PIZZA LAB MANAGEMENT SYSTEM

Data Structures and Algorithm's Project

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Overview

The main idea revolves around a Pizza Shop that deals with three different kinds of customers and serves them in different ways. The Project is built to assist that small business. It also stores the information of the customers served and the total earnings of the shop. The waiting customers' info can also be displayed.

Searching for the served Customers can be done. The delivery charges are calculated on the basis of the shortest distance on the map and 50 RS_/ per KM is charged as delivery charges.

Types of Customers

1. Walk-In Customers

    They will be served on the basis of their age. The older customer will be served first.

2. Home Delivery Customers

    They will be served on the basis of LIFO

3. Dine-In Customers

    They will be served on the basis of First come and first serve basis.

Served Customers

The Customers which are served are recorded in the System to keep the record of the served Customers and their bills so that we may have insights into the daily sales of the shop. Its main purpose is to check the record of a particular Customer

Map for Home Delivery
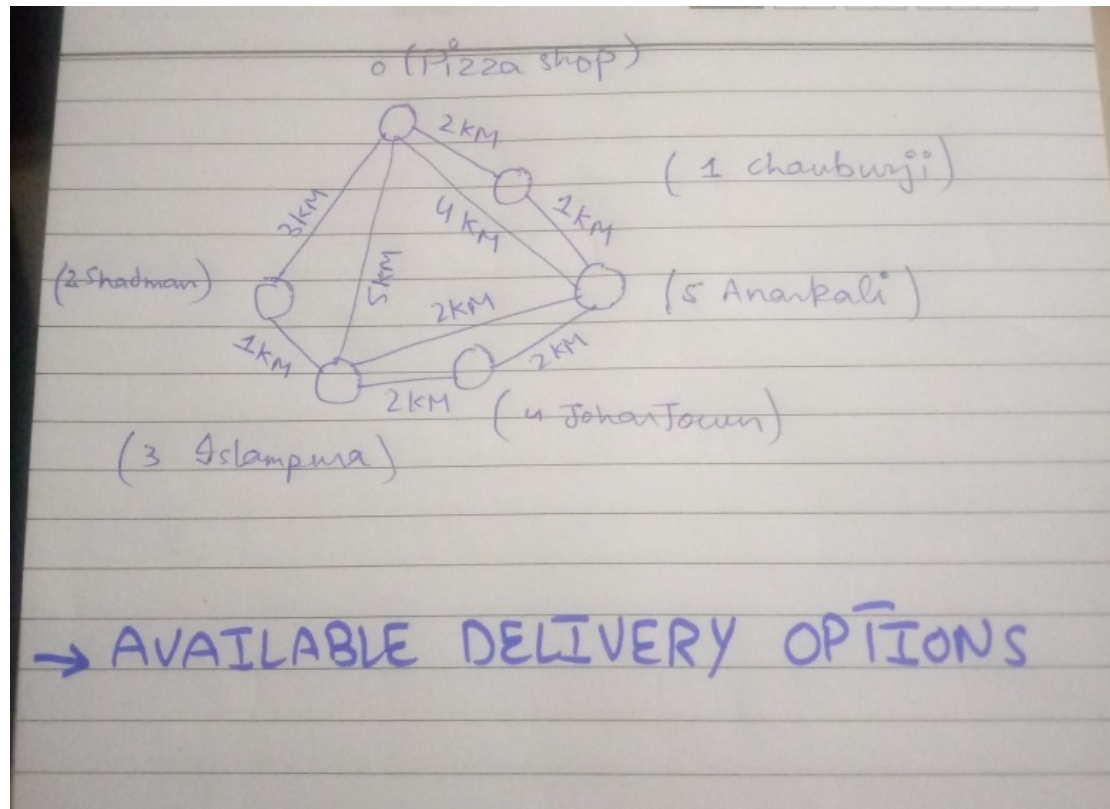
Implemented Data Structures and Algorithms

1. **LinkedList**

   The whole implementation of Customer's Enqueue and dequeue is based on the LinkedList.

2. **Stack**

   It is used in placing orders and serving Home Delivery Customers.

3. **Dynamic Queue**

It is used in placing orders and serving Dine-In Customers.

4. Dynamic Priority Queue

It is used in placing orders and serving Walk-In Customers.

5. Graph (Adjacency List Representation)

It is used for the Map for available Delivery options.

6. AVL Tree

The Served Customers were saved in it for efficient insertion, deletion, and searching. The implementation was based upon the lexicographical comparison of strings.

7. Dijkstra Algorithm

It is used to find the shortest possible distance from the Pizza Shop and on this basis, the Delivery charges are calculated.