Mandatory Tasks

Task 1: String Preprocessing

Streets might end in Strasse/Str./... This might lead to problems in the query. Therefore, think about situations where this might arise and standardize them.

Task 2: Geocoder

A Geocoder receives as input a string (e.g. "Hauptstrasse 10 Aalen") and returns one or multiple objects described by the input. As a base routine implement an inverted index and fill it with the names of streets and shops, restaurants, etc. Querying this would, for example, result in every Hauptstrasse in the data set. Use a secondary data structure to find the ones in Aalen. Return the results as a list as well as showing them on the map.

Task 3: Heuristics

A query might result in multiple results. Think about a way to order them in your results. Also the queries are given in natural language. How do you interpret them? Document your choices, including your reasoning, in a readme file.

Optional Tasks

Task 1: Substring search

So far only exact matches in the string search will be found. Replace the inverted index with a suffix array or tree, so also partial matches can be found.

Task 2: Aggregating

There might be many results close to each other. Bundle these.

Task 3: Results in View

Only show results in the current view. You can combine this with the heuristics from the mandatory task. What if there are no results in the current view?

Task 4: Example Queries

In the following are some example queries in roughly increasing difficulty. Make it possible to answer these queries.

- "Aalen Bahnhofstrasse 10"
- "Stuttgart Burger King"
- "Closest Park to Kaistrasse 5, Kiel"
- ...