CSE643: Artificial Intelligence

Assignment-2

Due date: 24-Oct-2022 11:59PM **Marks: 7**

1. Use the city "roaddistance" data given with this assignment. Assume that only these roads between the cities exist.
2. Write a Prolog program to search a road route from any city to any other city using this data. It should work for both cities that are directly connected (say, Ahmedabad to Indore) as well as for two cities that are not directly connected (say, Agartala to Hubli).
3. Now your program should either do option (a) or (b). Each option has two sub-parts and both sub-parts have to be done in that option; take an input from the user to decide which sub-part is to be shown.
    a. Show Depth First Search and Best-first search on this data. OR
    b. Show Breadth First Search and A* search on this data.
4. You should use Prolog features such as Lists, Input/ Output, Recursion, Backtracking etc.
5. Create your own heuristics that are meaningful.
6. Should work for different inputs for different cities. That is, don't make it hard-coded for one set of cities.
7. Prolog program should work as marks will be based on the working demo of the program and your explanation of the program.
8. Marks will be awarded for the assignment as follows: Working program (2 marks), complexity of the program / kind of Prolog features used (3 marks -- to award marks for non-trivial programs), kind of heuristics used (1 mark), ingenuity used (1 mark). Demonstrate the program to your assigned TAs
9. You should submit a ZIP file consisting of the program and a pdf file listing the program and sample screenshots of its working. Name the ZIP file as: AI-A2-<Name>-<RollNo>