

Exercise 1

a)

urn:TELECOMSudParis ex:located-at urn:locationOfTelecomSudParis

urn:locationOfTelecomSudParis ex:has-street " rue Charles Fourier "

urn:locationOfTelecomSudParis ex:has-postal-code "9100"

urn:locationOfTelecomSudParis ex:has-city "Evry"

urn:locationOfTelecomSudParis ex:has-country "France"

<http://www.w3.org/> rdf:type ex:website

<http://www.w3.org/> ex:hosts urn:sw-activity-homepage

urn:sw-activity-homepage rdf:type urn:homepage

urn:sw-activity ex:has-homepage urn:sw-activity-homepage

b)

urn:TELECOMSudParis ex:located-at _:x

_:x ex:has-street " rue Charles Fourier "

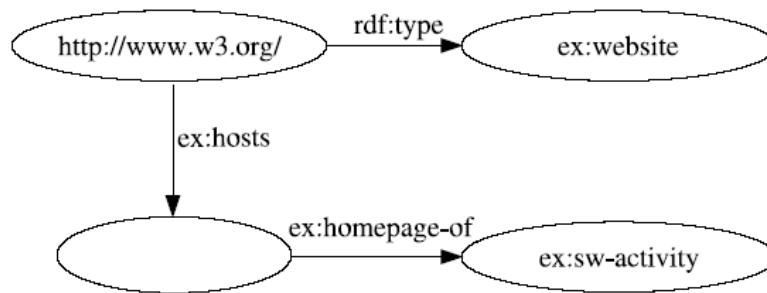
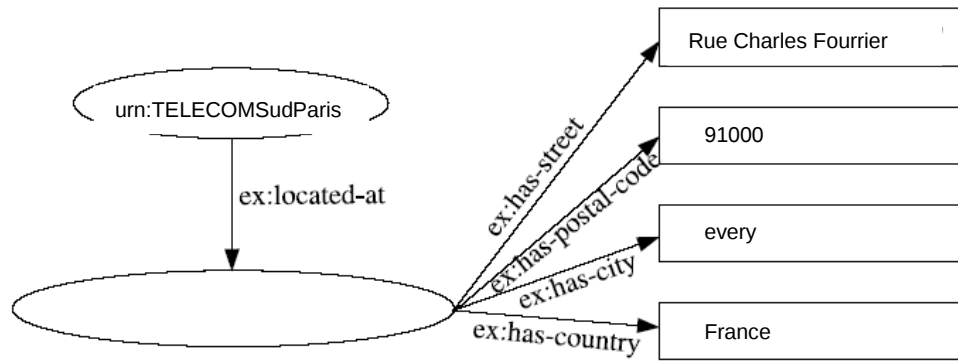
_:x ex:has-postal-code "9100"

_:x ex:has-city "Evry"

_:x ex:has-country "France"

<http://www.w3.org/> ex:hosts _:Y

_:Y rdf:type ex:homepage

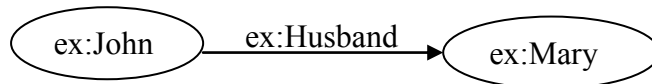


Exercises 3

Write the following sentences in RDF triple notation, directed label graph model, and RDF/XML based syntax.

1. John is the husband of Mary.

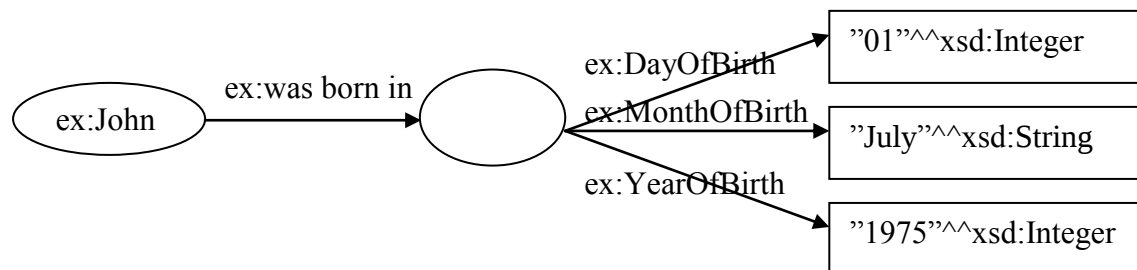
`<ex:John><ex:Husband of><ex:Mary>`



```
<rdf:description rdf:about="ex:john">
  <ex:husband rdf:resource="ex:Mary">
</rdf:description>
```

2. John was born in 01 July 1975.

```
<ex:John><ex:was born in><_:JohnDateOfBirth>
<_:JohnDateOfBirth><ex:DayOfBirth><"01"^^xsd:Integer>
<_:JohnDateOfBirth><ex:MonthOfBirth><"July"^^xsd:String>
<_:JohnDateOfBirth><ex:YearOfBirth><"1975"^^xsd:Integer>
```



```
<rdf:description rdf:about="ex:John">
  <ex:was born in rdf:nodeID="JohnDateOfBirth">
</rdf:description>
```

```
<rdf:description rdf:nodeID="JohnDateOfBirth">
  <ex:DayOfBirth rdf:datatype="xsd:Integer">01</ex:DayOfBirth>
  <ex:MonthOfBirth rdf:datatype="xsd:String">July</ex:MonthOfBirth>
  <ex:YearOfBirth rdf:datatype="xsd:Integer">1975</ex:YearOfBirth>
</rdf:description>
```

3. Mary is checking if John was born at Galway.

`<ex:OneStatement><rdf:type><rdf:statement>`

```

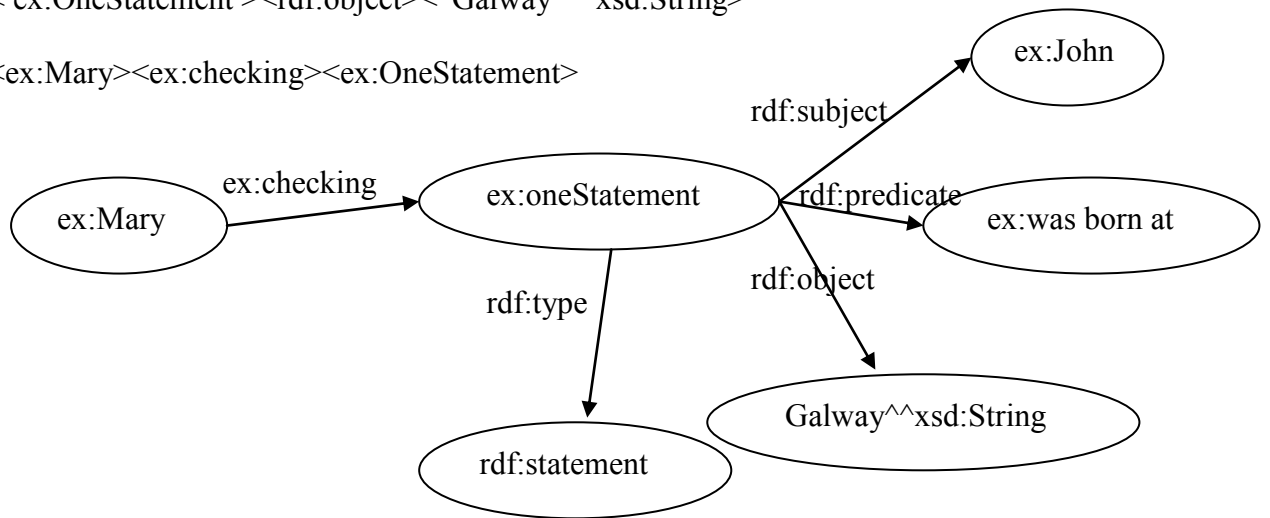
< ex:OneStatement ><rdf:subject><ex:John>
< ex:OneStatement ><rdf:predicate><ex:was born at>
< ex:OneStatement ><rdf:object><"Galway"^^xsd:String>

```

```

<ex:Mary><ex:checking><ex:OneStatement>

```



```

<rdf:statement rdf:about="ex:oneStatement">
  <rdf:subject rdf:resource="ex:John">
  <rdf:predicate rdf:resource="ex:was born at">
  <rdf:object rdf:datatype="&xsd,String">Galway</rdf:object>
</rdf:statement>

```

```

<ex:Mary><ex:checking><ex:oneStatement>

```

4. John has as children Brian, Sinead, and David.

```

<ex:John><ex:hasAsChildren><_:JohnChildren>

```

```

<_:JohnChildren><rdf:type><rdf:bag>

```

```

<_:JohnChildren><rdf:_1><ex:Sinead>

```

```

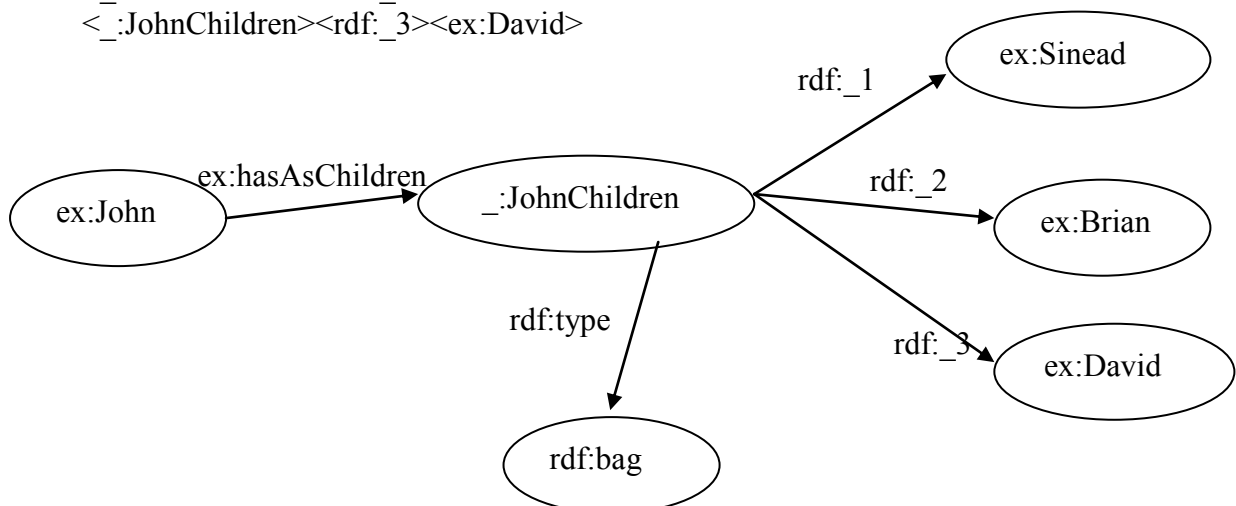
<_:JohnChildren><rdf:_2><ex:Brian>

```

```

<_:JohnChildren><rdf:_3><ex:David>

```



```

<rdf:Description rdf:about= "ex :John">
  <ex:hasAsChildren>
    <rdf:Bag>
      <rdf:_1 rdf:resource="ex:Sinead"/>
      <rdf:_2 rdf:resource="ex:Brian"/>
      <rdf:_3 rdf:resource="ex:David"/>
    </rdf:Bag>
  </ex:hasAsChildren>
</rdf:Description>

```

5. John got as children Brian, Sinead, and then David (in that order).

```

<ex:John><ex:hasAsChildren><_:JohnChildren>

```

```

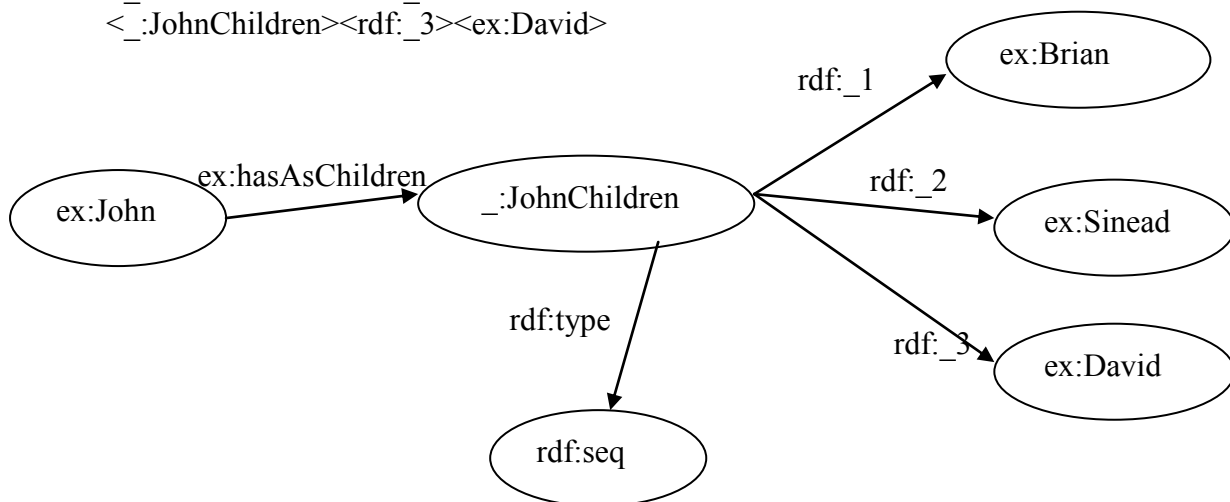
<_:JohnChildren><rdf:type><rdf:seq>

```

```

<_:JohnChildren><rdf:_1><ex:Brian>
<_:JohnChildren><rdf:_2><ex:Sinead>
<_:JohnChildren><rdf:_3><ex:David>

```



```

<rdf:Description rdf:about= "ex :John">
  <ex:hasAsChildren>
    <rdf:seq>
      <rdf:_1 rdf:resource="ex:Sinead"/>
      <rdf:_2 rdf:resource="ex:Brian"/>
      <rdf:_3 rdf:resource="ex:David"/>
    </rdf:seq>
  </ex:hasAsChildren>
</rdf:Description>

```

6. Galway can be reached either by train, by bus, or by plane.

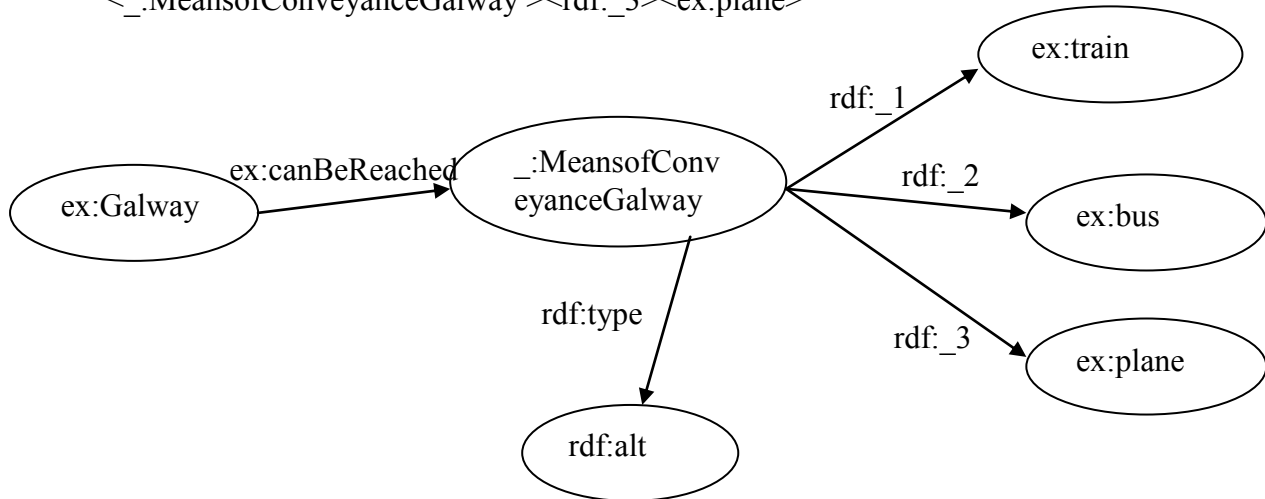
```
<ex:Galway><ex:canBeReached><_:MeansofConveyanceGalway>
```

```
<_:MeansofConveyanceGalway><rdf:type><rdf:alt>
```

```
<_:MeansofConveyanceGalway><rdf:_1><ex:train>
```

```
<_:MeansofConveyanceGalway><rdf:_2><ex:bus>
```

```
<_:MeansofConveyanceGalway><rdf:_3><ex:plane>
```



```
<rdf:Description rdf:about= "ex :Galway">
```

```
  <ex:canBeReached>
```

```
    <rdf:alt>
```

```
      <rdf:_1 rdf:resource="ex:train"/>
```

```
      <rdf:_2 rdf:resource="ex:bus"/>
```

```
      <rdf:_3 rdf:resource="ex:plane"/>
```

```
    </rdf:alt>
```

```
  </ex:canBeReached>
```

```
</rdf:Description>
```

7. Galway can be reached only by train, by bus or by plane.

```
<ex:Galway><ex:canBeReached><_:MeansofConveyanceGalway>
```

```
<_:MeansofConveyanceGalway><rdf:type><rdf:list>
```

```
<_:MeansofConveyanceGalway><rdf:first><ex:train>
```

```
<_:MeansofConveyanceGalway><rdf:rest><_:MeansofConveyanceGalwayRest1>
```

```
<_:MeansofConveyanceGalwayRest1><rdf:type><rdf:list>
```

```
<_:MeansofConveyanceGalwayRest1><rdf:first><ex:bus>
```

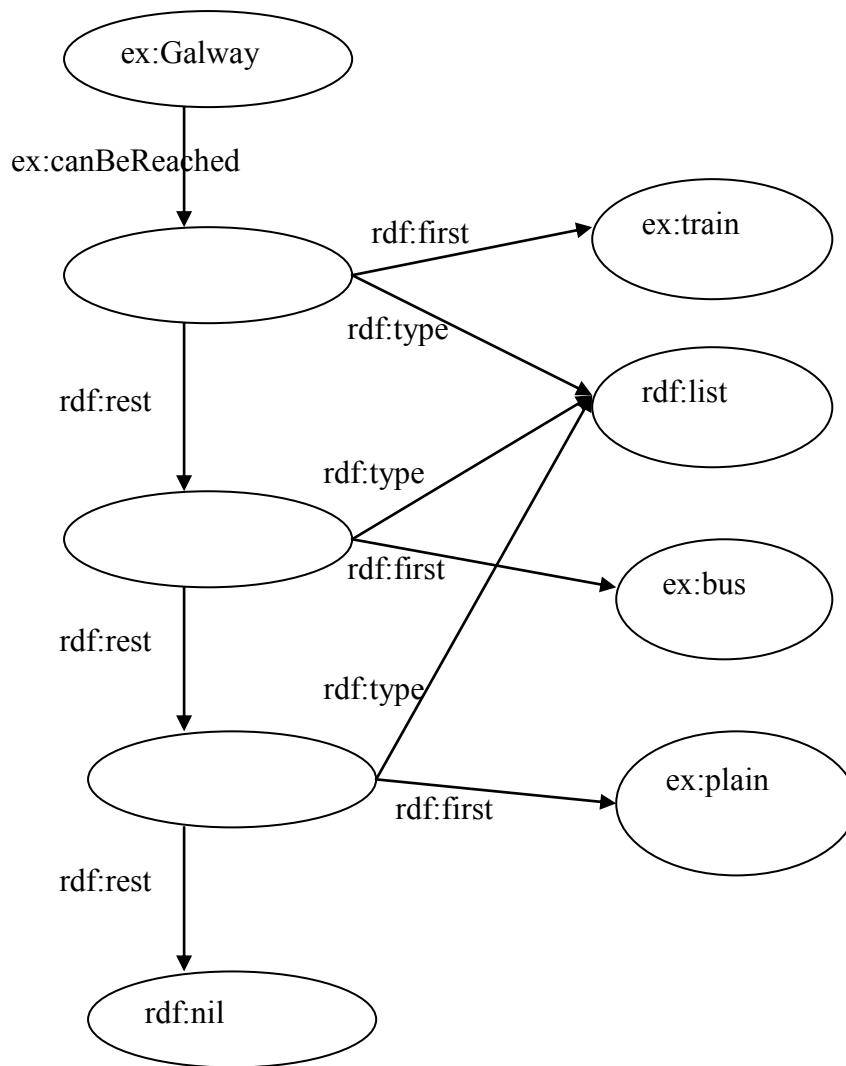
```
<_:MeansofConveyanceGalwayRest1><rdf:rest><_:MeansofConveyanceGalwayRest2>
```

```
<_>
```

```
<_:MeansofConveyanceGalwayRest2><rdf:type><rdf:list>
```

```
<_:MeansofConveyanceGalwayRest2><rdf:first><ex:plane>
```

```
<_:MeansofConveyanceGalwayRest2><rdf:rest><rdf:nil>
```



```

<rdf:description rdf:about="ex:Galway">
  <ex:canBeReached rdf:parsType="collection">
    <rdf:description rdf:about="train">
    <rdf:description rdf:about="bus">
    <rdf:description rdf:about="plain">
  </ex:canBeReached>
</rdf:description>

```