Karachi
Metro

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Group;

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Karachi Metro Application

Introduction

       The Karachi Metro Application is a basic implementation of Dijkstra's Algorithm using fundamental data structures which include stacks, linked lists and graphs to create shortest travel routes for metro. Apart from the data structures it contains the complete flow of a prototype application that includes both the user side and client side features.

       The Project contains different administrator privilege functions like adding routes, deleting routes, checking revenue, showing records and etc. The project provides customer features like ticket booking system and route checking feature.
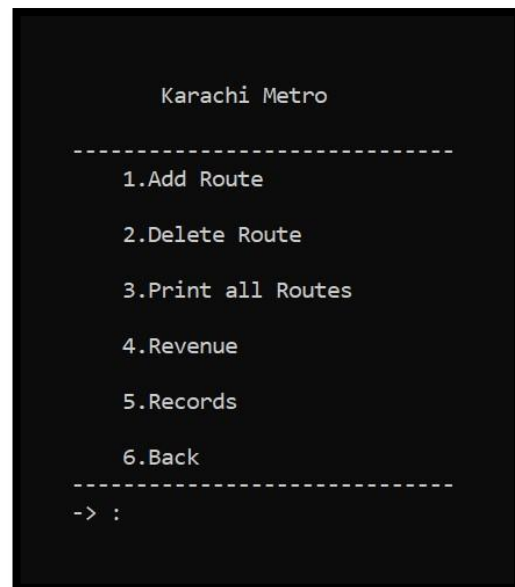
Detailed Work Flow
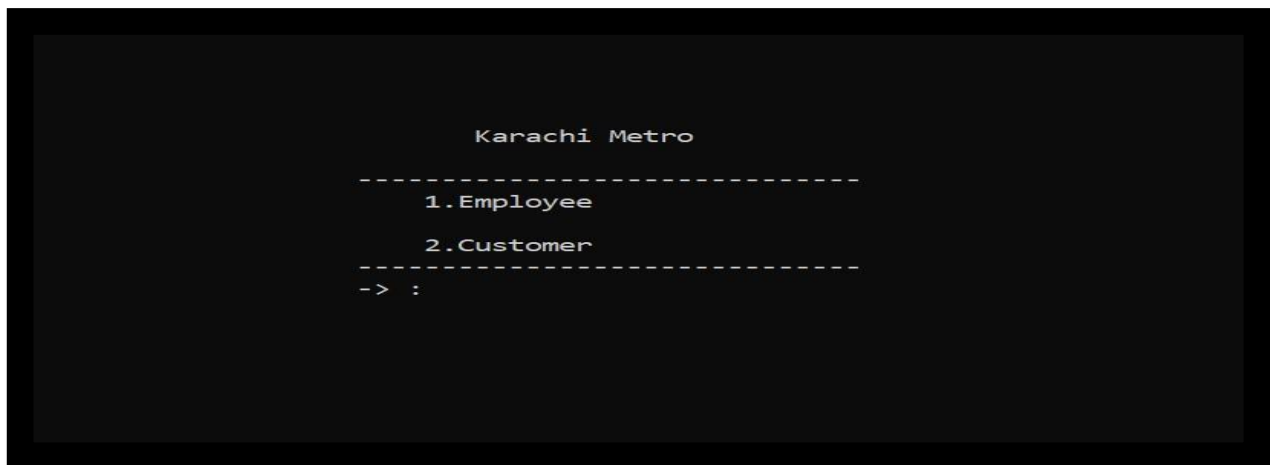
Screen#1

The screen-1 illustrates the initial view of the program; it asks the user to select the program-drive as if the employee is operating or the customer. □ **Employee**

Screen#2

After Selecting Employee option, Screen-2 will appear.

The employee will have to log in to access employee features.


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        Karachi Metro

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    1.Add Route

    2.Delete Route

    3.Print all Routes

    4.Revenue

    5.Records

    6.Back
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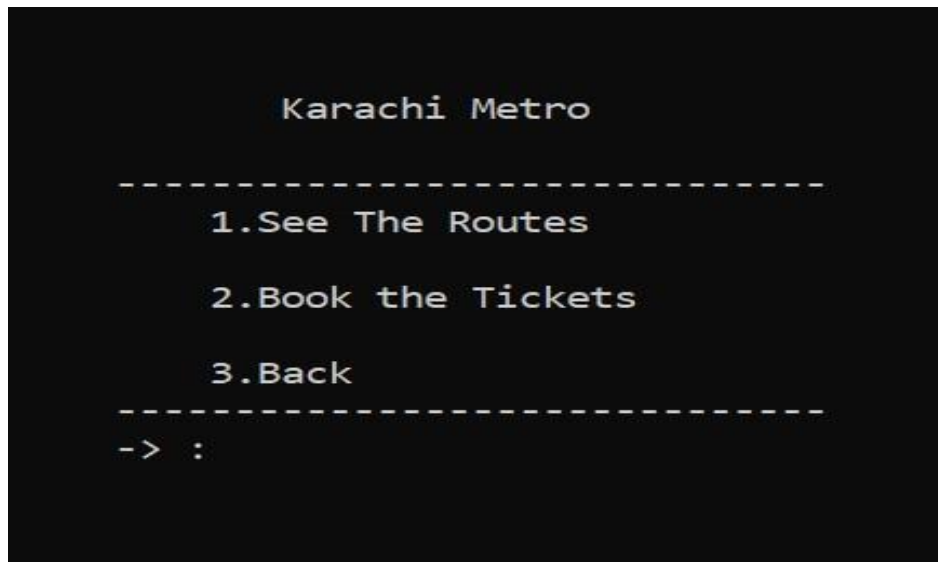
Screen#3

After logging in as an employee, Screen-3 will appear, it lists all the available functions for an employee to manage and get report of the information regarding business.

No#	Option	Function
1	Add Route	Adds a new route in the metro system using Dijkstra.
2	Delete Route	Deletes the route from the metro system.
3	Print Routes	Shows the all the working routes in the system.
4	Revenue	Displays total revenue.
5	Record	Displays all the records of bookings.

 Customer

Screen#4

After selecting the customer-drive, screen-4 will be displayed and it consists of two functions; first to see available routes and second to book tickets.

No#	Option	Function
1	Show Routes	It allows the user to see all available routes in the system.
2	Book Ticket	It registers tickets for the customer.

Data Structures used;

1. Stacks.
2. Graphs.
3. Linked Lists.

Challenges and Discussions

The project illustrates the simple metro system for both the user-end and the client side; it consists of both functions of user and client. The data is backed up in files and maintained through different functions.

As a prototype the program exhibits well up to its demands as it applies Dijkstra Algorithm to while adding new routes, however complete time complexity free program is still a challenge to be implemented at every data entry or retrieval of the program.

Eventually, it successfully prototypes the basic management system with backed up data and efficient coding structure.