



AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH

Department of Computer Science

Software Project Report, Fall 2023-24

Course	OBJECT ORIENTED PROGRAMMING 2	Group No.	04
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Project Title:
Restaurant Management System

Project Description:
<p>Restaurant Management System is a comprehensive software solution designed to streamline and enhance the operations of a restaurant. Developed as a part of a university project, this system incorporates various functionalities to cater to the diverse needs of both customers and restaurant staff.</p> <p>Key Features:</p> <ol style="list-style-type: none">1. User Authentication:<ul style="list-style-type: none">- Secure login for customers and staff members.- User-friendly interfaces ensuring accessibility for all users.2. Dine-In Reservation System:<ul style="list-style-type: none">- Effortlessly manage and track dine-in reservations.- Provide a seamless experience for customers to reserve tables.3. Order Processing:<ul style="list-style-type: none">- Streamline the order-taking process for both dine-in and online orders.- Automatically calculate the total amount based on the selected items.4. Customer Information Management:<ul style="list-style-type: none">- Maintain a centralized database of customer information for improved service.- Enable customers to update their profiles and preferences.5. Admin Functions:<ul style="list-style-type: none">- Empower administrators to manage user accounts, including creation and deletion.- Provide insights into user and reservation data for informed decision-making.

6. Payment System:

- Facilitate secure and convenient payment options for customers.
- Generate detailed bills for transparency and accuracy.

7. User-Friendly Interface:

- Ensure an intuitive and visually appealing interface for an enhanced user experience.
- Implement responsive design principles for accessibility on various devices.

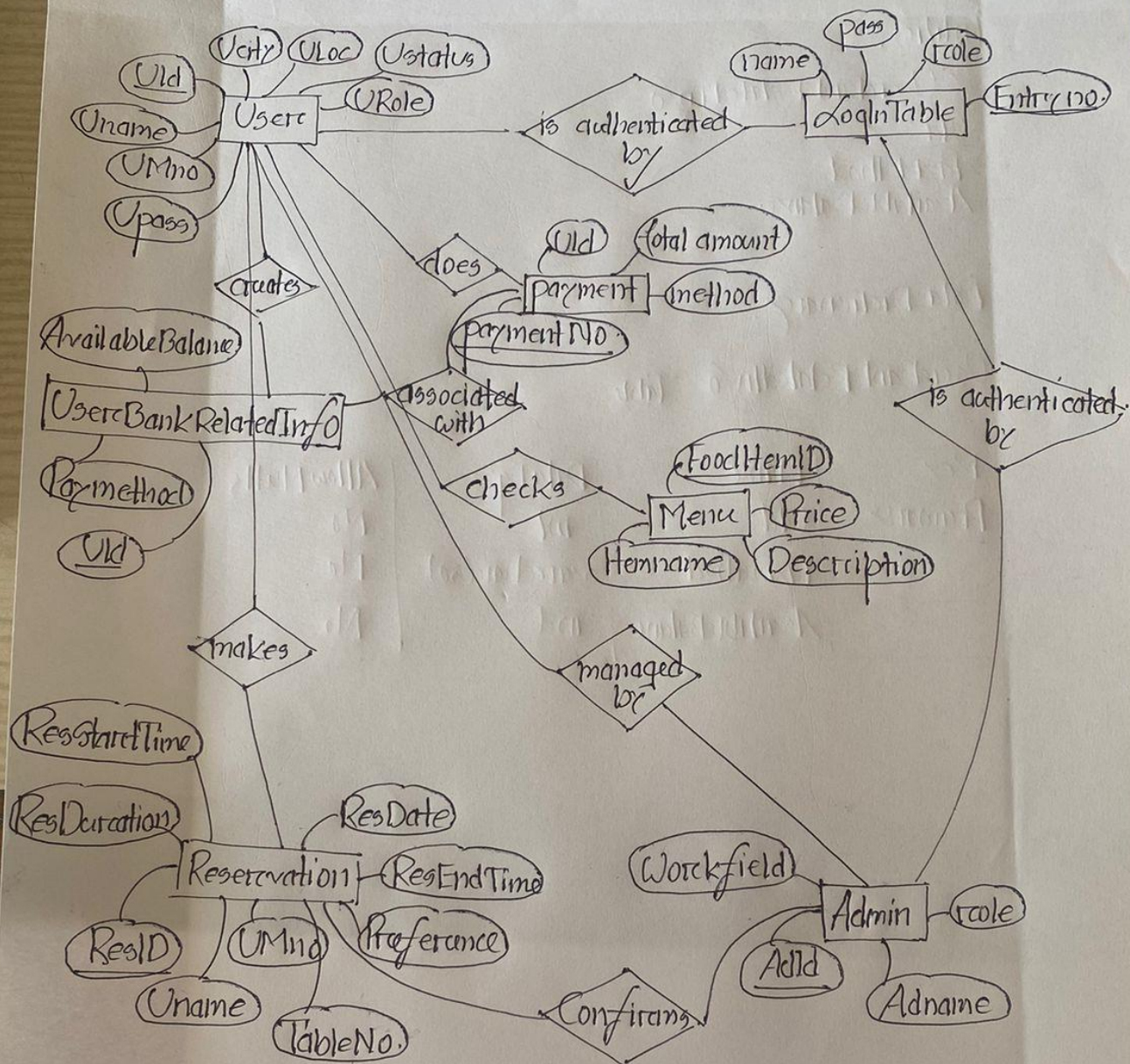
Technologies Used:

- C# programming language for application logic.
- Microsoft SQL Server for robust data storage and retrieval.
- Windows Forms for creating a graphical user interface.

Objective:

The primary objective of the Restaurant Management System is to provide a sophisticated yet user-friendly platform that simplifies daily restaurant operations, improves customer service, and enhances overall efficiency. This project aims to showcase the integration of essential features crucial for the successful management of a modern restaurant.

E-R DIAGRAM :



ENTITIES:

1. User:

Attributes:

- i. UId (User ID)
- ii. Uname (Username)
- iii. Upass (Password)
- iv. Ucity (City)
- v. UMobNo (Mobile Number)
- vi. ULoc (Location)
- Vii.UStatus(User Status)
- Viii.Role

2. Admin:

Attributes:

- i.AdminID (Admin ID)
- ii. AdminName (Admin Name)
- iii.AdminPassword (Admin Password)
- Iv.WorkField

3. Menu:

Attributes:

- i. FoodItemID (Item ID)
- ii.ItemName (Item Name)
- iii.ItemPrice (Item Price)
- Iv. Item description

4. LogInTableMembers

Attributes:

- i. EntryNo.
- ii. name
- iii. pass
- iv. role

5. Payment:

Attributes:

- i. PaymentNo. (Payment No.)
- ii. Total Amount (Amount Paid)
- iii. PaymentMethod (Payment Method)
- iv. UId(User ID)

6. Reservation:

Attributes:

- i. ReservationID (Reservation ID)
- ii. GuestName (Guest Name)
- iii. ReservationStartTime (Reservation Time)
- iv. NumberOfGuests (Number of Guests)
- v. ReservationPreference (Reservation Preference)
- vi. GuestContactNumber (Guest Contact Number)
- vii. ReservationDate (Reservation Date)
- Viii. ReservationEndTime (Reservation Time)
- Ix.UName(User name)
- x. Table no.

7. UserBankRelatedInfo:

Attributes:

- i.UId
- ii. PayMethod
- iii.AvailableBalance

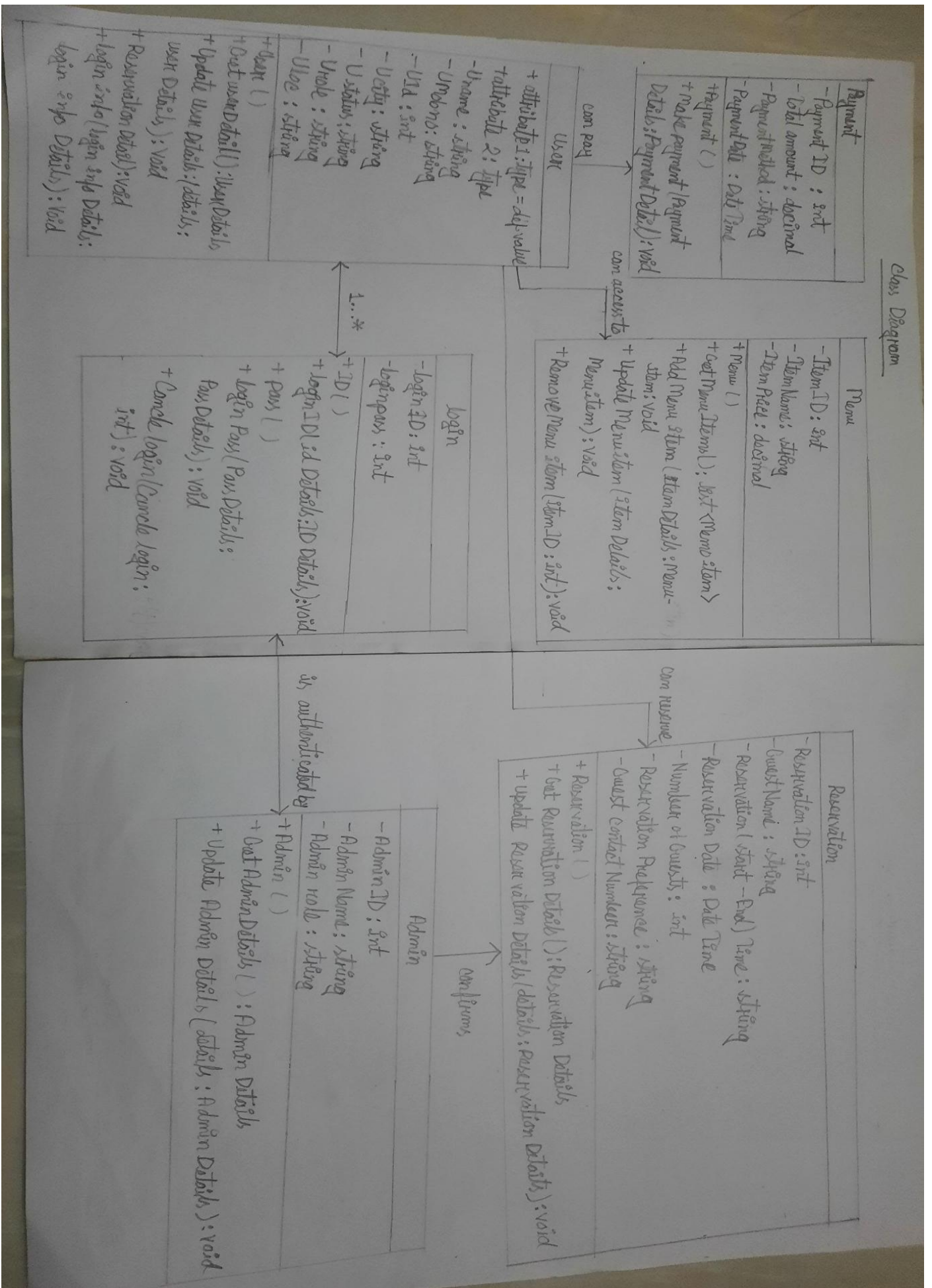
USER STORIES:

USE CASE	ACTOR	STORY
User Registration	Guest	As a guest, I want to register for a user account to personalize my experience and access exclusive features.
User Login	User	As a user, I want to log in to the system to view my profile, track my orders, and access reserved features.
Admin Login	Admin	As an admin, I want to log in to the system to manage users, view reservations, update the menu, and perform administrative tasks.
View Menu	User	As a user, I want to view the menu to see available food items, their descriptions, and prices.
Place an Order	User	As a user, I want to place an order for food items, specifying quantity and any additional preferences.
Make a Reservation	User	As a user, I want to make a reservation for dining, specifying the date, time, number of guests, and any special preferences.
View Reservation Details	User	As a user, I want to view details of my reservation, including date, time, and any special requests.
Process Payment	User	As a user, I want to process payment for my order or reservation using various payment methods.
Update User Profile	User	As a user, I want to update my profile information, including username, password, contact details, and location.

Use Case Diagram :



Class Diagram :



Data Dictionary :

Login Table :

Key	Name	Data Type	Allow Nulls
Primary	EntryNo	Int	No
	Name	Varchar(50)	No
	Pass	Varchar(50)	No
	Role	Varchar(50)	No

Admin Table :

Key	Name	Data Type	Allow Nulls
Primary	AdID	Int	No
	AdName	Varchar(50)	No
	AdPass	Varchar(50)	No
	Role	Varchar(50)	No
	WorkField	Varchar(50)	No

Menu Table :

Key	Name	Data Type	Allow Nulls
Primary	FoodItemID	Int	No
	ItemName	Varchar(50)	No
	ItemPrice	Int	No
	Description	Varchar(MAX)	No

Payment Table :

Key	Name	Data Type	Allow Nulls
Primary	PaymentNo	Int	No
	UserID	Int	No
	Method	Varchar(50)	No
	TotalAmount	Int	No

User Info Table :

Key	Name	Data Type	Allow Nulls
Primary	UId	int	No
	UName	Varchar(50)	No
	UPass	Varchar(50)	No
	UMobNo	Varchar(50)	No
	UCity	Varchar(50)	No
	UStatus	Varchar(50)	No
	URole	Varchar(50)	No
	ULoc	Varchar(MAX)	No

Reservation Table :

Key	Name	Data Type	Allow Nulls
Primary	ResID	int	No
	UName	Varchar(50)	No
	UMobNo	Varchar(50)	No
	NoOfGuests	Int	No
	ResData	Varchar(50)	No
	Preference	Varchar(50)	No
	ResDuration	Int	No
	ResStartTime(pm)	Int	No
	ResEndTime(pm)	Int	No
	TableNo	Int	No


UserBankRelatedInfo Table :

Key	Name	Data Type	Allow Nulls
Primary	UId	Int	No
	PayMethod	Varchar(50)	No
	AvailableBalance	Int	No

User Interface design :

Login

Welcome to Our Official App



Please enter your name and password

User/Admin Name

Pass word

Log In

Forgot Password

New to our app? Create an account to get a treat

Sign Up

PassManagement

Please enter your registered name

Name

Enter

Please enter your new password

password

Confirm


Return

Make a reservation

Check Reservation

Update user Info

Order Online



Make a reservation

Username

How many Guest?

Contact Number

☐ Use my stored mobile number

Pick a date
 31 December 2023

Any Preference?

For how long you want to stay?

Confirm

Update UserInfo

Username

password

Mobile number

City

Location

Update Info

Return

Enter Your User Name

User Name

Check Now!

Reservation ID

Name

Reservation Date

Reservation Duration

Reservation Start Time (pm)

Reservation End Time (pm)

Table No

FoodMenuForm


Entree

Drinks

Desserts

Please click on the quantity to select the number of food items


Return



Rice n Salmon
 Quantity

Traditional style fish curry and boiled rice


BDT-470 BDT 140



Steak Dish
 Quantity

Ribeye steak,mashed potato,green peas and pint of honey


BDT-4500 BDT 1300



Chicken Bowl
 Quantity

Crispy chicken,fried rice, vegetables with added gravy


BDT-350 BDT 300



Thai Soup
 Quantity

Traditional thai soup with mushrooms,green herbs,coriander and wontons


BDT-250 BDT 230



Oreo Shake
 Quantity

Chocolate icecream,Oreo crunches and whole lot of whipped cream


BDT-160 BDT 145



Strawberry MilkShake
 Quantity

A huge jar of strawberries mixed with milk, cream,ice


BDT-400 BDT 375



Soft Drinks
 Quantity

7up, Coca-cola, Mountain dew, Fanta


BDT-85 BDT 70



Hot Coffee
 Quantity

A cup of warm coffee to go through your day


BDT-250 BDT 225



Red Velveet Cake
 Quantity

Moist red velvet cake,topped with swirl of cream cheese frosting and sprinkle of rainbows


BDT-190 BDT 155



Cream n Cookies
 Quantity

Warm milk,bunch of cookies and a warm feeling


BDT-130 BDT 100



Cotton Candy Drink
 Quantity

Pink cotton candy mixed with strawberry and vanilla icecream

BDT-250 BDT 210



Banana Shake
 Quantity

Blended bananas,Vanilla essence,Whipped cream

BDT-240 BDT 185

Your Cart

Limited time pricecut. Offer ends in 4:1:51 seconds

Show Total Amount

Go to payment

Manage payment
process



Return to menupage

*Insert all the information below to
complete your payment*

User Payment Tab

User

8

Total amount to be

0

Your balance after payment will be BDT 4890

Payment method



Bank password

Confirm

Return



User Bank related Tab

Create New Bank Profile

Update Bank Statements

User ID (UserID)

Available (AvailableBalance)

*Enter an amount you
want to add to your
existing balance*

Update

User ID :

Enter your Payment
method(Bkash/Nagad) :

Payment method



Enter your bank account password

Enter Recharged amount. Amount will be
deducted when you confirm an order :

Add Info

AdminFunctions

Activate user

Manage Reservation

Show Users

Show Admins

Show LoginTable

Show FoodMenu table

Show Payment table

Show Reservation table

Show UserBank info

Add Admin

Update User

Select a user from the following drop-down menu
(Click 'Load Users' to See UserList)

Load Users

Activate

Return to Login

Username

Mobile number

City

Location

Update user

Select pending reservations from the drop
down menu
(Click 'Load' to see pending reservations)

Load

Reservation
Date

Reservation starting
time

pm

Reservation ending
time

pm

Select reservation
table

Admin Name

Authenticate

Admin Name

Show FoodMenu table

Show Payment table

Show Reservation table

Show UserBank info

Add Admin

Update User

Update Admin

Delete Admin

Delete User

Username

Mobile number

City

Location

Update user

Admin Name

Admin password

Admin

Admin WorkField

Add Admin

down menu
(Click 'Load' to see pending reservations)

Load

Reservation
Date

Reservation starting
time

pm

Reservation ending
time

pm

Select reservation
table

Authenticate

Enter User ID ot delete a User

User ID

Delete User

Enter Admin ID ot delete an admin

Admin ID

Delete Admin

Admin Name

Admin password

Admin

Admin WorkField

Update

**User Creation Tab**

Please fill out all the information correctly

[Return](#)[SignUp](#)