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Knowledge Graphs

Exercise 7: Property Graphs

7.1. RDF*/SPARQL*

Model the information

- Markus thinks that Jutta lives in Mannheim (only quoted)
- Jutta and Markus works for ABB between 2009 and 2015 (only quoted)
- Jutta works for Fucks Petrolub between 2015 and 2020 (only quoted)
- Franz knows that ABB is located in Mannheim (asserted)

in RDF*

Upload the file containg this information to Fuseki (SPARQL server from Jena)[1].

Create a queries for

- When did Jutta work for ABB?
- Who works for Fucks Petrolub between 2009 and 2015
- Who works for ABB (print also start and end time)
- List all triples where Mannheim is used as object

7.2. Cypher

Download and install Neo4j[2], or use the Neo4j Sandbox[3] to load the example dataset called movie (you can do so by executing ":play movies" or selecting it in the sandbox environment).

Create cypher queries for each case below:

1. Find all persons who acted and directed a movie
2. Find all actors who have co-starred in two movies
3. How is Corey Feldman connected to Kelly Preston (only via at most 5 ACTED_IN relations)

7.3. Cypher II

Create a new neo4j database and model the same information as in exercise 7.1.

Find answers for queries 1-3 from the same task.

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[1] You can download Fuseki at https://jena.apache.org/download/ (using the binary distribution of the Fuseki server)
[2] https://neo4j.com/download/
[3] https://neo4j.com/sandbox-v2/ - requires a free account