

TEST CASE OBLIG 1 INF3580 SPRING 2010

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This document provides test input and lists the output from testing the Java program and SPARQL query in exercises 2 and 3, respectively.

1 Exercise 1

Assume `places.ttl` looks like the following.

```
1: @prefix rdf:      <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
2: @prefix places:  <http://inf3580.ifi.uio.no/places#> .
3: @prefix geo:     <http://www.w3.org/2003/01/geo/wgs84_pos#> .
4: @prefix xsd:     <http://www.w3.org/2001/XMLSchema#> .
5: @prefix ex:      <http://www.example.org/aaa#> .
6:
7: ex:Bergen rdf:type places:Place ;
8:           places:name "Bergen"@no ;
9:           places:position
10:          [ rdf:type geo:Point ;
11:            geo:long "5.3233"^^xsd:double ;
12:            geo:lat "60.2925"^^xsd:double
13:          ] .
14:
15:
16: ex:Oslo rdf:type places:Place ;
17:         places:name "Oslo"@no ;
18:         places:position
19:        [ rdf:type geo:Point ;
20:          geo:lat "59.91111"^^xsd:double ;
21:          geo:long "10.73333"^^xsd:double
22:        ] .
23:
24: ex:Trondheim rdf:type places:Place ;
25:             places:position
26:            [ rdf:type geo:Point ;
27:              geo:long "10.393056"^^xsd:double ;
28:              geo:lat "63.426944"^^xsd:double
29:            ] ;
30:             places:name "Trondheim"@no .
```

2 Exercise 2

Running the Java program written in exercise 2 with the `places.ttl` file given above gives me the following output to the file `places-with-distances.ttl`.

```
1: @prefix ex:      <http://www.example.org/aaa#> .
2: @prefix geo:    <http://www.w3.org/2003/01/geo/wgs84_pos#> .
3: @prefix xsd:    <http://www.w3.org/2001/XMLSchema#> .
4: @prefix rdf:    <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
5: @prefix places: <http://inf3580.ifi.uio.no/places#> .
6:
7: []    rdf:type places:Connection ;
8:       places:distance "438.0942315936567"^^xsd:double ;
9:       places:endpoint ex:Bergen , ex:Trondheim .
10:
11: ex:Oslo
12:     rdf:type places:Place ;
13:     places:name "Oslo"@no ;
14:     places:position
15:         [ rdf:type geo:Point ;
16:           geo:lat "59.91111"^^xsd:double ;
17:           geo:long "10.73333"^^xsd:double
18:         ] .
19:
20: []    rdf:type places:Connection ;
21:       places:distance "391.35357937166157"^^xsd:double ;
22:       places:endpoint ex:Oslo , ex:Trondheim .
23:
24: ex:Bergen
25:     rdf:type places:Place ;
26:     places:name "Bergen"@no ;
27:     places:position
28:         [ rdf:type geo:Point ;
29:           geo:lat "60.2925"^^xsd:double ;
30:           geo:long "5.3233"^^xsd:double
31:         ] .
32:
33: []    rdf:type places:Connection ;
34:       places:distance "302.75342485607575"^^xsd:double ;
35:       places:endpoint ex:Oslo , ex:Bergen .
36:
37: ex:Trondheim
38:     rdf:type places:Place ;
39:     places:name "Trondheim"@no ;
40:     places:position
41:         [ rdf:type geo:Point ;
42:           geo:lat "63.426944"^^xsd:double ;
43:           geo:long "10.393056"^^xsd:double
44:         ] .
```

3 Exercise 3

The Java program in exercise 2 calculated the following distances:

Endpoint	Endpoint	ca. Distance
Bergen	Trondheim	438
Oslo	Bergen	302
Oslo	Trondheim	391

To test the SPARQL query in this exercise I change the distance values in the file `places-with-distances.ttl` to

Endpoint	Endpoint	ca. Distance
Bergen	Trondheim	438
Oslo	Bergen	120
Oslo	Trondheim	110

This makes the distance from Bergen to Trondheim via Oslo, which is $120 + 110 = 230$, shorter than the “direct” distance between Bergen and Trondheim, which is 438. This violates the triangle inequality, and the SPARQL query should return results which reflects this.

The result from running the SPARQL query on the altered `places-with-distances.ttl` is:

```
-----  
| x           | y           | z           |  
=====
```

ex:Trondheim	ex:Oslo	ex:Bergen
ex:Bergen	ex:Oslo	ex:Trondheim

```
-----
```