16 Feb 2022

Wtech AI Course - Homework -1

Deadline: 23 February 2022
Submission: Submit your code/ jupyter notebook to mursel.tasgin@gmail.com
Other: Open a github account on github.com and create a repository. Put your work also on your github repo, add me as a contributor to your repo (my github profile is murselTasginBoun)

Howework Details:
Write a python program to find the route between two cities using A*-search algorithm.
Details:

- **Program will get 2 inputs:**
  - 1st input: list: [from_city, to_city] , i,e: [Istanbul,Ankara]
  - 2nd input: string: "distances.csv" → File name containing containing connections and distances between cities
  - Program call will look like:
    `calculateRoute([Istanbul,Ankara], "distances.csv")`

- **Program will print the route (separated by a single dash ("-") and total distance:**
  Output: `Istanbul-Izmit-Bolu-Sakarya-Ankara,458`

- The .csv file (i.e., *distances.csv*) containing distances between cities has the following format. Each line in the file will show source-city name, destination-city name and distance. Distances are the same in both direction (i.e., Istanbul-Izmit distance is 103 km and Izmit-Istanbul distance is 103 km).

  The file will look like this:

  distances.csv

```
Istanbul,Izmit,103
Izmit,Adapazari,53
Adapazari,Bolu,125
Bolu,Ankara,187
Ankara,Kirikkale,73
Kirsehir,Kayseri,135
Isparta,Antalya,126
```

- You should represent the distances in an undirected weighted graph (or tree)
- Program should be able find distance and route between any reachable cities.