DATA STRUCTURES AND ALGORITHMS

OBJECTIVE: CONNECTING THE METRO CITIES OF INDIA USING RAILWAYS

PROJECT DESCRIPTION:

The Railway Planner project is a command-line application that assists users in finding the shortest path and distance between two railway stations. The program is implemented using C++ and utilizes concepts such as graph traversal and Dijkstra's algorithm to calculate the shortest path.

The application allows users to input their desired source and destination railway stations. It then computes and displays the shortest path along with the corresponding distance. The railway network is represented as a graph, where each station is a vertex and the connections between stations are represented as edges.

The program provides a user-friendly menu that allows users to choose between two options:

Enter the source and destination stations: This option enables users to input their desired source and destination stations and retrieves the shortest path and distance between them.

Display Map: This option displays the entire railway network map, showing all the stations and their connections.

The Railway Planner project demonstrates the usage of various data structures, including unordered maps and priority queues, to efficiently store and process the railway network data. It provides a practical solution for users to plan their train journeys by finding the optimal route based on distance.

This project can be further extended by adding additional features such as displaying the estimated travel time, suggesting alternate routes, or incorporating real-time data about train schedules and delays.

Overall, the Railway Planner project serves as a helpful tool for railway travellers to navigate the railway network efficiently and plan their journeys effectively.