

Programming Assignment 1

Due Date: February 1, 2016

The goal of this programming assignment is to develop search methods that we discussed in the class. To this effect, let us consider the road map of Romania (presented in Figure 3.2, page 68 of the book). Assume that the input is a text file that appears as presented in table 1. This essentially specifies the entire map. In each line, it specifies the distance between a pair of cities. Note that the distances are commutative, i.e., the distance between cities A and B is the same as the distance between B and A .

Given this file, your program should ask for two cities as input along with the type of search. For example, the input should be *Arad, Bucharest DFS* where *DFS* denotes depth first search. The output of the program should be a path to the goal city along with the total path cost. For example, the output could be *Arad, Sibiu, Fagara, Bucharest - 450*.

You are required to program three different search methods - Breadth first, depth first and iterative deepening.

While submitting your code, you are also required to submit sample output as a separate pdf file. The sample output file should have the paths between Arad and Bucharest, Sibiu and Eforie and between Drobeta and Fagaras. Submissions should be made through Sakai.

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Arad Sibiu 149
Zerind Arad 75
Oradea Zerind 71
Arad Timisoara 118
Timisoara Lugoj 111
...
```

Table 1: Sample Input file