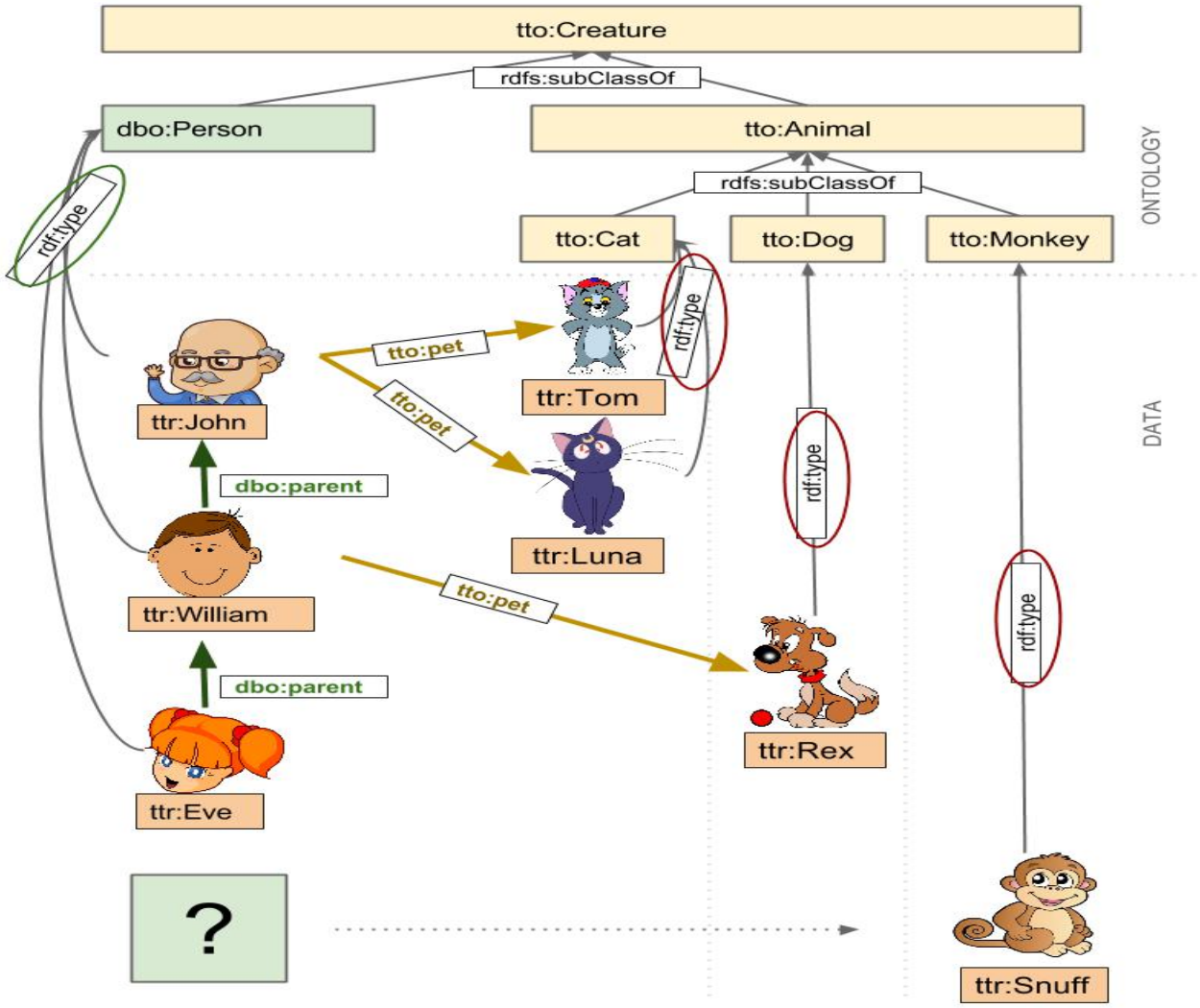
PRABAL GHOSH ROLL- AM.SC.P2CSC20040

SEMANTIC WEB –SPARQL ASSIGNMNET_code_done_by_me

Assignment SPARQL
Create owl file to describe the following using Protégé:



1.
Run the queries in protege for the questions given in the site https://sparql

playground.sib.swiss/ numbered - 200 till 209 using the owl file you have created. Then try to run 220 (by filling in the *** blanks). Take a screenshot of the SPARQL code box
& the output and paste it in a word file for each question. (1.1 to 1.11)

2.

Write a SPARQL statement to find out: How many triplets are contained in the dataset? Take a screenshot of the SPARQL code box and the output and paste in the word file.

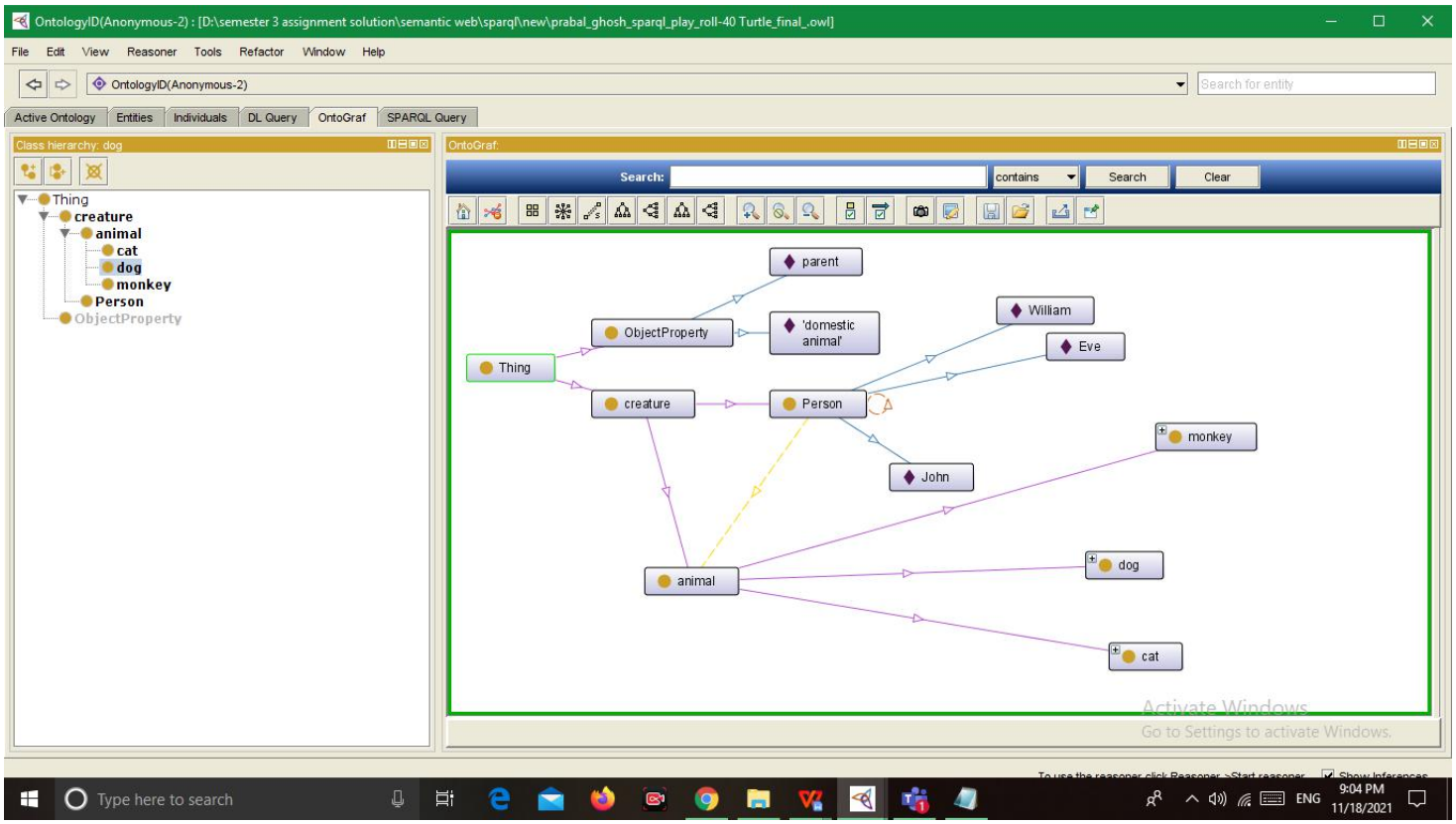
3.

Write a SPARQL statement to find out: How many instances of a “Animal” class are declared? Take a screenshot of the SPARQL code box and the output and paste below.

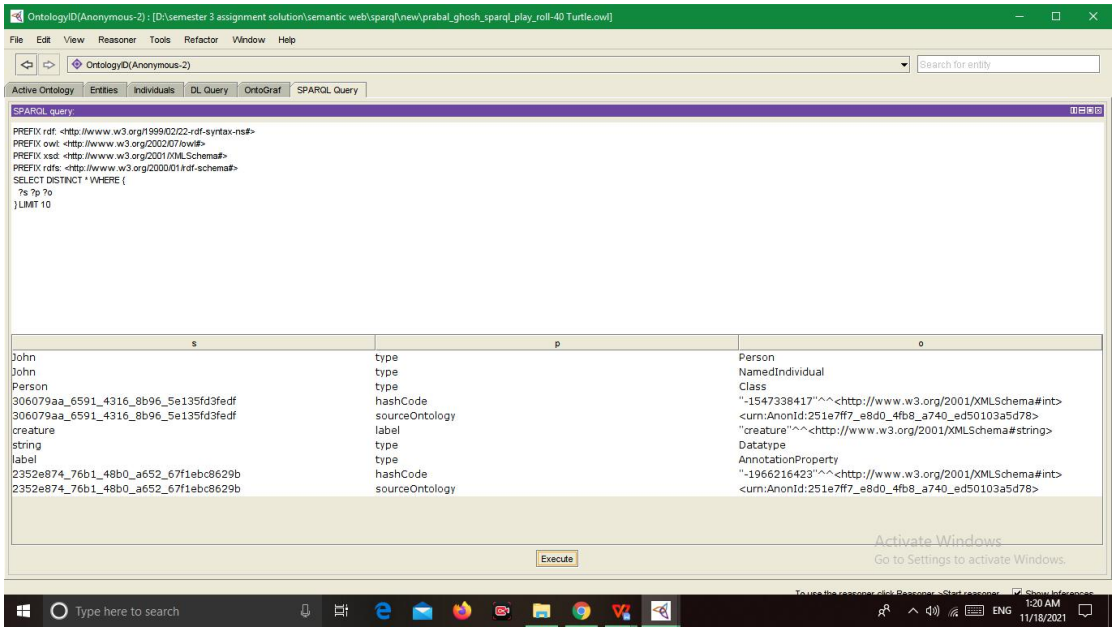
SOLUTION:

```
@prefix owl: <http://www.w3.org/2002/07/owl#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix :<http://example.org/prabal/ontology#> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

#class

:Creature a owl:Class ;
        rdfs:label "creature"^^xsd:string.

:Person a owl:Class ;
rdfs:subClassOf :Creature .

:Animal a owl:Class ;
        rdfs:label "animal"^^xsd:string ;
        rdfs:subClassOf :Creature .

:Cat a owl:Class ;
        rdfs:label "cat"^^xsd:string ;
        rdfs:subClassOf :Animal .

:Dog a owl:Class ;
        rdfs:label "dog"^^xsd:string ;
        rdfs:subClassOf :Animal .

:Monkey a owl:Class ;
        rdfs:label "monkey"^^xsd:string ;
        rdfs:subClassOf :Animal .

#property

:parent a rdf:ObjectProperty  ;
        rdfs:domain :Person ;
        rdfs:range :Person .
```

```
:pet a rdf:ObjectProperty  ;
            rdfs:domain :Person ;
            rdfs:label "domestic animal"^^xsd:string ;
            rdfs:range :Animal .

:sex a owl:DatatypeProperty  ;
            rdfs:domain :Creature ;
            rdfs:label "sex"^^xsd:string ;
            rdfs:range xsd:string .
:name a owl:DatatypeProperty  ;
            rdfs:domain :Creature ;
            rdfs:label "name"^^xsd:string ;
            rdfs:range xsd:string .

# individuals

:John a :Person ;
            :name "John"^^xsd:string ;
            :pet :Luna , :Tom ;
            :sex "male"^^xsd:string .


:William a :Person ;
    :parent :John ;
            :name "William"^^xsd:string ;
            :pet :Rex ;
            :sex "male"^^xsd:string .


:Eve a :Person;
    :parent :William ;
            :name "Eve"^^xsd:string ;
            :pet :Snuff ;
            :sex "female"^^xsd:string .

:Tom  a :Cat ;
  :name "Tom"^^xsd:string ;
            :sex "male"^^xsd:string .

:Luna a :Cat;
      :name "Luna"^^xsd:string ;
            :sex "female"^^xsd:string .



:Rex a :Dog ;
   :name "Rex"^^xsd:string ;
            :sex "male"^^xsd:string .

:Snuff  a :Monkey ;
  :name "snuff"^^xsd:string ;
            :sex "male"^^xsd:string .
```

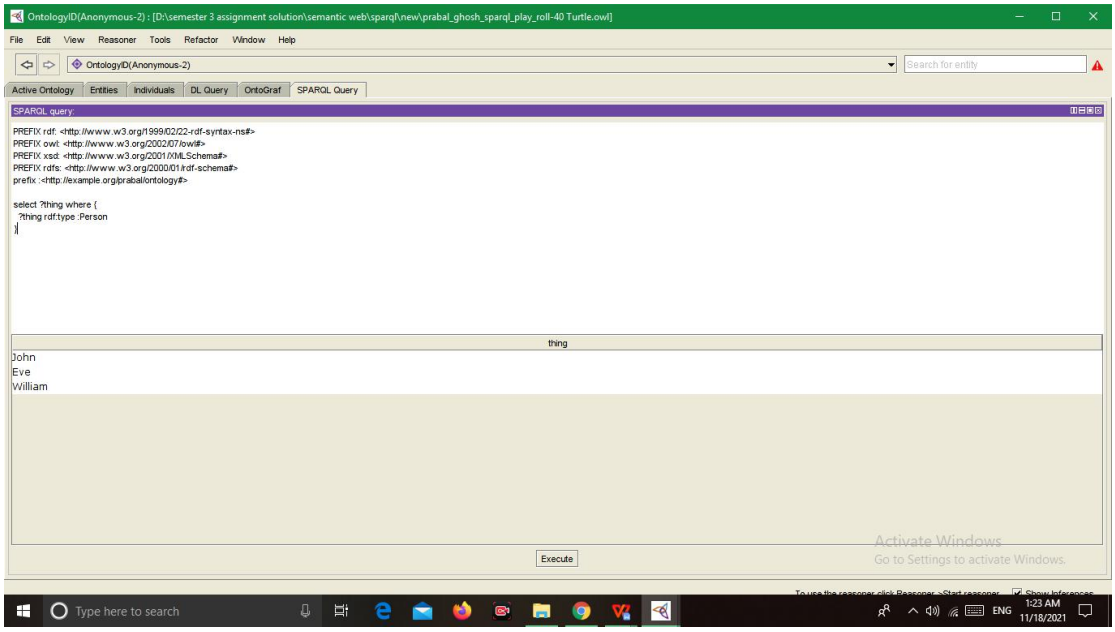



```
SELECT DISTINCT * WHERE {
  ?s ?p ?o
} LIMIT 10
```



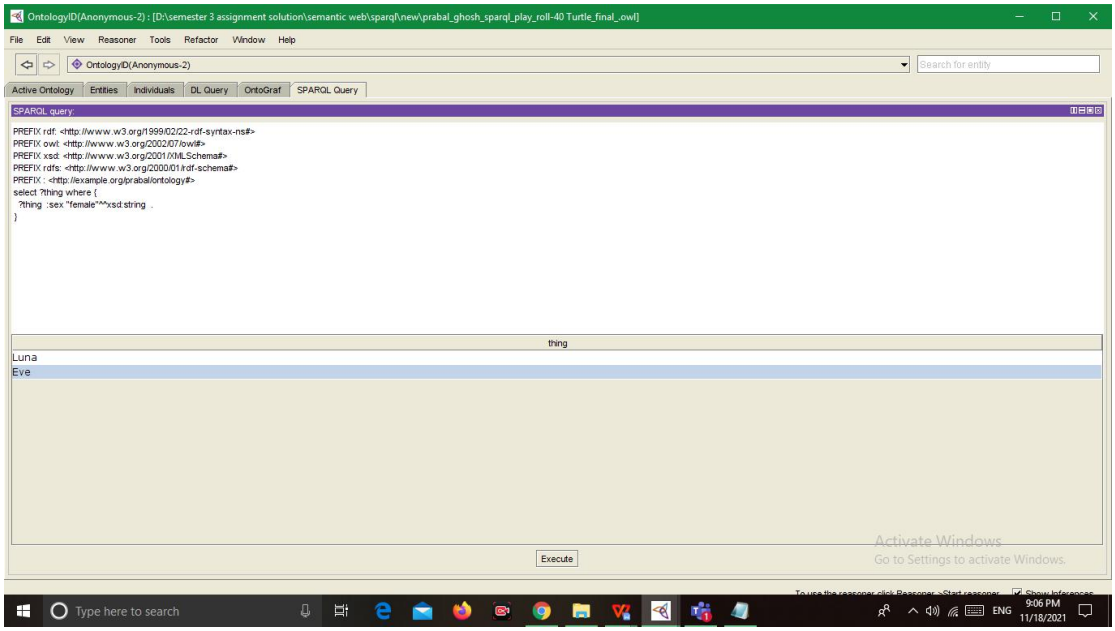
200)

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
prefix :<http://example.org/prabal/ontology#>

select ?thing where {
  ?thing rdf:type :Person
}
```



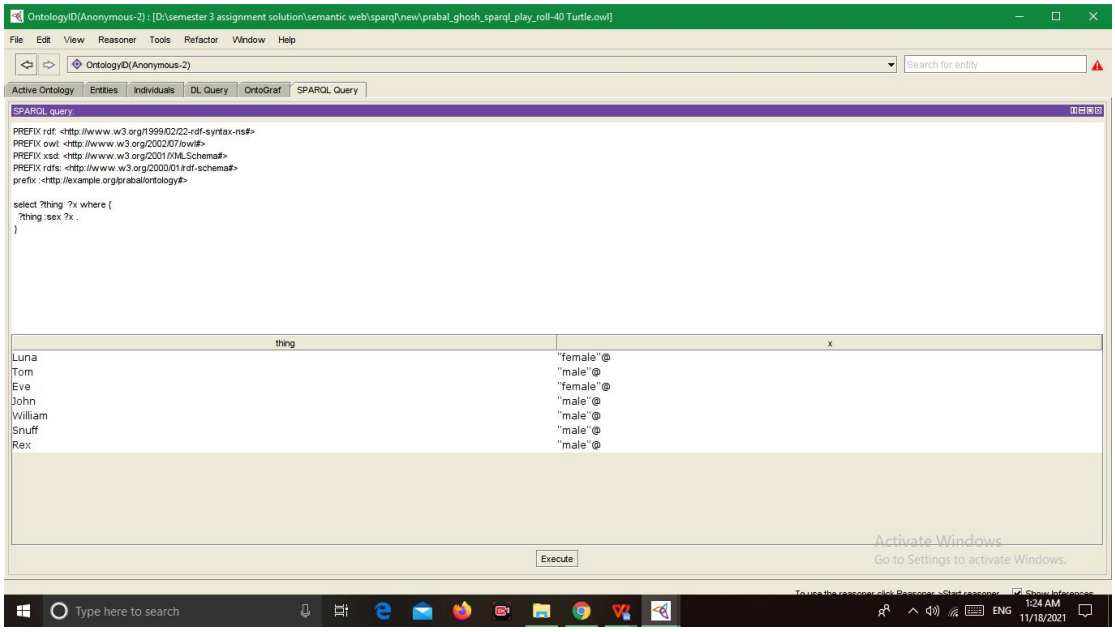
201)

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://example.org/prabal/ontology#>
select ?thing where {
  ?thing  :sex "female"^^xsd:string  .
}
```



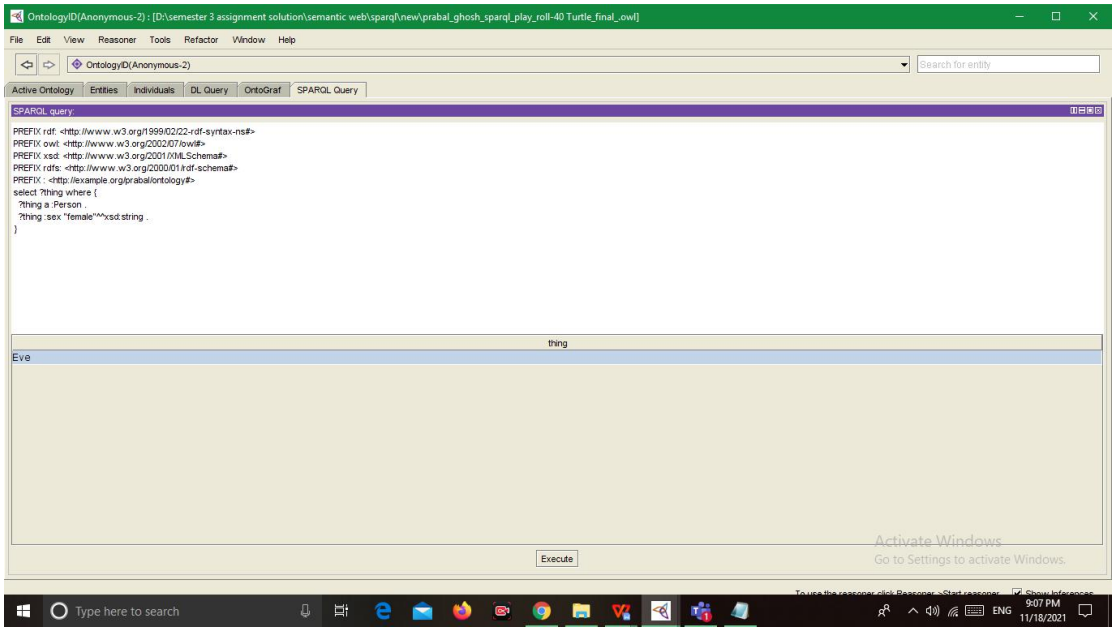
201)

```
select ?thing  ?x where {
  ?thing :sex ?x .
}
```



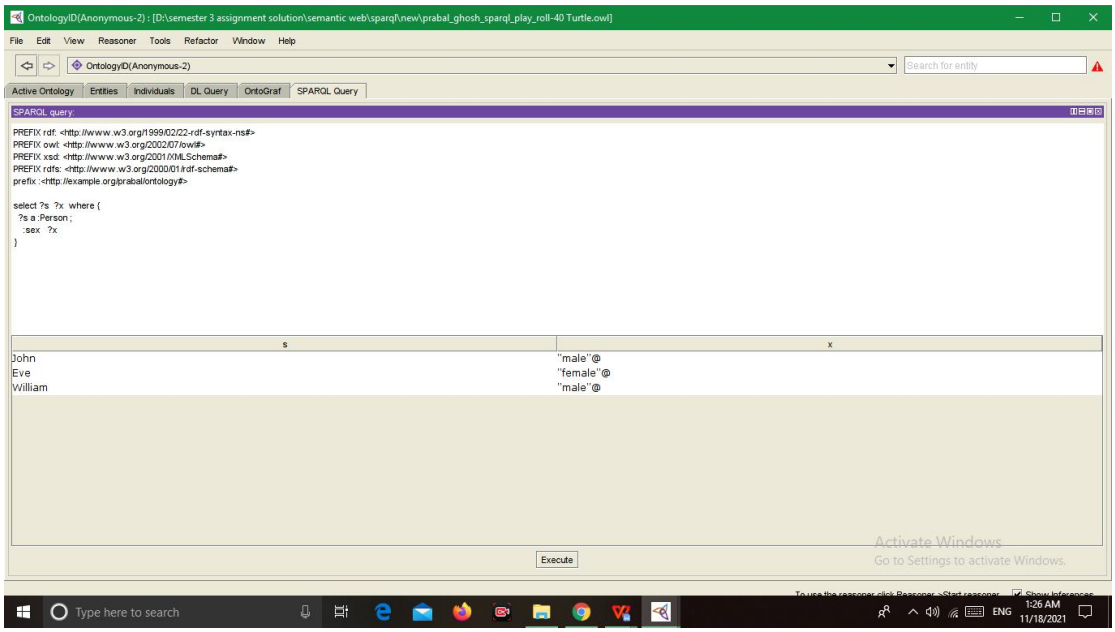
202)

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://example.org/prabal/ontology#>
select ?thing where {
  ?thing a :Person .
  ?thing :sex "female"^^xsd:string .
}
```



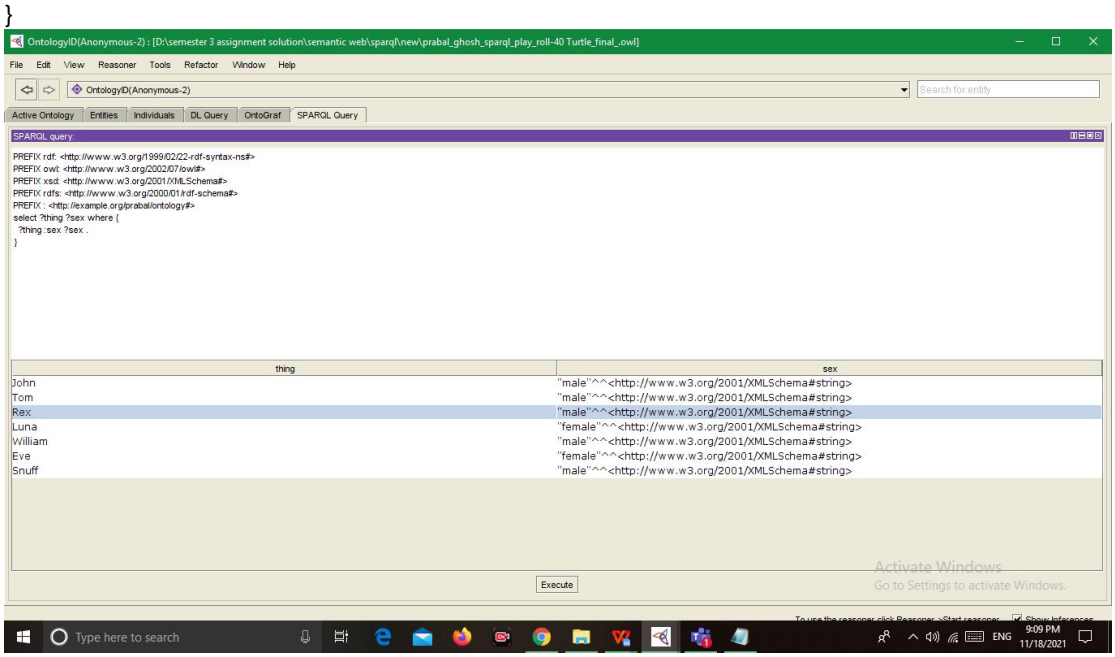
202)

```
select ?s  ?x  where {
 ?s a :Person ;
   :sex   ?x
}
```



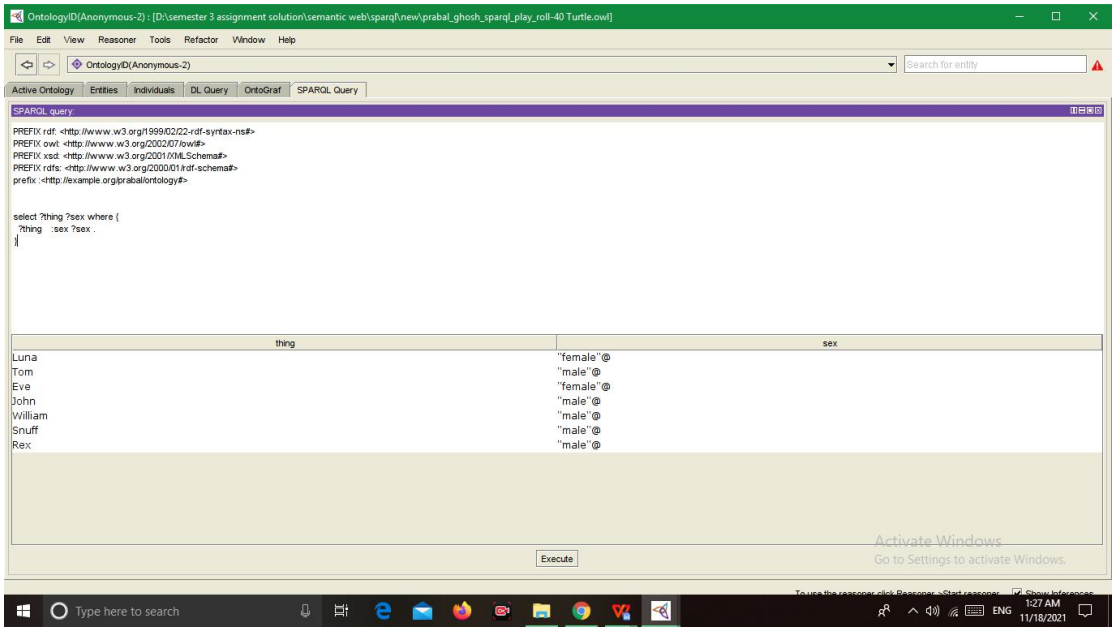
204)

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://example.org/prabal/ontology#>
select ?thing ?sex where {
 ?thing :sex ?sex .
}
```



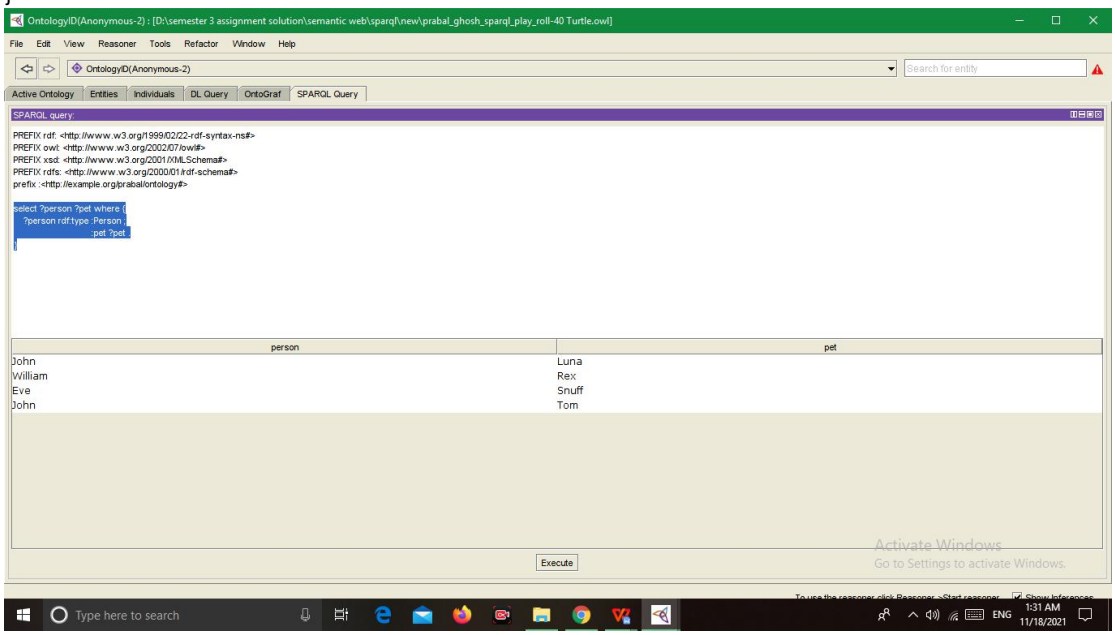
204)

```
select ?thing ?sex where {
  ?thing    :sex ?sex .
}
```



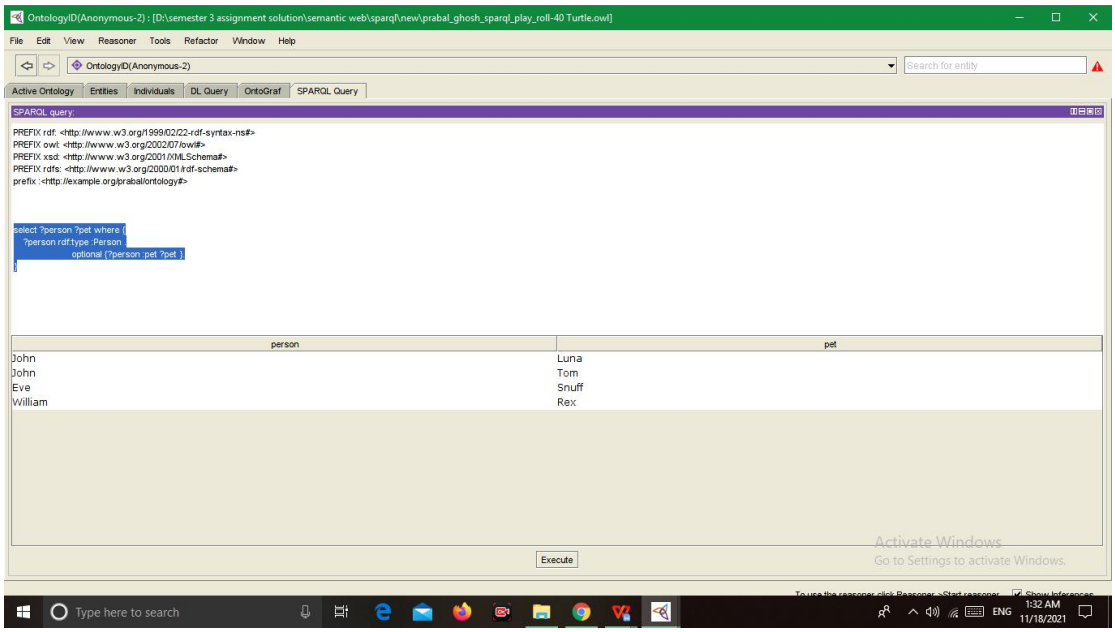
206)

```
select ?person ?pet where {
   ?person rdf:type :Person ;
                    :pet ?pet .
}
```



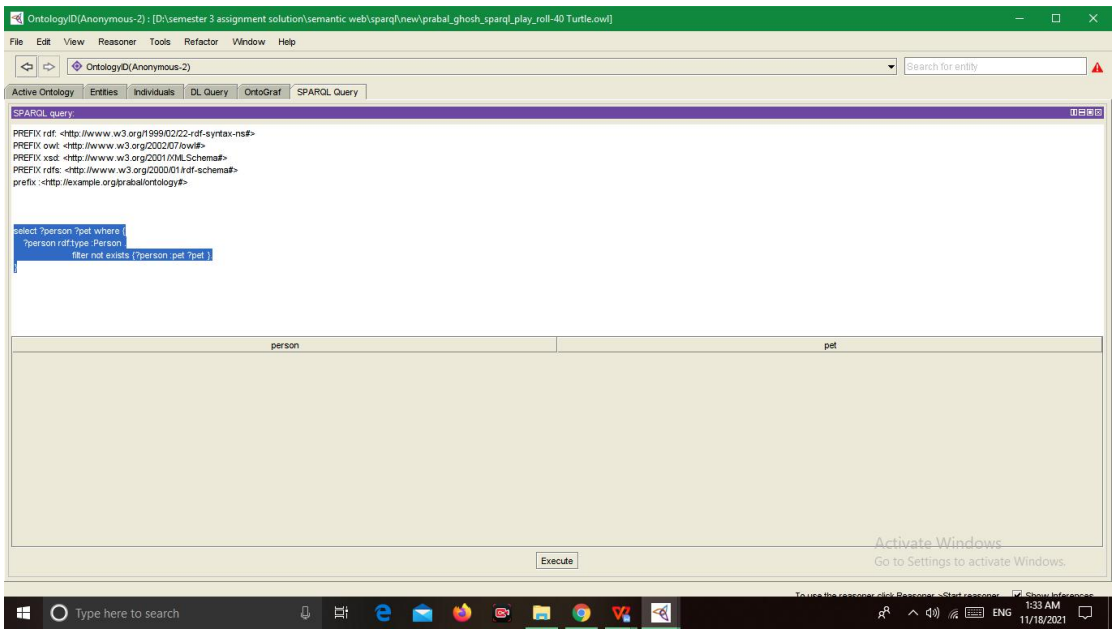
207)

```
select ?person ?pet where {
   ?person rdf:type :Person .
            optional {?person :pet ?pet }.
}
```



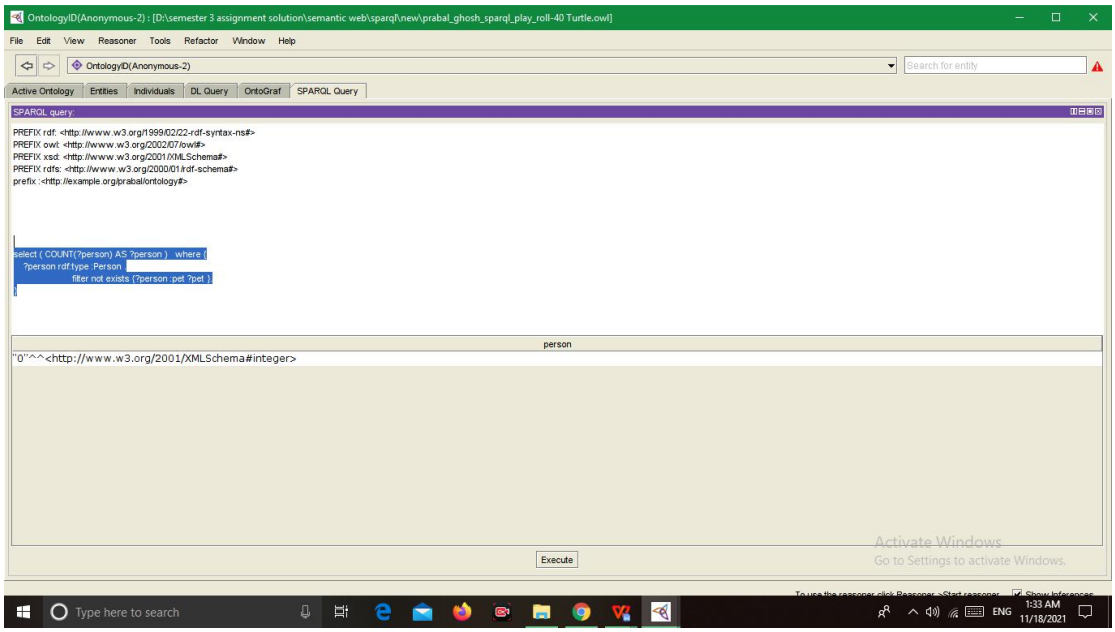
208)

```
select ?person ?pet where {
   ?person rdf:type :Person .
            filter not exists {?person :pet ?pet }.
}
```



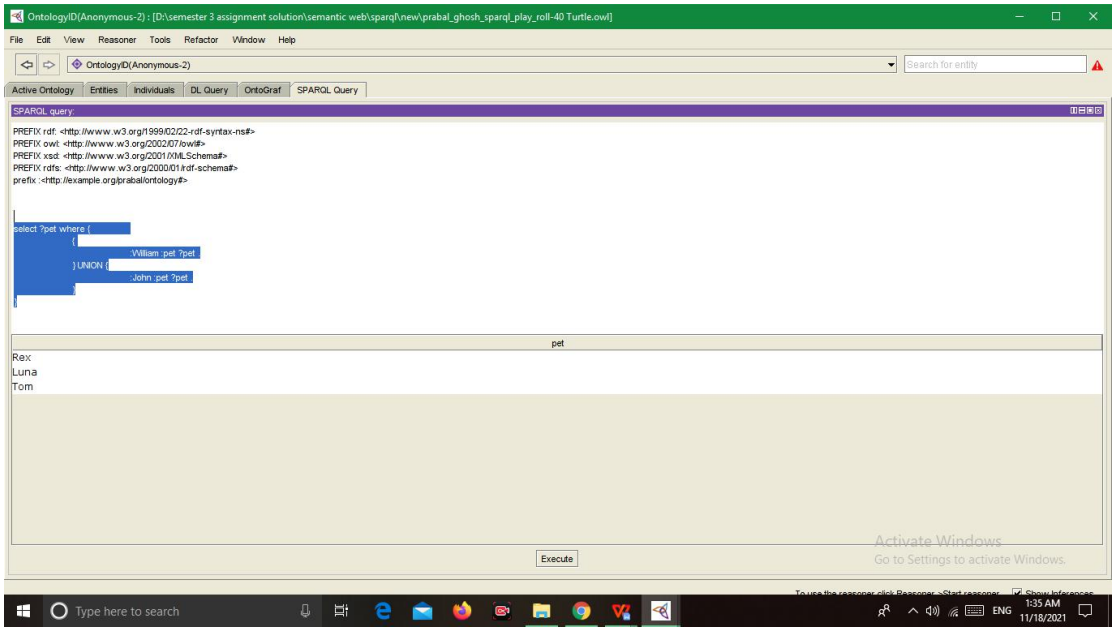
208)

```
select ( COUNT(?person) AS ?person )   where {
   ?person rdf:type :Person .
            filter not exists {?person :pet ?pet }.
}
```



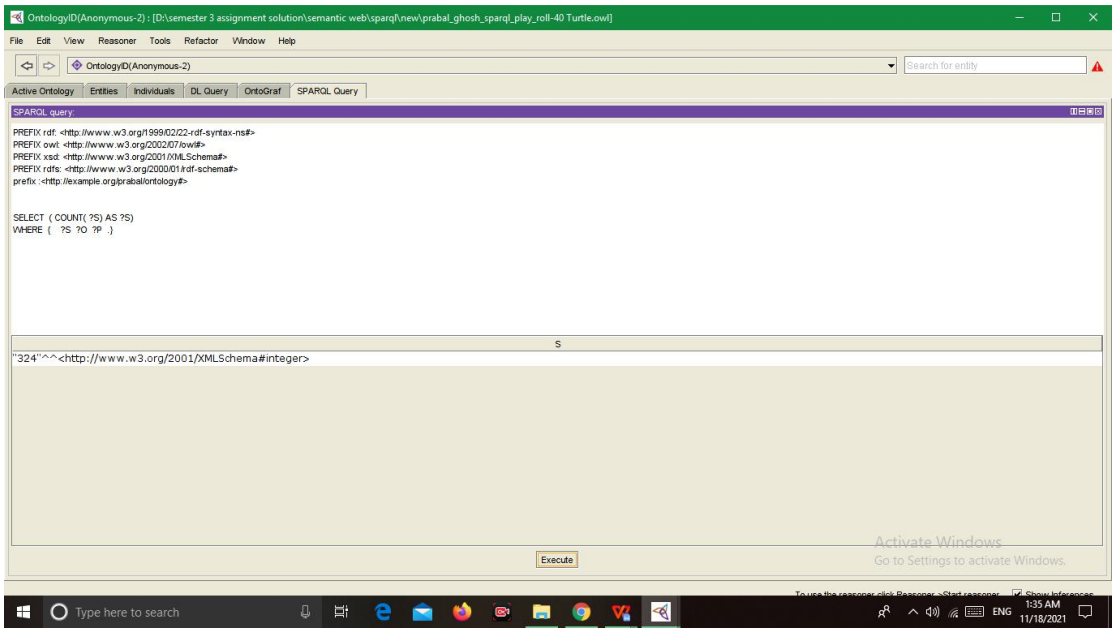
209)

```
select ?pet where {
        {
                :William :pet ?pet .
        } UNION {
                :John :pet ?pet .
        }
}
```



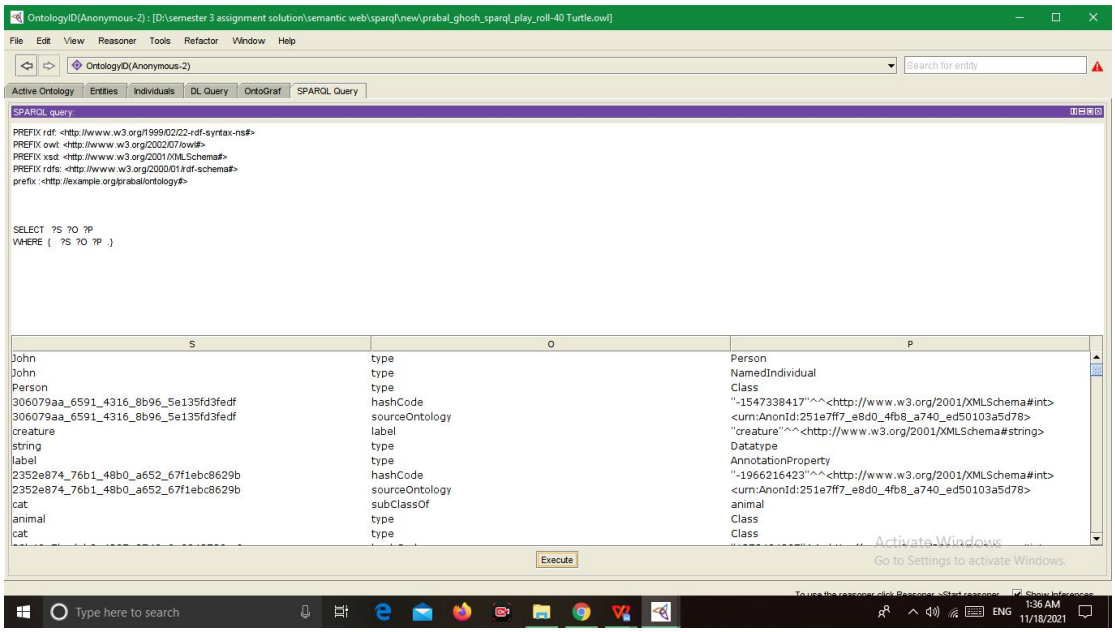
2) Write a SPARQL statement to find out: How many triplets are contained in the dataset? Take a screenshot of the SPARQL code box and the output and paste in the word file.

```
SELECT  ( COUNT( ?S) AS ?S)
WHERE  {   ?S  ?O  ?P  .}
```



triplets are contained in the
Dataset ------

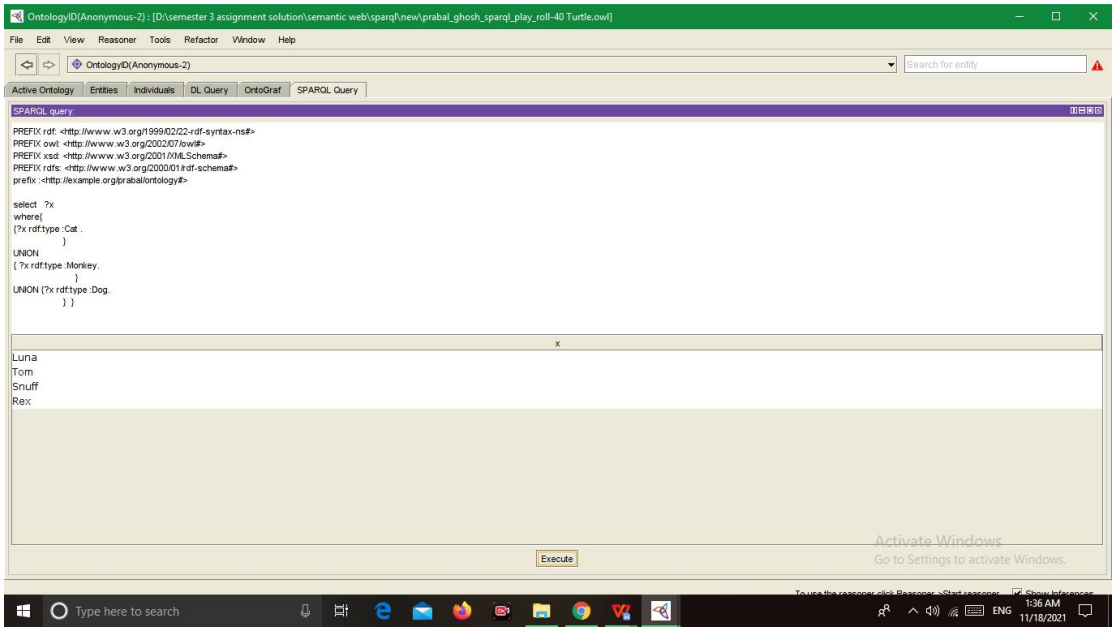
```
SELECT   ?S  ?O  ?P
WHERE  {   ?S  ?O  ?P  .}
```



3.

Write a SPARQL statement to find out: How many instances of a “Animal” class are declared? Take a screenshot of the SPARQL code box and the output and paste below.

```
select   ?x
where{
{?x rdf:type :Cat .
                }
UNION
{ ?x rdf:type :Monkey.
                  }
UNION {?x rdf:type :Dog.
                } }
```


OntologyID(Anonymous-2) : [D:\semester 3 assignment solution\semantic web\sparql\new\prabal_ghosh_sparql_play_roll-40 Turtle.owl]
File Edit View Reasoner Tools Refactor Window Help
OntologyID(Anonymous-2)
Search for entity
Active Ontology Entities Individuals DL Query OntoGraf SPARQL Query
SPARQL query:
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
prefix :<http://example.org/prabal/ontology#>
select ?x
where{
{?x rdf:type :Cat .
}
UNION
{ ?x rdf:type :Monkey.
}
UNION {?x rdf:type :Dog.
} }
x
Luna
Tom
Snuff
Rex
Execute
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
1:36 AM
11/18/2021