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TITLE : RESTAURANT MANAGEMENT SYSTEM

----------LIST OF CONTENT----------

Chapter 1

1.1 INTROUDCTION

Malaysians love for food has made the Food and Beverage sector a fast growing and broad sector here in our country. Our country consists of many different cultures which has resulted in many different cuisines that adapt to different cultural adaptations and even mixed cultures. The Malaysian chain of food outlets is even home to traditional food and beverages even outside of our country.

These days there are many restaurants around to cater for people's different taste buds. This promotes heavy competition between these restaurant owners and it is crucial for them to manage the restaurant systematically.

And as for the customers itself, going through the process of queuing up for a table, navigating through a menu as well as waiting for the food to be ready can be pretty time consuming and frustrating.

However thankfully in our modern world we are able to overcome this problem by means of a simple restaurant management system. The main objective is to cater for the convenience of the customers as well as organized management for the restaurant itself such as improvement of receiving and taking orders and so on.

This management system will consist of a log in module and a registration module, a module to list down menus as well as store orders as well as billing modules. This is a cost efficient way of managing a restaurant system digitally whilst also providing quality services to customers.

1.2 PROBLEM STATEMENT

- People are looking for easier and more convenient methods to order food.

- People are looking for less time consuming methods to order food.

- Companies are looking for organized structures to manage their restaurants.

1.3 BACKGROUND OF PROJECT

The motivation and inspiration that made me choose this project is that these recommendation system has become widely used during the midst of the covid-19 pandemic. Going to a restaurant and navigating through the long menu, waiting for the waiter to place the order and then holding-up till the food gets ready is really hard and time consuming. It can make the customers frustrated and irritated for which a good restaurant should not compromise on the comfort of the customer. So, the goal of this management system is to deal with the customers efficiently. Most of the restaurants possess a single place for all their customers which is surely easier to manage but is not suitable for all kinds of gatherings. Keeping a record of the orders and bills of all the customers along with the priority ones and going through it manually is a tedious task plus it does not ensure correctness. With the help of software based mechanism, these problems can be minimized without compromising accuracy and precision.

1.4 OBJECTIVES

(i) To build a system that allows customers to choose from a few range of recommendations to suit their convenience.
(ii) To manage the restaurant better and avoid hassle.
(iii) For the customers to be able to access and edit menu, order and billing details.

1.5 SCOPE

Modules
Admin :
- LOG IN
- INSERT NEW MENU
- VIEW LIST OF MENU
- SEARCH MENU
- UPDATE MENU INFORMATIONS
- DELETE MENU

Customers :
- REGISTER
- LOG IN
- INSERT NEW ORDER
- VIEW LIST OF ORDERS
- SEARCH ORDER
- UPDATE ORDER
- DELETE ORDER

Order :
- SHOW THE SUB TOTAL BY EACH MENU ID
- SHOW THE TOTAL THAT CUSTOMER MUST PAY

Ratings :

- CUSTOMER CAN INSERT RATING
- ADMIN CAN VIEW RATINGS
- ADMIN CAN SEARCH RATINGS

Report :

- ADMIN CAN VIEW MIN & MAX RATES GIVEN BY THE CUSTOMERS

Target audience :

All types of customers and admin is in charge of the whole restaurant. There is only one admin for this system.

Chapter 2

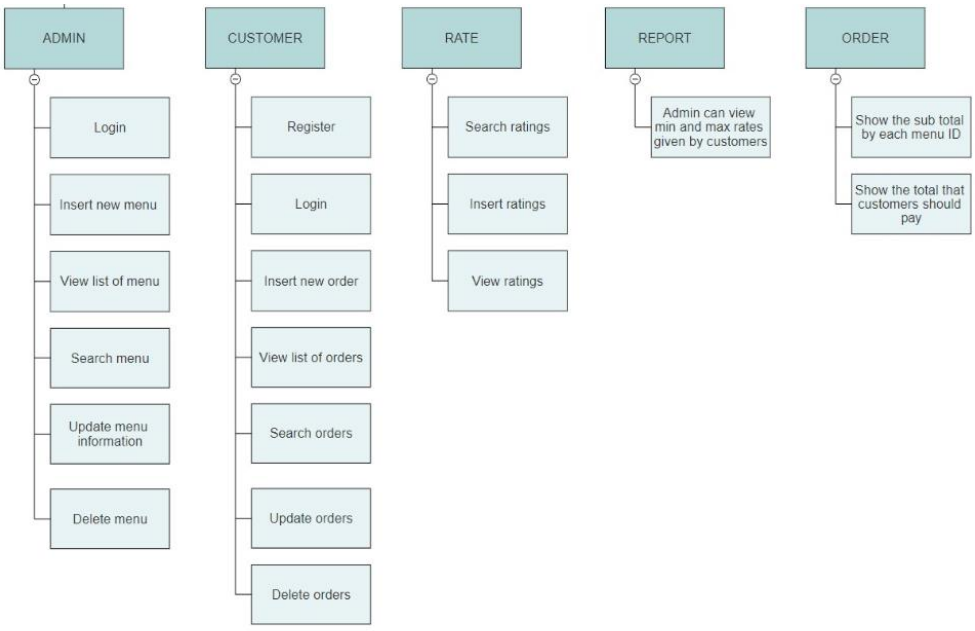
2.1 DETAILS OF PROBLEM

Going to a restaurant and navigating through the long menu, waiting for the waiter to place the order and then holding-up till the food gets ready is really hard and time consuming. It can make the customers frustrated and irritated for which a good restaurant should not compromise on the comfort of the customer. So, the goal of this management system is to deal with the customers efficiently. Most of the restaurants possess a single place for all their customers which is surely easier to manage but is not suitable for all kinds of gatherings. Keeping a record of the orders and bills of all the customers along with the priority ones and going through it manually is a tedious task plus it does not ensure correctness. With the help of software based mechanism, these problems can be minimized without compromising accuracy and precision.

2.2 PROBLEMS AND SOLUTIONS

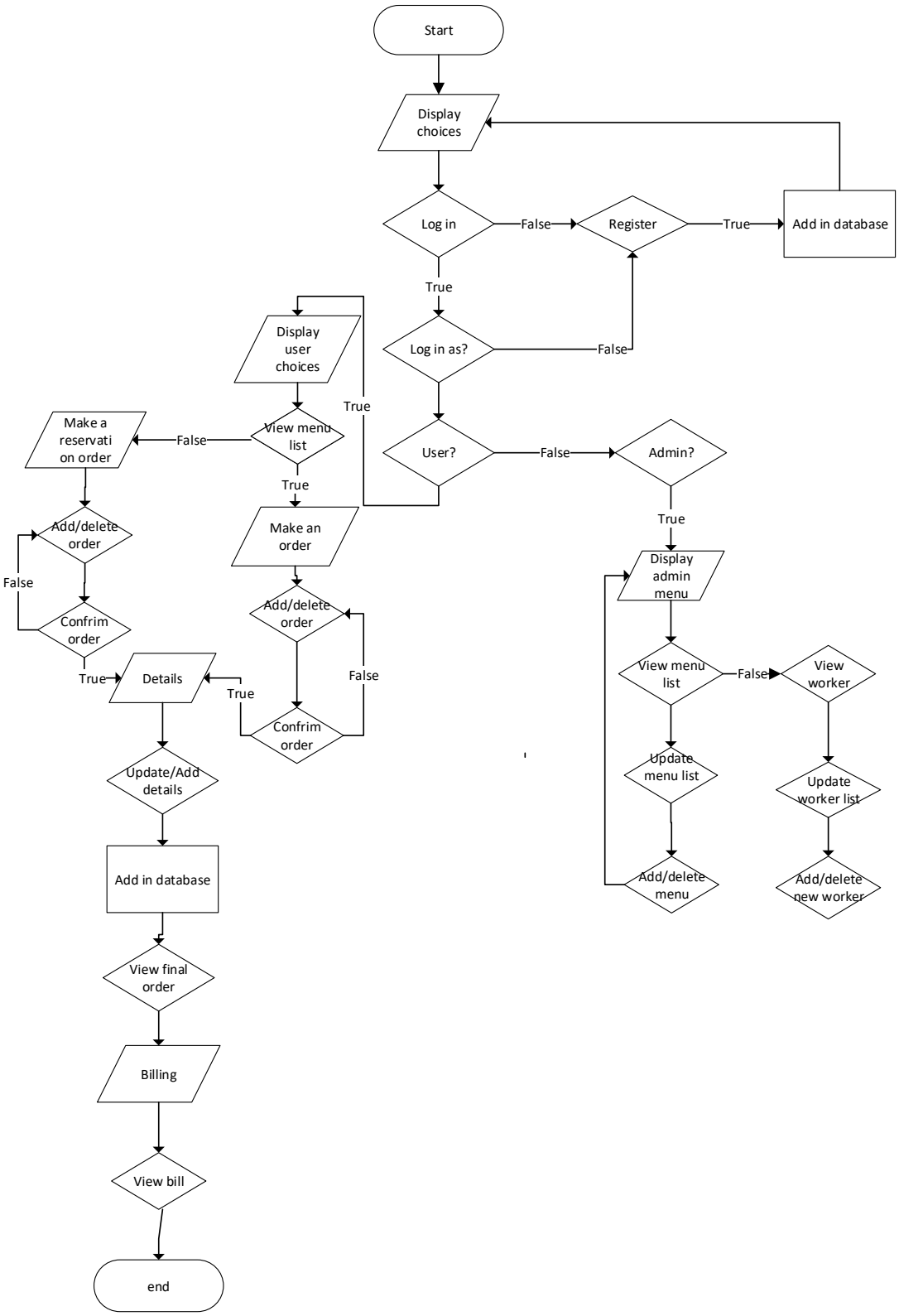
PROBLEM	**SOLUTION**
Too many data to handle on pen and paper	System database created
Too many orders to view	Can filter just by inserting Order ID and Cust ID
Calculation manually is time consuming	Automated calculations

2.3 STRUCTURED CHART



CHAPTER 3

3.1 DESIGN OF FLOWCHART



3.2 PSEUDO CODE

ADMIN MODULE

1. Start
2. Login
3. InsertMenu()
    - 3.1 Start
    - 3.2 Add Menu
    - 3.3 AdminMenu()
    - 3.4 End
4. ListMenu()
    - 4.1 Start
    - 4.2 View Menu
    - 4.3 AdminMenu()
    - 4.4 End
5. UpdateDelMenu()
    - 5.1 Start
    - 5.2 If Update
        - 5.2.1Choose MenuID
        - 5.2.2 Else Delete
        - 5.2.3 ChooseMenuID
    - 5.3 AdminMenu()
    - 5.4 End
6. SearchMenu()
    - 6.1 Search by MenuName
    - 6.2 AdminMenu()
    - 6.3 End

CUSTOMER MODULE

1. Start
2. Login
3. InsertOrder()
    - 3.1Start

3.2 Add Order

3.3 ustomerMenu()

3.4 End

4. ListOrder()

4.1 Start

4.2 View Order

4.3 CustomerMenu()

4.4 End

5. UpdateDelOrder()

5.1 Start

5.2 If Update

5.2.1Choose OrderID

5.2.2 Else Delete

5.2.3 Choose OrderID

5.3 CustomerOrder()

5.4 End

6. SearchMenu()

6.1 Search by MenuName

6.2 AdminMenu()

6.3 End

ORDERING MODULE

1. Start
2. InsertOrder()
3. ViewOrder()

3.1 Display totalprice

4. SearchOrder()

4.1 Display totalprice

RATING MODULE

1. Start
2. Initialize variables to accept customers data
3. Accept user input into variables
4. Allow admin to view Ratings
5. Allow Admin to search Ratings
6. End

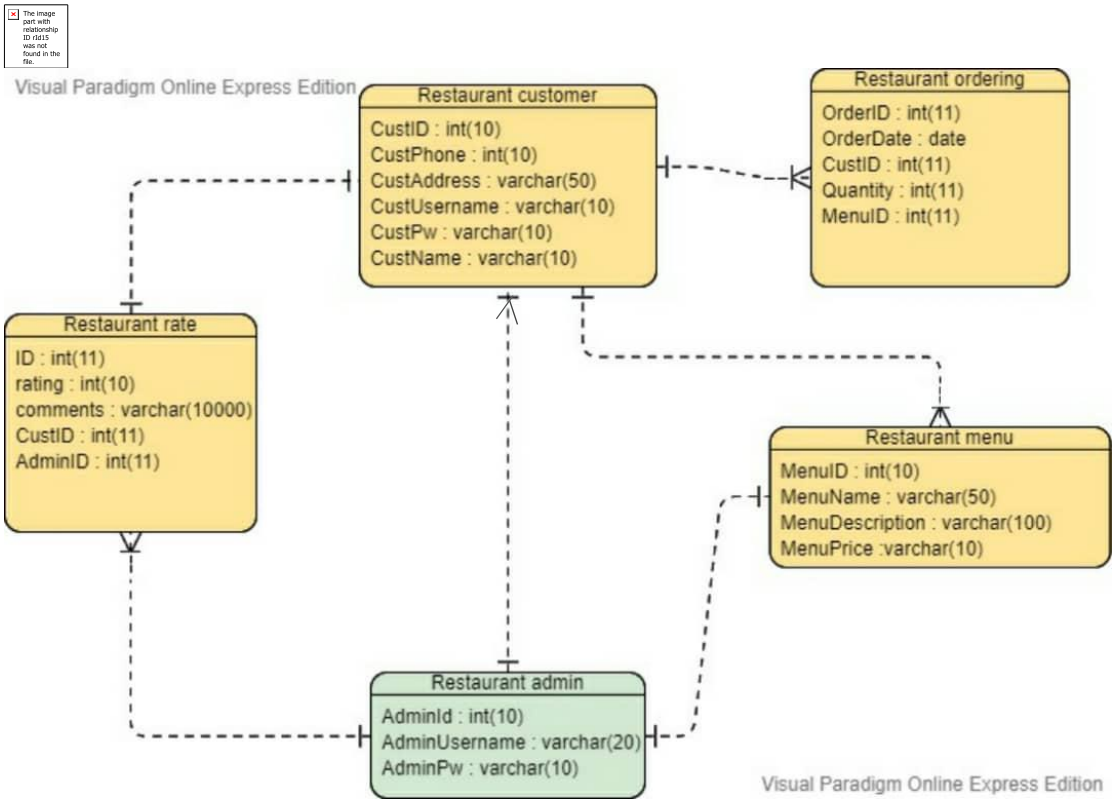
REPORT MODULE

1. Start
2. Allow Admin to view MinRate()

    2.1 else MaxRate()

3.End

3.3 ERD



3.4 BUSINESS RULES

- One customer can make only one rating
- One customer can make one or more orders
- One customer can choose one or more menu
- One admin deals with one customer
- One admin manages the menu
- One admin manages the ratings

3.5 DATA DICTIONARY

Table	Attribute Name	Content	Type	Form	Required	PK/ FK	FK table reference
Admin	AdminID	Admin ID	Varchar	XXX	Yes	PK	
	AdminUsername	Admin Login Username	Varchar	XXX	Yes		
	AdminPw	Admin Login Password	Varchar	XXX	Yes		
Customer	CustID	Customer ID	Varchar	XXX	Yes	PK	
	CustPhone	Customer Contact	Int	012	Yes		
	CustAddress	Customer Address	Varchar	XXX	Yes		
	CustUsername	Customer Login Username	Varchar	XXX	Yes		
	CustPw	Customer Login Password	Varchar	XXX	Yes		
	CustName	Customer Name	Varchar	XXX	Yes		

Menu	MenuID	Menu's ID	Varchar	XXX	Yes	PK	
	MenuName	Menu's Name	Varchar	XXX	Yes		
	MenuPrice	Menu's Price	Int	012	Yes		
	MenuDescription	Menu's Description	Varchar	XXX	Yes		
Ordering	OrderID	Orders' ID	Int	012	Yes	PK	
	OrderDate	Order's date	Date	Y/m/d	Yes		
	CustID	Customer's ID	Int	012	Yes	FK	Customer
	Quantity	Order's Quantity	Int	012	Yes		
	MenuID	Menu's ID	Int	012	Yes	FK	Menu

Rating	ID	Rating ID	Int	012	Yes	PK	
	Rating	Rating given by Customer	Int	012	Yes		
	Comments	Comments given by customer	Varchar	XXX	Yes		
	CustID	Customer's ID	Int	012	Yes	FK	Customer
	AdminID	Admin's ID	Int	012	Yes	FK	Menu

3.6 I/O

Input

- Login details & Registration Details

Process

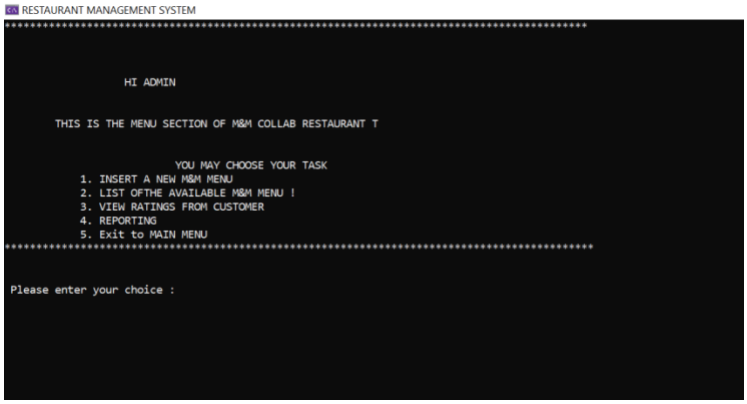
- Adding menu, Update/Deleting Menu, View Menu, Search Menu, Input Order, Update/delete Order, View Order, Search Order, save in database

Output

- Display all the details fetched from database

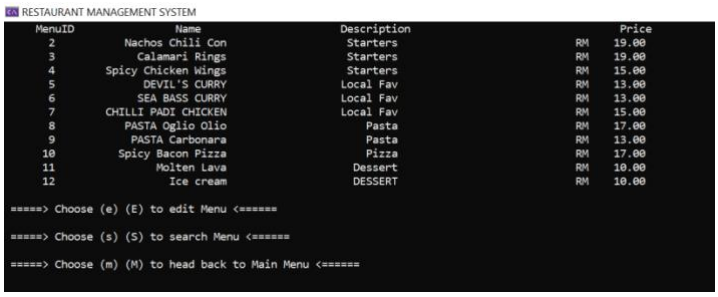
3.7 INTERFACE

Main interface

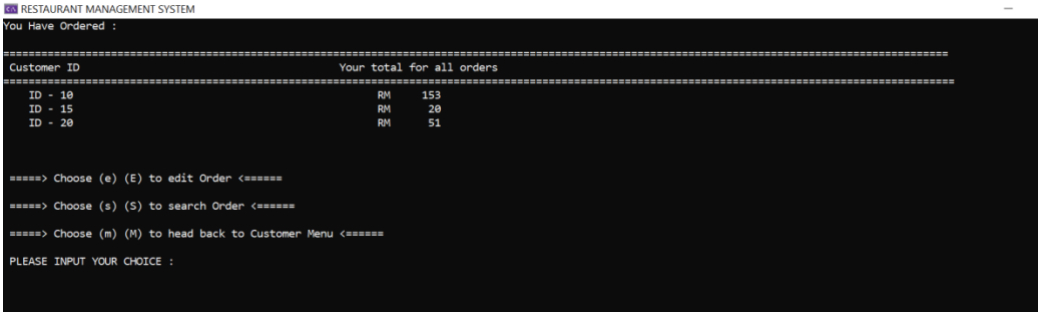


Admin Main Interface

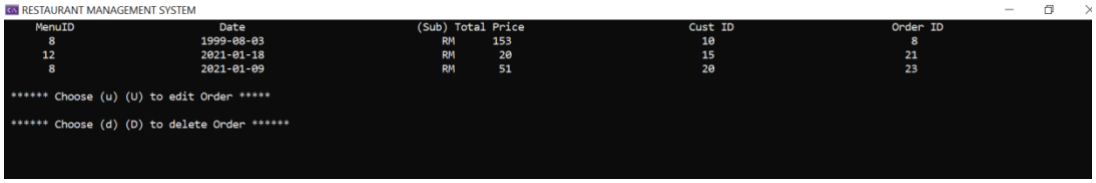
Customer Main Interface



Menu listing interface



Total cost to be paid by Customer interface



Sub Total to be paid by Customer (By MenuID) interface

CHAPTER 4

Herewith attached in this segment are example segments of the techniques implemented

4.1 PROGRAMMING TECHNIQUES

- multi way if-else statements

- two way if-else statements

- nested if

- switch

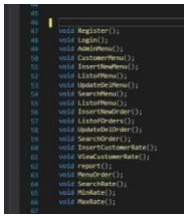
4.1.2 CONTROL TECHNIQUE

- While loop

- Do while loop

4.1.3 FUNCTIONS

- Function declaration



- Function definition

- Function calling

4.2 CODE EXPLANATION

- Main

a. Database connection

Diagram above shows the connection of c++ Visual Studio with the database Restaurant

b. Login

Diagram above shows the Login of both customers and admin

c. Register

Diagram above shows the registration of customers

- Admin

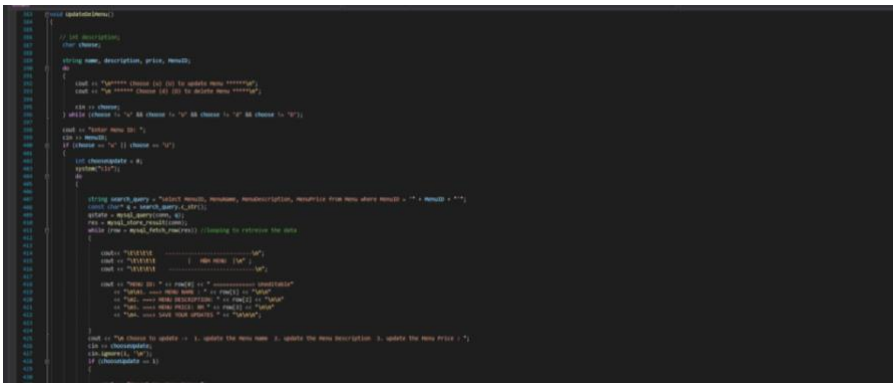
a. Admin Menu

Diagram above shows the code of Admin Main Menu

b. Admin Insert Menu

Diagram above shows the code of Admin inserting new menu

c. Admin Update/Delete Menu



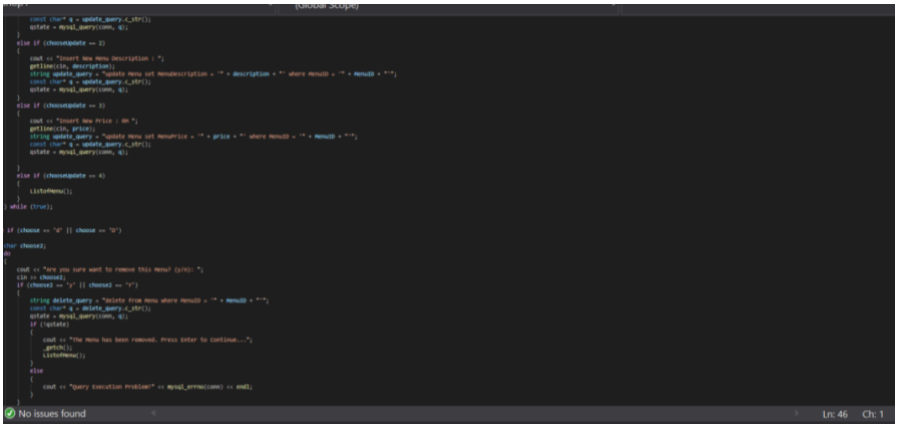


Diagram above shows the code of admin to insert and delete menu

d. Admin View

Diagram above shows the code for admin to view the list of menu

e. Admin Search

Diagram above shows the code to search a specific menu by MenuName

- Customer

a. Customer Menu

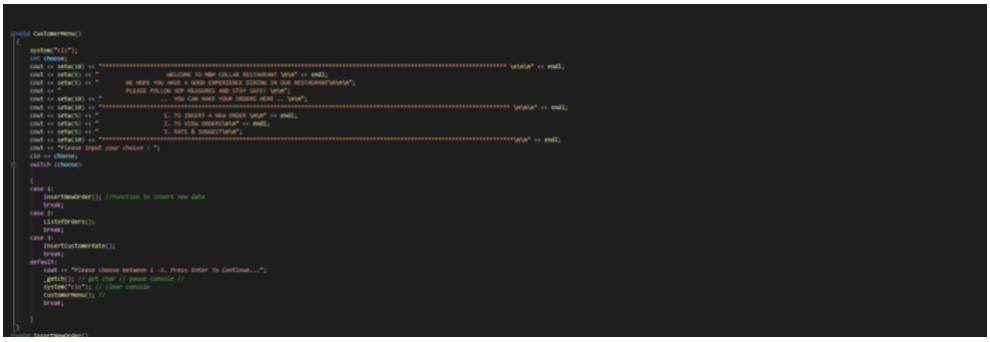


Diagram above shows the Main Customer Menu

b. Customer Insert Order

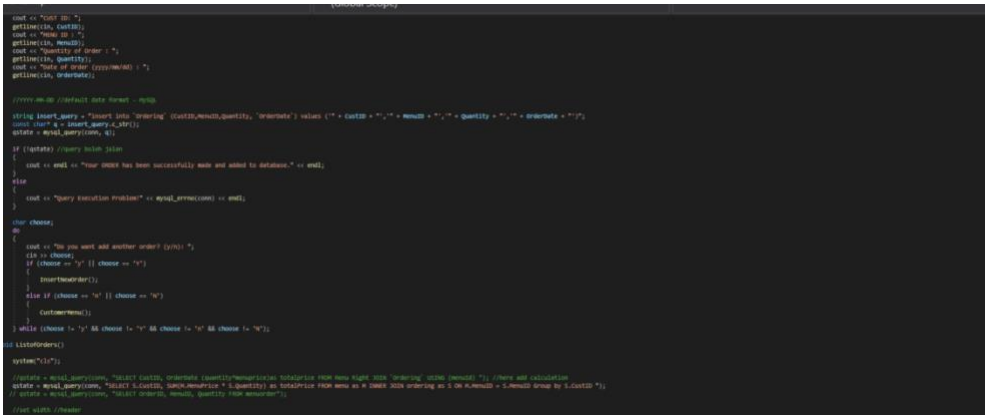


Diagram above shows the code for Customer to insert a new order

c. Customer Update/Delete Order

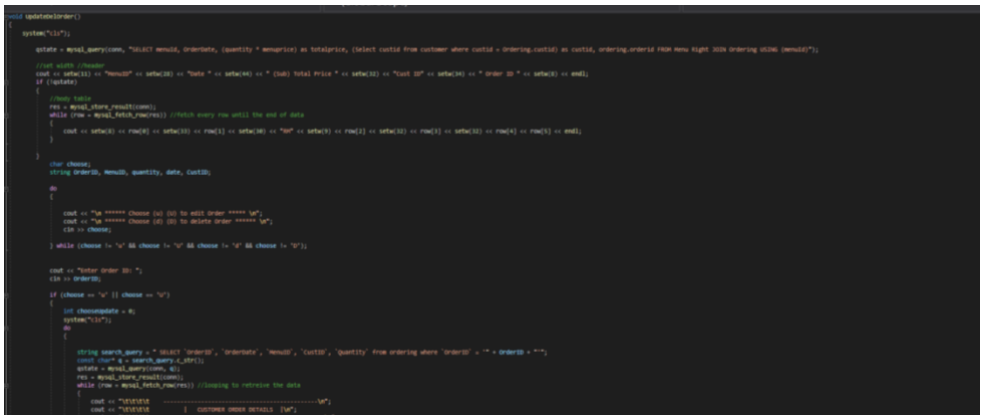


Diagram above shows the code for customer to update or delete their orders

d. Customer View Order

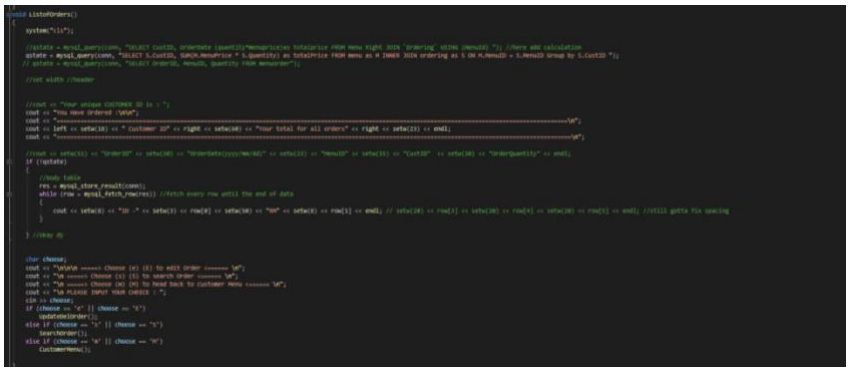


Diagram above shows the code for customers to be able to view the order list

e. Customer Search Order

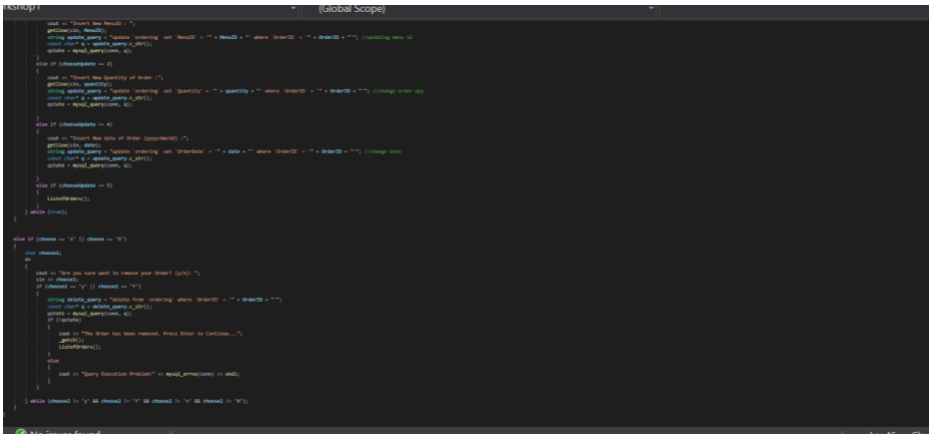


Diagram above shows the code for customers to be able to search for their specific orders by using OrderID

-Rating

a. Customer Insert Rate

Diagram above shows the code for customer to input rating between to 1-5

b. Admin View Rate

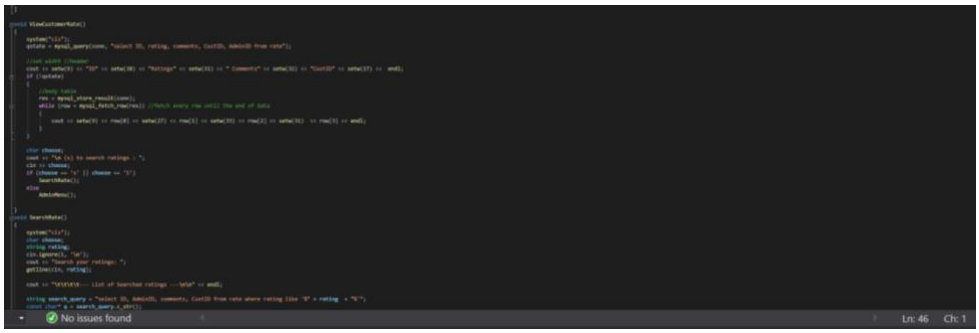


Diagram above shows the code for admin to view ratings

c. Admin Search Rate

- Report

a. Admin view Minimum Rate

Diagram above shows the code for Admin to view Minimum Rate (report)

b. Admin view Maximum Rating

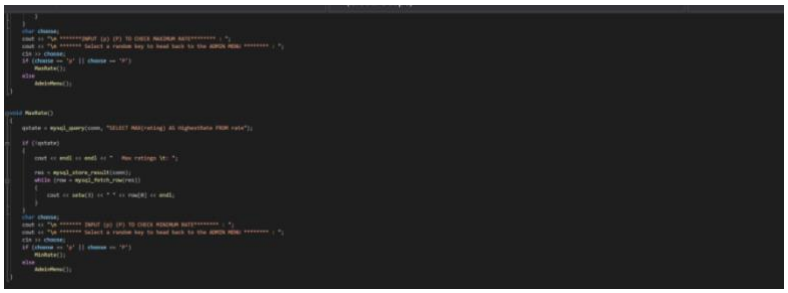


Diagram above shows the code for Admin to view Maximum Rate (report)

4.3 CALCULATION

Diagram above shows the Calculation of overall total cost to be paid by Customers by their CustID for their overall Orders.

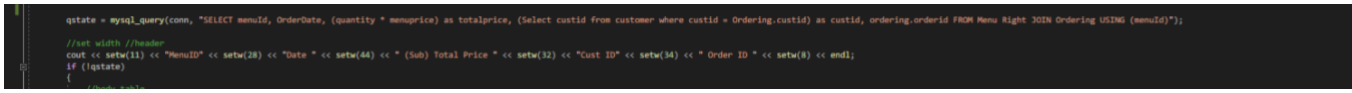


Diagram above shows the subcost to be paid by the customers by their OrderID.

4.4 ERROR HANDLING

Diagram above shows that system will print out error message "Invalid username or password. Would you want to try again?" when user inputs wrongly as a method of error handling.

Diagram above shows that system will print out error message "Please choose between 1-5" when user inputs wrongly as a method of error handling,

Chapter 5

5.1 CONCLUSION

As a conclusion, I have created this restaurant management system for restaurants so that it would help make our lifestyle easier. Managing a restaurant with an organized database is much simpler compared to managing with a pen and paper. It offers a systematic lifestyle and assists both employees and users. This is also a more modern and convenient way to organize a system. Having such a system can help you boost sales as well as make better marketing strategies. Not only that, you will also be easily managing the numerous orders coming in on a daily scale. The implementation of programming technique and database system knowledge would improvise the management of restaurants by ensuring less mistakes and errors to occur as well as reduce the usage of man power in the management side. Besides a well secured system, it also helps in reducing the cost of labor and other operational costs of restaurants. In a nutshell, it is a very productive system to be used.

5.2 Improvements

- Use a better language such as Python to create more better and challenging experiences

- Use a GUI to make it more convenient for the users.

APPENDIX 1

Database

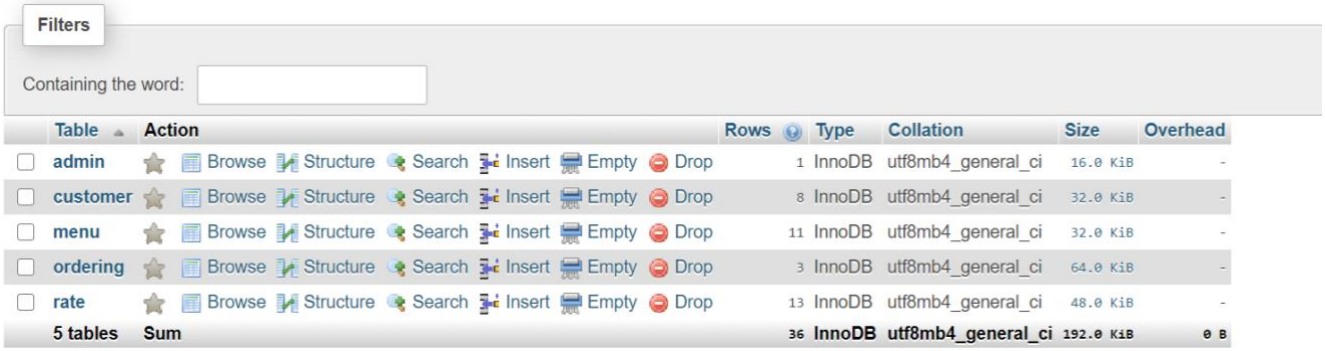
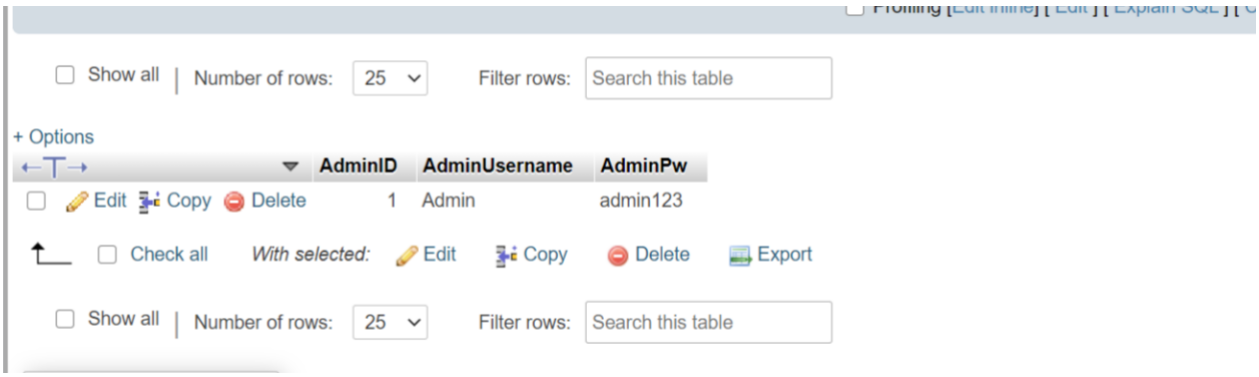


Diagram above shows the Restaurant database



Admin Table

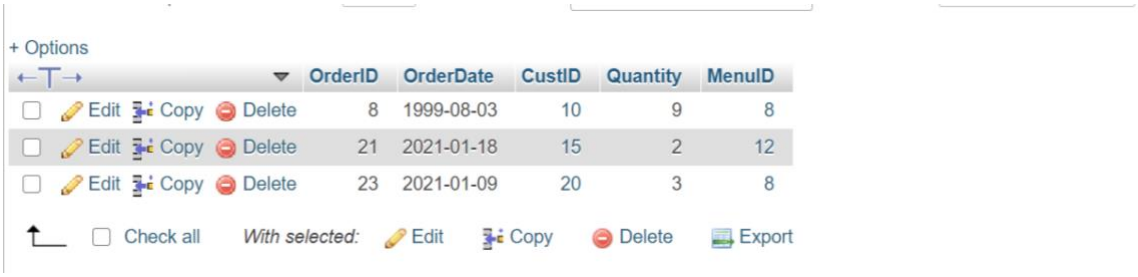
Customer Table

+ Options

	MenuID	MenuName	MenuDescription	MenuPrice
Edit Copy Delete	2	Nachos Chili Con	Starters	19.00
Edit Copy Delete	3	Calamari Rings	Starters	19.00
Edit Copy Delete	4	Spicy Chicken Wings	Starters	15.00
Edit Copy Delete	5	DEVIL'S CURRY	Local Fav	13.00
Edit Copy Delete	6	SEA BASS CURRY	Local Fav	13.00
Edit Copy Delete	7	CHILLI PADI CHICKEN	Local Fav	15.00
Edit Copy Delete	8	PASTA Oglio Olio	Pasta	17.00
Edit Copy Delete	9	PASTA Carbonara	Pasta	13.00
Edit Copy Delete	10	Spicy Bacon Pizza	Pizza	17.00
Edit Copy Delete	11	Molten Lava	Dessert	10.00
Edit Copy Delete	12	Ice cream	DESSERT	10.00

Check all *With selected:* Edit Copy Delete Export

Menu Table



+ Options

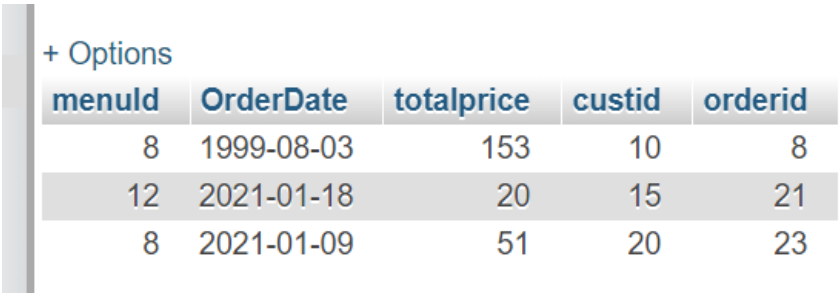
	OrderID	OrderDate	CustID	Quantity	MenuID
Edit Copy Delete	8	1999-08-03	10	9	8
Edit Copy Delete	21	2021-01-18	15	2	12
Edit Copy Delete	23	2021-01-09	20	3	8

Check all *With selected:* Edit Copy Delete Export

Order Table

	ID	rating	comments	CustID	AdminID
Edit Copy Delete	2	3	good. fast.	10	1
Edit Copy Delete	5	3	good	10	1
Edit Copy Delete	6	5	good!	6	1
Edit Copy Delete	8	5	great!	17	1
Edit Copy Delete	9	4	good.	17	1
Edit Copy Delete	10	4	none	10	1

Rate Table



+ Options

menuId	OrderDate	totalprice	custid	orderid
8	1999-08-03	153	10	8
12	2021-01-18	20	15	21
8	2021-01-09	51	20	23

Calculation - Sub Total Price by MENUID

+ Options

CustID	totalPrice
10	153
15	20
20	51

Calculation - totalPrice by CUSTID