I had no python background. First of all, I did the necessary python installations on my computer. I worked in Vs code. I installed the necessary extensions.

While reading the Cities file, I forgot to pass the first row. I solved this problem with the next function. Then I realized that it did not recognize Turkish characters in the city names. I fixed this error by giving the encoding="utf8" parameter to the open function.

I created a graph to read the file. I read the rows one by one and declare the values in it to the row variable. If the city in that row is not in the graph, I first added it to the graph. Then I gave the distance between the two as distance to the graph.

I gave the graph I created as a parameter to the UCS function and the start and end cities I get from the user. First I created a dictionary that holds the distances of the cities in this graph, I set all distances to infinity. Then I created the previous\_city dictionary, at first I gave the value none for all cities. I updated the distance of start city to 0. I created a priority queue and gave 0 and start city as a value.

I started pulling data from the priority queue, I kept this data as current\_distance and current\_city. I looped through current\_city's neighboring cities, updating the distances and previous\_city dictionaries when I found shorter distances.

If the current\_city variable is equal to the end variable I took as a parameter, the path is complete. I updated the path starting from the last city and moving towards the first city.

Here are the cities I tested and the outputs I got:

• İstanbul – Kayseri = İstanbul -> Eskişehir -> Konya -> Kayseri distance: 435

• Trabzon – İzmir = Trabzon -> Samsun -> Ankara -> Eskişehir -> İzmir distance: 525

• Çanakkale – Konya = Çanakkale -> İstanbul -> Eskişehir -> Konya distance: 375

• Balıkesir – Adana = Balıkesir -> İzmir -> Muğla -> Antalya -> Adana distance: 490

• İstanbul – Paris = does not exist