

ĐẠI HỌC KHOA HỌC TỰ NHIÊN
KHOA CÔNG NGHỆ THÔNG TIN

NGÀNH KHOA HỌC MÁY TÍNH

KHOA HỌC WEB

BÁO CÁO LAB 02

26/11/2019

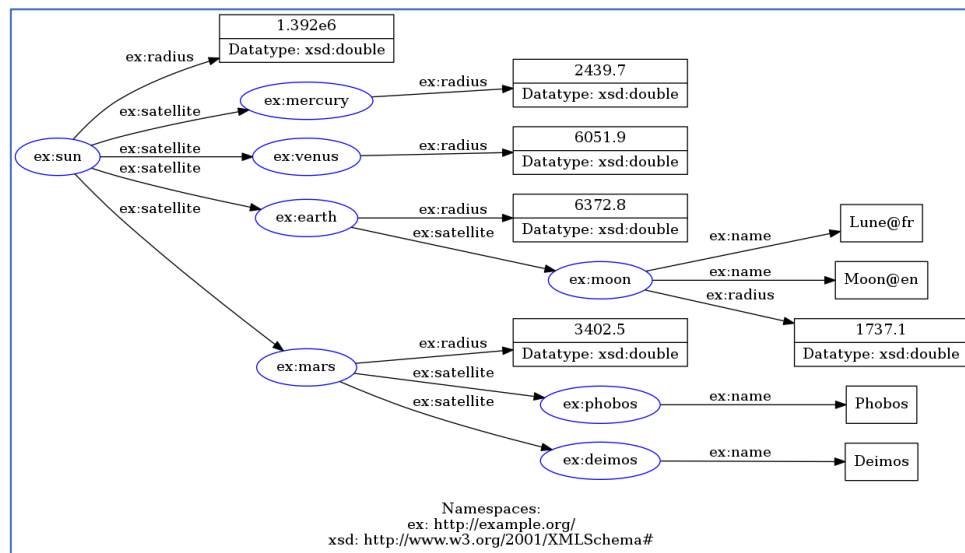
Thông tin sinh viên:

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MSSV: 161285

Namespaces:
 ex: <http://example.org/>
 xsd: <http://www.w3.org/2001/XMLSchema#>

Q1.



```
PREFIX ex: <http://example.org/>
SELECT ?object
WHERE {
  { ex:sun ex:satellite ?object . } UNION
  { ex:sun ex:satellite ?object_tmp .
```

```
?object_tmp ex:satellite ?object . }
}
```

ex:venus

ex:earth

ex:mercury

ex:mars

ex:moon

ex:deimos

ex:phobos

Q3. Các cặp câu tự nhiên ứng với query.

Query 1 - (c)

Query 2 - (a)

Query 3 - (b)

3. Exercise 03:

- Names of all movies. (1)

```
PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
SELECT (?label as ?Movie)
WHERE{
  ?movie rdf:type ex:Movie .
  ?movie rdfs:label ?label .
}
```

- Names of movies and directors sorted descending by the year the movie appeared. (2)

```
PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT (?label as ?Movie) (CONCAT(?familyName, " ", ?givenName) as ?Director) ?year
WHERE{
  ?movie rdf:type ex:Movie .
  ?movie rdfs:label ?label .
  ?movie ex:year ?year .
  ?movie ex:director ?director .
  ?director foaf:familyName ?familyName .
  ?director foaf:givenName ?givenName .
}ORDER BY DESC(?year)
```

	Movie	Director	year
1	"Marie Antoinette"	"Coppola Sofia"	"2006"^^xsd:gYear
2	"Heat"	"Mann Michael"	"1995"^^xsd:gYear

- Names and directors of all movies before 1996. (3)

```

PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT (?label as ?Movie) (CONCAT(?giName, " ", ?faName) as ?Director) ?year
WHERE{
  ?movie rdf:type ex:Movie .
  ?movie rdfs:label ?label .
  ?movie ex:year ?releaseYear .
  ?movie ex:director ?di .
  ?di rdf:type ex:Director .
  ?di foaf:familyName ?faName .
  ?di foaf:givenName ?giName .
  BIND(YEAR(?releaseYear) as ?year) .
  filter (?year < 1996) .
}

```

	Movie	Director	year
1	"Heat"	"Michael Mann"	"1995"^^xsd:integer

- Names all movies whose genre is Crime. (4)

```

PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT (?label as ?Movie) ?genre
WHERE{
  ?movie rdf:type ex:Movie .
  ?movie rdfs:label ?label .
  ?movie ex:genre ex:Crime .
  ?movie ex:genre ?genre .
}

```

	Movie	genre
1	"Heat"	ex:Crime

- Names of all actors who are above 50 (at 2016). (5)

```

PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT (CONCAT(?giName, " ", ?faName) as ?Actor) ?age
WHERE{
  ?actor rdf:type ex:Actor .
  ?actor foaf:familyName ?faName .
  ?actor foaf:givenName ?giName .
  ?actor ex:birthYear ?birthYear .
  BIND(2016 - YEAR(?birthYear) as ?age) .
  filter (?age > 50) .
}

```

	Actor	age
1	"Robert De Niro"	"73"^^xsd:integer
2	"Al Pacino"	"76"^^xsd:integer

- Names of all movies whose directors are above 70 (at 2016). (6)

```

PREFIX ex:<http://example.org/movies/>
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT (?label as ?Movie) ?age
WHERE{
  ?movie rdf:type ex:Movie .
  ?movie rdfs:label ?label .
  ?movie ex:director ?di .
  ?di rdf:type ex:Director .
  ?di ex:birthYear ?birthYear .
  BIND(2016 - YEAR(?birthYear) as ?age) .
  filter (?age > 70) .
}

```

	Movie	age
1	"Heat"	"73"^^xsd:integer

4. Exercise 04:

Data Exercise 02:

- Khi chạy câu query tương ứng

	object
1	ex:venus
2	ex:earth
3	ex:mercury
4	ex:mars
5	ex:moon
6	ex:deimos
7	ex:phobos

- Bỏ 2 triplets này

```

ex:mercury  ex:radius  "2439.7"^^xsd:double .
ex:mars     ex:radius  "3402.5"^^xsd:double ;
ex:satellite ex:deimos , ex:phobos .
ex:moon     ex:name    "Moon@en" , "Lune@fr" ;
            ex:radius  "1737.1"^^xsd:double .

```

```


ex:mercury  ex:radius  "2439.7"^^xsd:double .
ex:mars     ex:radius  "3402.5"^^xsd:double .|

```

Kết quả:

	object
1	ex:venus
2	ex:earth
3	ex:mercury
4	ex:mars
5	ex:moon

- Query 1

	object	 center
1	ex:earth	ex:sun
2	ex:mars	ex:sun
3	ex:venus	ex:sun
4	ex:sun	

- Query 2

	object
No data available in table	

Showing 0 to 0 of 0 entries

- Query 3

Showing 1 to 14 of 14 entries

	object
1	ex:mars
2	ex:sun
3	ex:sun
4	ex:sun
5	ex:mars
6	ex:sun
7	ex:sun
8	ex:sun
9	ex:sun
10	ex:sun
11	ex:sun
12	ex:sun
13	ex:sun
14	ex:sun

Data Exercise 03:

Với dữ liệu gốc đã được trình bày ở Exercise 03 bên trên.

Thêm vào các triplets sau (trong file data03_more).

- Câu 1

	Movie
1	"Marie Antoinette"
2	"Heat"
3	"ZORRO"
4	"Dead or Alive"

Showing 1 to 4 of 4 entries

- Câu 2

	Movie	Director	year
1	"Marie Antoinette"	"Coppola Sofia"	"2006"^^xsd:gYear
2	"Dead or Alive"	"Coppola Sofia"	"1995"^^xsd:gYear
3	"Heat"	"Mann Michael"	"1995"^^xsd:gYear
4	"ZORRO"	"Aladin Messi"	"1994"^^xsd:gYear

Showing 1 to 4 of 4 entries

- Câu 3

	Movie	Director	year
1	"Heat"	"Michael Mann"	"1995"^^xsd:integer
2	"ZORRO"	"Messi Aladin"	"1994"^^xsd:integer
3	"Dead or Alive"	"Jorgua HuyMe"	"1995"^^xsd:integer

Showing 1 to 3 of 3 entries

- Câu 4

	Movie	genre
1	"Heat"	ex:Crime
2	"ZORRO"	ex:Drama
3	"ZORRO"	ex:Crime
4	"Dead or Alive"	ex:Crime
5	"Dead or Alive"	ex:Romance

Showing 1 to 5 of 5 entries

- Câu 5

	Actor	age
1	"Robert De Niro"	"73"^^xsd:integer
2	"Al Pacino"	"76"^^xsd:integer

Showing 1 to 2 of 2 entries

- Câu 6

	Movie	age
1	"Heat"	"73"^^xsd:integer

5. Exercise 05:

Phần lớn các câu query chạy được trên <http://dbpedia.org/sparql>, một vài câu chỉ đạt kết quả khi chạy trên <http://live.dbpedia.org/sparql>.

- How tall is Claudia Schiffer ?

PREFIX rdf: <<http://www.w3.org/1999/02/22-rdf-syntax-ns#>>

PREFIX rdfs: <<http://www.w3.org/2000/01/rdf-schema#>>

PREFIX res: <<http://dbpedia.org/resource/>>


```

PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

SELECT ?height
WHERE {
  res:Claudia_Schiffer dbo:height ?height .
}

```

height
1.81

- Give me all female Russian astronauts. (chỉ đạt kết quả khi sử dụng live.dbpedia.org)

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

SELECT DISTINCT ?who WHERE {
  ?who rdf:type yago:RussianCosmonauts .
  ?who rdf:type yago:FemaleAstronauts .
}

```

who
http://dbpedia.org/resource/Valentina_Tereshkova
http://dbpedia.org/resource/Yelena_Serova
http://dbpedia.org/resource/Yelena_Kondakova

- How many monarchical countries are there in Europe ?

```

SELECT count(DISTINCT ?country) WHERE {
  ?country rdf:type dbo:Country .
  ?country dbo:governmentType ?govern .
  ?country dbp:region ?region .
  FILTER ( regex(?govern,'monarchy') && regex(?region, 'Europe')).
}

```

- Which states of Germany are governed by the Social Democratic Party ?

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>
SELECT DISTINCT ?states WHERE {
    ?states rdf:type yago:StatesOfGermany .
    ?states dbp:rulingParty res:Social_Democratic_Party_of_Germany .
}
```

- Which monarchs of the United Kingdom were married to a German ?

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>
SELECT DISTINCT ?mornachs
WHERE{
    ?mornachs rdf:type yago:MonarchsOfTheUnitedKingdom .
    ?mornach dbo:spouse ?spouse .
    ?spouse dbo:birthPlace res:Germany .
}
```

mornachs
http://dbpedia.org/resource/Edward_VII
http://dbpedia.org/resource/George_V
http://dbpedia.org/resource/Queen_Victoria
http://dbpedia.org/resource/George_IV_of_the_United_Kingdom
http://dbpedia.org/resource/Elizabeth_II
http://dbpedia.org/resource/William_IV_of_the_United_Kingdom
http://dbpedia.org/resource/George_VI
http://dbpedia.org/resource/Edward_VIII
http://dbpedia.org/resource/George_III_of_the_United_Kingdom

- Which countries have places with more than two caves ?

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

SELECT DISTINCT ?country WHERE {
    ?country rdf:type dbo:Country .
    ?cave rdf:type dbo:Cave .
    ?cave dbo:location ?country .
} GROUP BY ?country HAVING (COUNT(?cave) > 2)

```

- Give me all cities in New Jersey with more than 100000 inhabitants.

```

SELECT DISTINCT ?city WHERE {
    ?city rdf:type dbo:City .
    ?city dbo:isPartOf res:New_Jersey .
    ?city dbp:populationTotal ?inhabitants .
    FILTER (?inhabitants > 100000) .
}

```

- Is proinsulin a protein

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

```

```

PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

ASK WHERE {
  res:Proinsulin rdf:type dbo:Protein
}

```

true

- Is Frank Herbert still alive ?

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

ASK WHERE{
  OPTIONAL {res:Frank_Herbert dbo:deathDate ?date} .
  FILTER (!bound(?date))
}

```

false

- Which mountain is the highest after the Annapurna ?

(núi Annapurna trong database được thay đổi thành Annapurna_Massif có elevation là 8081.0m)

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX res: <http://dbpedia.org/resource/>
PREFIX dbp: <http://dbpedia.org/property/>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX yago: <http://dbpedia.org/class/yago/>

SELECT DISTINCT ?mountain ?height

```

```

WHERE{

  res:Annapurna_Massif dbo:elevation ?elevation .

  ?mountain rdf:type dbo:Mountain .

  ?mountain dbo:elevation ?height .

  FILTER (?height < ?elevation) .

} ORDER BY DESC(?height) LIMIT(1)

```

mountain	height
http://dbpedia.org/resource/Gasherbrum_I	8080.0

THAM KHẢO:

Slide bài giảng giáo viên cung cấp.

File tài liệu hướng dẫn thực hành.

<https://virtuoso.openlinksw.com/whitepapers/relational%20rdf%20views%20mapping.html#>

<https://www.w3.org/TR/sparql11-query/>

http://www.iro.umontreal.ca/~lapalme/ift6281/sparql-1_1-cheat-sheet.pdf

<https://codyburleson.com/sparql-examples-select/>