Shortest Path Query Processing with Label Restrictions on Neo4j

Master

Summary
Implement a state-of-the-art graph index structure for shortest path queries under label constraints in the industrial-grade Graph DBMS Neo4j.

Project Phase
Implement Contraction Hierarchies with label Restriction (CHLR) by extending an existing implementation of Contraction Hierarchies in Neo4j.

Thesis Phase
Investigate parameters, e.g., node ordering, labels to be considered, etc., that influence the performance of CHLR. Conduct experiments to provide insight on how to configure the various parameters.

Requirements
- Experience in Java programming
- Course on Algorithms and Data Structures (or equivalent)

Preferable Courses (or equivalent)
- Database System Architecture and Implementation
- Graph Data Management and Analysis
- Efficient Route Planning Techniques

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