

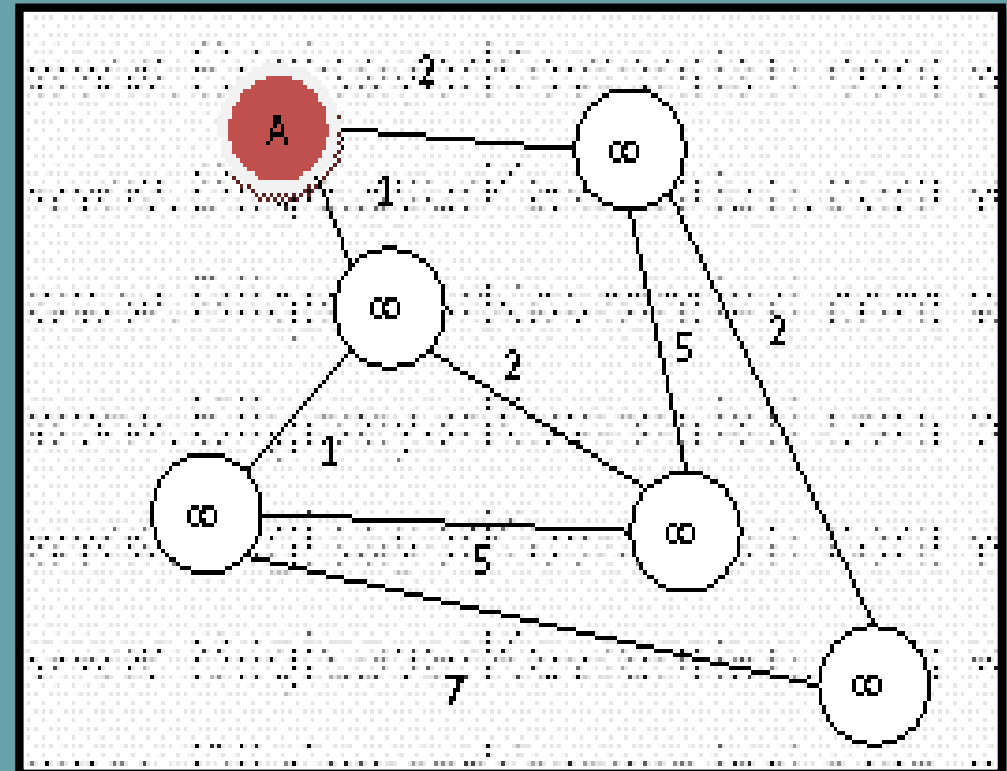
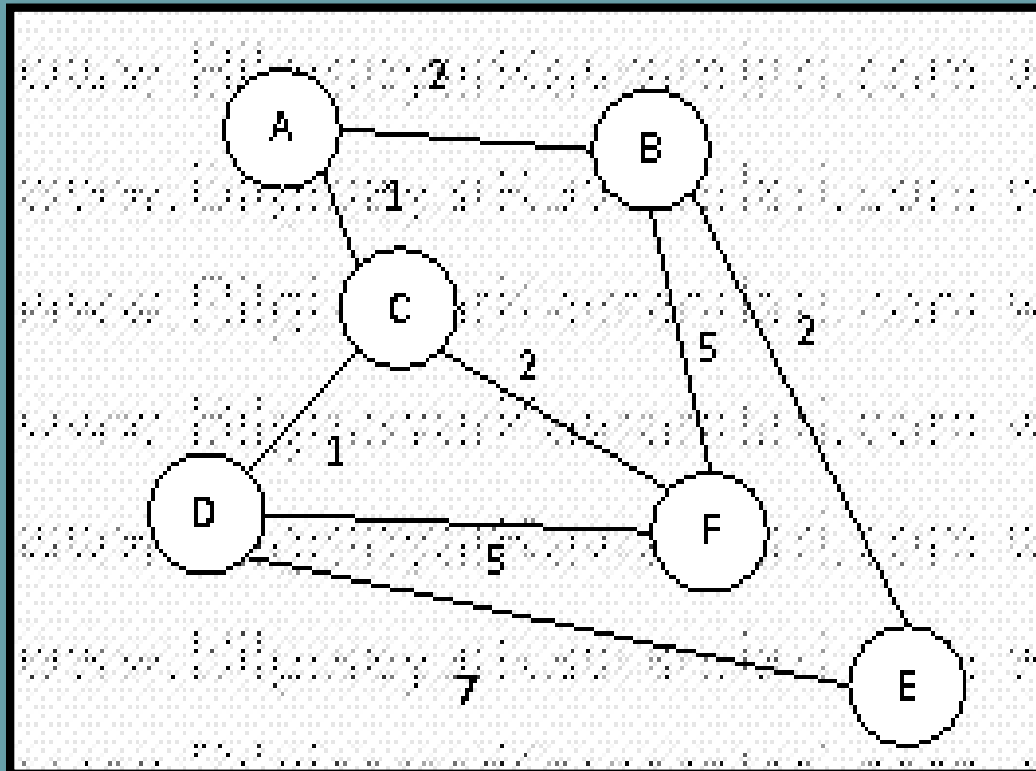


GMT-203 FINAL PROJECT

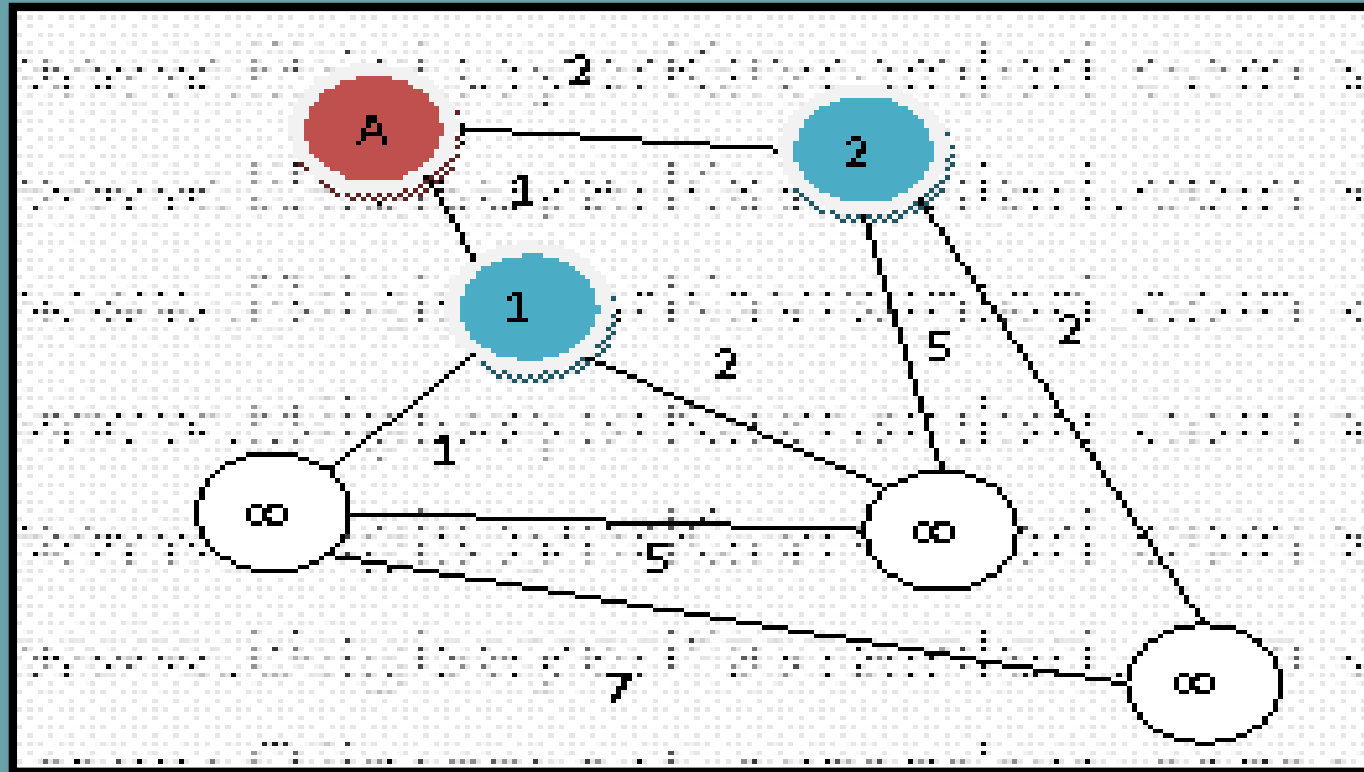
RAFET ÇIRPAN 21833063



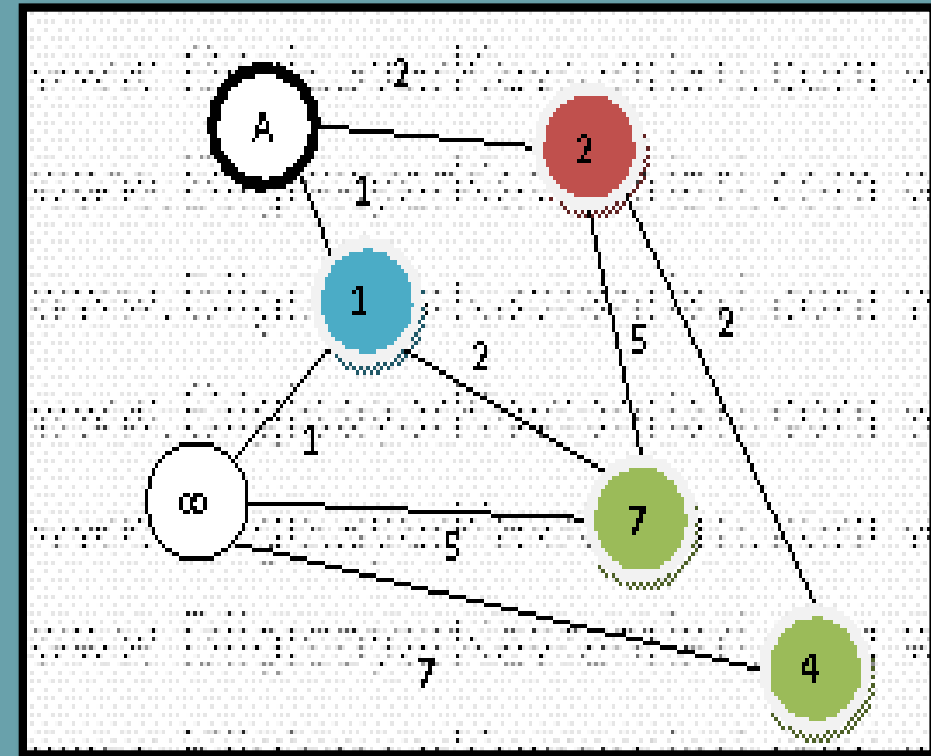
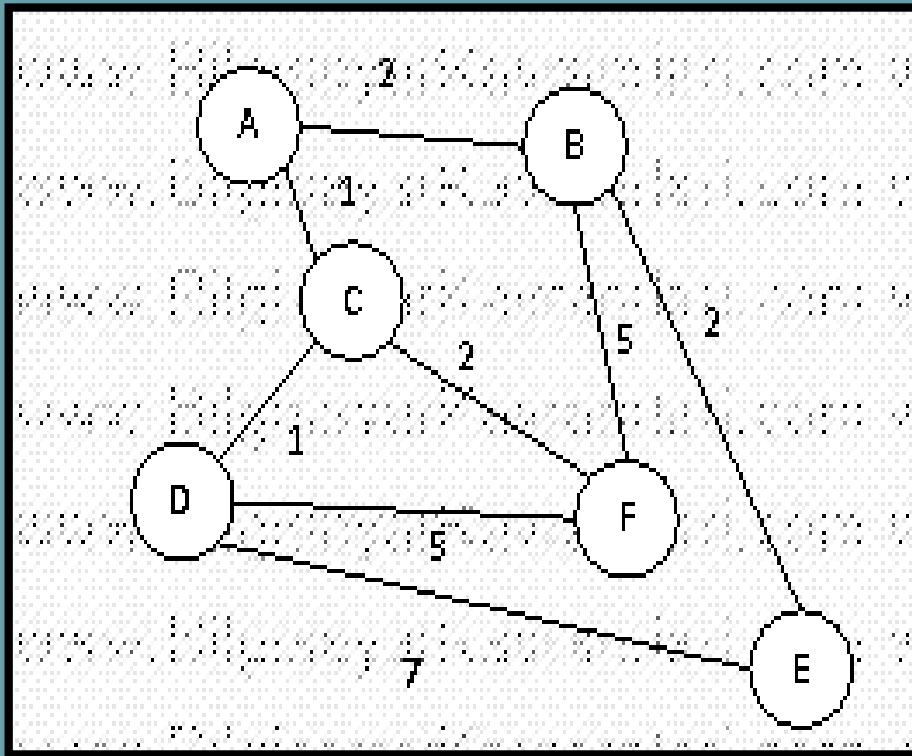
The dijkstra algorithm, which is used in computer science and named after the person who brought the algorithm to the literature, is used to find the shortest path in a given graph. Let's try to show the operation of this algorithm on a sample graph.



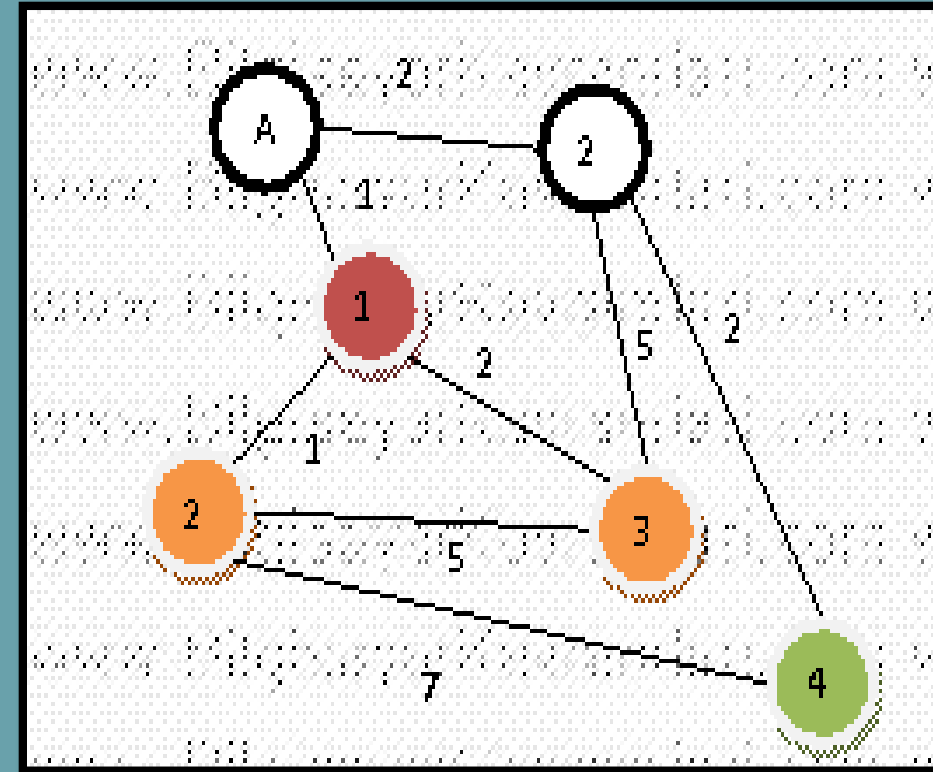
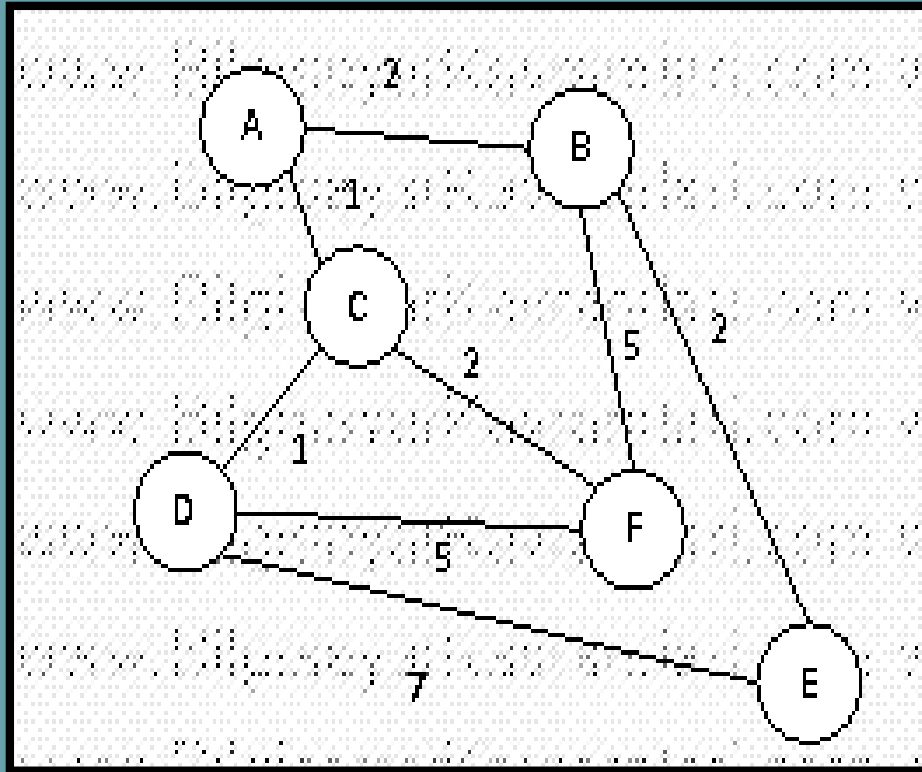
The Dijkstra algorithm calculates the shortest path from a node of any shape to all other nodes. In our example, we can assume that we select node A as the starting node.



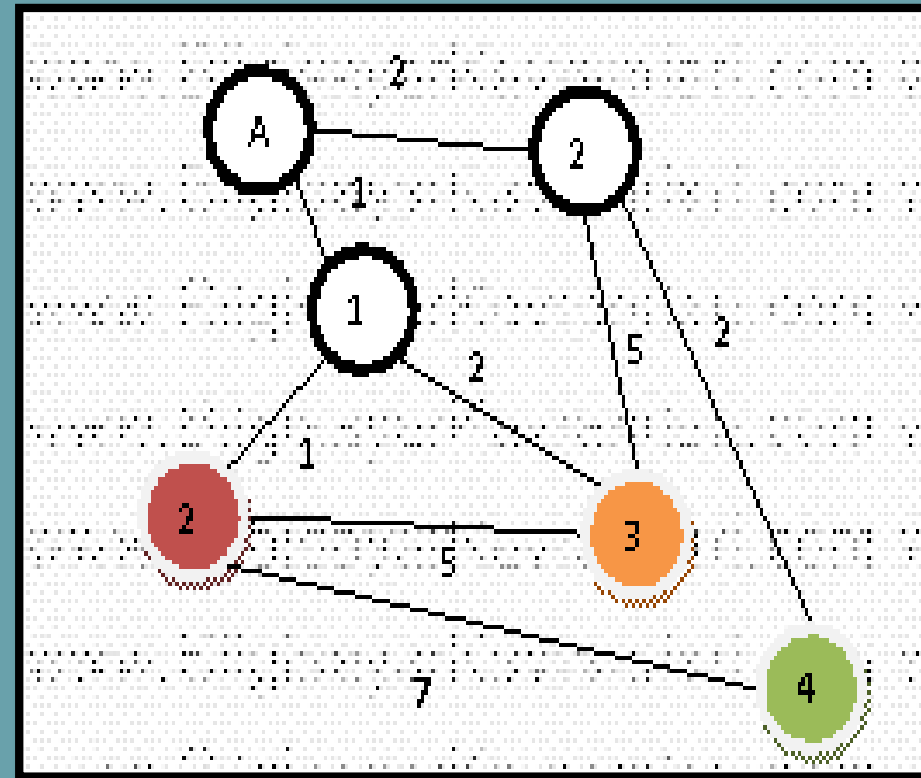
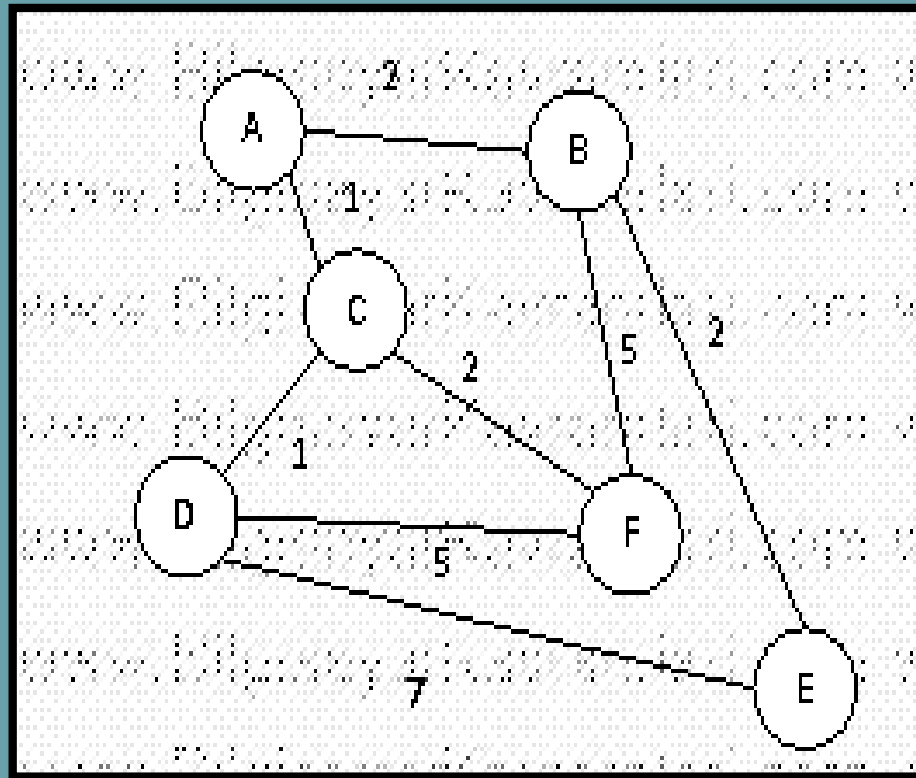
Nodes E and F have been updated in this graph. Now we will update from the next node C.



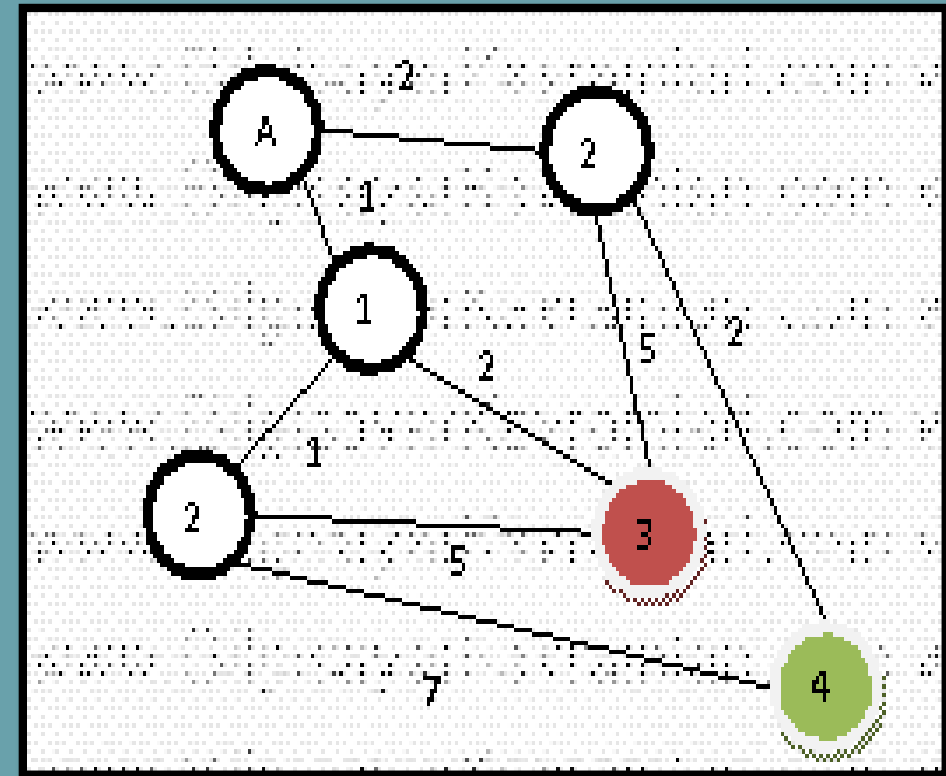
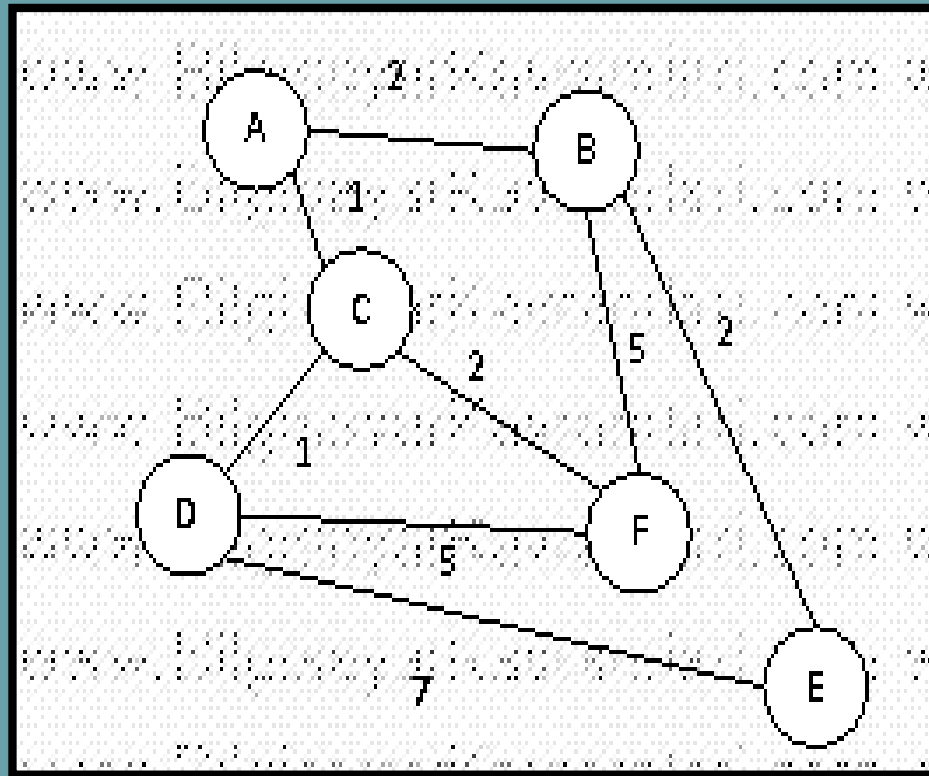
The node F was updated and was 7. It became 3 by overwriting the 7.



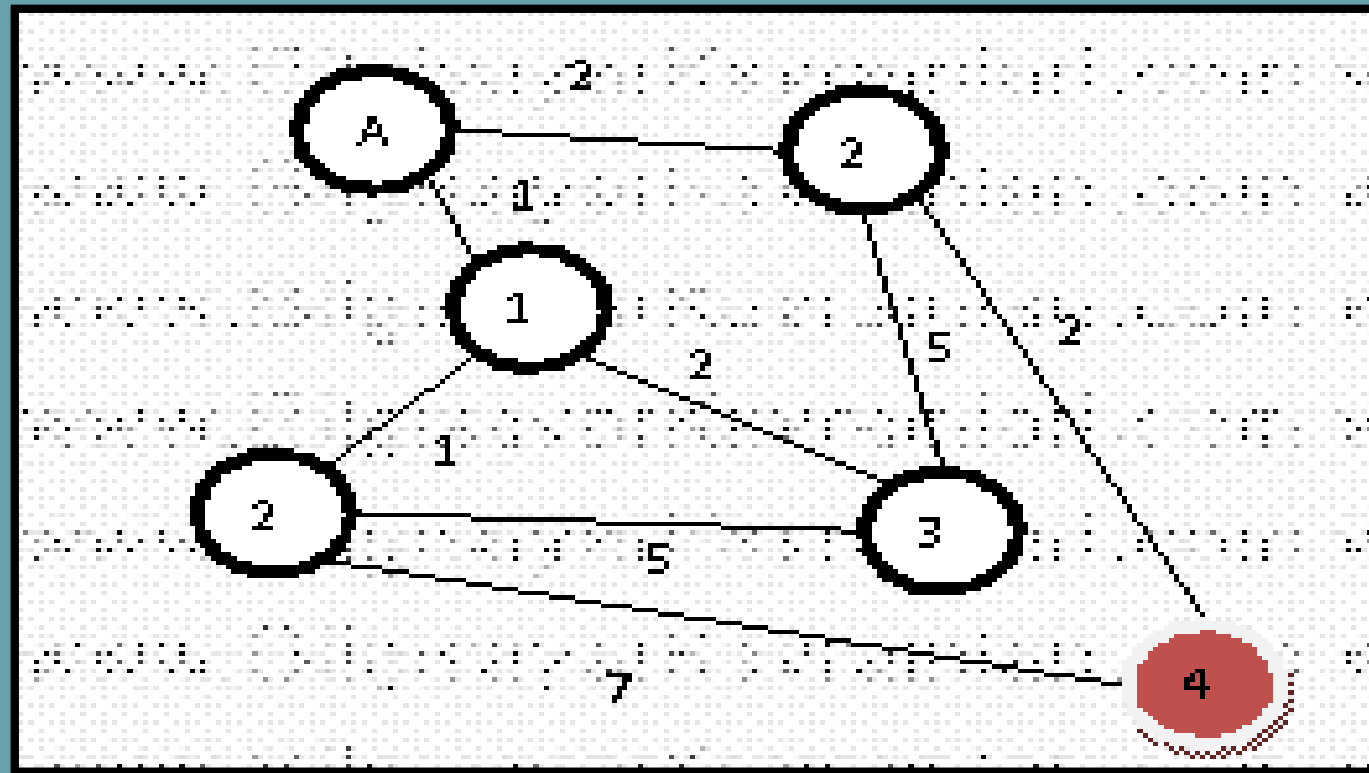
No neighbors of node D updated.



The neighbors of node F do not change and finally node E is tried.



In the last case, there is no change and it ends.



In this project, with the Dijkstra Algorithm, a code was written that calculates the shortest route for the user who wants to travel between cities selected by using the coordinates and plate information of the provinces in our country and presents the user as the shortest route.

The code was written in python, and QGIS and GOOGLE EARTH were used for route visualizations.

The json file containing the city, latitude and longitude, license plate information was used.

Neighboring provinces of the city were kept on the graph.

The Dijkstra Algorithm was used.

Haversine function used.

After the route was created, the start and end coordinates of the route were written in the Json file by using the geodesic function.

Visualizations were made in QGIS and GOOGLE EARTH.

-----WE CREATE THE SHORTEST ROUTE FOR YOUR TRAVEL-----

CHECK THE PLATE INFORMATION OF THE CITIES YOU WANT TO GO BY THE SHORT WAY

ENTER THE PLATE INFORMATION OF YOUR POINT OF MOVEMENT:7

ENTER THE PLATE INFORMATION OF THE DESTINATION:34

POINT OF MOVEMENT: 7 - Antalya

POINT OF DESTINATION: 34 - İstanbul

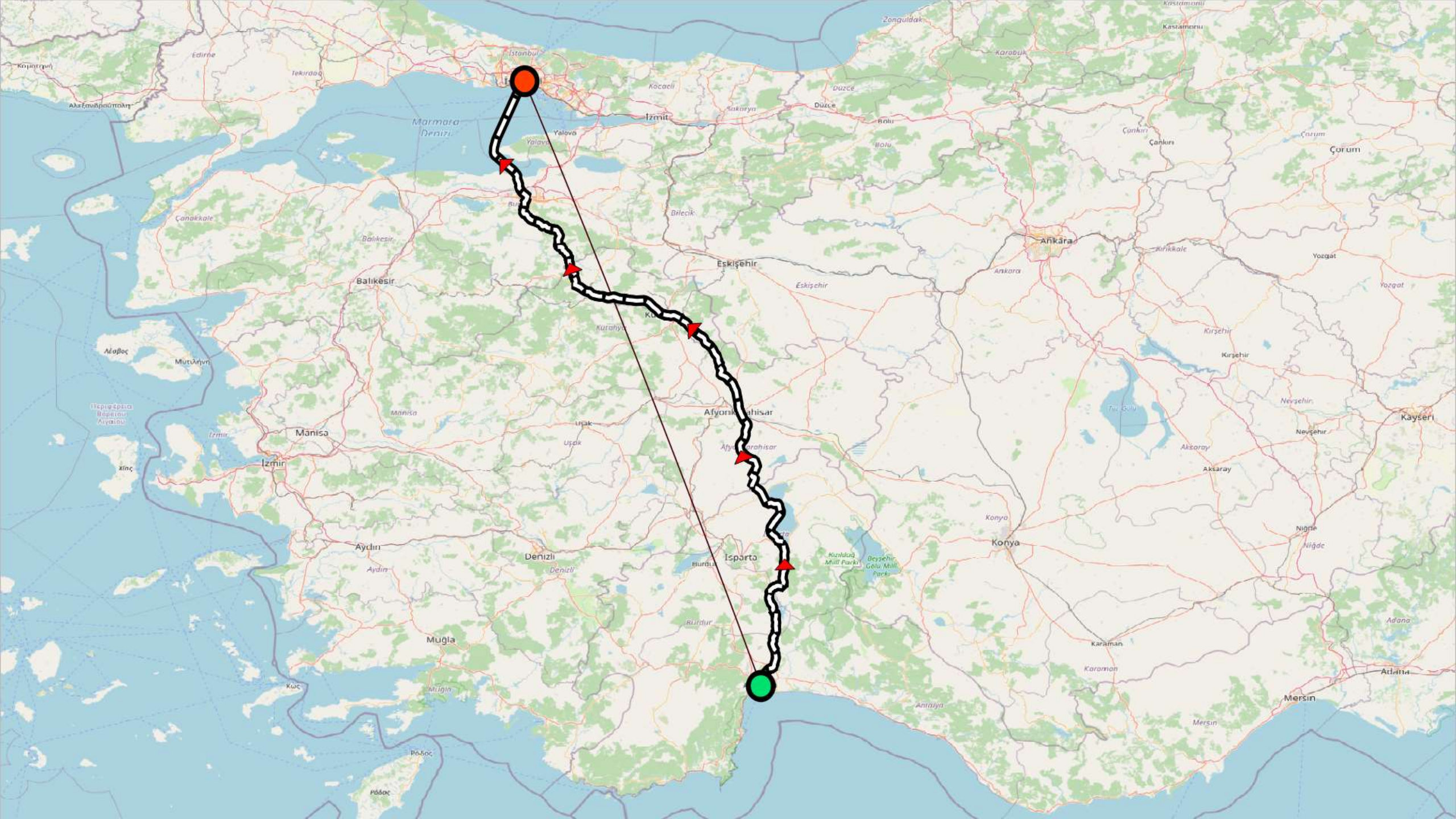
ROUTE: 7----->15----->3----->43----->11----->41----->34

DISTANCE BETWEEN Antalya - İstanbul 481.99 KM



ANTALYA-
ISTANBUL

ANTALYA-
ISTANBUL



-----WE CREATE THE SHORTEST ROUTE FOR YOUR TRAVEL-----

CHECK THE PLATE INFORMATION OF THE CITIES YOU WANT TO GO BY THE SHORT WAY

ENTER THE PLATE INFORMATION OF YOUR POINT OF MOVEMENT:33

ENTER THE PLATE INFORMATION OF THE DESTINATION:6

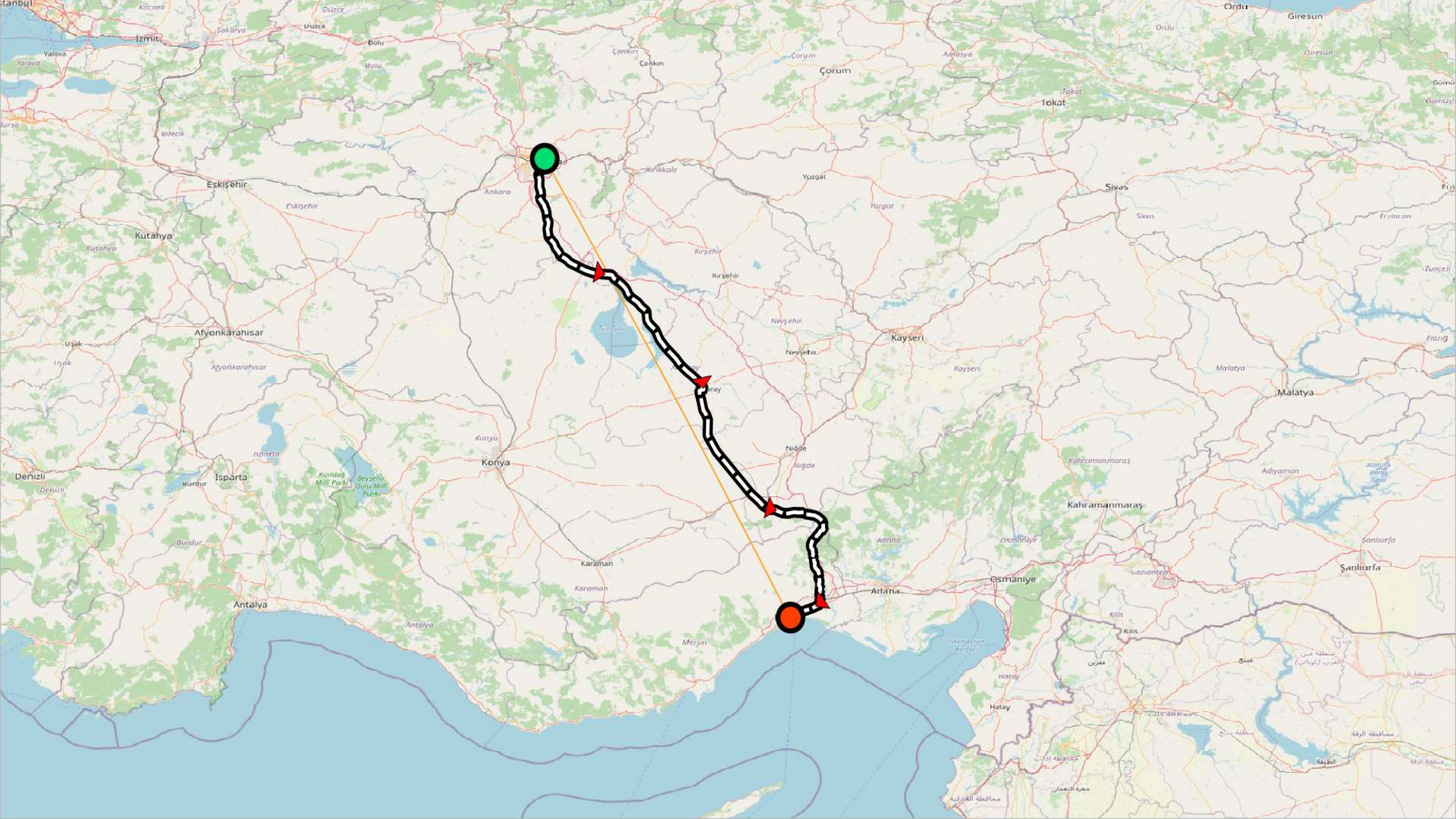
POINT OF MOVEMENT: 33 - Mersin

POINT OF DESTINATION: 6 - Ankara

ROUTE: 33----->51----->68----->6

DISTANCE BETWEEN Mersin - Ankara 380.09 KM





-----WE CREATE THE SHORTEST ROUTE FOR YOUR TRAVEL-----

CHECK THE PLATE INFORMATION OF THE CITIES YOU WANT TO GO BY THE SHORT WAY

ENTER THE PLATE INFORMATION OF YOUR POINT OF MOVEMENT:64

ENTER THE PLATE INFORMATION OF THE DESTINATION:78

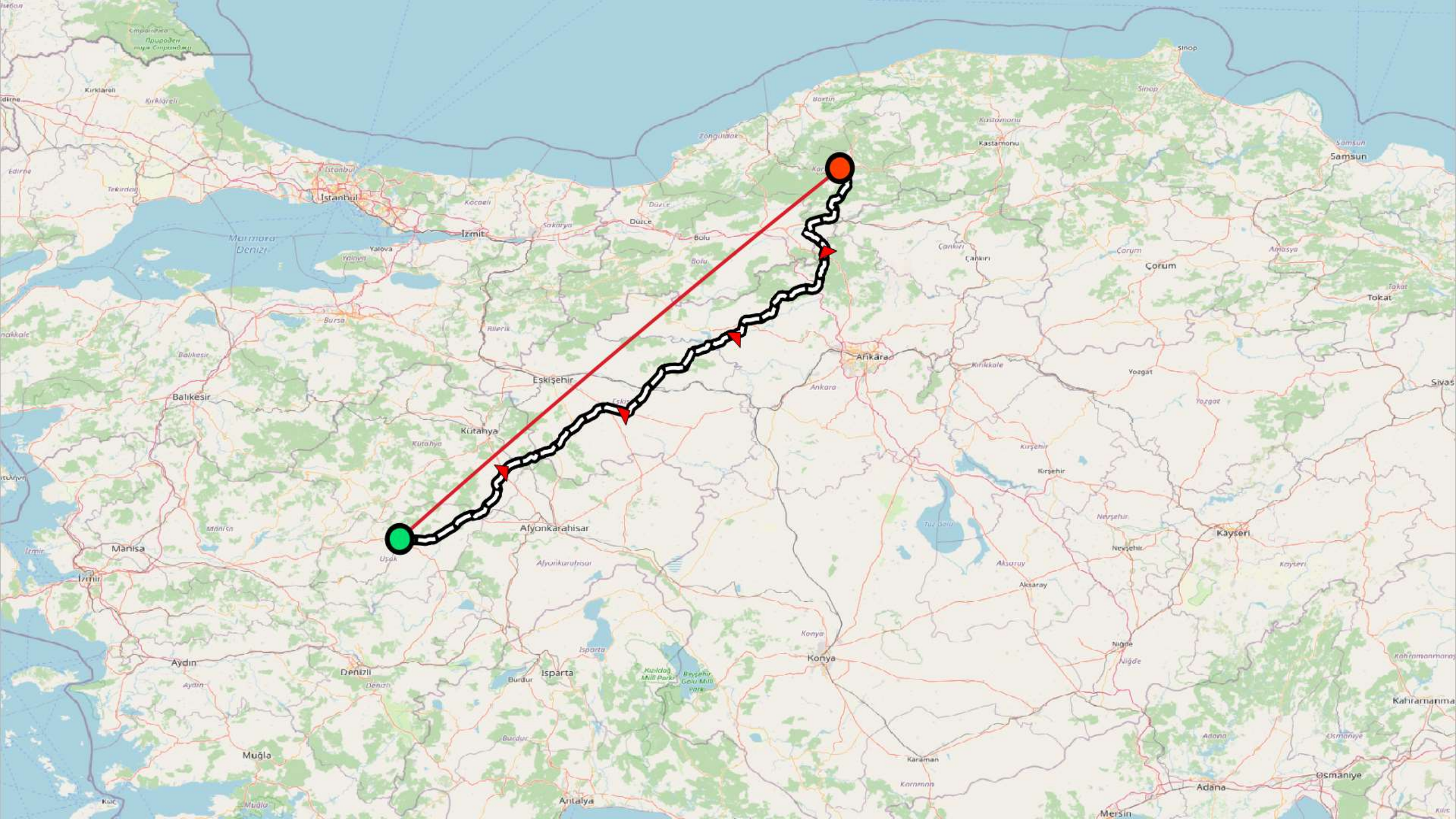
POINT OF MOVEMENT: 64 - Uşak

POINT OF DESTINATION: 78 - Karabük

ROUTE: 64----->43----->11----->54----->14----->67----->78

DISTANCE BETWEEN Uşak - Karabük 392.04 KM





-----WE CREATE THE SHORTEST ROUTE FOR YOUR TRAVEL-----

CHECK THE PLATE INFORMATION OF THE CITIES YOU WANT TO GO BY THE SHORT WAY

ENTER THE PLATE INFORMATION OF YOUR POINT OF MOVEMENT:48

ENTER THE PLATE INFORMATION OF THE DESTINATION:75

POINT OF MOVEMENT: 48 - Muğla

POINT OF DESTINATION: 75 - Ardahan

ROUTE: 48----->15----->32----->42----->68----->50----->38----->58----->24----->25----->75

DISTANCE BETWEEN Muğla - Ardahan 1308.0 KM



