Semantics, knowledge graphs and ontologies in practice

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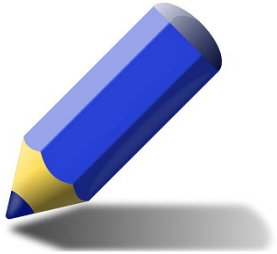


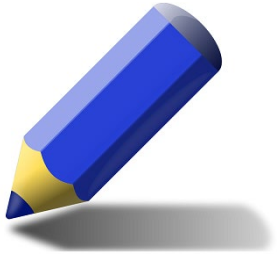
Exercise 1

1.- Represent in RDF: *"The temperature of Oviedo is 36"*

Different possibilities:

Oviedo = city, temperature = weather

Oviedo = football player, body temperature



Exercise 2

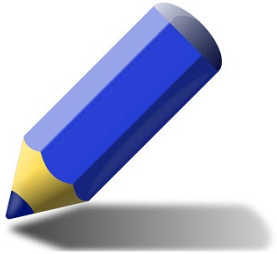
In the match between F. C. Copenhagen and Manchester United F. C. on 11th August, 2020, some temperature observations were taken to a sample of players and recorded by five officials.

The first official, Miltos Soares, filled the following table at 20:15h.

Football player	Wikidata Item	Team	Temperature
Bryan Oviedo	Q325997	F. C. Copenhagen	36
Jonas Wind	Q52084298	F. C. Copenhagen	35.5
Bruno Fernandes	Q4979316	Manchester United F. C.	36.1
Juan Mata	Q168740	Manchester United F. C.	37

Represent that table in RDF

You can provide different alternatives and discuss pros/cons of each alternative



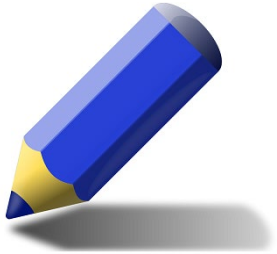
Exercise 3

The second official, Robert Klauss, filled the following table.

In some cases, he provided more than one value for the temperature, and in other cases, he provided no value.

Football player	Wikidata Item	Team	Temperature
Bruno Fernandes	Q4979316	Manchester United F. C.	36, 37.5
Cristiano Ronaldo	Q11571	Manchester United F. C.	-
Jonas Wind	Q52084298	F. C. Copenhagen	39

Represent that table in RDF and check how it could be integrated with the previous file.



Exercise 4

The third official, Michael Blur, filled the following table after a long party night:

Football player	Wikidata Item	Team	Temperature
Jens Stage	R5235126	F. C. Copenhagen	37
Zeca	Q3810416	F. C. Copenhagen	Approx. thirty six
Pep Biel	Q47478674	Manchester United F. C., F. C. Copenhagen	38.2
Kevin Diks	Q17602824	F. C. Copenhagen	370

Although the data contains some errors, represent it in RDF.
In the next lessons we will present tools that can be used to detect those errors.

Exercise 5

The fourth official, Jason Smith, created a web service and submitted the following JSON file:

```
{
  "author": "Jason Smith",
  "date": "2020-08-11",
  "recordings": [
    { "player": "Jadon Sancho",
      "item": "http://www.wikidata.org/entity/Q30148558",
      "team": "Manchester United F. C.",
      "temperature": 35.7
    },
    {
      "player": "David de Gea",
      "item": "http://www.wikidata.org/entity/Q150268",
      "team": "Manchester United F. C.",
      "temperature": 36.1
    }
  ]
}
```

Represent the JSON file as RDF.
Is it possible to represent any JSON file as RDF?

Exercise 6

The fifth official, Tom Bray, created another web service and submitted this XML file:

```
<Recording date="2020-08-11">
 <author>Tom Bray</author>
 <observations>
     <observation>
         <player>Kamil Grabara</player>
         <team>F. C. Copenhagen</team>
         <temperature>36</temperature>
         <comment>This observation was done by the <person name="Jess Thorup">Coach</person>
            and the <person name="Rubén Sellés">Assistant coach</person></comment>
     </observation>
     <observation>
        <player>Raphaël Varane</player>
        <team>Manchester United F. C.</team>
        <temperature>35.8</temperature>
    </observation>
</observations>
</Recording>
```

Represent the XML file as RDF.
Is it possible to represent any XML file as RDF?