Lehrgebiet Robotik und Grundlagen der Informatik Prof. Dr. A. Ferrein

Introduction to AI - SS 2019 Practical 1 26.04.2019



Problem 1: Route planning in Romania

You are to solve a route planning problem in Romania. To do so, please use the file Romania-Graph.lua. Implement

- BFS
- DFS
- UCS

For your solution, please provide the path and the costs for travelling from Bucharest to Timisoara.

Hint:

- 1. First implement the class Queue, which should provide a FIFO, LIFO and PRIO queue.
- 2. Then, implement a data structure Node, which is able to store the required search tree information.

Problem 2: Pathplanning for mobile robots

In the lecture, we discussed how the pathplanning problem for mobile robots can be solved using A^* . Implement the A^* path planning algoriothm as shown in the lecture and provide the optimal path from S to G for the following configuration:

