“Preprocessing and Storing Sea Map Data to Graph Database”

“OpenStreetMap (OSM) provides a global free geographical data sets. The data can be used in many fields and in many applications. In order to be able to use the data it must be stored to a database at the first place. The Database Management System (DBMS) and the data model play a big role in the efficiency and the execution speed of an implemented software, which relies on those data. The available OSM importer provided by Neo4j converts and stores the whole OSM data to an equivalent graph representation based on a very complex data model, which has consequences in terms of executing time and data storage usage. This solution is also for some applications not often necessary. This Thesis is about designing and implementing a software to store sea map data after being preprocessed into a graph database. The main goal is to create an appropriate data model that can be efficient in terms of executing time and storage volume. It should allow the execution of spatial queries, which makes the data usable for navigational purposes. The implemented software was tested with several OSM sea data files. The results derived from the implemented software were faster in spatial’s query executing time and smaller in storage space, when compared to the Neo4j provided OSM importer.”