Project Report

Restaurant Management System

Only for course Teacher						
		Needs Improvement	Developing	Sufficient	Above Average	Total Mark
Allocate mark & Percentage		25%	50%	75%	100%	25
Understanding	3					
Analysis	4					
Implementation	8					
Report Writing	10					
					Total obtained mark	
Comments						

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Course Code: SE 133 **Course Name: Software Development Capstone Project**

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Designation: Lecturer

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ABSTRACT

This report presents the development of a Restaurant Management System (RMS) using C programming, designed to streamline various restaurant operations. The system integrates functionalities for managing menu items, processing orders, and controlling inventory, enhancing overall efficiency and customer satisfaction.

The RMS allows administrators to manage menu items by adding, deleting, and updating item details such as name and price. Customers interact with a user-friendly interface to browse the menu, place orders, and receive accurate cost calculations, including potential discounts. The system assigns unique identifiers to each order and records detailed transaction information using file handling techniques.

Inventory levels are automatically updated following successful payments, ensuring precise stock management. Restaurant staff can access a comprehensive list of all placed orders, facilitating efficient order fulfillment and maintaining clear transaction records.

Overall, the RMS promotes an organized and efficient restaurant environment, improving the dining experience for customers and streamlining operations for staff. This report delves into the system's architecture, design considerations, and implementation details, demonstrating its potential as a valuable tool in modern restaurant management.

Chapter-1 (Introduction)

About the system

A Restaurant Management System (RMS) efficiently manages menu items, orders, and inventory, enhancing operational efficiency and customer satisfaction. Key features include menu item management, order processing with discounts, and automated inventory control.

Purpose

The Restaurant Management System is designed in C programming to handle tasks seamlessly. It includes functionalities such as menu management, order placement and processing, payment processing, inventory management, and order tracking for staff. Customers can easily browse the menu, place orders, and make payments, while staff can efficiently manage orders and inventory. The system is built with a user-friendly interface for customers and provides comprehensive order details for staff to ensure a smooth dining experience and efficient restaurant operations.

Why this system is necessary?

This system is necessary to streamline restaurant operations, improve efficiency, accuracy, and customer satisfaction while reducing costs and maintaining a competitive edge in the industry.

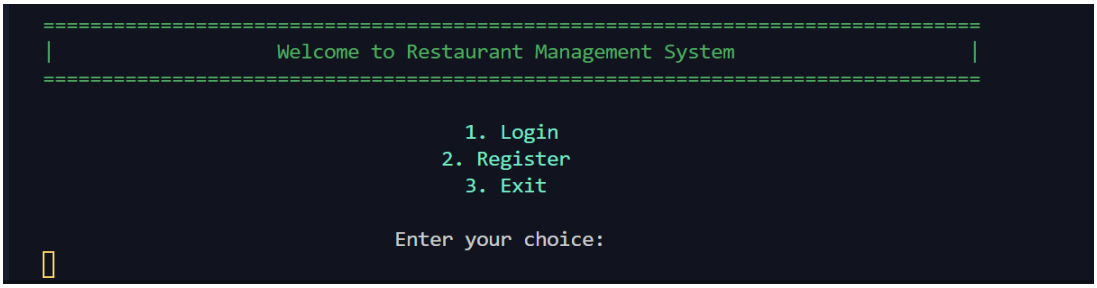
Used C Programming Concepts in this Project:

1. **Conditions**
2. **Loops**
3. **File Handling**
4. **Structure**
5. **Functions**
6. **Arrays**
7. **String**
8. **Control flow**

Chapter-2 (Features)

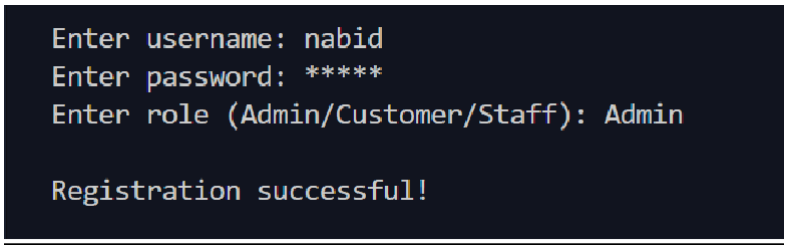
1. Home Screen:

   Here when a user enters into the system he/she will go throw the process login if the user is already registered .If the user is not registered then he/she will go throw the registration process. The Home screen showing this options.



2. Register as a new user:

   Here a new user, who doesn't have any account yet, can create a new account by inputting username, password, role. Once these are provided by user, his account is created and the user is ready to login as user.



3. Login:

   If a user is already registered then for the log in, the user should input username and password. If the username and password matches with the previous registered username and password then it will enter into the system with a welcome message.

```
Enter username: nabid
Enter password: *****

Invalid username or password!
```

```
Enter username: nabid
Enter password: *****

Login successful! Welcome, nabid.
```

4. Admin Menu:

   Here all the menu that an admin only can access. This will show selecting the number the admin will route to that specific page.

```
================================================================================
|                                  Admin Menu                                  |
================================================================================

                              1. Add Menu Item
                           2. Remove Menu Item
                           3. Update Menu Item
                             4. Display Menu
                                0. Logout
```

5. Add Menu Item:

   Here an admin can add menu item for the customer. This functionality is taking input the item name and item price from the admin. After successfully it is showing the “Item added successfully” message.

```
================================================================================
|                                  Admin Menu                                  |
================================================================================

                              1. Add Menu Item
                           2. Remove Menu Item
                           3. Update Menu Item
                             4. Display Menu
                                0. Logout

                           Enter your choice:
1

Enter item name: Burger
Enter item price: 250

Item added successfully.
```

6. Update Menu Item:

Here an admin is updating the menu item. Targeting the stored menu item list admin will input new item name and price for the specific item. After successfully update it will show “Item updated successfully.”

```
Enter the ID of the item to update: 1

Enter new item name: Pasta
Enter new item price: 250

Item updated successfully.
```

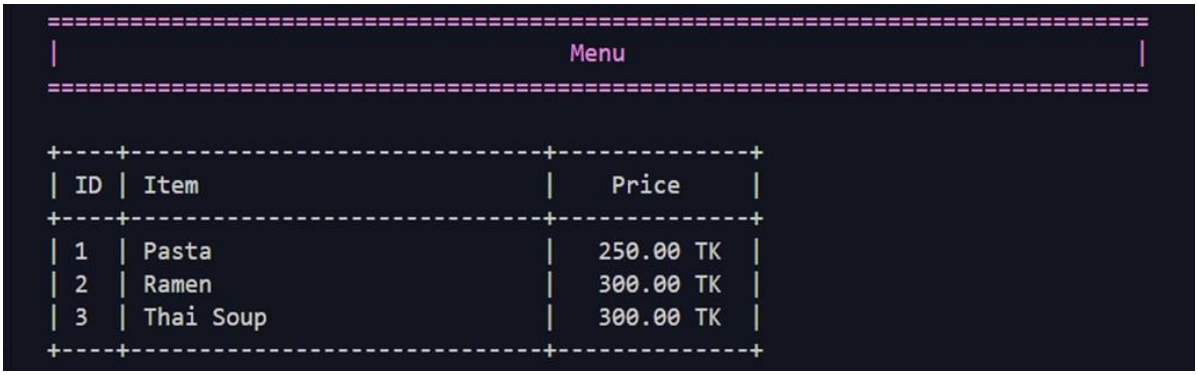
7. Remove Menu:

Here an admin can remove the item from the menu. Admin will input the item id and then the item will delete from the menu. After successful deletion it will show the message “Menu item removed and IDs updated successfully.”

```
================================================================================
|                                 Admin Menu                                   |
================================================================================

                              1. Add Menu Item
                            2. Remove Menu Item
                            3. Update Menu Item
                              4. Display Menu
                                 0. Logout

                            Enter your choice:
2

Enter the ID of the item to remove: 1

Menu item removed and IDs updated successfully!
```

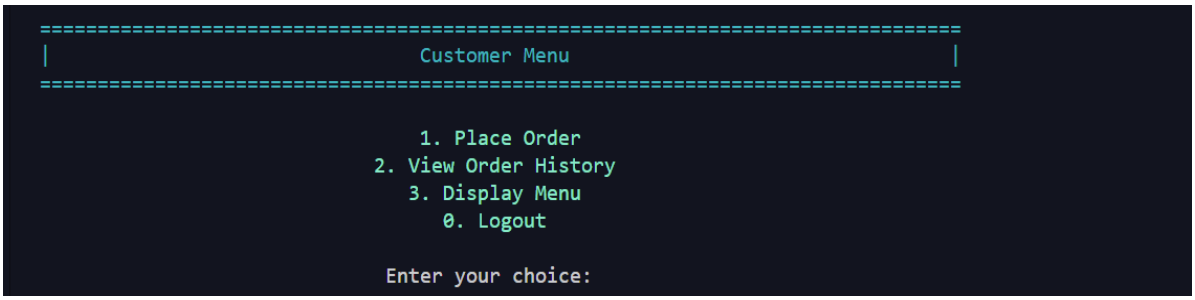
8. Display Menu:

Here all the menu that has been added into the menu will show with id no, item name and item price maintaining 3 column.



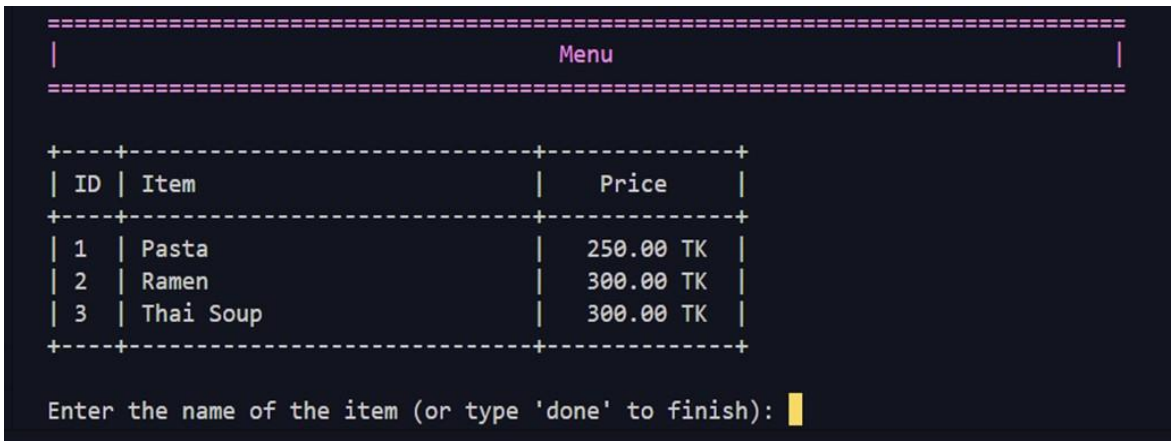
9. Customer Menu:

All the functionality that can only customer will access show here. When a customer will enter the number of the functionality, he/she will be move to that specific page.



10. Place Order:

i. When a customer wants to order any food item function will say customer to “Enter the name of the item”



ii. After typing the item, customer should choose how many food item he/she wants to order that means he/she needs to enter the quantity number.

```
Enter the name of the item (or type 'done' to finish): Pasta
Enter the quantity: 1

'Pasta' added to cart. Quantity: 1
```

11. View Total Cost:

After typing “done” program will terminate place order. Then this function will show the customer how much amount should pay.

```
Enter the name of the item (or type 'done' to finish): done

Total amount to be paid: Taka 550.00
```

12. Payment Method:

When a customer choose the payment method this interface will come. Customer can pay by cash, credit card or mobile banking system like Bkash and Nagad. Customer have to enter their phone number and password for mobile banking options. For Credit card , customer have to enter card credentials.

```
Choose payment method:
1. Cash
2. Credit Card
3. Bkash
4. Nagad
Enter your choice:
```

13.Invoice:

This function will provide a invoice to the customer . And Customer can see what he order and what was the quantity and how much cost of foods .

```
================================================================================
|                                Invoice                                       |
================================================================================

+----+------------------------------+----------+----------+--------------+
| No | Item                         | Quantity | Price    | Total Cost   |
+----+------------------------------+----------+----------+--------------+
| 1  | Pasta                        | 1        | 250.00   | 250.00       |
| 2  | Ramen                        | 1        | 300.00   | 300.00       |
+----+------------------------------+----------+----------+--------------+
| Total                                                   |550.00      TK|
+----+------------------------------+----------+----------+--------------+
```

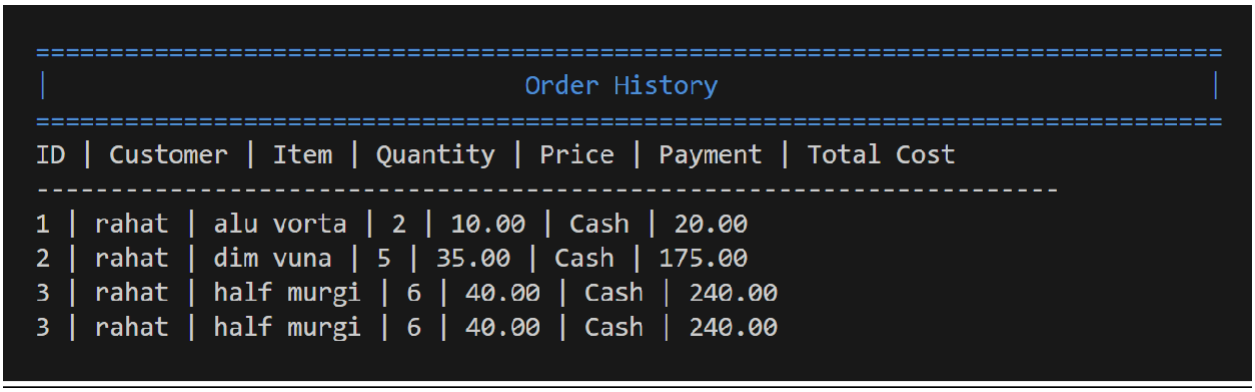
14.Staff Menu:

When a Staff open Staff menu this 3 function will come to the display. Staff can choose to see order history and menu and logout from here.

```
================================================================================
|                              Staff Menu                                      |
================================================================================

                        1. View Order History
                           2. Display Menu
                              0. Logout

                         Enter your choice:
```

15.View Order History:

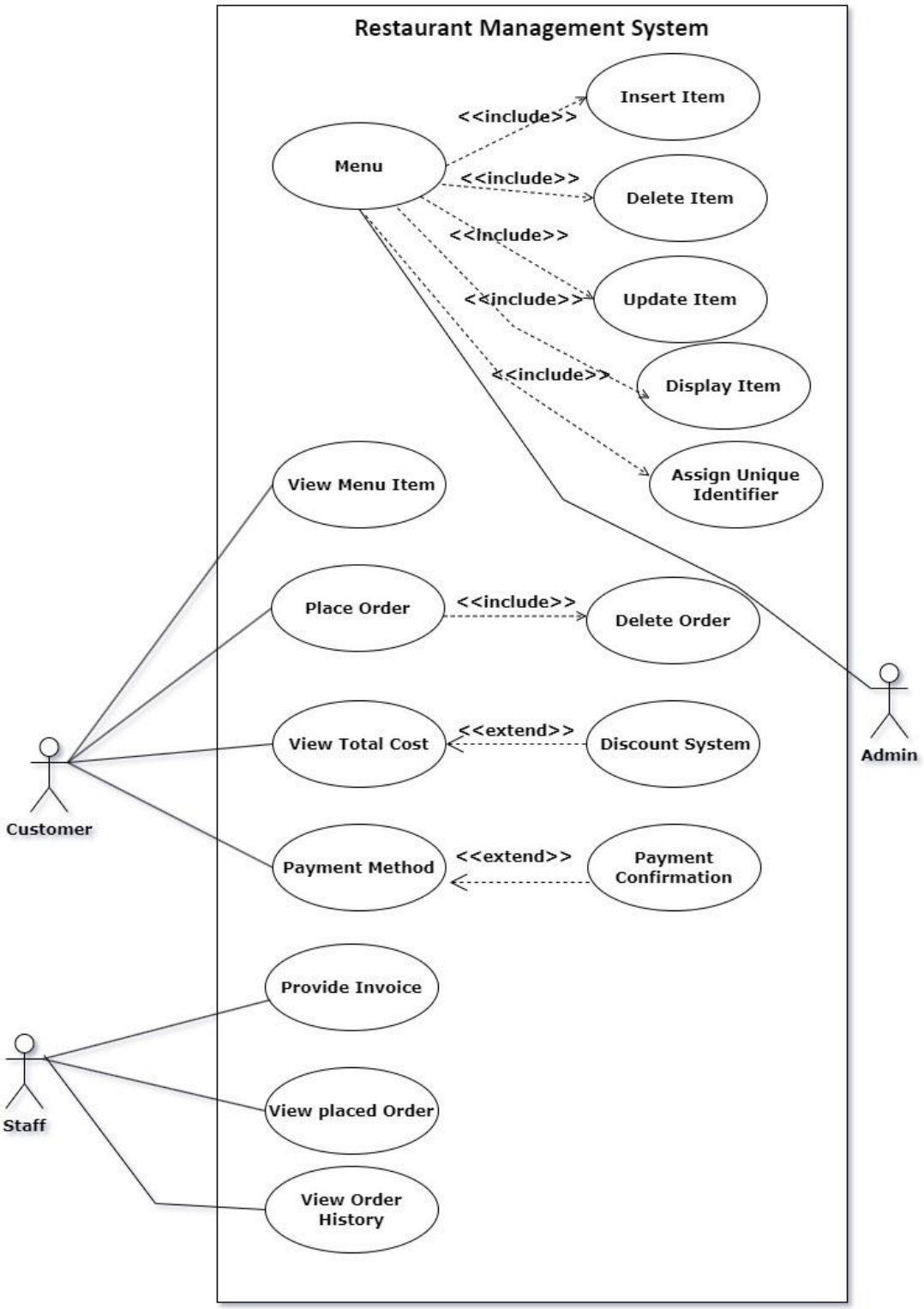
Staff can see the order history for providing the order to customer properly.
By this function he/she can see what was the order from customer and what is the price and quantity and how customer pay bill.



Stakeholders:

1. Customer
2. Admin
3. Staff

Use Case Diagram:



Chapter-3 (Conclusion)

Limitation:

- User interface
- No remove from cart
- No tracking of date and time

Future Enhancements:

- User Interface Improvement
- Implement functionality to remove items from the cart.
- Integrate a reservation system with reminders and notifications.
- Add a customer feedback system.
- Implement real-time inventory management.

In conclusion, the Restaurant Management System greatly improves the restaurant's operations, making things smoother for both customers and staff. It helps manage everything from menus to orders and inventory. By using this system, the restaurant can provide better service, reduce errors, and make smarter decisions based on data. Overall, it's a vital tool for running a successful restaurant in today's competitive market.