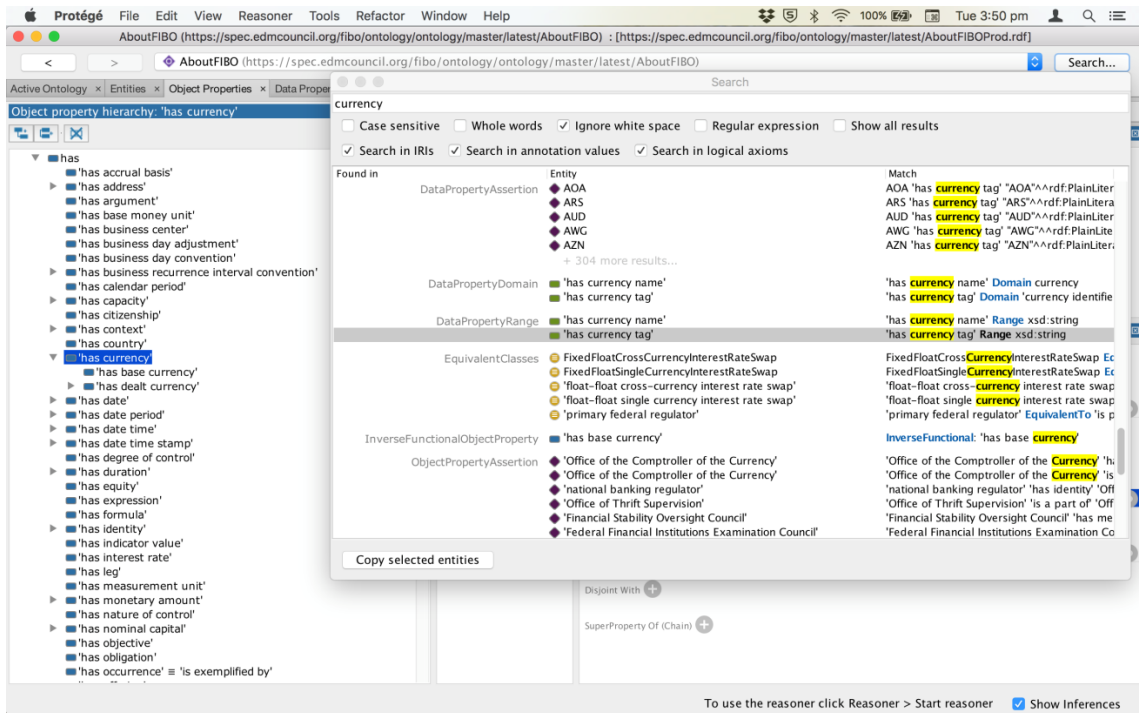
11. You can observe all the instance related to particular class, by visiting "Individuals by Class" tab. Show below is an example instance of "Currency" class – "Australian Dollar"
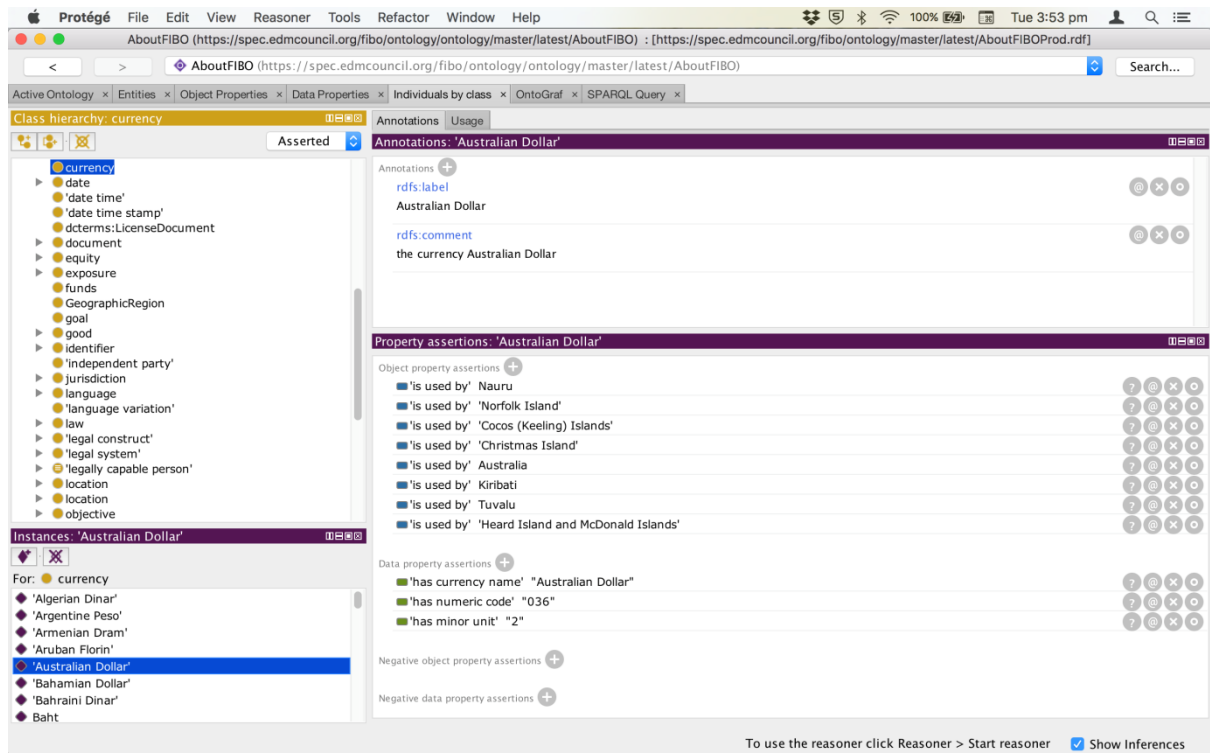
Exercises

1. Each currency has a data property which is a numerical code. Find the numerical code associated with the Hong Kong Dollar
2. Use search button to find out all data properties of the country "Indonesia"