

Exercise 4

- (a) Write an RDF/RDFS model representing the following statements about URLs Person, Director, Actor, Writer, Movie, Country, Continent, Comedy, Drama, Man, Woman, filmedInYear, filmedInCountry, hasBoxOfficeGross, isDirectorOf, isWriterOf, actsIn, bornIn, Joe, Mary, Ann, Paul, Italy, France, Europe, ABC, XYZ.

1. Person, Director, Writer, Actor, Country, Continent, Movie, Comedy, Drama, Man, and Woman are classes;
2. Man and Woman are subclasses of Person;
3. Comedy and Drama are subclasses of Movie;
4. actsIn, bornIn, filmedInCountry, isDirectorOf and isWriterOf are properties;
5. isDirectorOf has domain Director and range Movie;
6. filmedInYear has domain Movie and range xsd:integer;
7. filmedInCountry has domain Movie and range Country;
8. bornIn has domain Person and range Country;
9. actsIn has domain Actor and range Movie;
10. isInContinent has domain Country and range Continent;
11. hasBoxOfficeGross has domain Movie and range xsd:integer;
12. Ann is the director and the writer of movie XYZ;
13. Joe and Paul act in movie ABC;
14. ABC was filmed in France in 2015;
15. Ann is a woman;
16. Italy and France are in Europe.

- (b) Write SPARQL queries corresponding to the following requests: (b1) "return every director who directed at least one movie whose box office gross is above \$10,000,000". (b2) return the directors of the movies filmed in Italy and played by at least an Italian actor, and, optionally, the box office gross of the movie and the writer of the movie.

@prefix rdfs: ...
 @prefix rdf: ...
 @prefix myns: ...

<u>1)</u> myns:Person	rdf:type	rdfs:Class.
myns:Director	rdf:type	rdfs:Class.
myns:Writer	rdf:type	rdfs:Class.
myns:Actor	rdf:type	rdfs:Class.
myns:Country	rdf:type	rdfs:Class.
myns:Continent	rdf:type	rdfs:Class.
myns:Movie	rdf:type	rdfs:Class.
myns:Comedy	rdf:type	rdfs:Class.
myns:Drama	rdf:type	rdfs:Class.
myns:Man	rdf:type	rdfs:Class.
myns:Woman	rdf:type	rdfs:Class.
2) myns:Man	rdfs:subClassOf	myns:Person.

- 2) myns: Man rdfs: subClassOf myns: Person.
 myns: Women rdfs: subClassOf myns: Person.
 3) myns: Comedy rdfs: subClassOf myns: Movie.
 myns: Drama rdfs: subClassOf myns: Movie.
 4) myns: actsIn rdfs: Type rdfs: Project.
 myns: BornIn rdfs: Type rdfs: Project.
 myns: AlmostInCountry rdfs: Type rdfs: Project.
 myns: IsDirectedOf rdfs: Type rdfs: Project.
 myns: IsWriterOf rdfs: Type rdfs: Project.
 5) myns: IsDirectorOf rdfs: domain myns: Director.
 myns: IsDirectorOf rdfs: range myns: Movie.
 6) myns: FilmedInYear rdfs: domain myns: Movie.
 myns: FilmedInYear rdfs: range xsd:integer.
 7) myns: FilmedInCountry rdfs: domain myns: Movie.
 myns: FilmedInCountry rdfs: range myns: Country.
 8) myns: bornIn rdfs: domain myns: Person.
 myns: bornIn rdfs: range myns: Country.
 9) myns: actsIn rdfs: domain myns: Actor.
 myns: actsIn rdfs: range myns: Movie.
 10) myns: IsInContinent rdfs: domain myns: Country.
 myns: IsInContinent rdfs: range myns: Continent.
 11) myns: hasBoxOfficeWEEKS rdfs: domain myns: Movie.
 myns: hasBoxOfficeGROSS rdfs: range xsd:integer.
 12) myns: film myns: IsDirectedOf XYZ

- 12) myns: flm myns: is Director myns: XYZ
myns: ANN myns: is Writer OF myns: XYZ.

13) myns: Tee myns: actsIn myns: ABC.
myns: Paul myns: actsIn myns: ABC.

14) myns: ABC myns: filmedInCountry myns: France.
myns: ABC myns: filmedInYear myns: 2005.

15) myns: ANN role:type myns: Women.

16) myns: Italy myns: isInContinent myns: Europe.
myns: France myns: isInContinent myns: Europe.

(b)

(b1)

PREFIX

Rdf.....

myns....

SELECT ?d

WHERE{

?d myns:isDirectorOf ?m.

?m myns:hasBoxOfficeGross ?z.

```
FILTER {?z > "10,000,000".}
```

}

(b2)

PREFIX

Rdf.....

mys....

```
SELECT ?d ?b ?w
WHERE{
  ?d myns:isDirectorOf ?m.
  ?m myns:filmedIn myns:Italy.
  ?a myns:actsIn ?m.
  ?a myns:bornIn myns:Italy.
  OPTIONAL {
    ?m myns:hasBoxOfficeGross ?b.
    ?w myns:isWriterOf ?m.
    ?w rdf:type myns:Writer.
  }
}
```