

Health SPARQL Tutorial Solutions

- Download **CovidCountyStatistics.ttl** and **CovidStatisticsProfile.ttl** from the SPARQL_data zip file on Blackboard
- These have been downloaded originally from October 5th 2020 from the Covid geohive LOD webpage
<http://data.geohive.ie/covidData.html>
- Import these into your installed triplestore
- Create SPARQL for the following queries

Return all resources where confirmedCovidCases > 100

```
select * where {  
  ?s <http://ontologies.geohive.ie/covid#confirmedCovidCases> ?o .  
  FILTER(?o>100)  
} limit 100
```

Change so that you get returned the resource for related to each county

```
select * where {  
  ?county <http://ontologies.geohive.ie/covid#confirmedCovidCases> ?cases .  
  ?county <http://ontologies.geohive.ie/covid#regionDetails> ?details .  
  FILTER(?cases>100)  
}  
limit 100
```

Change so that you return max number of confirmedCovidCases per county

```
select ?details (max(?cases) as ?total) where {  
  ?county <http://ontologies.geohive.ie/covid#confirmedCovidCases> ?cases .  
  ?county <http://ontologies.geohive.ie/covid#regionDetails> ?details .  
  FILTER(?cases>100)  
}  
GROUP BY ?details  
limit 500
```

male cases per day, limit 1000

```
select ?s ?male  
where {  
  ?s <http://ontologies.geohive.ie/covid#maleCases> ?male.  
}  
Limit 1000
```

Number of male cases in April 2020 ordered in ascending order

```
select ?s ?male  
where {  
  ?s <http://ontologies.geohive.ie/covid#maleCases> ?male.  
  ?s <http://purl.org/dc/elements/1.1/date> ?date.  
  FILTER(month(?date)=4)  
}  
ORDER BY ?male
```

```
limit 1000
```

```
# Ensure the geohiveCovidOntology.ttl is imported  
# together with the CovidCountyStatistics.ttl and CovidStatisticsProfile.ttl
```

5. Return all the predicates and objects related to `<http://ontologies.geohive.ie/covid#>`

Option A: using namespace

```
PREFIX osicovid: <http://ontologies.geohive.ie/covid#>
```

```
SELECT ?p ?o  
WHERE {  
    osicovid: ?p ?o .  
}
```

Option B: using URI

```
PREFIX osicovid: <http://ontologies.geohive.ie/covid#>
```

```
SELECT ?p ?o  
WHERE {  
    <http://ontologies.geohive.ie/covid#> ?p ?o .  
}
```

6. Number of properties within the `osicovid:IrishCovidCountyStatisticsRecord` domain

```
PREFIX osicovid: <http://ontologies.geohive.ie/covid#>  
PREFIX owl: <http://www.w3.org/2002/07/owl#>  
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  
SELECT (COUNT(?datatypeP) AS ?datatypePCount)  
WHERE {  
    ?datatypeP a owl:DatatypeProperty ;  
    rdfs:domain osicovid:IrishCovidStatisticsRecord .  
}
```

7. Number of properties (object and datatype) per class in the geohive covid ontology

```
PREFIX osicovid: <http://ontologies.geohive.ie/covid#>  
PREFIX owl: <http://www.w3.org/2002/07/owl#>  
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  
SELECT ?osicovidClass (COUNT(?datatypeP) AS ?datatypePCount)  
WHERE {  
    ?osicovidClass a owl:Class .  
    ?datatypeP a owl:DatatypeProperty ;  
    rdfs:domain ?osicovidClass .  
}  
GROUP BY ?osicovidClass
```