cab booking system

**AIM OF THE PROJECT:**

This project is designed with the idea of effectively managing a cab service or any cab management comapny. This system can be used to store the details of the cabs, customer and locations based on the booking details and show all details of customers and cabs.

*DATA STRUCTURE*:-

* Graph

Graph is a data structure that consists of following two components:

1. A finite set of vertices also called as nodes.

2. A finite set of ordered pair of the form (u, v) called as edge. The pair is ordered because (u, v) is not same as (v, u) in case of a directed graph(di-graph). The pair of the form (u, v) indicates that there is an edge from vertex u to vertex v. The edges may contain weight/value/cost.

In this project, undirected weighted graph has been used. Node represent the location and weights represent the distance between the two nodes.

**FUNCTIONS USED:**

1. **Add New Cab**

To add a new cab with its location and price. The status of all the cabs are initially set to 0 (meaning free).

1. **Add New Customer**

To allot the nearest cab to a new customer. The nearest cab is calculated according to the weights on the edges (distance between the locations).

1. **Existing Customer**

To allot the nearest cab to an existing customer. The nearest cab is calculated according to the weights on the edges (distance between the locations) and the count of the number of cabs used by a customer is updated.

1. **Free Cab**

When a cab is booked, the status is changed to 1 i.e. the cab is now not free for use by another customer.

1. **Show Cab List**

To display all the cab details.

1. **Show Customer List**

To display all the customer details.

**GRAPH:**

The Undirected Weighted Graph used in the project is shown below.

The value of the nodes show the locations and the value on the edges(weights) show the distance between the two nodes(locations).

**4**

**7**

**8**

**4**

**14**

**2**

**9**

**10**

**11**

**8**

**2**

**6**

**7**

**1**

**SCREENSHOTS (CODE):**

**A screenshot of a computer

Description automatically generatedA screenshot of a computer

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Description automatically generatedA screenshot of a computer

Description automatically generatedA picture containing screenshot

Description automatically generatedA screenshot of a social media post

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**SCREENSHOTS (OUTPUT):**

**A screenshot of a cell phone

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**A screenshot of a computer

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**A screenshot of a computer

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