

### TUTORS:

Yaser Jaradeh, and some other ORKG team members

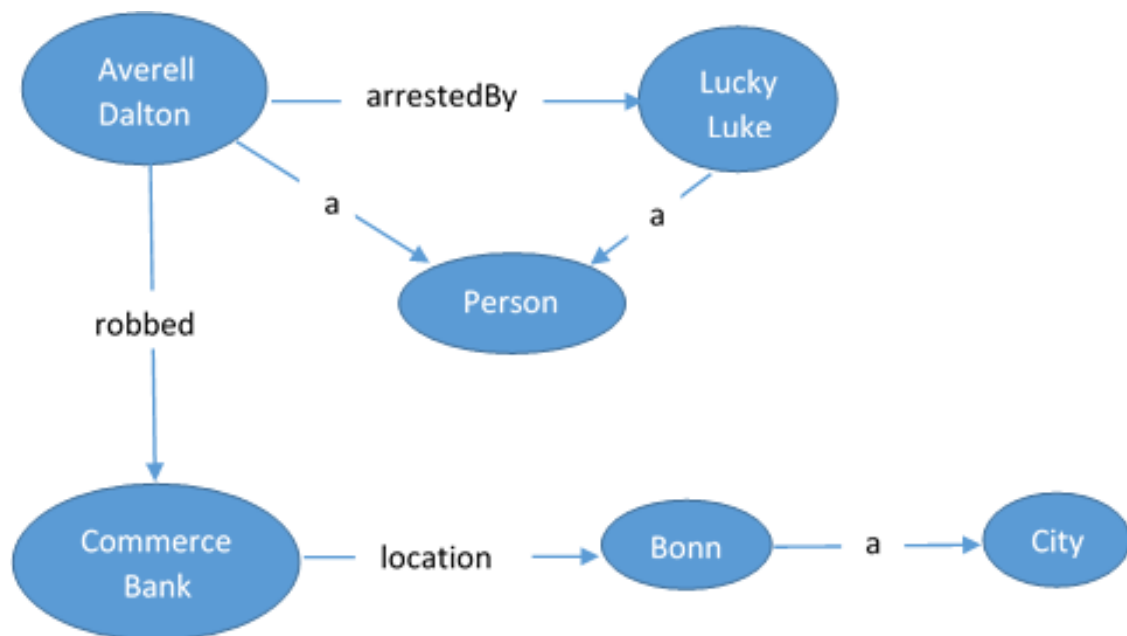
**QUESTIONS:** Please don't hesitate to ask any questions. Questions help you and your peers.

**PRINT:** Please consider the environment before printing the exercise.

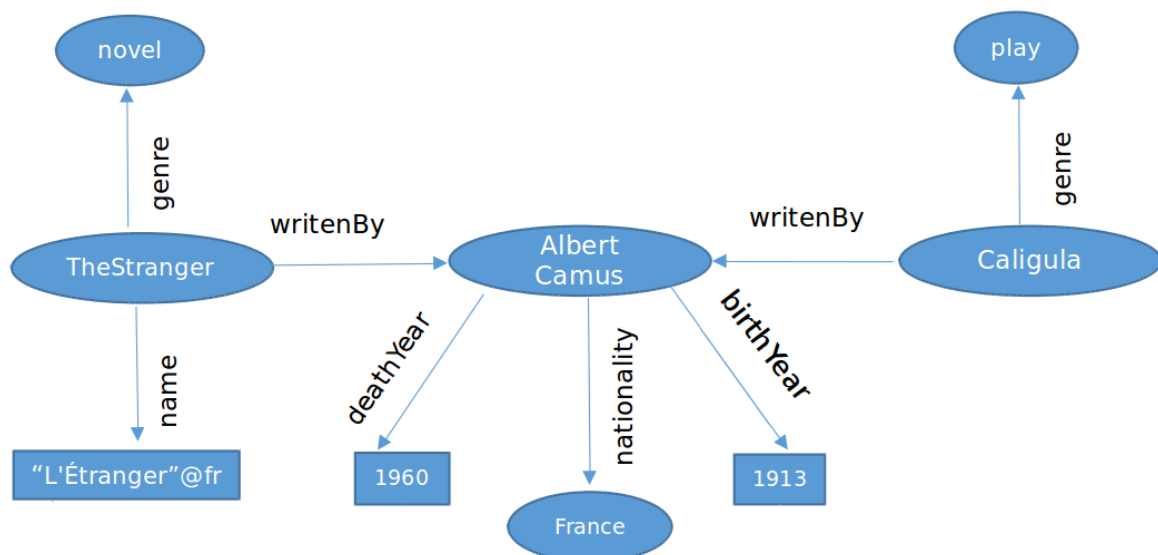
## 1 Review questions

1. Which ones could be considered as main reasons for development of semantic data web?
  - (a) Creation of huge amounts of information and data  
**✗ Huge amount of information is already existing on the web.**
  - (b) Standardization of data for transferring  
**✗ Transferring of data is already standardized using protocols.**
  - (c) Machine readability of data  
**✓ Data in the web is always represented in documents which are not machine readable.**
  - (d) Meaningfulness of data  
**✓ Semantic Web makes the meaning for the data by indicating relation between resources and defining schemas and ontologies to make data as much meaningful as needed in the domain.**
  
2. Which ones could be considered as motivations for development of semantic data web in future?
  - (a) Human readability of data  
**✗ Documents in the Web are (typically) already human readable.**
  - (b) Integration of data from heterogeneous resources  
**✓ One important issue for web of data and semantic web is collecting and so integrating data which is gathered from different heterogeneous sources.**
  - (c) Intelligent information retrieval  
**✓ When you make your data set with RDF model, it is always interesting to retrieve new facts (information) from it.**
  - (d) Syntactical standardization of information  
**✗ Syntactical standardization is necessary in the progress of semantic web, but it's not a motivation for development of semantic web.**





### 3 Consider the following knowledge graph



1. Count the number of triples and indicate the URIs and literals.
2. Write each triple as a simple fact in one sentence of natural language.
3. (optional) Rewrite the extracted facts in the last section in XML representation.
4. (optional) Consider that we don't have the URI of book "The Stranger", how can we show the respective information?

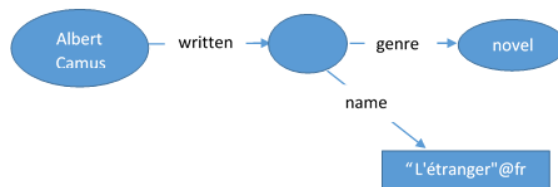
#### Solution:

1. 8 triples
2. (a) The Stranger is written by Albert Camus.  
  
(b) The genre of The Stranger is novel.  
  
(c) The name of The Stranger in French is "L'étranger".

- (d) Albert Camus died in 1960.
- (e) Albert Camus born in 1913.
- (f) Albert Camus in a French.
- (g) Caligula is written by Albert Camus.
- (h) The genre of Caligula is play.

```
3. <person deathYear="1960" birthYear="1913">
    <name> Albert Camus </name>
    <nationality> France </nationality>
    <written>
        <novel name="L'etranger"@fr> The Stranger </novel>
    </written>
    <written>
        <play> Caligula </play>
    </written>
</person>
```

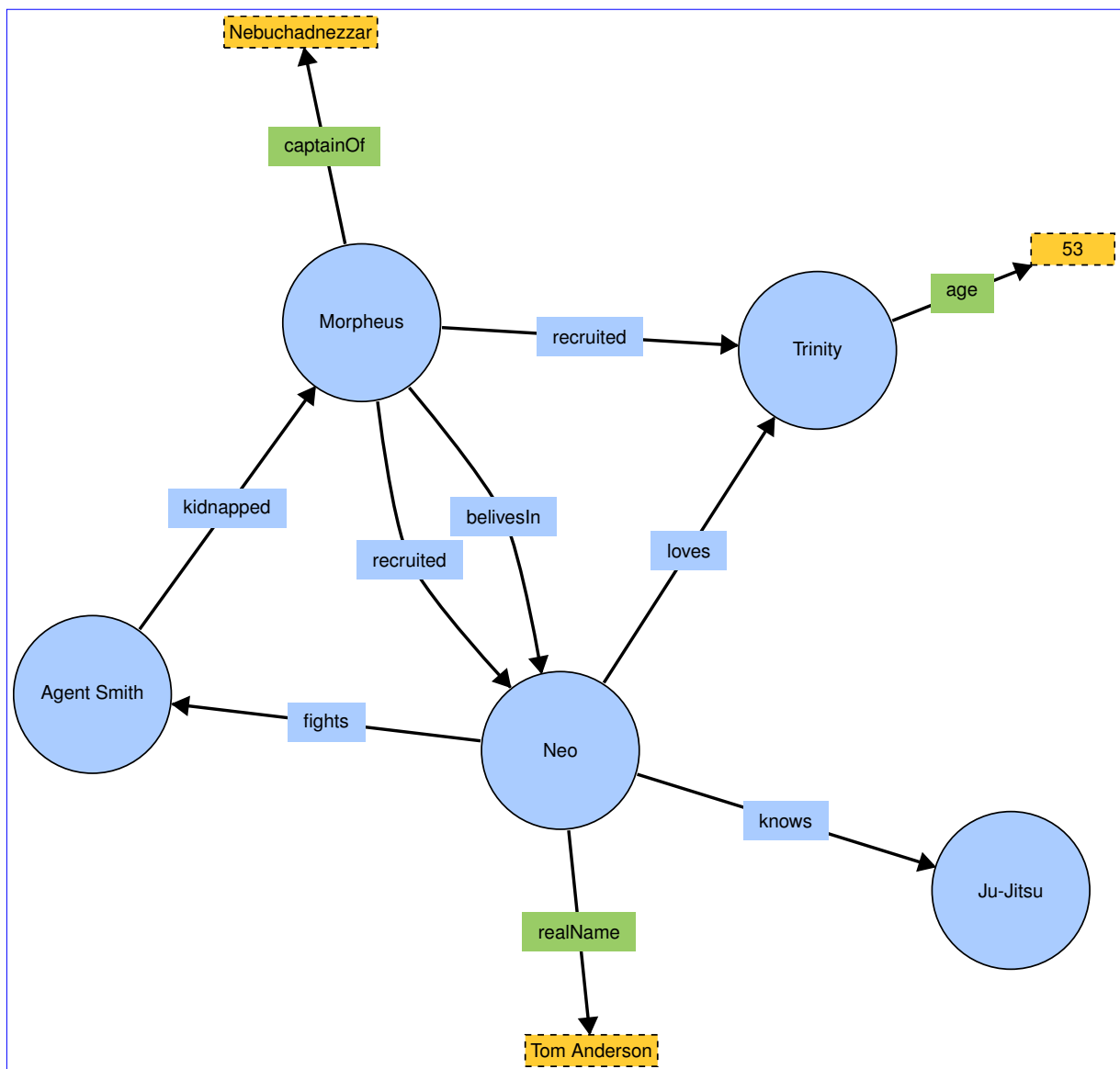
4. With blank node:



## 4 Assume a familiar subject, such as your family or LUH

1. Create a knowledge graph with at least 10 triples about it.
2. (optional) Write the triples of your knowledge graph in turtle representation.

[Solution:](#)



@prefix ex:<http://example.org#>.

```

ex:Neo          ex:realName    "Tom Anderson";
                ex:knows       ex:Ju-Jitsu;
                ex:loves       ex:Trinity;
                ex:fights      ex:AgentSmith.

ex:AgentSmith   ex:kidnapped    ex:Morpheus.

ex:Morpheus     ex:captainOf    "Nebuchadnezzar";
                ex:recruited    ex:Trinity;
                ex:believesIn   ex:Neo;
                ex:recruited    ex:Neo, ex:Trinity.

ex:Trinity      ex:Age          "53".
  
```