Queries for the paper "RDF^M: An Alternative Approach for representing and maintaining meta-knowledge in Web of Data"

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This document is part of the paper "RDF^M: An Alternative Approach for representing and maintaining meta-knowledge in Web of Data". It presents the queries used in the experiments described in the paper. This document is devided in four parts.: Part 1 which shows the queries used for BKR dataset, Part 2 which shows the queries used for Gov-track dataset, Part 3 which shows the queries used for Synthetic dataset with and without nested meta-knowledge, and Part 4 which shows the queries used for Dataset4.

Part I

Queries for BKR dataset in RDF^M format

Q1 *Find out the triples which are derived from <http://mor.nlm.nih.gov/bkr/PUBMED_99992-INST>.*

```
select ?s ?p ?o
where {
?s ?p[,,(,),] ?o ?i ?i2.
?i <http://knoesis.wright.edu/provenir/derives_from>[,,(,),]
<http://mor.nlm.nih.gov/bkr/PUBMED_99992-INST> ?i1 ?i3 .}
```

Q2 *Find out the property value for the entity <http://mor.nlm.nih.gov/umls/META_C0543467> connected with relationship <http://mor.nlm.nih.gov/umls/SEMNET_TREATS> and find out the causes responsible for that property value. Also find out the sources of these statements.*

```
select ?o1 ?o2 ?i ?pmid2
where {
<http://mor.nlm.nih.gov/umls/META_C0543467>
<http://mor.nlm.nih.gov/umls/SEMNET_TREATS>[,,(,),] ?o1 ?i ?i2 . ?i
<http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?o ?i1 ?i5 . ?o1
<http://mor.nlm.nih.gov/umls/SEMNET_CAUSES>[,,(,),] ?o2 ?i3 ?i6 . ?i3
<http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?pmid2 ?i4 ?i7 .}
```

Q3 *Find out the property value for the entity <http://mor.nlm.nih.gov/umls/META_C0543467> connected with relationship <http://mor.nlm.nih.gov/umls/SEMNET_TREATS> and find out the causes responsible for that property value. After that find out how those causes affects the entities. Find out the sources of these statements.*

```
select ?o1 ?o2 ?i ?pmid2 ?o3 ?pmid3
where {
<http://mor.nlm.nih.gov/umls/META_C0543467>
<http://mor.nlm.nih.gov/umls/SEMNET_TREATS>[,,(,),] ?o1 ?i ?i9 .  ?i
<http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?o ?i1 ?j1 .  ?o1
<http://mor.nlm.nih.gov/umls/SEMNET_CAUSES>[,,(,),] ?o2 ?i3 ?j2 . ?i3
<http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?pmid2 ?i4 ?j3 . ?o2
<http://mor.nlm.nih.gov/umls/SEMNET_AFFECTS>[,,(,),] ?o3 ?i5 ?j4 . ?i5
<http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?pmid3 ?i6 ?j5 .}
LIMIT 10     // display results should be limited to 10
```

Q4 *Find out the property value for the entity <http://mor.nlm.nih.gov/umls/META_C0006307> connected with relationship <http://mor.nlm.nih.gov/umls/SEMNET_TREATS>. Find out the sources of these statements.*

```
select ?o ?i
where {
<http://mor.nlm.nih.gov/umls/META_C0006307>
<http://mor.nlm.nih.gov/umls/SEMNET_TREATS>[,,(,),] ?o ?i ?i5 .
?i <http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?o1 ?i1 ?i6 .}
```

Q5 *Find out the source of the triple <http://mor.nlm.nih.gov/umls/META_C0012963> <http://mor.nlm.nih.gov/umls/SEMNET_STIMULATES> <http://mor.nlm.nih.gov/umls/META_C0598981>.*

```
select ?o1
where {
<http://mor.nlm.nih.gov/umls/META_C0012963>
<http://mor.nlm.nih.gov/umls/SEMNET_STIMULATES>[,,(,),]
<http://mor.nlm.nih.gov/umls/META_C0598981> ?i ?i1 .
?i <http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?o1 ?i2 ?i3 .}
```

Q6 *Find out how many meta-knowledge are connected with the triple <http://mor.nlm.nih.gov/umls/META_C0012963> <http://mor.nlm.nih.gov/umls/SEMNET_STIMULATES> <http://mor.nlm.nih.gov/umls/META_C0598981>.*

```
select ?n
where {
<http://mor.nlm.nih.gov/umls/META_C0012963>
<http://mor.nlm.nih.gov/umls/SEMNET_STIMULATES>[,,(,),?n]
<http://mor.nlm.nih.gov/umls/META_C0598981> ?i ?i1 .
?i <http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?o1 ?i2 ?i3 .}
```

Q7 *Check the presence of the sources for the triples connected with <http://mor.nlm.nih.gov/umls/SEMNET_CAUSES>.*

ASK{ ?o1 <http://mor.nlm.nih.gov/umls/SEMNET_CAUSES>[,,(,),] ?o2 ?i3 ?j2 . ?i3 <http://knoesis.wright.edu/provenir/derives_from>[,,(,),] ?pmid2 ?i4 ?j3 .}

Part II

Queries for Gov-track dataset in RDF^M format

Q8 *Find out all the bills and their actions with timestamp.*

select ?s1 ?t1 ?o1
where {
?s1 <http://www.rdfabout.com/rdf/schema/usbill/hadAction>[,?t1,(,),] ?o1 ?i1 ?i2 . }
LIMIT 10

Q9 *Find out all the US congress members and their role between the year 1975 to 1976.*

select ?s1 ?o1
where {
?s1 <http://www.rdfabout.com/rdf/schema/politico/hasRole>[,,(1975,1976),] ?o1 ?i1 ?i2 . }

Q10 *Find out the actions of the bill <http://www.rdfabout.com/rdf/usgov/congress/106/bills/h1139> having timestamp 1999.*

select ?o1
where {
<http://www.rdfabout.com/rdf/usgov/congress/106/bills/h1139>
<http://www.rdfabout.com/rdf/schema/usbill/hadAction>[,1999,(,),1] ?o1 ?i1 ?i2 . }

Q11 *Find out the period of existance for the triple <http://www.rdfabout.com/rdf/usgov/congress/people/K000064> <http://www.rdfabout.com/rdf/schema/politico/hasRole> <http://strabon.di.uoa.gr/blank_node/_node17cn1754hx23627>.*

select ?t1 ?t3
where {
<http://www.rdfabout.com/rdf/usgov/congress/people/K000064>
<http://www.rdfabout.com/rdf/schema/politico/hasRole>[,,(?t1,?t3),]
<http://strabon.di.uoa.gr/blank_node/_node17cn1754hx23627> ?i1 ?i2 . }

Q12 *Find out the action of the bill <http://www.rdfabout.com/rdf/usgov/congress/106/bills/hr168> in the year 1999 and describe the action.*

```
select ?o1 ?o2
where {
<http://www.rdfabout.com/rdf/usgov/congress/106/bills/hr168>
<http://www.rdfabout.com/rdf/schema/usbill/hadAction>[,1999,(,),] ?o2 ?i1
?i2 . ?o2 <http://purl.org/dc/elements/1.1/description>[,,(,),] ?o1 ?i3 ?i4 .
}
```

Q13 *Find out the bill which has action <http://strabon.di.uoa.gr/blank_node/_node17d3oknm3x29796> in the year 1999.*

```
select ?s1 ?n
where {
?s1 <http://www.rdfabout.com/rdf/schema/usbill/hadAction>[,1999,(,),?n]
<http://strabon.di.uoa.gr/blank_node/_node17d3oknm3x29796> ?i1 ?i2 . }
```

Q14 *Find out the number of meta-knowledge connected with the triple <http://www.rdfabout.com/rdf/usgov/congress/people/K000064> <http://www.rdfabout.com/rdf/schema/politico/hasRole> <http://strabon.di.uoa.gr/blank_node/_node17cn1754hx23627>.*

```
select ?n
where { <http://www.rdfabout.com/rdf/usgov/congress/people/K000064>
<http://www.rdfabout.com/rdf/schema/politico/hasRole>[,,(,),?n]
<http://strabon.di.uoa.gr/blank_node/_node17cn1754hx23627> ?i1 ?i2 . }
```

Part III

Queries for Synthetic dataset in RDF^M format

1. **Queries for Synthetic dataset without nested MK.**

Q15 *Find out the name, nick name of the entity who knows <http://example.org/objects/o1000020> and also find out the source of the triple.*

```
select ?i5 ?s1 ?o1 ?o3 ?o2
where {
?s1 <http://xmlns.com/foaf/0.1/knows>[,,(,),] <http://example.org/objects/o1000020>
?i5 ?i6 . ?s1 <http://xmlns.com/foaf/0.1/name>[,,(,),] ?o1 ?i ?i1 . ?s1
<http://xmlns.com/foaf/0.1/nick>[,,(,),] ?o2 ?i2 ?i3 .
?i5 <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o3 ?i7 ?i4
. }
```

Q16 *Find out the triples where entities know each other. Also find out the sources of the triples and the number of meta-knowledge conected with them.*

```
select ?s1 ?o1 ?i5 ?n
where {
?s1 <http://xmlns.com/foaf/0.1/knows>[,,(,),?n] ?o1 ?i5 ?i6 .
?i5 <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o3 ?i7 ?i4
. }
```

Q17 *Find out the period of existance and source of the triple <http://example.org/subjects/s1> <http://xmlns.com/foaf/0.1/knows> <http://example.org/objects/o1000013>.*

```
select ?o3 ?i5 ?n ?t1 ?t3
where {
<http://example.org/subjects/s1>
<http://xmlns.com/foaf/0.1/knows>[,,(?t1,?t3),?n]
<http://example.org/objects/o1000013> ?i5 ?i6 .
?i5 <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o3 ?i7 ?i4
. }
```

Q18 *Find out the certainty value, period of existance and source of the triple <http://example.org/subjects/s2> <http://xmlns.com/foaf/0.1/knows> <http://example.org/objects/o1000020>. Also find out the meta-knowledge associated with the triple.*

```
select ?c ?i5 ?n ?t1 ?t3 ?o3
where {
<http://example.org/subjects/s2> <http://xmlns.com/foaf/0.1/knows>[?c,,(?t1,?t3),?n]
<http://example.org/objects/o1000020> ?i5 ?i6 .
?i5 <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o3 ?i7 ?i4
. }
```

2. **Queries for Synthetic dataset with nested MK.**

Q19 *Find out the certainty value, the number of meta-knowledge associated with the triple and the source of the triple <http://example.org/subjects/s0> <http://xmlns.com/foaf/0.1/knows> <http://example.org/objects/o1000006>.*

```
select ?c ?n ?i ?o2
where {
<http://example.org/subjects/s0> <http://xmlns.com/foaf/0.1/knows>[?c,,(,),?n]
<http://example.org/objects/o1000006> ?i ?i1 .
?i <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o2 ?i2 ?i3
. }
```

Q20 *Find out the entities who know each other and the source of the statements.*

```
select ?s1 ?o1 ?o2
where {
?s1 <http://xmlns.com/foaf/0.1/knows>[,,(,),] ?o1 ?i ?i1 .
?i <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o2 ?i2 ?i3
. }
```

Q21 *Check the presence of the source of the triple <http://example.org/subjects/s0> <http://xmlns.com/foaf/0.1/knows> <http://example.org/objects/o1000006>..*

ASK { <http://example.org/subjects/s0> <http://xmlns.com/foaf/0.1/knows>[,,(,),]
<http://example.org/objects/o1000006> ?i ?i1 .
?i <http://purl.org/biotop/biotop.owl#derivesFrom>[,,(,),] ?o2 ?i2 ?i3
. }

Part IV

Queries for Dataset4 in RDF^M format

Q22 *Find out the causes and the type of the diseases for the entities.*

select ?disease
where {
?s <http://rdf.ncbi.nlm.nih.gov/pubchem/vocabulary#causes>[,,(,),] ?disease
?i ?i1 . ?disease <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>[,,(,),]
?o1 ?i6 ?i7 . }
LIMIT 10

Q23 *Find out the causes and the type of diseases for the entity <http://rdf.ncbi.nlm.nih.gov/pubchem/compound/CID4946>. Also find out the relation which provides assertion for the statement.*
select ?rela1 ?i
where {
<http://rdf.ncbi.nlm.nih.gov/pubchem/compound/CID4946>
<http://rdf.ncbi.nlm.nih.gov/pubchem/vocabulary#causes>[,,(,),] ?disease ?i
?i1 . ?disease <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>[,,(,),]
?o1 ?i6 ?i7 . ?rela1 <http://purl.org/spar/cito/providesAssertionFor>[,,(,),]
?i ?i2 ?i3 . }
LIMIT 10

Q24 *Check the presence of the causes and the type of the diseases for the entities.*

ASK { ?s <http://rdf.ncbi.nlm.nih.gov/pubchem/vocabulary#causes>[,,(,),]
?disease ?i ?i1 . ?disease <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>[,,(,),]
?o1 ?i6 ?i7 . }

Q25 *Find out the causes of the diseases for an entity <http://rdf.ncbi.nlm.nih.gov/pubchem/compound/CID4946>. Also find out the number of meta-knowledge associated with the statement.*

select ?n ?disease
where {
<http://rdf.ncbi.nlm.nih.gov/pubchem/compound/CID4946>
<http://rdf.ncbi.nlm.nih.gov/pubchem/vocabulary#causes>[,,(,),?n] ?disease
?i ?i1 . }