

Problem statement :

Helsinki City Bikes are bicycles that anyone in Helsinki and Espoo can use. They were introduced in 2016 with only 46 bike stations in Helsinki. People liked them, so they decided to add more stations each year until they had around 350 stations in 2019. By 2020, there were 3,510 bikes available for everyone to use in these areas. The main idea behind these bikes is to help people with the "last mile" problem, which means getting from a transportation hub to their final destination.

To use the city bikes, people can buy access for a day, a week, or the whole cycling season, which runs from April to November. All passes let you take as many 30-minute bike rides as you want. If you need more time, you can pay an extra 1€ per hour. You can pick up and drop off the bikes at stations all over Helsinki and Espoo.

Problem importance :

In order to reduce the expenses associated with bike rentals, it is important to identify the most efficient routes of traversing Helsinki. Failure to do so may result in increased usage duration, subsequently incurring additional charges. However, by effectively utilizing the pick-up and drop-off stations, users can seamlessly exchange their bicycles, resetting the process and using the bikes for free with the passes that has been subscribed.

Your proposed approach :

1. Download dataset from Kaggle
2. Developing the graph
3. Perform EDA:
 - a. Remove NA
 - b. Provide visualization toward the data
4. Perform Network Analysis:
 - a. Centrality Degree
 - b. Betweenness Centrality
 - c. Diameter
 - d. Density
 - e. Node connectivity
 - f. Average Shortest Path
5. Calculate shortest path by using the Graph

The expected outcome:

1. Simple EDA
2. Simple Network Analysis
3. Simple UI that is implemented at google collab, could receive input of the longitude and latitude for both departure and arrival, and the output would be the shortest path to travel from 1 place to the other, print the graph result and the track way.