Chair for Algorithms
and Data Structures
Prof. Dr. Hannah Bast
M. Brodesser/E. Sawin

Efficient Route Planning
SS 2012

http://ad-wiki.informatik.uni-freiburg.de/teaching

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Exercise Sheet 5

Submit until Wednesday, June 6 at 4:00pm

Exercise 1 (18 points)

Write a web application with the following functionality:

1. A web page displaying a map using the Google Maps API.

2. Two markers, one for the source and one for the target location. They should be relocatable by either dragging them (as shown in the lecture) or by clicking somewhere on the map, or both.

3. A backend that speaks HTTP and accepts shortest path queries (in a format of your choice) and sends back the shortest path as a JSONP object. Compute the shortest path with the fastest algorithm for which you have a working implementation (typically: A* with the landmark heuristic).

4. Whenever either the source or target marker is relocated, send a query to the backend (via AJAX), and when the result is received, draw the shortest path on the Map (and take care that the previous one is erased).

Consider the example code in the SVN and the explanations given in the lecture.

There is no need to write a unit test for the additional server code.

Important: Independent of whether you use Java or C++, make sure that your executable program is called *MapsDemoServerMain* and that it takes as first and only mandatory argument the path to the OSM file and that it supports the option *-p <port>* to specify the port on which it listens to requests. The default port should be 8888. Also make sure that the web-page related files are in a separate subfolder *www*.

Exercise 2 (0 points)

Extend your program from Exercise 1 by the following functionality:

5. When either the source or target marker is relocated, *additionally* launch a query to the Google Driving Directions API and show the path returned by that, too (in a different color).

Exercise 3 (2 points)

As usual, commit your code to our SVN and check that everything works on Jenkins, and also commit a text file *feedback-exercise-sheet-5.txt* where you briefly describe your experiences with this exercise sheet and the corresponding lecture.