实验名 称 实验工 具		RDF 查询语言 SPARQL 的使用
		Windows 10
	完成	10 个题目并且完成实验报告。每个题目需要给出 SPAROL 语句和查询结果截

完成 10 个题目并且完成实验报告。每个题目需要给出 SPARQL 语句和查询结果截图/文本(如果发现结果太长,可以只截图一个屏幕的内容,不要求把所有结果截图)

实验目的和内容

1. 查询国家的首都,打印国家名称和首都名称,按国家名称进行排序, 只输出前 100 个查询结果(提示: limit)

select ?country ?city where{
?country rdf:type http://dbpedia.org/ontology/Country.

?city rdf:type <nttp://dopedia.org/ontology/Country>.

?country <http://dbpedia.org/ontology/capital> ?city

ORDER BY ?country LIMIT 100

数据分析

country	city
http://dbpedia.org/resource/4th_of_August_Regime	http://dbpedia.org/resource/Athens
http://dbpedia.org/resource/Abarshahr	http://dbpedia.org/resource/Nishapur
http://dbpedia.org/resource/Abaúj-Torna_County	http://dbpedia.org/resource/Košice
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Merv
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Kufa
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Baghdad
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Cairo
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Abbasid_Samarra
http://dbpedia.org/resource/Abbasid_Caliphate	http://dbpedia.org/resource/Raqqa
http://dbpedia.org/resource/Abkhazia	http://dbpedia.org/resource/Sukhumi
http://dbpedia.org/resource/Aceh_Sultanate	http://dbpedia.org/resource/Banda_Aceh
http://dbpedia.org/resource/Achaemenid_Empire	http://dbpedia.org/resource/Ecbatana
http://dbpedia.org/resource/Achaemenid_Empire	http://dbpedia.org/resource/Susa
http://dbpedia.org/resource/Achaemenid_Empire	http://dbpedia.org/resource/Babylon
http://dbpedia.org/resource/Acre_Sanjak	http://dbpedia.org/resource/Acre,_Israel
http://dbpedia.org/resource/Adal_Sultanate	http://dbpedia.org/resource/Harar
http://dbpedia.org/resource/Adal_Sultanate	http://dbpedia.org/resource/Zeila
http://dbpedia.org/resource/Adana_Vilayet	http://dbpedia.org/resource/Adana
http://dbpedia.org/resource/Aden_Colony	http://dbpedia.org/resource/Aden

2. 找出所有人口大于 1 千万的国家,并且按照人口数量从大到小打印国家名称和人口数量,要求国家名称必须是英文(提示:langMatches EN)

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

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

PREFIX dbp:<http://dbpedia.org/ontology/>

```
select ?country ?population where{
?country rdf:type dbp:Country.
?country rdfs:label ?name.FILTER (langmatches(lang(?name),"EN")).
?country dbp:populationTotal ?population.FILTER ( ?population >
10000000 ).
} ORDER BY desc(?population)
```

country	population
http://dbpedia.org/resource/Caribbean_Community	"18482141239251864"^^ <http: 2001="" td="" www.w3.org="" xmlschema#nonnegativein<=""></http:>
http://dbpedia.org/resource/Georgia_(country)	"37285734012104"^^ <http: 2001="" td="" www.w3.org="" xmlschema#nonnegativeinteg<=""></http:>
http://dbpedia.org/resource/Asia_Cooperation_Dialogue	"4317290284"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/Commonwealth_of_Nations	"2418964000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/South_Asia	"1940000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/Organisation_of_Islamic_Cooperation	"1810000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/indian_subcontinent	"180000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/Under2_Coalition	"1750000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/South_Asian_Association_for_Regional_Cooperation	"1713870000"^^ <http: 2001="" www.w3.org="" xmlschema#nonnegativeinteger=""></http:>
http://dbpedia.org/resource/East_Asia	"160000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/BBIN_Initiative	"1465236000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/Comprehensive_Economic_Partnership_Agreement_between_India_and_South_Korea	"1401511167"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/African_Union	"1321000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
http://dbpedia.org/resource/Organization_for_Security_and_Co-operation_in_Europe	"1300000000"^^ http://www.w3.org/2001/XMLSchema#nonNegativeInteger>

3. 找出名字中带有'Republic'的国家,打印出国家名称和成立时间(提示: Country108544813, establishedDate)

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbp:<http://dbpedia.org/ontology/>
PREFIX prop: <http://dbpedia.org/property/>
select ?country ?date where{
   ?country rdf:type dbp:Country.
   ?country rdfs:label ?name.FILTER(bif:contains(?name, "Republic")).
   ?country prop:establishedDate ?date.
}
```

country	date
http://dbpedia.org/resource/Third_Portuguese_Republic	868
http://dbpedia.org/resource/Third_Portuguese_Republic	1095
http://dbpedia.org/resource/Third_Portuguese_Republic	1128-06-24
http://dbpedia.org/resource/Third_Portuguese_Republic	1139-07-26
http://dbpedia.org/resource/Third_Portuguese_Republic	1143-10-05
http://dbpedia.org/resource/Third_Portuguese_Republic	1179-05-23
http://dbpedia.org/resource/Third_Portuguese_Republic	1640-12-01
http://dbpedia.org/resource/Third_Portuguese_Republic	1910-10-05
http://dbpedia.org/resource/Third_Portuguese_Republic	1974-04-25
http://dbpedia.org/resource/Third_Portuguese_Republic	1976-04-25
http://dbpedia.org/resource/Third_Portuguese_Republic	1986-01-01
http://dbpedia.org/resource/Republic_of_Vevčani	1991-09-19
http://dbpedia.org/resource/Conch_Republic	1982-04-23
http://dbpedia.org/resource/Conch_Republic	1982-04-23

4. 找出在 1949 年以前出生在北京的人,要求打印名字出生日期死亡日期(提示:日期比较,PREFIX xsd:

http://www.w3.org/2001/XMLSchema#>, xsd:date)

name	byear	dyear
"Hou Yaowen"@en	1948-07-17	2007-06-23
"Ying Ruocheng"@en	1929-06-21	2003-12-27
"Hong Yuanshuo"@en	1948-03-31	2015-08-01
"洪元碩"@en	1948-03-31	2015-08-01
"Karen Lachmann"@en	1916-05-30	1962-09-30
"Li Lili"@en	1915-06-02	2005-08-07
"E-An Zen"@en	1928-05-31	2014-03-29
"Basil Shuang"@en	1888-12-23	1962-01-03
"Wang Da-hong"@en	1917-07-06	2018-05-28
"Claud Cockburn"@en	1904-04-12	1981-12-15
"Jim Pineo Grant"@en	1922-05-12	1995-01-28
"John Dobson"@en	1915-09-14	2014-01-15
"King Hu"@en	1932-04-29	1997-01-14
"Fuyumi Shiraishi"@en	1936-10-14	2019-03-26

5. 找出所有满足下面条件的足球运动员:

出生在一个人口超过 500 万的国家/地区:

担任过拥有 30000 个座位的体育场的俱乐部的守门员;

所属俱乐部所在国与出生国不同。

打印运动员的名字、出生地、所属的足球俱乐部名字、俱乐部所在国名字、俱乐部所属体育场的观众容量(提示: SoccerPlayer,

Goalkeeper (association football), stadiumcapacity)

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX prop:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
```

```
SELECT
distinct ?name ?bplace ?team ?team_location ?stadiumCapacityWHERE
?p rdf:type dbo:SoccerPlayer.
?p foaf:name ?name.
?p dbo:birthPlace ?bplace.
?bplace dbo:country ?bcountry.
?bplace dbp:populationTotal ?pop_num.FILTER ( ?pop_num >
5000000).
?p dbo:position dbr:Goalkeeper_\(association_football\).
?p dbo:team ?team.
?team dbo:capacity ?stadiumCapacity.FILTER ( ?stadiumCapacity >
30000 ).
?team dbo:ground ?main ground.
?team_location rdf:type dbo:Country.
?main_ground dbo:location ?team_location.FILTER
(?team_location != ?bplace).
"Eduardo Niño"@en
                         http://dbpedia.org/resource/Bogotá
                                                     http://dbpedia.org/resource/Botafogo_de_Futebol_e_Regatas http://dbpedia.org
                     http://dbpedia.org/resource/Bogotá
"Eduardo Niño García"@en
                                                    http://dbpedia.org/resource/Botafogo_de_Futebol_e_Regatas http://dbpedia.org/re
"Eduardo Niño"@en
                http://dbpedia.org/resource/Bogotá
                                                    http://dbpedia.org/resource/América_de_Cali http://dbpedia.org/
                                                    http://dbpedia.org/resource/América_de_Cali
"Eduardo Niño García"@en
                      http://dbpedia.org/resource/Bogotá
                        http://dbpedia.org/resource/Cardiff
                                                    http://dbpedia.org/resource/Cardiff_City_F.C.
"Marcos Leandro"@en
                                                    http://dbpedia.org/resource/Botafogo_de_Futebol_e_Regatas http://db
"Marcos Leandro Pereira"@en http://dbpedia.org/resource/Rio_de_Janeiro
                                                    http://dbpedia.org/resource/Botafogo_de_Futebol_e_Regatas http://dbpedia.org/resource/
"Oğuz Dağlaroğlu"@en
                                                    http://dbpedia.org/resource/Adana_Demirspor
"Oğuz Dağlaroğlu"@en
                         http://dbpedia.org/resource/Istanbul
"Richard Andrés Leyton Abrigo"@en http://dbpedia.org/resource/Santiago
                                                    http://dbpedia.org/resource/Colo-Colo
"Richard Levton"@en
"Richard Andrés Leyton Abrigo"@en
                                                    http://dbpedia.org/resource/C.D._Universidad_de_Concepción http://
"Richard Leyton"@en
                         http://dbpedia.org/resource/Santiago
                                                    http://dbpedia.org/resource/C.D._Universidad_de_Concepción http://db
                         http://dbpedia.org/resource/Antioquia_Department http://dbpedia.org/resource/Cienciano http://dbpedia.org/resource/Cienciano
6. 长江是不是比亚马逊河长?马云是 60 后吗? (提示: ask 输出结果为
    true 或者 false)
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
ASK {
dbr:Yangtze dbp:length ?11.
dbr:Amazon_River dbp:length ?12.FILTER(?11 > ?12)
```

false

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>PREFIX
foaf:<http://xmlns.com/foaf/0.1/>
ASK {
dbr:Jack_Ma dbo:birthYear ?byear.FILTER(?byear < "1970-01-01"^^xsd:date
&& ?byear >= "1960-01-01"^^xsd:date).
}
```

true

7. 北京有哪些不在 1900 后出生的名人, 打印名字、性别、逝世时间 (提示: not exists)

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
SELECT ?name ?gender ?dyear
WHERE {
?p foaf:name ?name.
?p foaf:gender ?gender.
?p dbo:birthPlace dbr:Beijing.
?p dbo:deathDate ?dyear.
FILTER(NOT EXISTS{
?p dbo:birthDate ?byear.FILTER(?byear > "1900-01-01"^^xsd:date)
})
```

name	gender	dyear
"Basil Shuang"@en		1962-01-03
"Heshen"@en		1799-02-22
"Mei Lanfang"@en		1961-08-08
"Zhang Tingyu"@en		1755-05-19
"Yuan Jing"@en		1999-07-29
"Qishan"@en		1854-08-03
"Fang Jing"@en		2015-11-18
"O.D. Hopkins"@en		2010-04-03
"Jorge Ruffier Acosta"@en		1975-03-05
"Keying"@en		1858-06-29
"Wang Dulu"@en		1977-02-12
Changling@en		1838-01-26
"Zhou Yaohe"@en		2018-07-30
"Wang Guangying"@en		2018-10-29

8. 北京有哪些不在 1900 后出生的名人,打印名字、性别、逝世时间,如果没有逝世时间的话就不打印(提示: optional)

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
SELECT ?name ?gender ?dyear
WHERE {
?p foaf:name ?name.
?p foaf:gender ?gender.
?p dbo:birthPlace dbr:Beijing.
FILTER(NOT EXISTS{
?p dbo:birthDate ?byear.FILTER(?byear > "1900-01-01"^^xsd:date).
}).
OPTIONAL{?p dbo:deathDate ?dyear}.
```

name	gender	dyear
"Basil Shuang"@en		1962-01-03
"Heshen"@en		1799-02-22
"Mei Lanfang"⊕en		1961-08-08
"Zhang Tingyu"@en		1755-05-19
"Yuan Jing"∉en		1999-07-29
"Qishan"@en		1854-08-03
"Fang Jing"@en		2015-11-18
"O.D. Hopkins"@en		2010-04-03
"Jorge Ruffier Acosta"@en		1975-03-05
"Keying"@en		1858-06-29
"Wang Dulu"@en		1977-02-12
"Changling"@en		1838-01-26
"Zhou Yaohe"@en		2018-07-30
"Wang Guangying"@en		2018-10-29

9. 自由发挥,任意想一个问题,并构建对应的 SPARQL 语句,要求语句中同时使用到 union 和 construction 两个关键字(不能是课件出现的例子)

人口大于 100000000, 土地面积大于 1000000000 的国家

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>PREFIX
foaf:<http://xmlns.com/foaf/0.1/>
CONSTRUCT{
?country dbo:populationTotal ?pop_tot;
dbo:areaTotal ?areaTotal.
} WHERE {
?country rdf:type dbo:Country;
dbo:populationTotal ?pop tot;
dbo:areaTotal ?areaTotal.
?country dbo:populationTotal ?pop_tot.FILTER(?pop_tot > 10000000)
} UNION {
?country dbo:areaTotal ?areaTotal.FILTER(?areaTotal > 1000000000)
```

This HTML5 document contains 365 embedded RDF statements represented using HTML+Microdata notation

The embedded RDF content will be recognized by any processor of HTML5 Microdata

Namespace Prefixes

dbo http://dbpedia.org/ontology/

xsdh http://www.w3.org/2001/XMLSchema# http://dbpedia.org/resource/

Statements

Subject Item

dbo:areaTotal 1.0886e+11

dbo:populationTotal

Subject Item

dbo:areaTotal 2.70316e+12

10. 自由发挥,任意想一个问题,并构建对应的 SPARQL 语句,要求语句 中同时使用到 union 和 describe 两个关键字(不能是课件出现的例 子)

描述周杰伦和陈奕迅

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo:<http://dbpedia.org/ontology/>
PREFIX dbr:<http://dbpedia.org/resource/>
PREFIX dbp:<http://dbpedia.org/property/>
PREFIX xsd:<http://www.w3.org/2001/XMLSchema#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
DESCRIBE ?p
WHERE {
?p rdf:type dbo:Person.
?p foaf:name "Jay Chou"@EN
?p foaf:name "Eason Chan"@EN
```

Jay Chou (traditional Chinese: 周杰倫; simplified Chinese: 周杰伦; pinyin: Zhōu Jiélún; born 18 January 1979) is a Taiwanese singer, songwriter, rapper, record producer, actor, film director, busi magician. Dubbed the "King of Mandopop", and having sold over 30 million records, Chou is one of the best-selling artists in the Greater China Area and is known for his work with lyricist Vincent Fa whom he has frequently collaborated on his music. In 2000, Chou released his debut studio album, Jay (2000), under the record company Alfa Music to moderate success. Chou rose to fame with the second studio album, Fantasy (2001), which combined Western and Eastern music styles. The album won five Golden Melody Awards, including Album of the Year. He has since further released tw albums, spawning a string of hit singles and gaining significant prominence in Asian communities such as Taiwan, mainland China, Hong Kong, Singapore and Malaysia. Chou has embarked on six v performing in cities around the world to more than 10 million spectators as of 2019. In 2007, Chou established his own record and management company JVR Music. Outside of music, Chou has see President of his own fashion brand PHANTACi since 2006. As an actor, Chou made his acting debut in the film Initial D (2005), followed shortly by a starring role in the epic Curse of the Golden Flow has since starred in a number of movies, becoming known to Western audiences when he made his Hollywood debut in 2011 with The Green Homet, starring alongside Seth Rogen and Christoph W by Now You See Me 2 (2016). 周 杰倫(ジェイ・チョウ、Jay Chou、1979年1月18日 -)は台湾出身の歌手、俳優、作曲家、作詞家、若者を中心に中華圏で絶大な人気を誇る。台湾で2000年11月1 violència domèstica, la querra, i la urbanització. Des de llavors, ha llancat un àlbum per any, la venda de diversos milions d'exemplars cada un. La seva música ha quanyat el reconeixement en tota À en països com la Xina, Japó, Malàisia, Indonésia, Singapur, Vietnam, Taiwan, i en les comunitats xineses d'ultramar, ha guanyant més de 20 premis cada any. Ha venut més de 25 milions d'àlbums en 2007, va ser nomenat una de les 50 persones més influents a la Xina. Jay Chou (Chinès tradicional: 周杰倫, Chinès simplificado: 周杰伦, pinyin: Zhòu Jiélún, n. 18 de janeiro de 1979) é um popular m Taiwanense especialista no estilo R&B e rap. Foi o ator principal do filme Initial D. Em 2011 estreou O Besouro Verde (The Green Hornett), onde interpreta Kato, o fiel escudeiro do personagem-titulo Rogen. Em 2016 participou como Li, em Truque de Mestre o Segundo Ato (Now You See Me 2). 저우제론(중국어 정체자: 周杰他, 간체자: 周杰伦, 병음: Zhōu Jiélún, 한자음: 주걸롶, 영어: Jay Chou 제(1979년 2월 14일 -)은 타이완의 대중 가수, 작곡가, 음악가, 감독, 프로듀서이자 배우이며, 하카계 출신이다. R&B, 힙합, 중국 전통음악의 영향을 받은 음악으로 중화권에서 인기를 얻어 활동하고 있다. : 알파 뮤직(Alfa Music)을 통해서 데뷔했고 2006년 알파 뮤직에서 독립해 자신의 레코드 회사 JVR 뮤직을 설립했다. Jay Chou (Hanzi tradisional: 周杰德, Hanzi yang Disederhanakan: 周杰伦, pinyin: Zh 18 Januari 1979) adalah seorang penyanyi dan aktor serba bisa asal Taiwan. Jay yang berdarah asli Chinese ini amat populer karena ia banyak menulis lagu untuk artis lain dan seluruh lagu dalam alt