LOMBA KOMPETENSI SISWA SMK

TINGKAT PROVINSI KALIMANTAN SELATAN

TAHUN 2019

LKS SMK

TEST PROJECT

BIDANG LOMBA: *IT Software Solutions for Business*

ESEMKA RESTAURANT PROJECT OVERVIEW

ESEMKA Restaurant wants to develop a new application to help them manage their day to day operation. Their main requirements are:

1. Application to store restaurant data such as: category, menu, and promotion
2. Record and manage customer orders
3. Process customer payment
4. Show payment history during certain date range.
5. Future update to facilitate catering business

In this Test Project, you are asked to develop this application by following the requirements given on the Test Project. There will be several project resources given to you, they are:

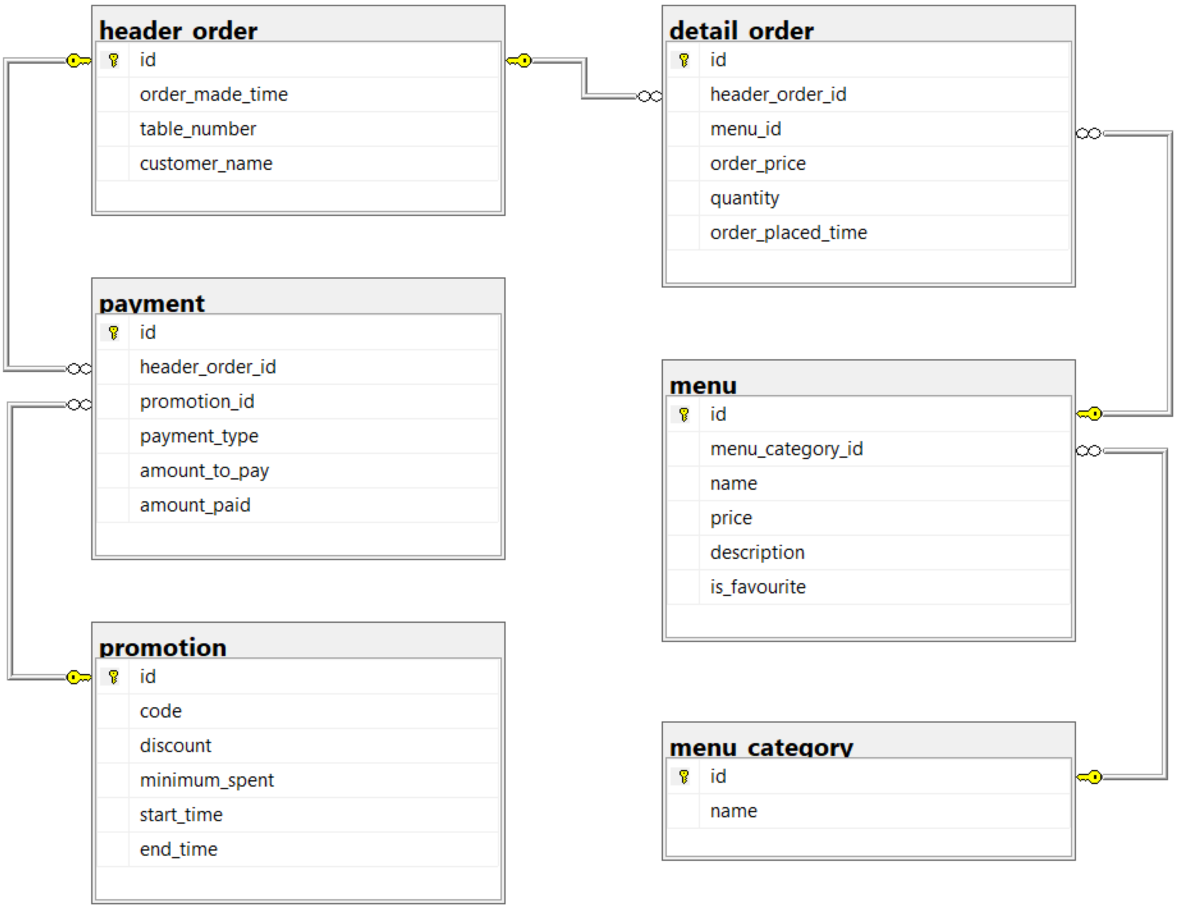
1. **Entity Relationship Diagram (ERD) and Data Dictionary**

   This will be used to guide you create the database. Ensure that all entities (data type, size, relationship, and criteria) created on the database are matched with the given ERD and Data Dictionary.
2. **Example Design (Wireframe) of desired Information System**

   This wireframe is used to give you design guidelines of all required forms. Please note that your form designs are not limited to these examples.
3. **Data Files**

   The data files will be used to support your test and development of the information system of each module. Please use this data files in the development. You can use other resources outside the given data files, only if it is instructed in the module.

ESEMKA RESTAURANT - ENTITY RELATIONSHIP DIAGRAM



ESEMKA RESTAURANT - ENTITY RELATIONSHIP DIAGRAM

TABLE	KEY	COLUMN	REQUIRED	DATATYPE	NOTES
menu_category	PK	id	Y	INT	Auto Increment
		name	Y	VARCHAR(100)	
menu	PK	id	Y	INT	Auto Increment
	FK	menu_category_id	Y	INT	
		name	Y	VARCHAR(100)	
		price	Y	DECIMAL(8, 2)	
		description		VARCHAR(200)	
		is_favourite		BIT	
promotion	PK	id	Y	INT	Auto Increment
		code	Y	VARCHAR(20)	
		discount	Y	DECIMAL(5, 2)	
		minimum_spent	Y	DECIMAL(10, 2)	
		start_time	Y	DATETIME	
		end_time	Y	DATETIME	
header_order	PK	id	Y	INT	Auto Increment
		order_made_time	Y	DATETIME	
		table_number	Y	INT	
		customer_name	Y	VARCHAR(100)	
detail_order	PK	id	Y	INT	Auto Increment
	FK	header_order_id	Y	INT	
	FK	menu_id	Y	INT	
		order_price	Y	DECIMAL(8, 2)	
		quantity	Y	INT	
		order_placed_time	Y	DATETIME	
payment	PK	id	Y	INT	Auto Increment
	FK	header_order_id	Y	INT	
	FK	promotion_id		INT	
		payment_type	Y	VARCHAR(20)	
		amount_to_pay	Y	DECIMAL(10, 2)	
		amount_paid	Y	DECIMAL(10, 2)	

Module 1: Master Form Development

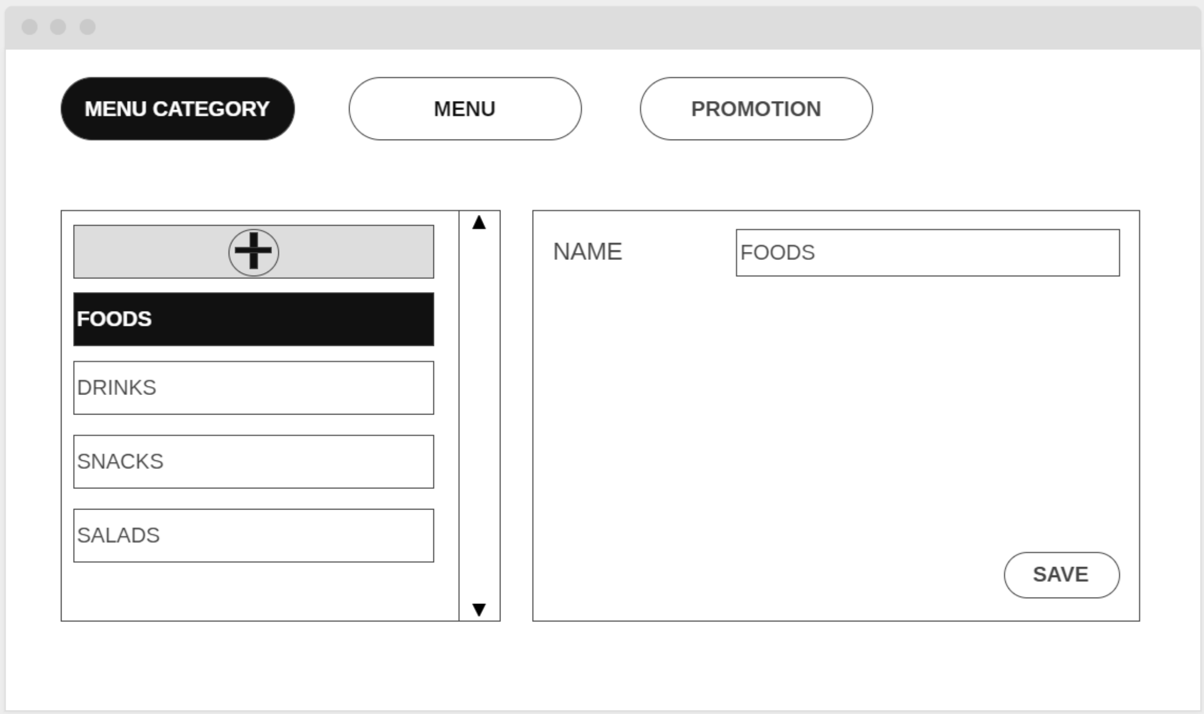
1. Database and Project Creation

Create a database inside your local Microsoft SQL Server. The database should be named **“DB_PC_XX_Module1”**, where **XX** is your PC number. Afterwards, import all the data given in the excel file.

Create a new Visual Studio Project on your local machine named **“Project_PC_XX_Module1”**, where **XX** is your PC number.

2. Menu Category Form

- ✓ This form will be shown when user clicks “Menu Category” Button
- ✓ When a category is selected, the detail will be shown in the right side. User can edit the value. When save button is clicked, validate all fields, then save the changes. Menu Category must be unique. Foods, Drinks, and Snacks category cannot be edited.
- ✓ New category can be added by clicking ⊕ button. User then can fill in all the field on the right side. When save button is clicked, validate all fields, then save the new category.

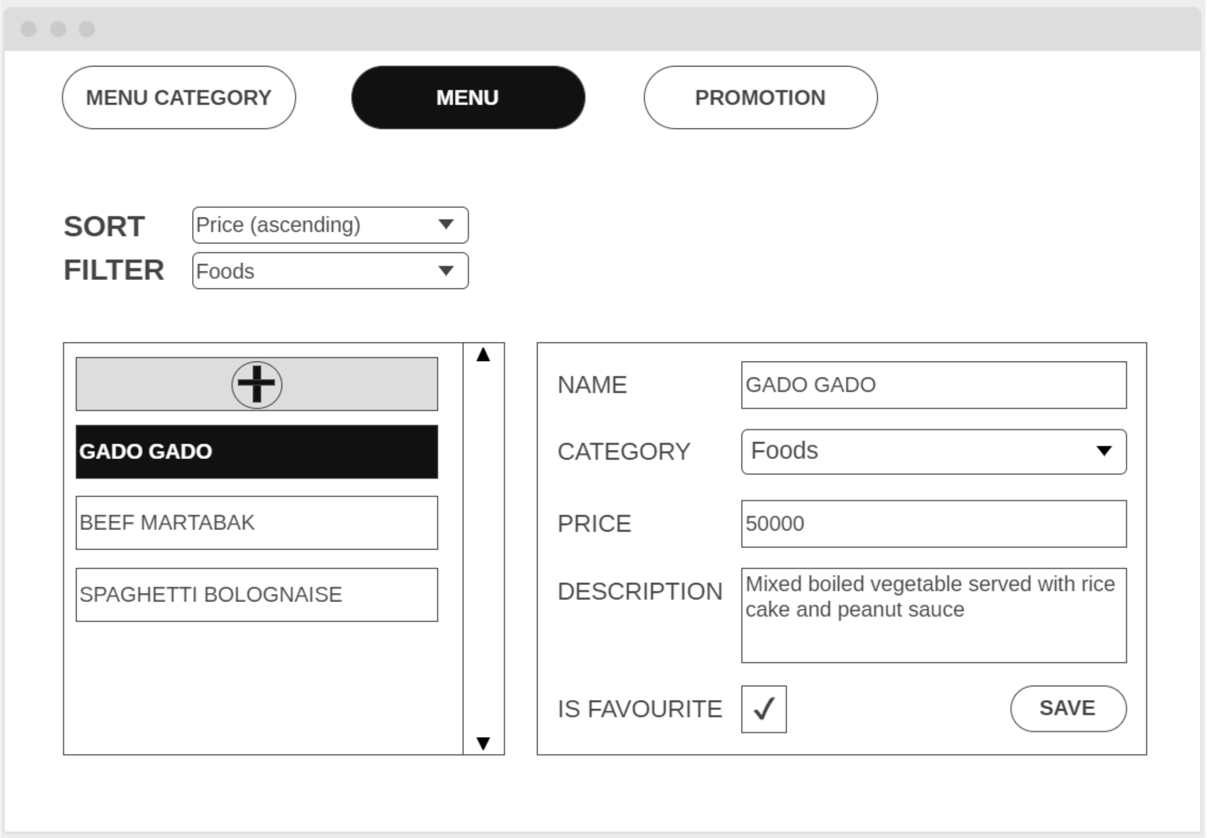


NAME FOODS

Figure 1. Menu Category Form

3. Menu Form

- ✓ This form will be shown when user clicks “Menu” Button
- ✓ Sort feature can be used to sort the displayed data. Available options are: Price (ascending), Price (descending), Name (ascending), and Name (descending).
- ✓ Displayed data can be filtered based on Menu Category.
- ✓ When a menu is selected, the detail will be shown in the right side. User can edit the value. When the save button is clicked, validate all fields, then save the changes.
- ✓ New menu can be added by clicking ⊕ button. User then can fill in all the field on the right side. When save button is clicked, validate all fields, then save the new menu.



SORT Price (ascending)

FILTER Foods

NAME GADO GADO

CATEGORY Foods

PRICE 50000

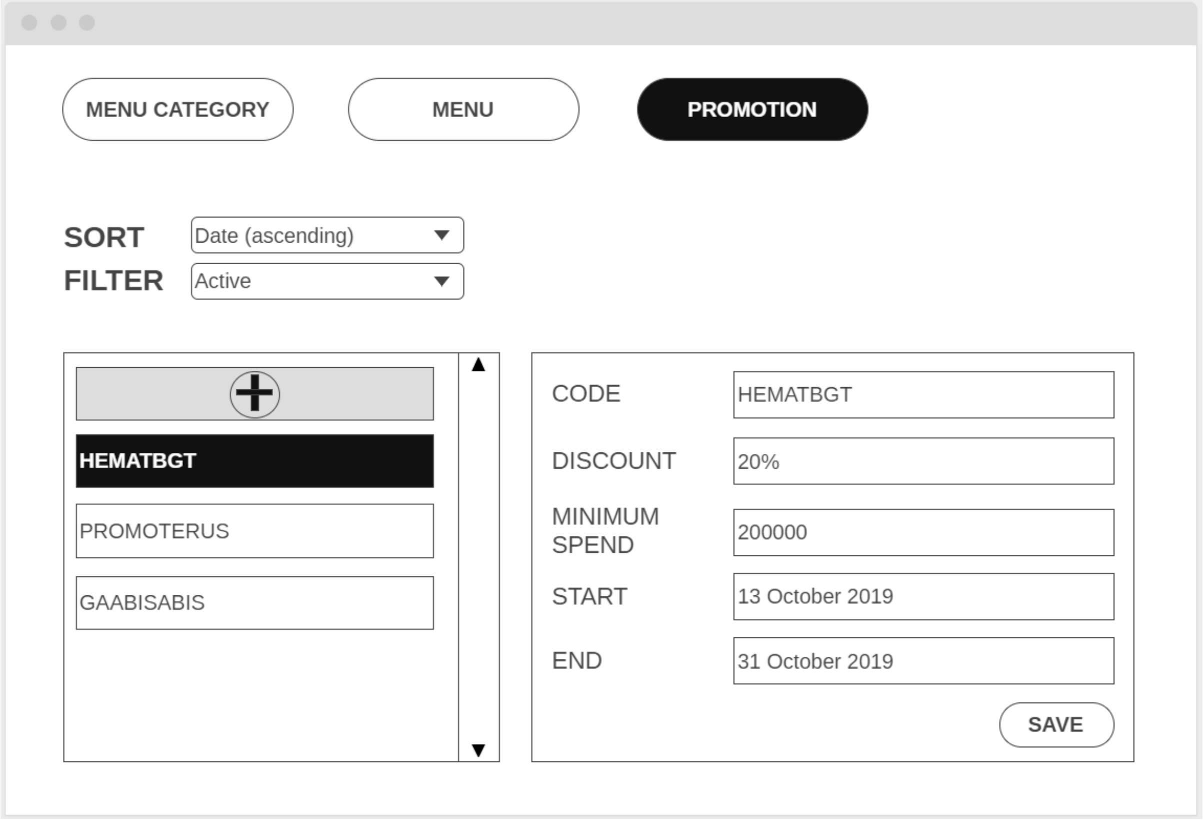
DESCRIPTION Mixed boiled vegetable served with rice cake and peanut sauce

IS FAVOURITE ☑

Figure 2. Menu Form

4. Promotion Form

- ✓ This form will be shown when user clicks “Menu Promotion” Button
- ✓ Sort feature can be used to sort the displayed data. Available options are: Start Date (ascending), Start Date (descending), Discount (ascending), and Discount (descending).
- ✓ Displayed data can be filtered whether the promotion is active or expired.
- ✓ When a promotion is selected, the detail will be shown in the right side. User can edit the value. Promotion code must be unique. Discount field cannot be edited. When the save button is clicked, validate all fields, then save the changes.
- ✓ New promotion can be added by clicking ⊕ button. User then can fill in all the field on the right side. When save button is clicked, validate all fields, then save the new promotion.



SORT Date (ascending)

FILTER Active

HEMATBGT

PROMOTERUS

GAABISABIS

CODE	HEMATBGT
DISCOUNT	20%
MINIMUM SPEND	200000
START	13 October 2019
END	31 October 2019

Figure 3. Promotion Form

Module 2: Order Form Development

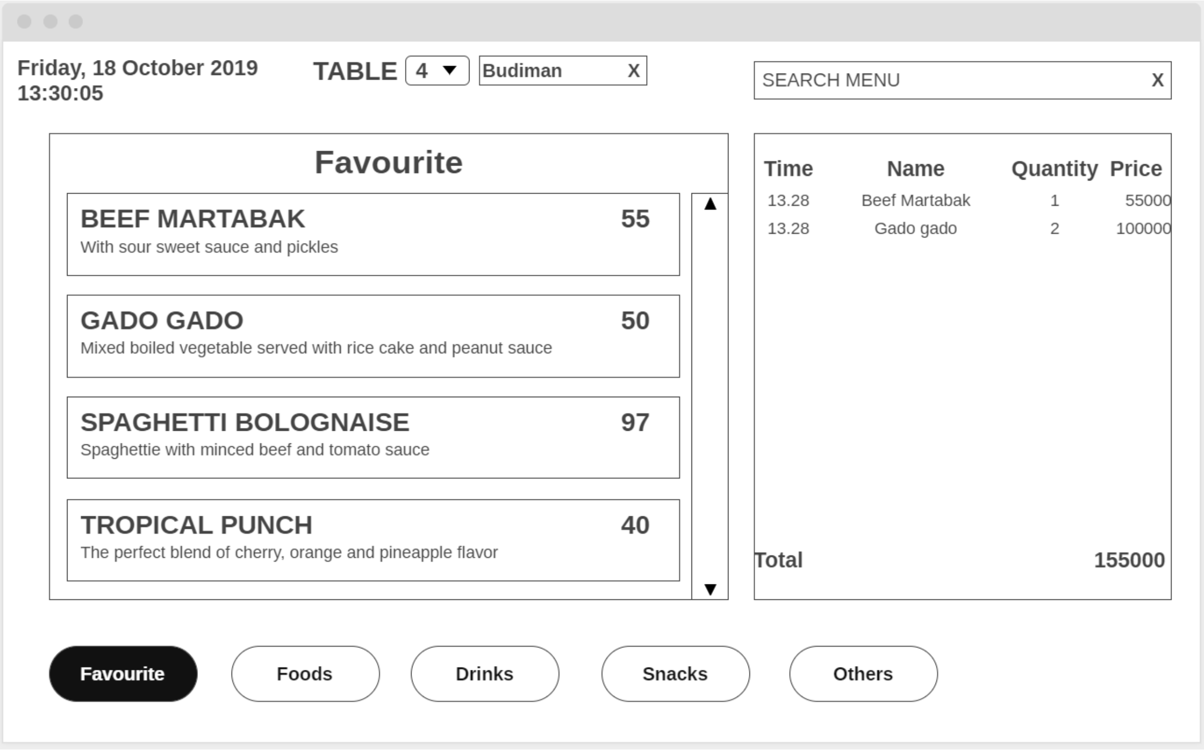
1. Database and Project Creation

Import the pre-made SQL script given to you to your local Microsoft SQL Server database server. The database should be named **“DB_PC_XX_Module2”**, where **XX** is your PC number. Afterwards, import all the data given in the excel file.

Create a new Visual Studio Project on your local machine named **“Project_PC_XX_Module2”**, where **XX** is your PC number.

2. Order Form

- ✓ Display live date and time in the left corner of the form.
- ✓ Table can be changed by selecting from the dropdown. There are 10 tables in the restaurant.
- ✓ Show customer name beside the table. This field can be edited or cleared. This field cannot be leaved empty, except there is no item in the order list.
- ✓ Menu can be searched by name on the right corner of the field.
- ✓ Display menu based on chosen category in the bottom side. Favourite button shows all menu that marked as favourite. Others category will show menu which is not Foods, Drinks, or Snacks.
- ✓ When a menu is chosen, display Add Order pop-up. The added menu will be shown in the order list. Calculate the estimated price.
- ✓ When an order is clicked, display Add Order pop-up. Re-calculate the estimated price after the order is modified.
- ✓ All changes made in this form is real time, therefore it does not need button trigger to save the data into database.



Friday, 18 October 2019
13:30:05

TABLE 4 ▼ Budiman X

SEARCH MENU X

Favourite

BEEF MARTABAK 55
With sour sweet sauce and pickles

GADO GADO 50
Mixed boiled vegetable served with rice cake and peanut sauce

SPAGHETTI BOLOGNAISE 97
Spaghettie with minced beef and tomato sauce

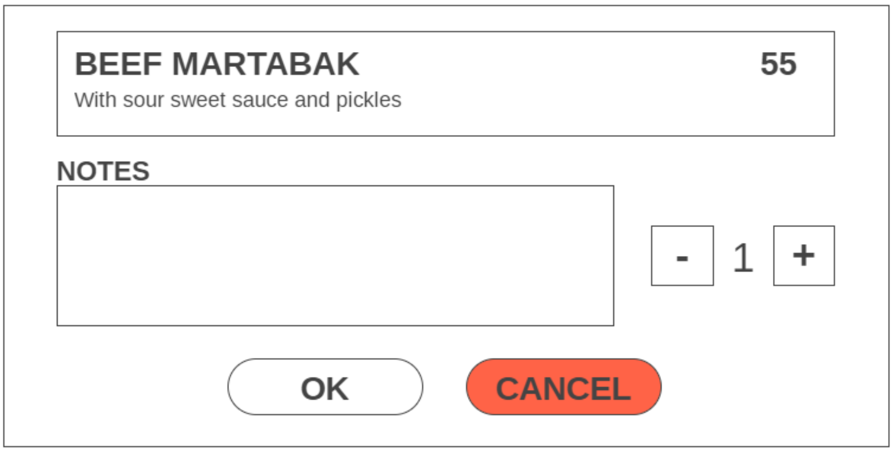
TROPICAL PUNCH 40
The perfect blend of cherry, orange and pineapple flavor

Time	Name	Quantity	Price
13.28	Beef Martabak	1	55000
13.28	Gado gado	2	100000
Total			155000

Figure 4. Order Form

3. Add Order Pop-up Form

- ✓ When shown after user clicks a menu, this form can be used to add quantity to the order. If the menu has been added before, any notes written here will be added to the previous one.
- ✓ When shown after user clicks an order, this form can be used to modify quantity of the order. Reducing the quantity to 0 will change the OK button to REMOVE button, thus removing the item from the list. Otherwise, it will update the quantity and notes if any.



BEEF MARTABAK 55
With sour sweet sauce and pickles

NOTES

- 1 +

Figure 5. Add Order Pop-up Form

Module 3: Payment and Payment History Form Development

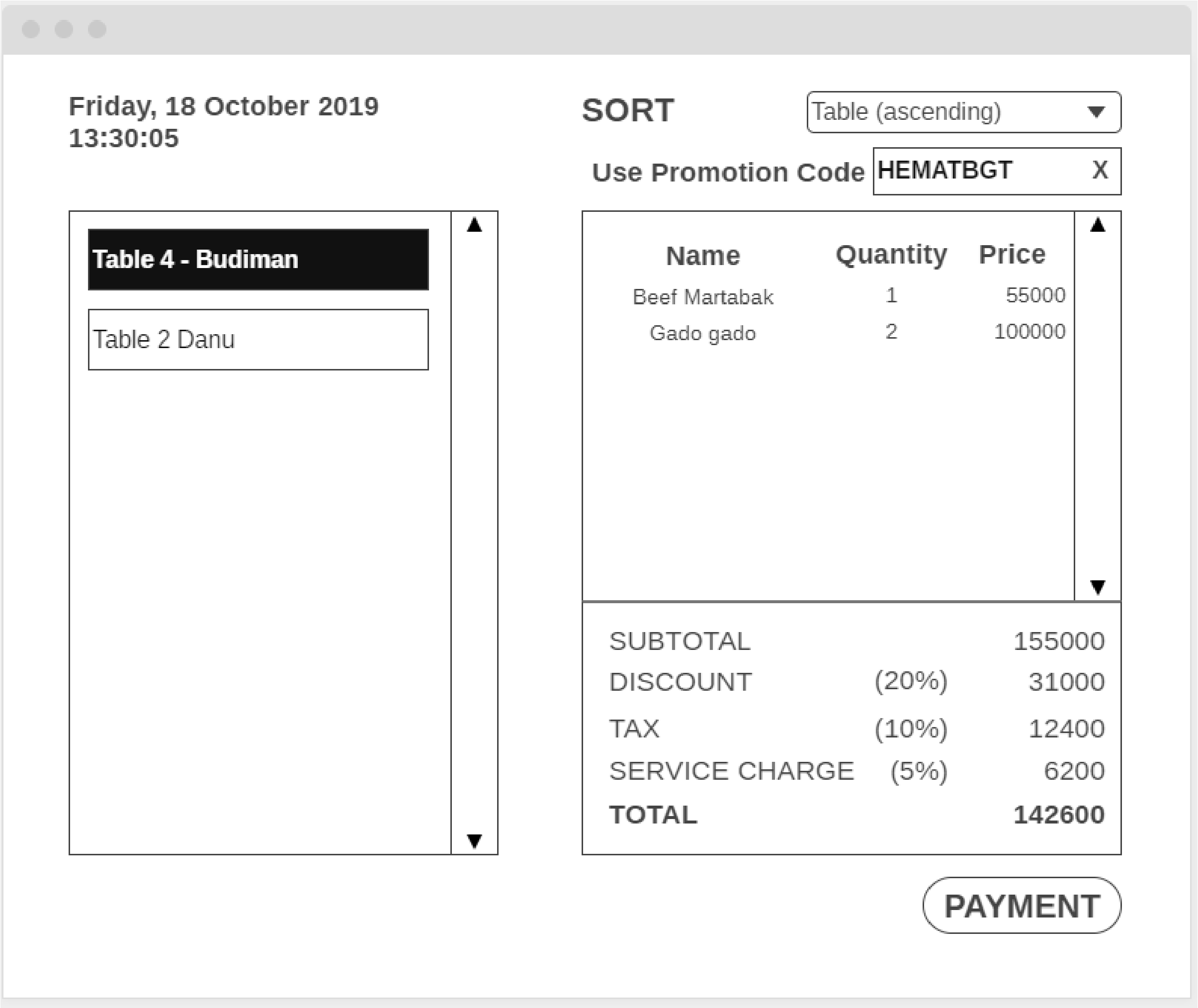
1. Database and Project Creation

Import the pre-made SQL script given to you to your local Microsoft SQL Server database server. The database should be named **“DB_PC_XX_Module3”**, where **XX** is your PC number. Afterwards, import all the data given in the excel file.

Create a new Visual Studio Project on your local machine named **“Project_PC_XX_Module3”**, where **XX** is your PC number.

2. Payment Form

- ✓ Display live date and time in the left corner of the form.
- ✓ Display all table that currently occupied by customer that has not made payment. Selecting one of the table will show the customer’s order. Calculate price of items, subtotal, discount (if any), tax, and service charge. Tax and service charge is in fixed percentage.
- ✓ Sort feature can be used to sort the displayed data. Available options are: Customer (ascending), Customer (descending), Table (ascending), and Table (descending).
- ✓ Promotion code can be inputted by typing in the code. Only valid promotion code will appear in the field. Validate the minimum spent requirement and active period of the promotion. If the code is valid, then the discount will be applied to the calculation. This field can be edited or cleared.
- ✓ When the Payment button is clicked, show Payment Confirmation pop-up form.



Friday, 18 October 2019
13:30:05

SORT: Table (ascending)

Use Promotion Code: HEMATBGT

Table 4 - Budiman

Table 2 Danu

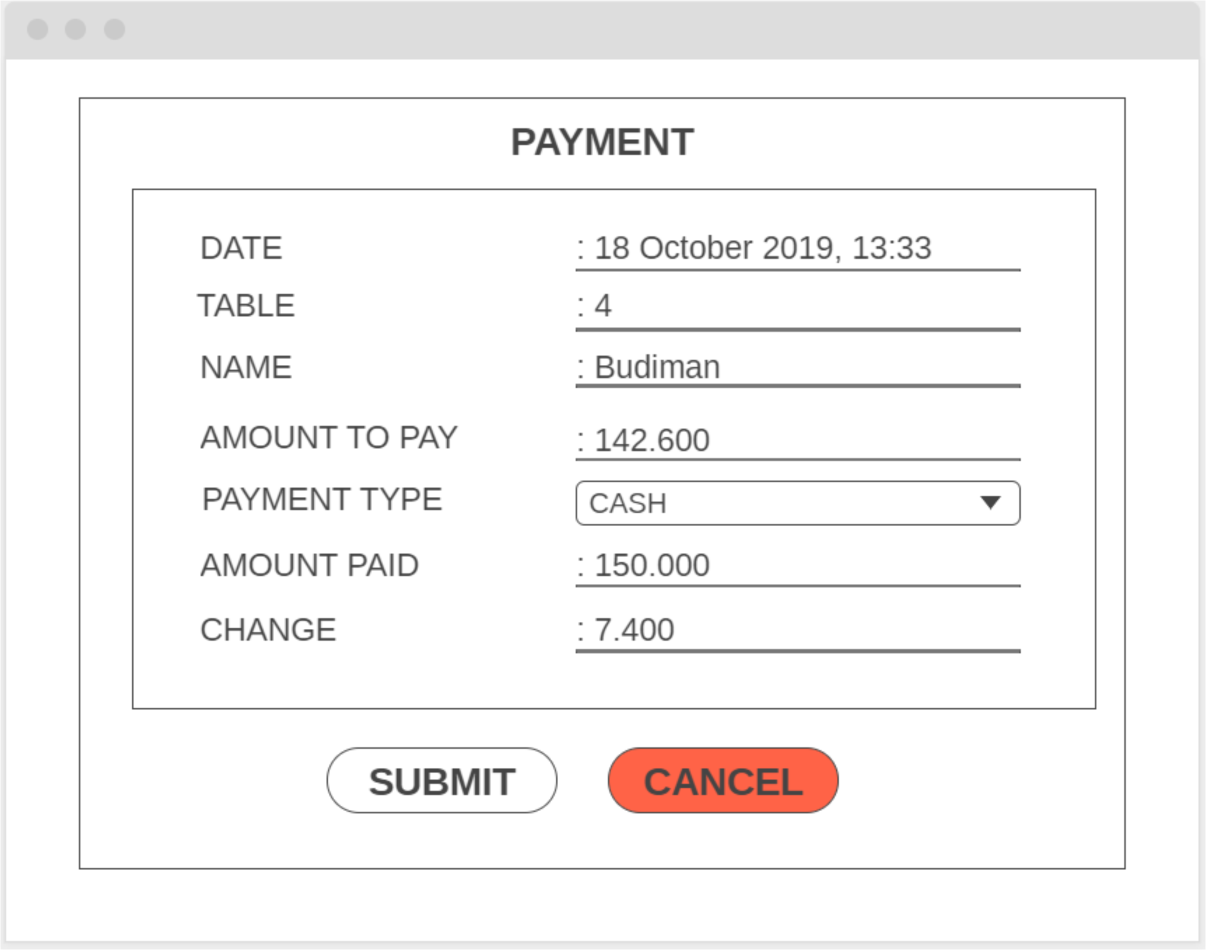
Name	Quantity	Price
Beef Martabak	1	55000
Gado gado	2	100000

SUBTOTAL		155000
DISCOUNT	(20%)	31000
TAX	(10%)	12400
SERVICE CHARGE	(5%)	6200
TOTAL		**142600**

Figure 6. Payment Form

3. Payment Confirmation Form

- ✓ The date and time are the current time when the form is opened
- ✓ Display all required data retrieved from the payment from. These values can be edited except amount paid (depends on payment type) and payment type.
- ✓ Payment type can be chosen between (cash, debit, and credit card). When cash payment is selected, user can insert amount paid field. The system then will calculate the change. For other payment, the amount paid field value should be the same with the amount to pay value.
- ✓ Clicking submit will record and finalized payment process, thus the table can be used for the next new customer.



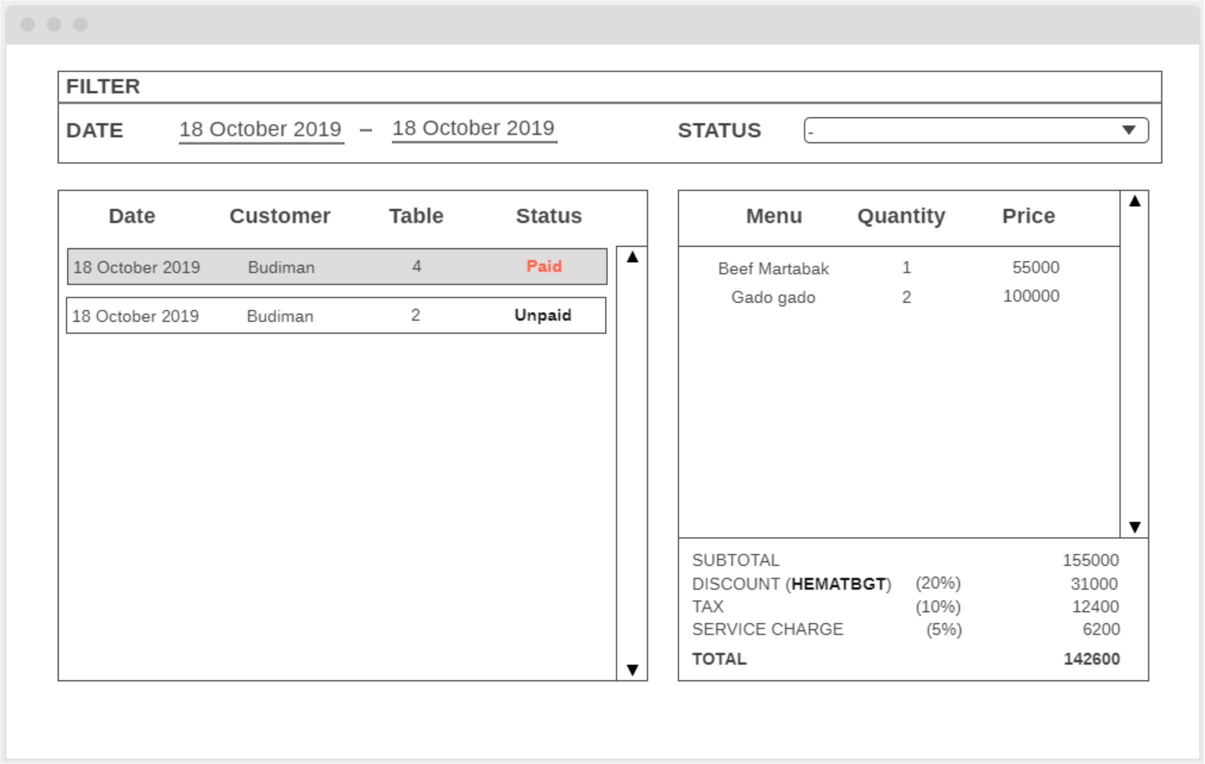
PAYMENT

DATE	: 18 October 2019, 13:33
TABLE	: 4
NAME	: Budiman
AMOUNT TO PAY	: 142.600
PAYMENT TYPE	CASH ▼
AMOUNT PAID	: 150.000
CHANGE	: 7.400

Figure 7. Payment Confirmation Form

4. Payment History Form

- ✓ Initially, this form will show all transaction made that day only, either paid or unpaid. Give clear sign whether a transaction is paid or not.
- ✓ Displayed data can be filtered based on date range and payment status (Paid or unpaid).
- ✓ When a transaction item is selected, displayed all menu ordered under the transaction.
- ✓ If the transaction status is paid, then show the detail payment too. Otherwise, show price estimation (subtotal only).



FILTER

DATE 18 October 2019 – 18 October 2019 STATUS -

Date	Customer	Table	Status
18 October 2019	Budiman	4	Paid
18 October 2019	Budiman	2	Unpaid

Menu	Quantity	Price
Beef Martabak	1	55000
Gado gado	2	100000

SUBTOTAL		155000
DISCOUNT (**HEMATBGT**)	(20%)	31000
TAX	(10%)	12400
SERVICE CHARGE	(5%)	6200
TOTAL		**142600**

Module 4: Database Analysis for Catering System Information

ESEMKA Restaurant want to expand its business to catering. There are two type of catering services they can provide, snacks and rice box. The applications will be separated from the existing one. In this early prototyping stage, you will be asked to design the database and several user interface design. The features required are as follows:

1. Catering Package

- ✓ ESEMKA Restaurant has lists of all menus that can be ordered. Each item has its own category, such as: food, snacks, desserts, or drinks.
- ✓ Customer cannot order each item individually. The item should be sold in a group known as package.
- ✓ Package is combinations of several different menu items, with various type and quantity. Each package has its own unique name and price. There is minimum quantity to be met for each package to be ordered. Each package has various estimation time to finished.
- ✓ The package can be changed regularly. For example, there is a snack package that contains: two risoles, one mango pudding, and one glass of mineral water. Meanwhile, there is other package that consist of one risoles, one chocolate pudding, one lemper and a glass of mineral water.

2. Order

- ✓ There are two types of customer: regular and member. You don’t need to become a member to order packages. However, a member can get additional benefits such as free delivery cost and extra discount.
- ✓ As a member, the customer data is stored in the system. Required data are name, email, phone number, address, place of birth, birthdate, and join member date.
- ✓ When registering an order, customer must decide the pickup date of the catering and whether using delivery services or not. Regular customer must fill in name and phone number or email.

- ✓ As a member, the system will retrieve customer data from the database. Both member and regular customer must fill in delivery destination if only delivery service is chosen.
- ✓ Order data can still be updated maximum three days before the pickup date. Otherwise no changes can be made.

3. Payment

- ✓ There are three acceptable payment type: cash, debit, and credit card.
- ✓ As a member, there will be additional 5% discount. If there are special event or promotion, the code should be entered when processing payment. Make sure that the event or promotion is still active.
- ✓ Payment is made twice. The first payment is 50% of the total payment and should be done when placing the order. Second payment should be done on the pickup date.
- ✓ If the regular customer chooses a delivery service, additional fee will be added. The fee will be imputed to the system. The amount is as previously discussed with the customer during the order process.
- ✓ There will be always 5% tax for every payment.

Based on the given requirement above, your tasks are:

1. Design an Entity Relationship Diagram (ERD) representing the given requirement. Make sure to define relationship and multiplicity between entities. You can use ERD given in this test project as reference.
2. Data dictionary explaining each entities in your ERD. You can use the given data dictionary in this test project as guidelines.
3. Create a new Visual Studio Project on your local machine named **“Project_PC_XX_Module4”**, where **XX** is your PC number. Design at least three forms to accommodate: managing catering package, processing order, and processing payment. You are only required to create the design without any working functionality in the form.
4. (Optional) Additional documentation, if you decided there are matters that should be further explained.

- Good luck and do your best! -