Experiment No:- 2

Aim: To Study Semantic Web Open-Source Tool protégé.

Theory:

The Semantic Web is an evolving extension of the World Wide Web in which the semantics of information and services on the web is defined, making it possible for the web to understand and satisfy the requests of people and machines to use the Web content. It derives from W3C director Tim Berners -Lee vision of the Web as a universal medium for data, information and knowledge exchange.

The semantic web addresses this shortcoming, using the descriptive technologies Resource Description Framework (RDF) and Web Ontology Language (OWL), and the data-centric, customizable Extensible Mark-up Language (XML). These technologies are combined in order to provide descriptions that supplement or replace the content of Web documents
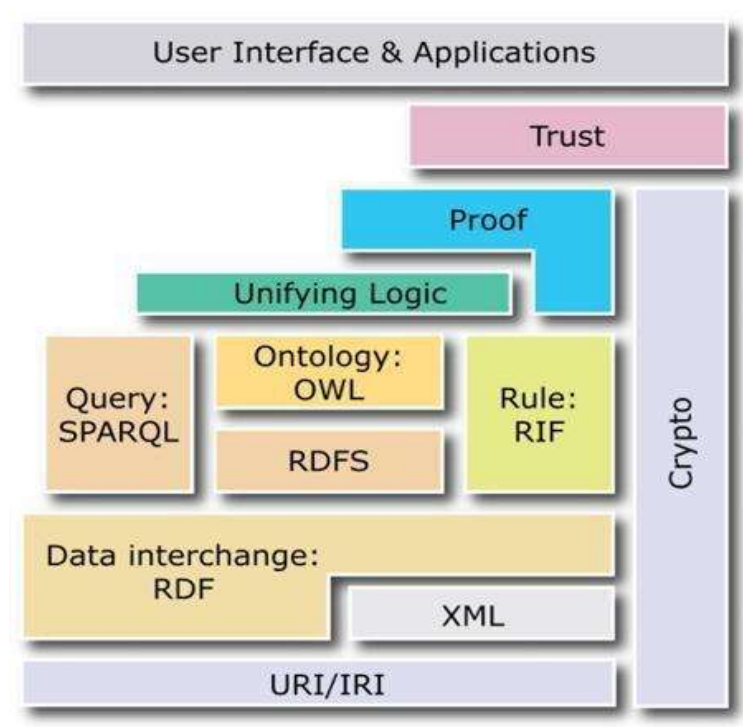

Fig:- Semantic web stack

Web Ontology language: The W3C Web Ontology Language (OWL) is a Semantic Web language designed to represent rich and complex knowledge about things, groups of things, and
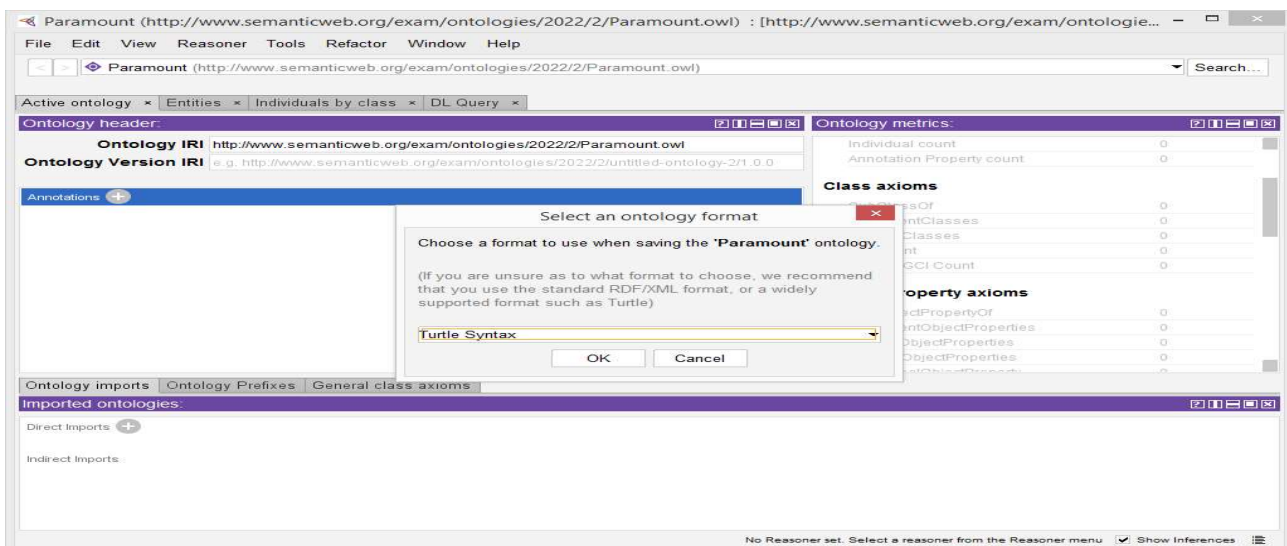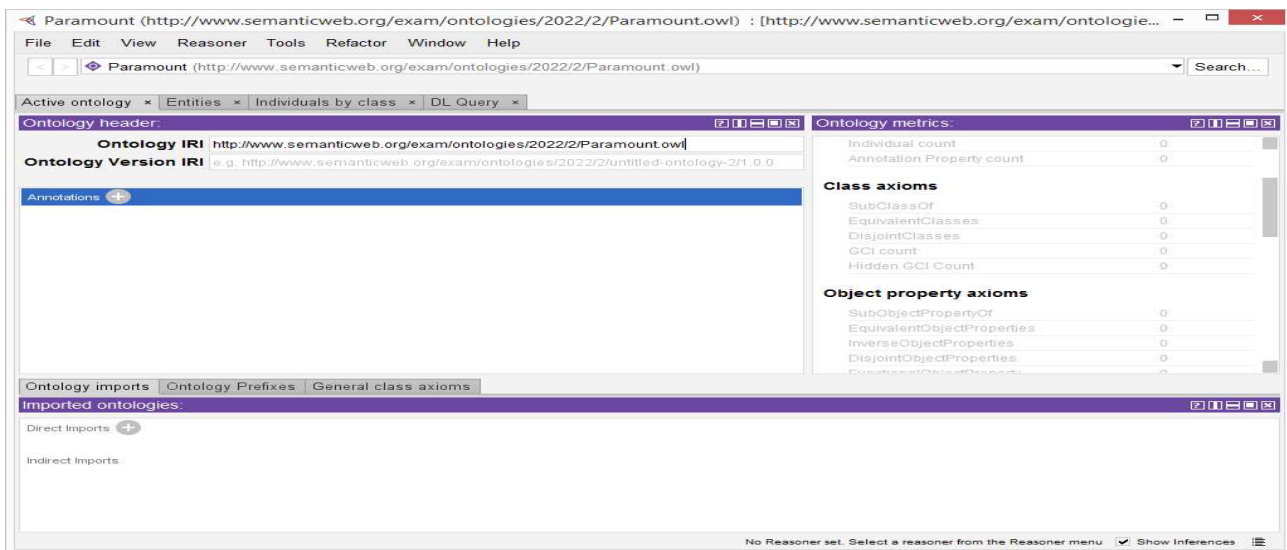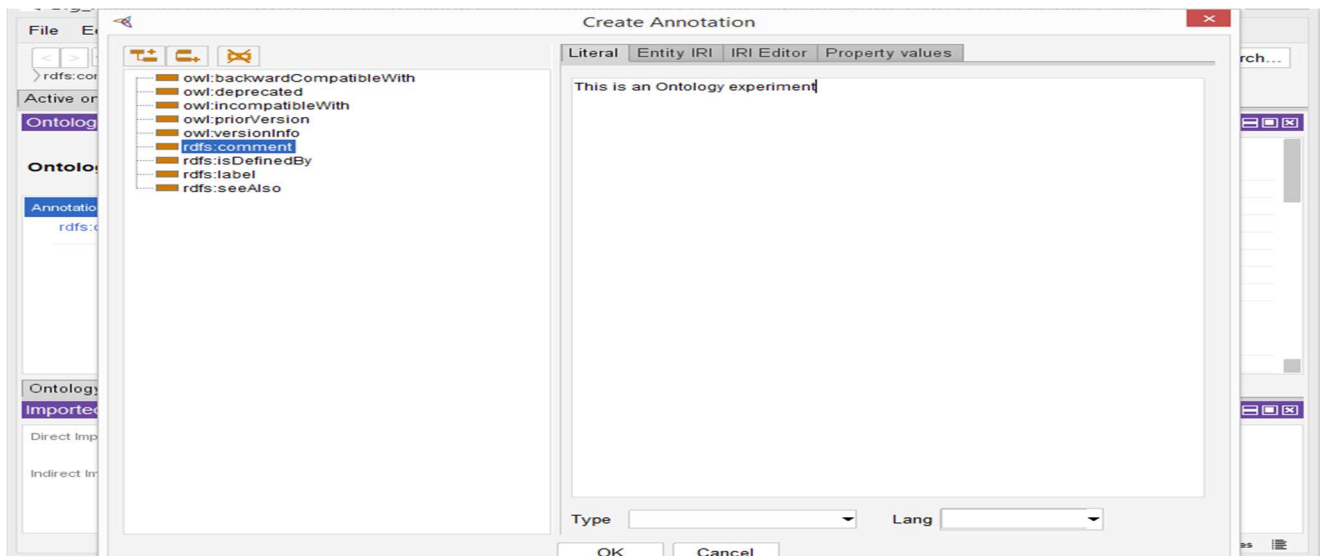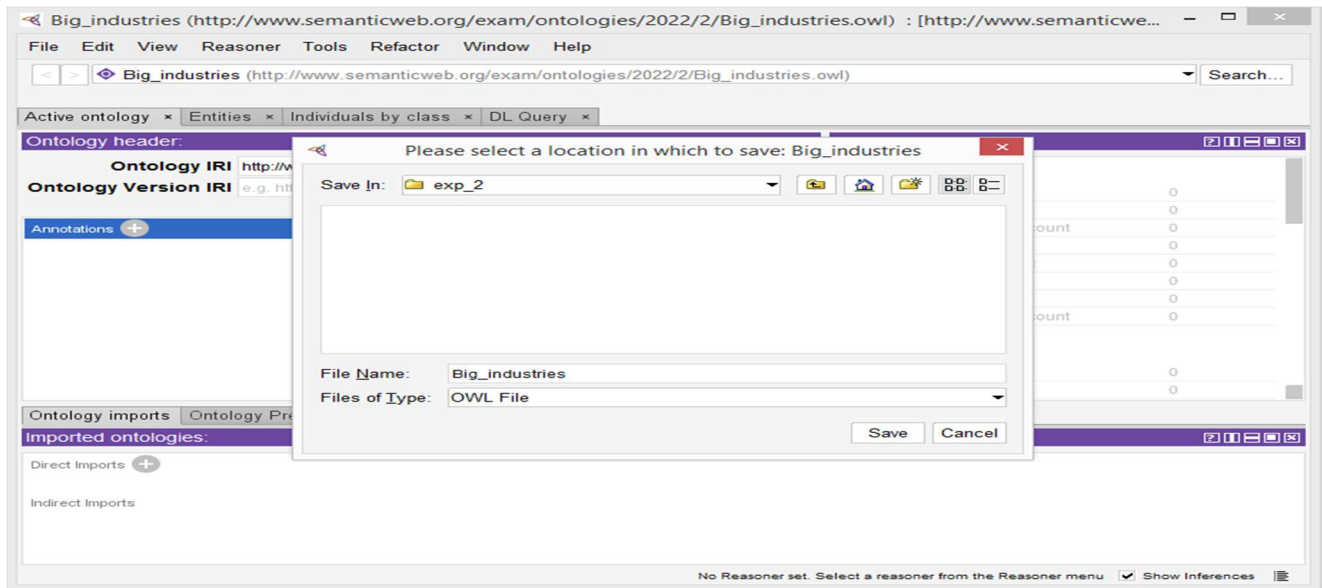
relations between things.

OWL tool Protégé: - Protégé is an open-source ontology editor and framework developed by the Stanford Center for Biomedical Informatics Research for building knowledge-based solutions. It provides a plug-and-play environment that makes it a flexible base for rapid prototyping. One can either download the desktop application or continue to use web-protégé

Download protégé from below link
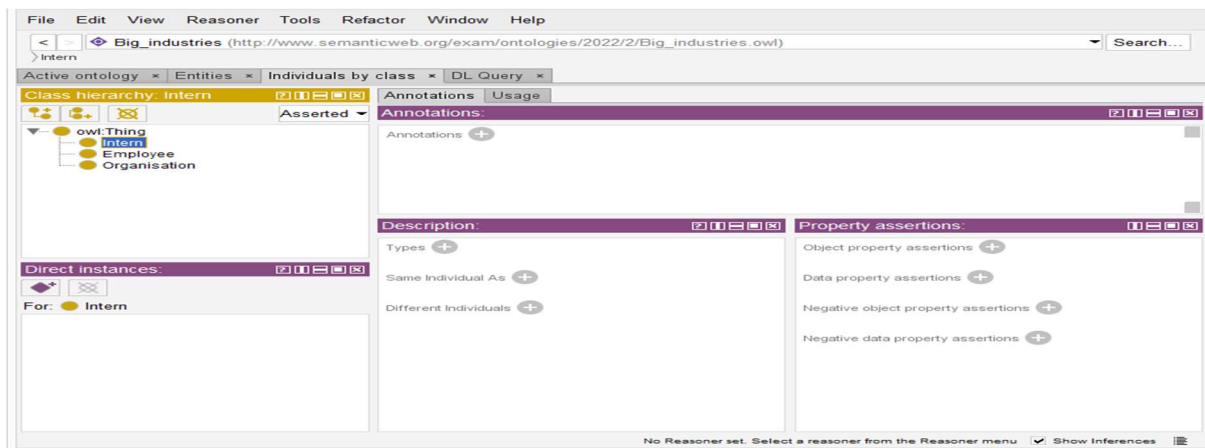https://protege.stanford.edu/products.php#desktop-protege

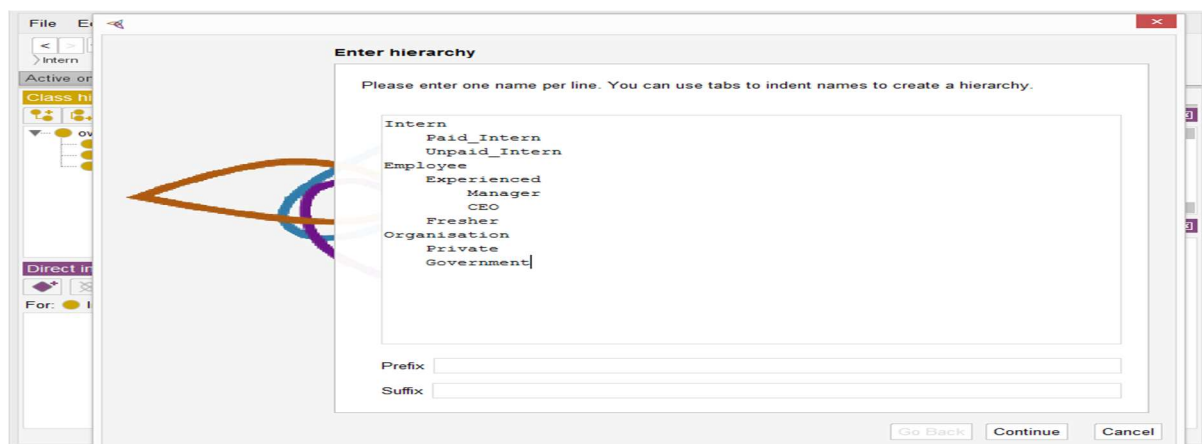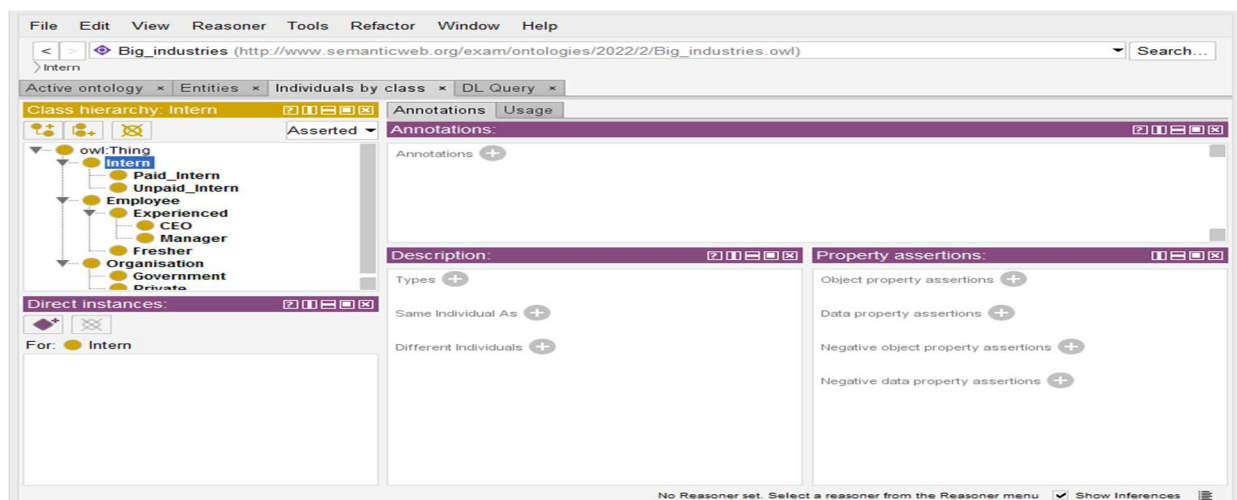After install, provide name to file and save as.owl extension

Add annotation

Class properties: Create a class Intern, Employee and Organization as subclass of thing

Create class and subclass by class hierarchy as below, Go to tools, select class hierarchy and enter hierarchy details as below.
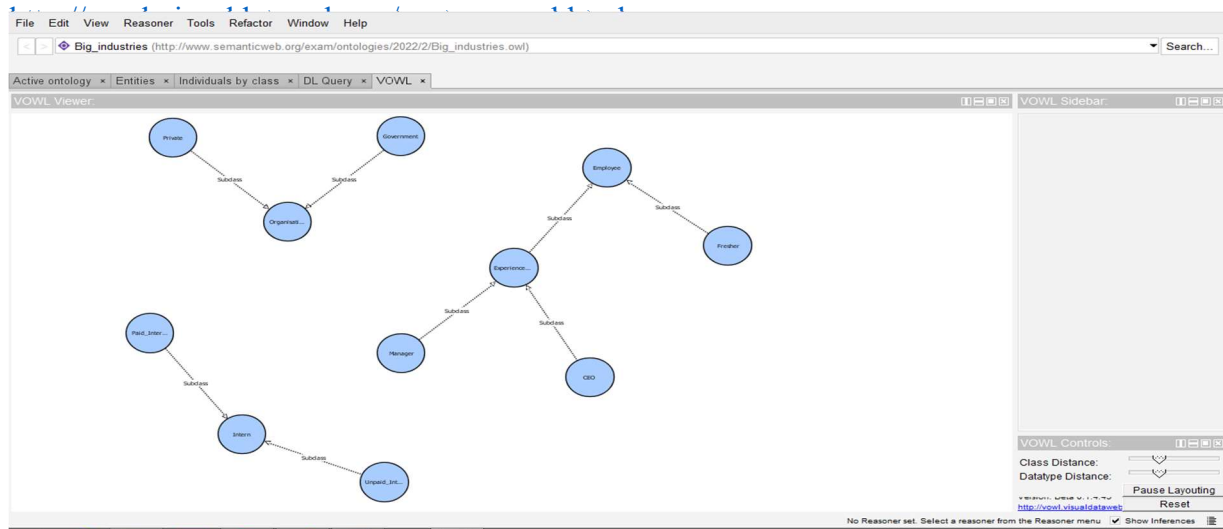

To do disjoint class select class and select option disjoint with .provide which class to be disjoint
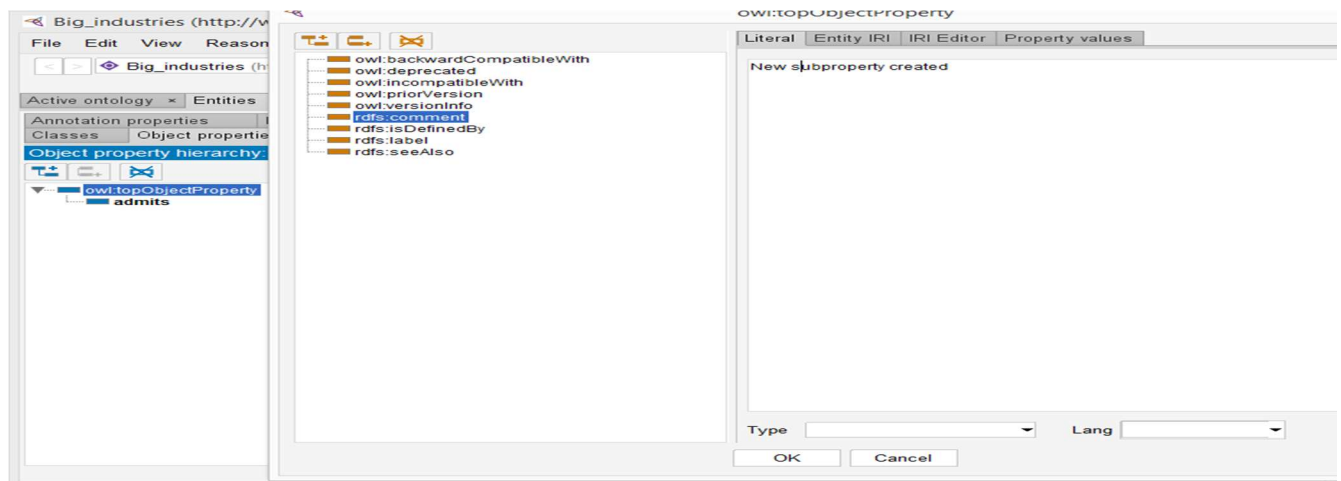

To see visualization

Goto windows->tabs->OWLviz

If visualization is not proper.download vowl plugin From

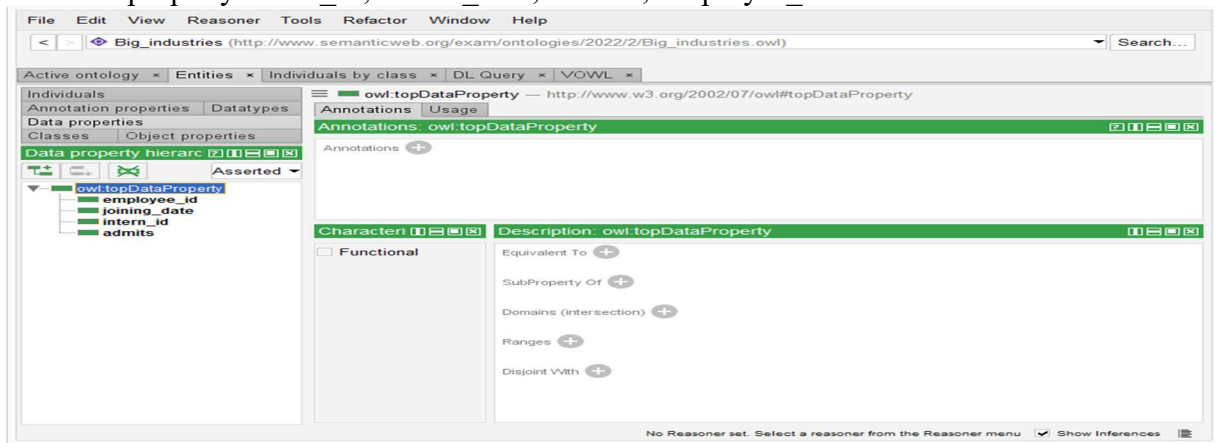Object properties:
Create new subproperty as admits as below

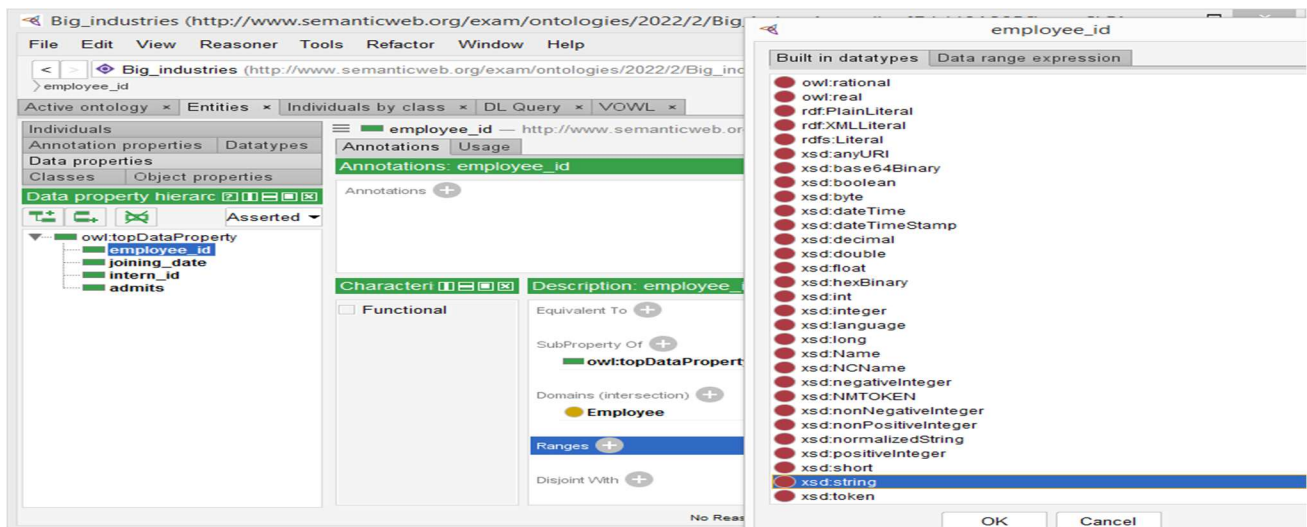Add domain as Organization and range as Intern & Employee
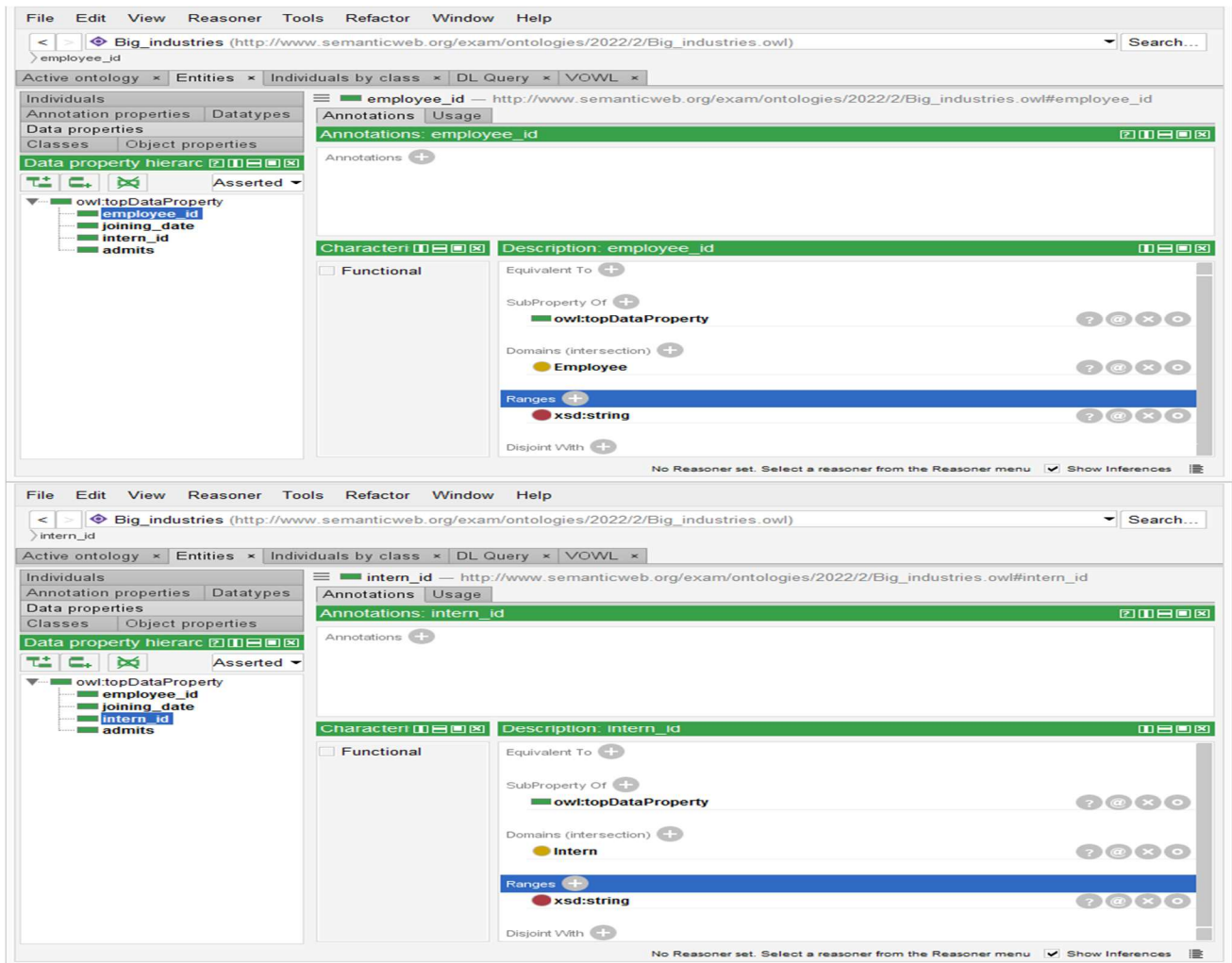
Data Properties:

Click dataproperties tab

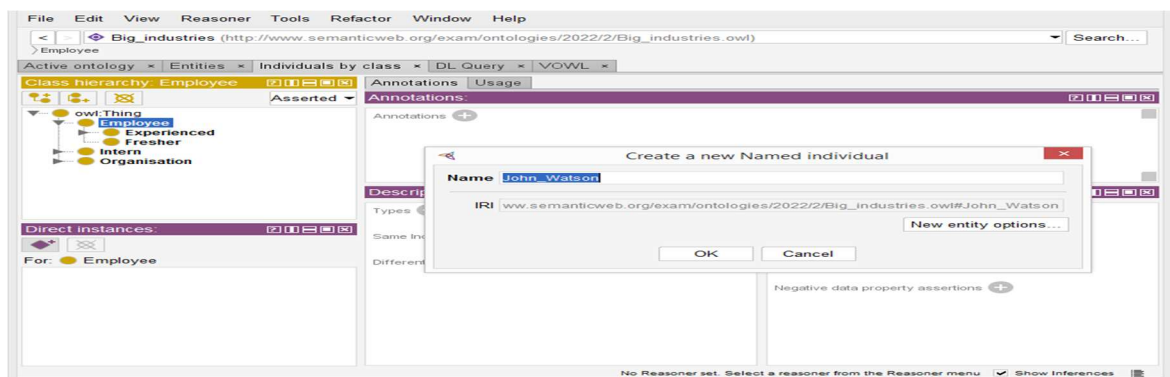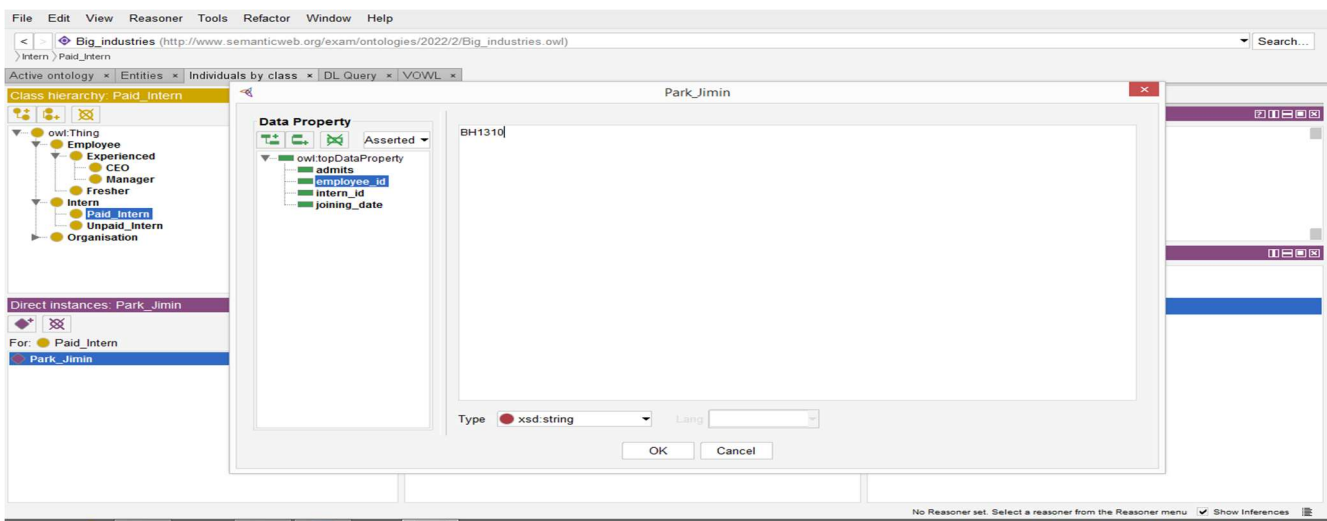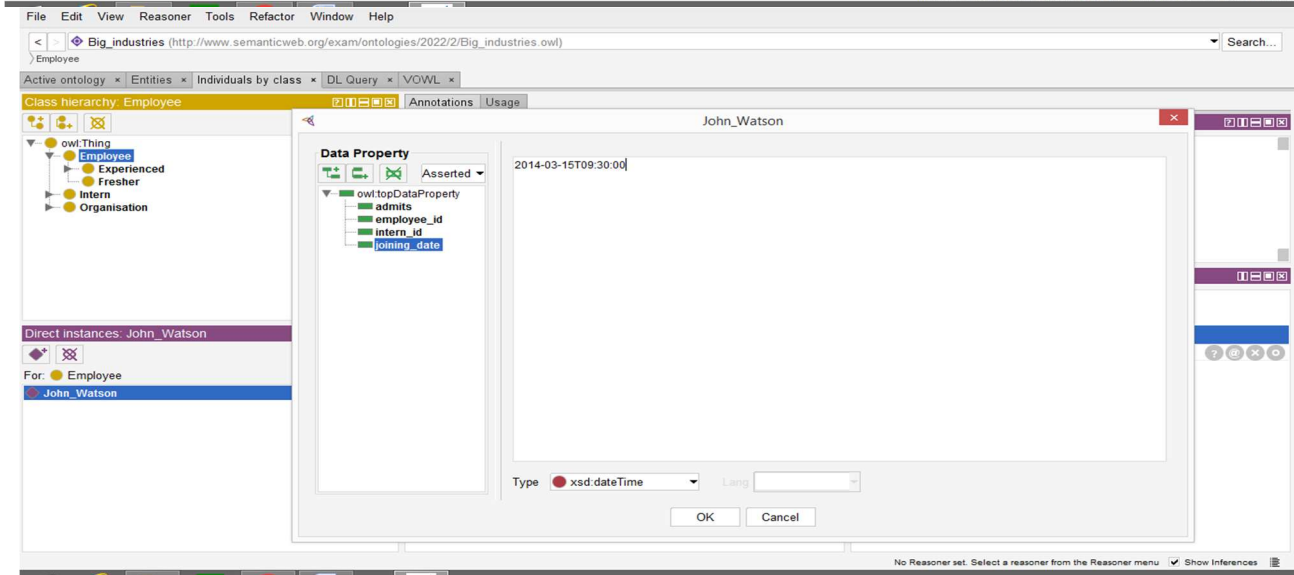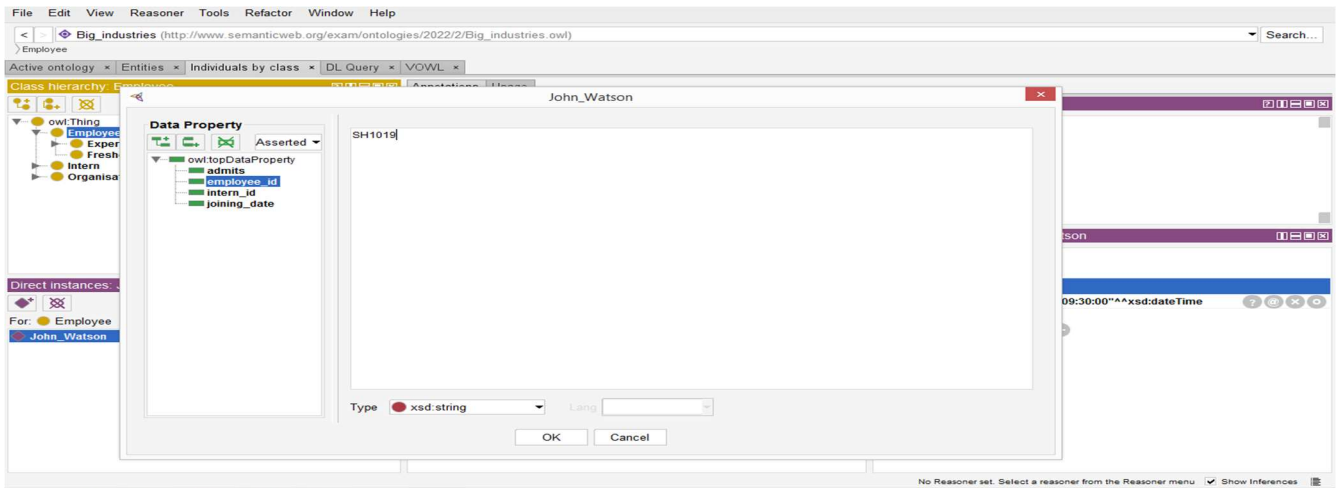Add subproperty Intern_Id, Joined_date, Admits, Employee_Id as below

Provide domain of each data property and range as below

Individual by class:
Select class first
 Click individual by class Add
 name of individual

Conclusion: Hence, we have Studied Semantic Web Open-Source Tool protégé.