

Lab Training Database Systems 2020

Task 2

For this task, you have to create a graph database in Neo4j for a flight system. The data that is used here can be loaded from <https://openflights.org/data.html>. Of interest are the airports, the airlines, and the flight routes. At the end of this task, it is again necessary to upload a report (PDF) on Moodle.

- a) Load the three data files into Neo4j. You can manually download and copy them into the Docker container, or use their direct website links in Neo4j to load them. Do not forget to rename the attributes according to their description on the website, else it might be hard to query them later.
In addition, create relationships between them where necessary, e.g., a relationship for the *Airline ID* attribute of *Routes*, referencing to the *ID* attribute of *Airlines* (obviously).

If you are not sure if everything works correctly, check your design by using only a few tuples/nodes and displaying it in your browser.

=> **For the PDF:** Add all used commands to load the data, to rename the attributes, and to create the relationships.

- b) Answer the eight given queries in Cypher for your task.

=> **For the PDF:** Add your solution to the queries as well as the result from execution. If the result is too big (e.g. a thousand nodes), limit the output to 10 by adding LIMIT 10 to your solution.

- c) Think of two more queries that a user could pose to this graph database!

=> **For the PDF:** Add both queries with an English description, the solution in Cypher, as well as the output of them!

Further comments on the second task:

- I. You have to do it on your own, **do not copy&paste** commands and results from your fellow students!
- II. When you have finished your tasks, upload the PDF on Moodle **within the given time**.