# DSA MINIPROJECT

SYNOPSIS

**Title:** METRO ROUTE TRACKER

## Team Members:

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## Data Structures Used:

1. **Graphs:** Graphs are commonly used to represent the stations , where each station is a node and the connections between stations are edges

**2.Stacks:** It is used in operations keeping track of visited stations or managing the order of traversal.

**3.Linked Lists:** Linked lists are used to represent the adjacency list data structure and represent the connections between metro stations, allowing for easy traversal of metro network and finding the fartest station from given source station.

**4.Arrays**: Arrays help us to track visited nodes, distance from source , and manage the nodes to be explored.it explores the graph to find the farthest node from source.

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## Functionalities implemented:

**1.Route Planning:** Helping passengers plan their journeys by providing route options, information on transfers, estimated travel times, and fare details.

**2. Fare Calculations:** Calculating and displaying the cost of a journey based on the selected routes and fare zones.

**3. Data Analytics:** Collecting data on passenger usage and preferences to improve services and plan future developments.

**4. Safety Measurements:** passengers' Providing safety information and emergency contact details for well-being.

**5. User Interface:** It receives information of the user where users can input their starting and ending stations and provide the best route and fare information**.**

**6. Ticket Information:** It includes details whether there are seats available in the compartment and it also asks and verifies the number of seats required for the passenger and also shows the tickets sales report which includes number of tickets sold from specific start to destination.