

Test Project

IT Software Solutions for Business



LKS Provinsi DKI Jakarta 2023

EsemkaFoodcourt_TP

Prepared By:

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Esemka Foodcourt



Esemka Foodcourt is a big food company that currently running in Indonesia. Previously, the table reservation process is handled only by calls and manually recorded by hand. The more reservation handled each day, the higher the chance for the reservation records to be messed up. Unhandled reservation has been the main problem since then. In order to overcome that problem, the CEO wants an application that can help his company to handle the reservation process.

The application will be used by two types of user. First one is members, where they can reserve a table with their desired menu straightaway via only one desktop app and view their reservation history. And the other type of user is admin that can manage members data, menus data, menu ingredients data, and view the reservations on a specific date.

An additional notes for you as a developer is that the reservation method is a full-day reservation. It means when you want reserve a table, you are going to reserve that for a whole day.

The table layout of this foodcourt is also a fixed layout, so there are a fixed number of tables already.

Content

The following files are included in the test project:

1. EsemkaFoodcourt_TP.pdf (Test project instructions)
2. EsemkaFoodcourt_Style.pdf (Style guide document)
3. Database-MSSQL.sql (SQL Script for Microsoft SQL Server Database)
4. Database-MySQL.sql (SQL Script for MySQL Database)
5. DataDictionary.xlsx (Data dictionary)
6. Resources (Additional resources folder that may be used in the application)

Project Description and Tasks

When developing the test project, make sure all the deliverables are matched with the standard that arranged by project designers:

- Project criteria:
 - The project name must be in format “**Desktop_[XX]**” where XX is your PC number.
 - Time management is a crucial thing for this project. So, manage the given time wisely and submit all your works on time.
 - Use this following database connection:

Server Name	.\SQLEXPRESS
Authentication	Windows Authentication

- Application User Interface:
 - Use the given style guide consistently.
 - You are allowed to change some components as long as it doesn't interfere the business logic and flow.
 - There are no bonus marks for design (features > design).
 - Provides scrollbar to user when the contents shown doesn't conveniently fit to the application.
- Validation and error messages:
 - The application must runs well without any crashes. Display useful error message to the users when needed.
 - Validation for every input process is a must.

- Analyze the required validation that is needed in the application. Especially the validations that are not explicitly stated in this project description. This is one of the marking criteria for your analysis result.
- Specific validation will be included in the project description.
- Components default format:
 - The default date format is DD/MM/YYYY. But if there is a specific instruction in some part, ignore this.
 - The default time format is HH:mm. But if there is a specific instruction in some part, ignore this.

Instructions for Competitors

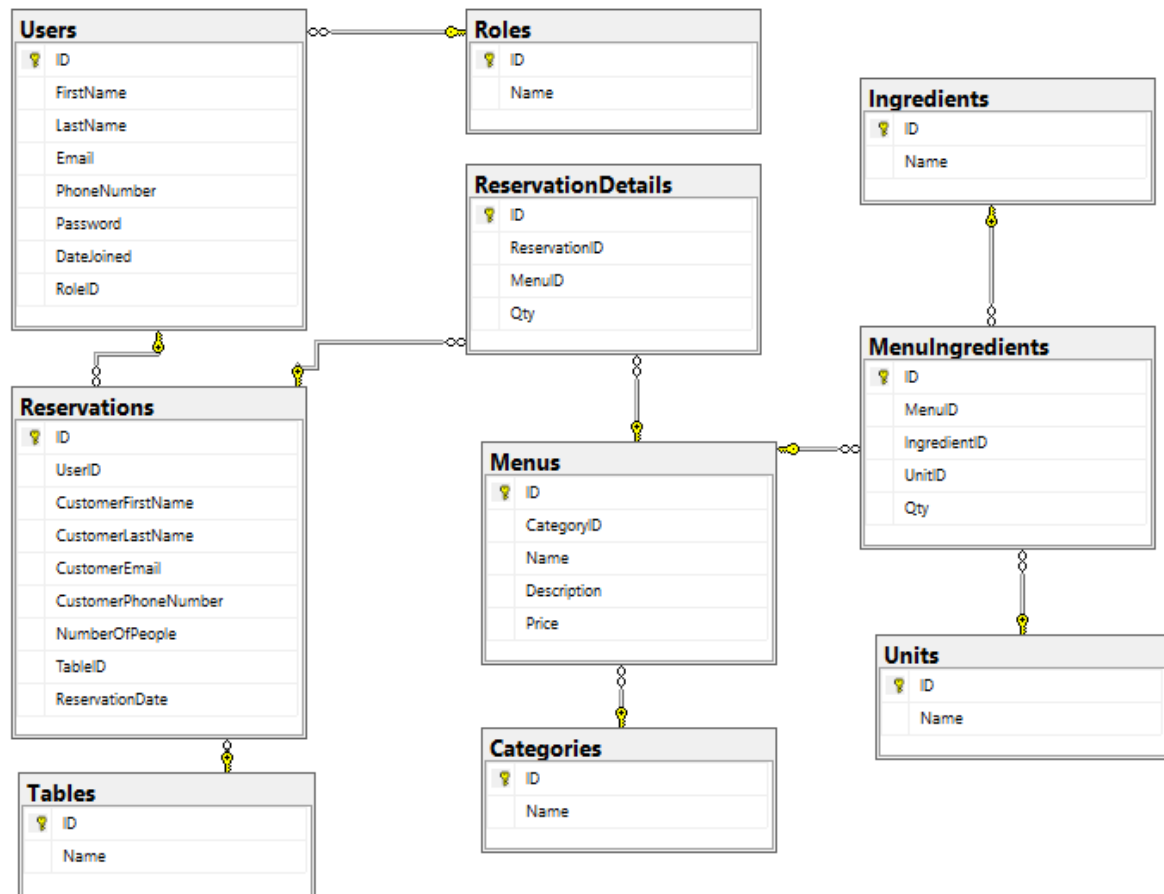
1. Import Database

Import the database from the database script (.sql) that is already provided to you. This is the only database that will connect to your application. **You are prohibited to perform any changes on the database schema.**

2. Develop application and submit the answers

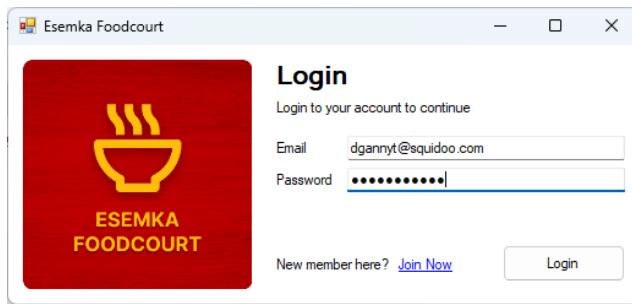
Develop a desktop application that the company needed based on the descriptions in the next part. Compress and submit all your answers (.zip) to the link that is already provided.

Entity Relationship Diagram



In order to help you to understand the database structure, our database designer from Esemka Foodcourt provides you this Entity-Relationship Diagram (ERD). This diagram will explain the concept and the data model representation that is used in the database.

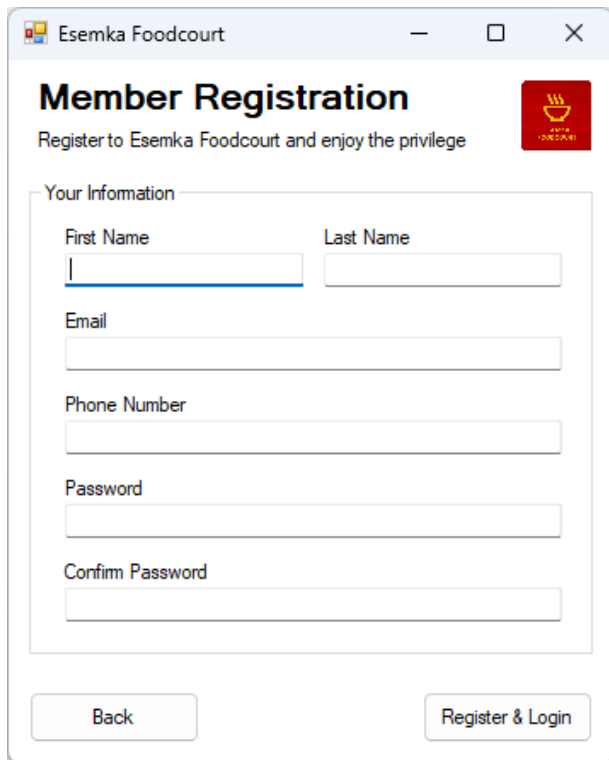
1. Login Form

The image shows a web browser window titled "Esemka Foodcourt". Inside the window, there is a login form. On the left side of the form is a red square logo with a yellow bowl icon and the text "ESEMKA FOODCOURT". To the right of the logo, the word "Login" is displayed in bold. Below it, a subtitle reads "Login to your account to continue". There are two input fields: "Email" with the value "dgannyt@squidoo.com" and "Password" with masked characters "••••••••". Below the password field is a link "New member here? [Join Now](#)". At the bottom right of the form is a "Login" button.

This is the first form that will be shown to the user. Users can input their email and password to login into their account. For new members, they can also register their account.

- User can input their **username** and **password** to **login**.
 - Prompt a **useful message** when the **login credentials is invalid**. Otherwise, **direct user** to their **main form** based on their **role**.
- When user choose to **register** a new account, user will be **directed** to the **registration form**.

2. Register Form

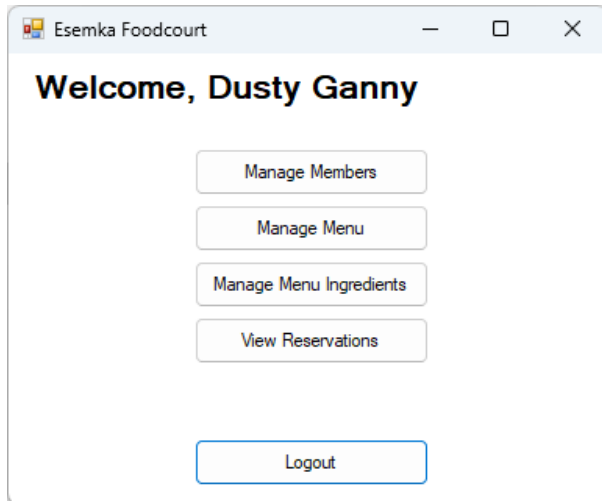


The screenshot shows a web browser window titled "Esemka Foodcourt". The page has a header with the title "Member Registration" and a subtitle "Register to Esemka Foodcourt and enjoy the privilege". There is a red logo with a flame icon and the text "ESEMKA" below it. The main content area is titled "Your Information" and contains several input fields: "First Name", "Last Name", "Email", "Phone Number", "Password", and "Confirm Password". At the bottom of the form, there are two buttons: "Back" and "Register & Login".

The registration form will be used by a new user to register new account. Users can fill up their information to register to the application as a new member.

- The **email** should be **unique** and in a **correct format** (valid).
- **Phone number** should be a **digit** (between 10-15 digits).
- **Password** length must be at least **8 characters**.
- When user proceeded to **register and login**, **save** the data to the **database** and **direct** the new member to his/her **main form**.

3. Admin Main Form



This is the main form for admin. Admin can navigate to some other forms. Admin can choose to manage members data, manage menus data, manage menu ingredients data, view the reservations data, or logout from the system and back to the login form.

4. Manage Member Form

Esemka Foodcourt

Manage Member

Search

FirstName	LastName	Email	PhoneNumber	MemberSince
Lavena	Schwant	lschwant0@europa.eu	081046774606	01/06/2001 (22 year(s))
Lil	Mapplebeck	lmapplebeck1@slashdot....	083076891362	02/08/2003 (20 year(s))
Cleavland	Hadaway	chadaway2@globo.com	087942165404	05/05/2004 (19 year(s))
Waylan	Jaegar	wjaegar3@omniture.com	087639048951	23/08/2004 (18 year(s))
Nelson	Firbanks	nfirbanks4@slate.com	086267583989	05/04/2003 (20 year(s))
Eugine	Noblet	enoblet5@google.co.jp	085967453568	29/10/2003 (19 year(s))
Tomkin	Piccop	tpiccop6@princeton.edu	086601132923	22/12/2003 (19 year(s))

First Name

Last Name

Email

Password

Phone Number

In this form, admin can inserts, updates, and deletes the members data. Admin also can filters the data by searching on some keywords.

- The **initial state** of the form is:
 - All the **input fields** are **disabled**.
 - **Save** and **cancel** button are **disabled**.
 - Show all data.
- Admin can **search** the members data by using the **first name**, **last name**, or **email (case-insensitive)**.
- **Email** should be **unique** and in a **correct format** (valid).
- **Phone number** should be a **digit** (between 10-15 digits).
- **Password** length must be at least **8 characters**.
- When admin click the **insert** button, it will:
 - **Enable** all the **input fields**.
 - **Enable save** and **cancel** button.
 - **Disable** the **insert**, **update**, and **delete** button.
- When admin **select** a **data** from the table, **load** the selected data to the **fields below**.
- When there is a **data selected**, and admin **click** the **update** button, it will:
 - **Enable** all the **input fields**.
 - **Enable save** and **cancel** button.
 - **Disable** the **insert**, **update**, and **delete** button.

- When there is a **data selected**, and admin **click** the **delete** button, it will **display a message** about data **deletion confirmation**.
 - If admin **confirms** the deletion, then **delete** the data from database and **refresh** the data in the table.
 - If admin **cancels** the deletion, then **clear** all the fields and **unselect** the data that is selected previously.
- When admin click the **save** button, it will **save the data** to the database.
 - If it's in **insert** mode, then **insert** the **new data** to the database.
 - If it's in **update** mode, then **save** the **changes** for the **selected data** to the database.
 - **Refresh** the table when the changes already saved successfully.
- When admin click the **cancel** button, it will:
 - **Reset** and **disable** all the **input fields**.
 - **Reset** the **button** state to the **initial state**.
 - **Unselect** the selected data if there is any.

5. Manage Menu Form

Esemka Foodcourt

Manage Menu

Search

Menu	Category	Description	Price
Zucchini fritters	Breakfast	Served with a poached egg on t...	Rp150.000.00
Dark chocolate cranberry scones	Breakfast	Dark chocolate and dried cranb...	Rp75.000.00
Three-minute breakfast tortilla	Breakfast	A simple basted egg on a tortilla ...	Rp60.000.00
Classic Pancakes	Breakfast	Fluffy and delicious pancakes se...	Rp120.000.00
Fruit Parfait	Breakfast	Layers of yogurt, granola, and as...	Rp90.000.00
Eggs Benedict	Breakfast	Poached eggs on English muffin...	Rp180.000.00
Homemade Granola Bars	Breakfast	Nutritious granola bars made wit...	Rp75.000.00

Menu Name

Category

Description

Price

In this form, admin can inserts, updates, and deletes the menus data. Admin also can filters the data by searching on some keywords.

- The **initial state** of the form is:
 - All the **input fields** are **disabled**.
 - **Save** and **cancel** button are **disabled**.
 - Show all data.
 - Display the menu price in "**Rp.X.XXX.YY**" format.
- Admin can **search** the menus data by using the **menu name** and **category (case-insensitive)**.
- The **minimal price** is 1 (one).
- When admin click the **insert** button, it will:
 - **Enable** all the **input fields**.
 - **Enable save** and **cancel** button.
 - **Disable** the **insert**, **update**, and **delete** button.
- When admin **select** a **data** from the table, **load** the selected data to the **fields below**.
- When there is a **data selected**, and admin **click** the **update** button, it will:
 - **Enable** all the **input fields**.
 - **Enable save** and **cancel** button.
 - **Disable** the **insert**, **update**, and **delete** button.

- When there is a **data selected**, and admin **click** the **delete** button, it will **display a message** about data **deletion confirmation**.
 - If admin **confirms** the deletion, then **delete** the data from database and **refresh** the data in the table.
 - If admin **cancels** the deletion, then **clear** all the fields and **unselect** the data that is selected previously.
- When admin click the **save** button, it will **save the data** to the database.
 - If it's in **insert** mode, then **insert** the **new data** to the database.
 - If it's in **update** mode, then **save** the **changes** for the **selected data** to the database.
 - **Refresh** the table when the changes already saved successfully.
- When admin click the **cancel** button, it will:
 - **Reset** and **disable** all the **input fields**.
 - **Reset** the **button** state to the **initial state**.
- **Unselect** the selected data if there is any.

6. Manage Menu Ingredients Form

Manage Menu Ingredients

Search

Menu	Action
Zucchini fritters	Edit Ingredients
Dark chocolate cranb...	Edit Ingredients
Three-minute breakfa...	Edit Ingredients
Classic Pancakes	Edit Ingredients
Fruit Parfait	Edit Ingredients
Eggs Benedict	Edit Ingredients
Homemade Granola B...	Edit Ingredients
Avocado Toast	Edit Ingredients
Greek Yogurt Parfait	Edit Ingredients
Banana Walnut Muffins	Edit Ingredients
Omelette with Spinac...	Edit Ingredients

Ingredients

Choose ingredient:

Qty:

Ingredient Name	Qty	Unit	Action
Baking powder	30	Kilogram	<input type="button" value="Remove"/>
Flour	59	Pint	<input type="button" value="Remove"/>
Ketchup	51	Cup	<input type="button" value="Remove"/>
Rice	75	Gallon	<input type="button" value="Remove"/>
Tomatoes	29	Gallon	<input type="button" value="Remove"/>

In this form, admin can edit the menu ingredients by adding or removing ingredients to the menu data.

- The **initial state** of the form is:
 - **Ingredients** data / table are **empty** and all the **input fields** are **disabled**.
 - **Save** and **cancel** button are **disabled**.
 - Show all menu data.
- Admin can **search** the menu ingredients data by using the **menu name (case-insensitive)**.
- When admin **select** a **data** from the **left table** (menu data), the **detail ingredients** will **show up** in the **right table**.
- When admin click the **"Edit Ingredients"** link, it will **enable** all the **input fields** for the ingredients and **enable** the **save** and **cancel** button.
- The **quantity** must be **more than** or **equals** to 1 (one).
- When admin click the **"Add"** button, it will **add** the **selected ingredients** with its **quantity** and **unit** selected **to** the **ingredients table** below.
 - The menu **can't have duplicate ingredients** (even though it has the different unit).
- When admin click the **"Remove"** button from the ingredients table, it will **remove** the ingredient **from** the **ingredients table**.
- When admin click the **save** button, it will **save** the menu ingredients data to the **database**.
- When admin click the **cancel** button, it will:
 - **Clear** the **ingredients table**, **disable** it and all the **input fields**.













7. View Reservations Form

Esemka Foodcourt

Reservations

Date:

Table

					
1	2	3	4	5	6
					
7	8	9	10	11	12

Customer Information

First Name: Last Name:

Email:

Phone Number:

Menu Ordered

Menu	Qty	Price	Subtotal
Greek Yogurt Parfait	3	Rp90.000.00	Rp270.000.00
Chocolate Lava Cake	1	Rp120.000.00	Rp120.000.00

This form is used by admin to view the reservations made by members on a specific date. Admin can see the which table is reserved and which is not reserved yet. Admin can also see the details of the reservation, such as the customer information and the menu ordered within the reservation.

- Display the **tables status** on the **selected date**.
 - Show table in **red** color for **reserved table**.
 - Show table in **dark gray** color for **unreserved table**.
- When user **click** on **one of the tables** from the layout, it will:
 - Display **nothing** if the table is **not reserved**.
 - Display the **customer information** for that selected table and the **menu ordered** in that reservation If the table is **reserved**.
 - Customer information must be **selectable** but **not editable**.
 - Display the price and subtotal in "**Rp.X.XXX.YY**" format.

8. Member Main Form

The screenshot shows a desktop application window titled "Esemka Foodcourt". The interface includes a welcome message "Welcome, Lavena Schwant" and a timestamp "Current Time: 17:35:57". On the left side, there are two buttons: "Reserve a table" and "View Reservation History". At the bottom left, there is a "Logout" button. The central part of the window displays a "Table Layout" consisting of 12 tables arranged in two rows of six. Tables 1, 2, and 8 are highlighted in red, indicating they are reserved. Tables 3, 4, 5, 6, 7, 9, 10, 11, and 12 are in dark gray, indicating they are unreserved.

This is the main form for member. Members can reserve a table and view their reservation history. They also can see the table reservation status for the current day from the layout.

- Display **live current time** at top right of the form.
- Display the **tables status** on **current date**.
 - Show table in **red** color for **reserved table**.
 - Show table in **dark gray** color for **unreserved table**.
- Members can choose whether they want to reserve a table, view their reservation history, or logout from the system and back to the login form.

9. Reserve Table Form

Reserve Table

Date:

Number of people:

Choose table:

Customer Information

First Name: Last Name:

Email:

Phone Number:

☒ Use the same information as logged in account

Menu

Choose menu:

Qty:

Menu	Qty	Price	Subtotal	Action
Zucchini fritters	1	Rp150.000.00	Rp150.000.00	<input type="button" value="Remove"/>
Fruit Parfait	1	Rp90.000.00	Rp90.000.00	<input type="button" value="Remove"/>

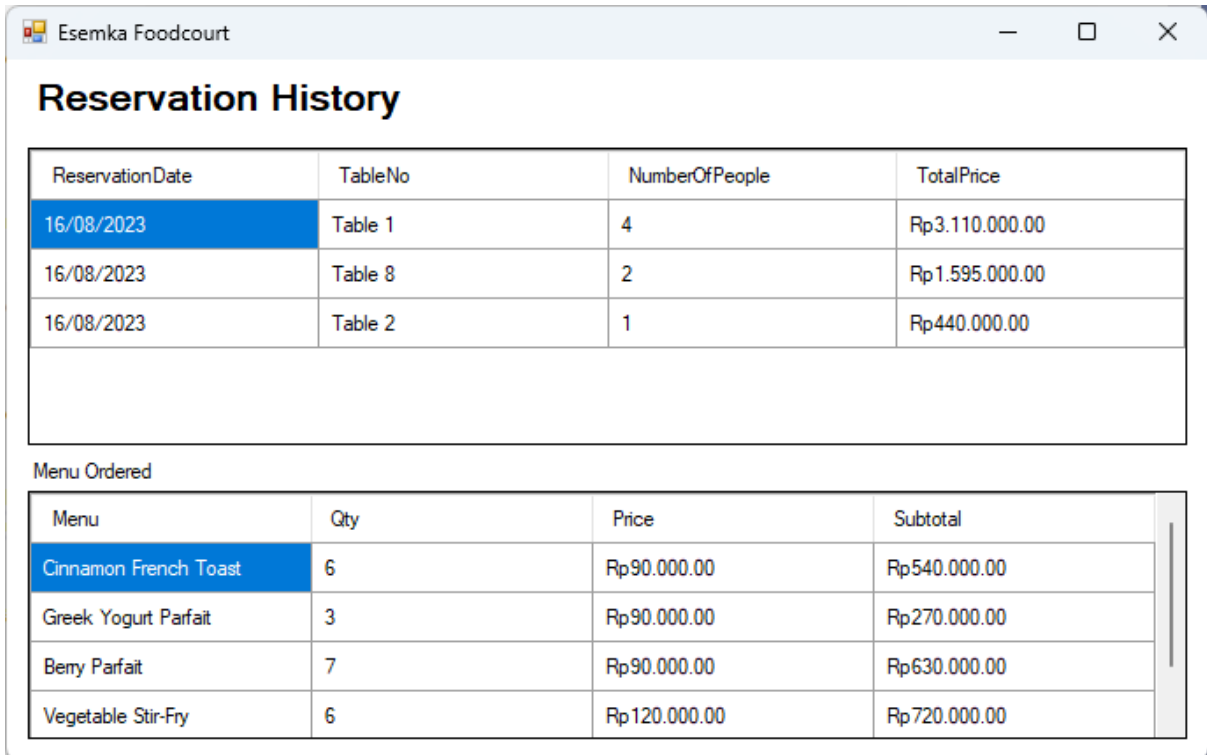
Reservation Fee: Rp50.000.00
Menu Total: Rp240.000.00
Total Price: Rp290.000.00

This is the form that will be used by a member to reserve a table. The member will have to input the reservation date, number of people, and the table that they want to reserve. Member also have to input the customer information that will be recorded in the reservation information. They also need to include the menu that they want to order in the reservation.

- **Number of people** must be **at least** 1 person and **can't be more** than 4 people.
- Load only the **remaining available tables** for the **selected date**.
- **Member** can **use their information** for the **customer information** by checking the options provided.
 - **Disable** all the **input fields** for customer information.
- If member want to **use other person's information** for the reservation:
 - **Enable** all the **input fields** for customer information.
 - **Email** must be in a **valid format**.
 - **Phone number** should be a **digit** (between 10-15 digits).
- The **reservation fee** is **fixed** at **Rp.50.000.00**.
- **Calculate** the **total price** by **adding** the **reservation fee** and the **total price** of the **selected menus**.
- All the price must be displayed in "**Rp.X.XXX.YY**" format.
- When member click the "**Add**" button:
 - If the menu **hasn't been added** before, **add** the menu to the table.
 - If the menu **already added before**, **update** the menu **quantity** by adding the current quantity with the added quantity.

- When **new menu is added** or the **quantity is updated**, all the **related information** should also be **updated**.
- When member click the **"Remove"** button in the menu table, **remove** the menu from the table and **update** all the **information that is related** to this menu deletion result.
- Member can only **submit** their reservation when all the **reservation** and **customer information** is **complete** and **at least one menu** is ordered for the reservation. **Save** the reservation data to the **database**.

10. Reservation History Form



ReservationDate	TableNo	NumberOfPeople	TotalPrice
16/08/2023	Table 1	4	Rp3.110.000.00
16/08/2023	Table 8	2	Rp1.595.000.00
16/08/2023	Table 2	1	Rp440.000.00

Menu	Qty	Price	Subtotal
Cinnamon French Toast	6	Rp90.000.00	Rp540.000.00
Greek Yogurt Parfait	3	Rp90.000.00	Rp270.000.00
Berry Parfait	7	Rp90.000.00	Rp630.000.00
Vegetable Stir-Fry	6	Rp120.000.00	Rp720.000.00

This is the form for members to view their reservation history. They can see the reservation information and the menu ordered for that reservation.

- Display all the member's reservation history.
 - Display the total price in "Rp.X.XXX.YY" format
- When member **select** a **data** from the **reservation data table**, it will **shows** all the **menu ordered** for that reservation in the **table below**.
 - Display the price and subtotal in "Rp.X.XXX.YY" format.

~ Programming is thinking, not typing ~