21/7/2017 EX4

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Exercise 4

(a) Write an RDF/RDFS model representing the following statements about URIs `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. Ann is the director and the writer of movie XYZ;
12. Joe and Paul act in movie ABC;
13. ABC was filmed in France in 2015;
14. Ann is a woman;
15. Italy and France are in Europe.

(b) Write SPARQL queries corresponding to the following requests: (b1) return all the directors of the movies filemd in Europe in 2016; (b2) return the dramas filmed in Italy and played by at least an Italian actor, and, optionally, the year when the movie was filmed.

@ prefix rdf
@ prefix rdfs
@ prefix my/ns

a)

my/ns: Person rdf: type rdfs: Class.
my/ns: Director rdf: type rdfs: Class.
my/ns: Writer rdf: type rdfs: Class.
my/ns: Actor rdf: type rdfs: Class.
my/ns: Country rdf: type rdfs: Class.
my/ns: Continent rdf: type rdfs: Class.
my/ns: Movie rdf: type rdfs: Class.
my/ns: Comedy rdf: type rdfs: Class.
my/ns: Drama rdf: type rdfs: Class.
my/ns: Man rdf: type rdfs: Class.
my/ns: Woman rdf: type rdfs: Class.

2) my ns: Man rdfs: subClassOf my/ns: Person.
my ns: Woman rdfs: subClassOf my/ns: Person.

3) my ns: Comedy rdfs: subClassOf my/ns: Movie.

3) my ns: Comedy rdfs: subClassOf my/NS: Movie .

my ns: Drama rdfs: subClassOf my/NS: Movie .

4) my/NS: actsIn rdf: type rdf: Property .

my/NS: bornIn rdf: type rdf: Property .

my/NS: filmedInCity rdf: type rdf: Property .

my/NS: isDirectorOf rdf: type rdf: Property .

my/NS: isWriterOf rdf: type rdf: Property .

5) my/NS: isDirectorOf rdfs: domain my/NS: Director .

my/NS: isDirectorOf rdfs: range my/NS: Movie .

6) my/NS: filmedInYear rdfs: domain my/NS: Movie .

my/NS: filmedInYear rdfs: range xsd: integer .

7) my/NS: filmedInCountry rdfs: domain my/NS: Movie .

my/NS: filmedInCountry rdfs: range my/NS: Country .

8) my/NS: bornIn rdfs: domain my/NS: Person .

my/NS: bornIn rdfs: range my/NS: Country .

9) my/NS: actsIn rdfs: domain my/NS: Actor .

my/NS: actsIn rdfs: range my/NS: Movie .

10) my/NS: isInContinent rdfs: domain my/NS: Country .

my/NS: isInContinent rdfs: range my/NS: Continent .

11) my/NS: Ann my/NS: isDirectorOf my/NS: XYZ.

my/NS: Ann my/NS: isWriterOf my/NS: XYZ.

myNS: Ann myNS: isMarriedTo myNS: Xyz.

12) myNS: Jee myNS: getsIn myNS: ABC.

myNS: Paul myNS: getsIn myNS: ABC.

13) myNS: ABC myNS: FilmedInCountry myNS: France.

myNS: ABC myNS: FilmedInYear "2015" ^^ xsd: integer.

14) myNS: Ann rdf: type myNS: Woman.

15) 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: FilmedInYear  ?z
      FILTER { ?z = "2016" }.
  }
```

(b2)

```
PREFIX
```

```
vdf —
myns —
SELECT ?d ?y
WHERE {
    ?d myns:filmedInCounty myns:Italy.
    ?a myns:actsIn ?d.
    ?a myns:bornIn myns:Italy.
    OPTIONAL { ?d myns:filmedInYear ?y . }.
}
```