Project Statement

Domain: DSA in C++

Project 5: Travel planner using Graph in C++
Project Title: Travel planner using Graph in C++

Project Objective:
This project aims to help travelers plan optimal travel routes between different locations. It uses graph data structures to represent locations as nodes and paths and the connecting roads or transportation routes as edges. This application will be able to calculate the shortest path between two locations, considering factors like distance, travel time, and cost.

Technologies to Use:

- C++ – Core programming language
- STL (vectors, lists, priority_queue) – Graph representation and algorithm support
- Graph Algorithms – Dijkstra's, BFS, DFS for route planning
- Console / Terminal – For user input/output

Tasks Breakdown:

1. Represent cities as nodes and routes as weighted edges in an adjacency list or matrix.
2. Allow user input to define cities and distances dynamically.
3. Implement Dijkstra's algorithm to find the shortest path between cities.
4. Implement BFS/DFS to explore all reachable destinations.
5. Display shortest route, distance, and cost to the user.
6. Optionally, implement multi-destination route optimization.

Submission:
Submit the project folder in ZIP file.
Submit the .cpp source file and executable file.
The ZIP will includes all files that used to create the project and Project Report PDF file