Advanced Data Structures Project - Problem Statement

Project Title: Trip Planner

One of the main difficulties faced by many people is planning a proper trip. To solve this issue, the proposed project is a trip planner to give people the optimised travel plan.
The input data would be a range of data like travel dates, approximate budget, their current location, number of days of travel etc.
Data taken from user:

- The origin and destination locations
- The choice/s of transport mode for the trip
- The time of departure or time of arrival
- Maximum number of transfers between modes
- Cost information

The chosen data structure for our project is **graphs.** A graph is a non linear data structure. Graphs are very efficient for visually illustrating relationships in the data. It consists of nodes and edges, edges are lines that connect any two nodes in the graph. Nodes are entities where the data is stored and their relationships are expressed using edges. Edges may be directed or undirected. Graphs demonstrate complicated relationships with ease and are used to solve many real-life problems. Considering our problem statement, it would be more efficient to represent the vast amount of data we have as graphs. Graphs will be used to represent the various available options for the user, like the arrival departure events, the connects of different travelling options etc.

- The application will act as a solution to a wide range of audience ranging from school or college students to the elderly aged people.
- Feedback about the trip planned will be taken into account
- Factors that will affect the final plan can be customised
- Once all the options are formulated, it will be presented to the user for them to choose.

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