

Artificial Intelligence
CSE422 Sec-3
Fall2019

Instructor: IBU

Total: 25

Lab: 14.10.19

1. Wizard of Alpha casts a magic spell on any AI student. His magic sends the student to a magical kingdom called Alpha. Alpha is a multiple island kingdom. Each island is connected to at least one other island by a bridge. When an AI student is sent to one of the islands in Alpha, a wise old man tries to help. The old man, unable to speak, gives the student a txt or csv file.
 - a. The first line contains the name of the island the student is in, name of the island that has the way back to real world, the number of islands in the kingdom.
 - b. The second line contains the maximum number of islands; one island can be connected with.
 - c. The next lines contain the information of each connecting bridges i.e. Name of island at one end, Name of island at the other end, distance needed to travel while crossing the bridge.

Your job is to implement A* search algorithm so, you can use it whenever the Wizard of Alpha sends you to an unknown island of Alpha.

Your code has to

1. [3 pt]Read the txt/csv file
2. [7 pt]Create a graph from the given information on which the A* search algorithm will run, the root of the graph is the island the student finds him/herself in.
3. [15 pt]Find out the optimal route to reach his goal island (goal) from the island he is in (root).



Example: txt file

A	X	10
3		
A	C	10
A	B	20
B	C	50
B	D	51
B	E	32
D	P	21
D	Q	30
E	P	10
E	Q	11
P	X	11
P	Y	12
Q	Z	72
X	Z	21
Y	Z	50