Artificial Intelligence Assignment

Question 1: Kidnapped Recovery

A Father (F) has a Daughter (D). They were living in Country (PK). PK has N number of Cities (C) C={1,2,3…N}. Each City is connected to another city by a Road (R). R (i,j) means that there is a road between city i and city j. Assume there is only one road between any pair of cities, and all cities are connected. Travelling from city i to city j takes H(i,j) hours.

The daughter (D) was unluckily kidnapped by Kidnappers. Kidnappers took her to any City N. Father is living in city 1 and wants to travel along the roads to pay the ransom. It is decided that Daughter will stay in the City N and her father will travel from city 1 to city N.

Help him to find the fastest way to get there to release her daughter.

Formulate this as a search problem. Draw your cities weighted-directed graph. Use Informed OR uninformed search technique to find the solution.

You can either show the computation on the paper OR write a program to demonstrate your solution.

This is a Single Agent Search Problem…..

Question 2: Kidnapped Recovery

Luckily the Daughter (D) got a mobile phone. She ranged her father (F). Her father ordered her to immediately ran from the place to any other nearest city. The mobile has a problem, it works only within a city. So during travelling they cannot contact each other. On every stay at a city, they contact each other for next destination information. Kidnappers will follow her, so she cannot stay at a city for long. She must move until she meets her father.

Note: Both are moving. They only can meet in a city not on the road (during travelling).

Formulate this as a search problem. Draw your cities weighted-directed graph. Use Informed OR uninformed search technique to find the solution.

You can either show the computation on the paper OR write a program to demonstrate your solution.

This is a Multi Agents Search Problem…..