

Introduction

1.1 Industry Selected

The industry that we have chosen is related to the food and beverage industry as this industry is an ordinary approach in our daily life. In this modern era, most of the equipment and needs for every industry have moved towards digitization and the food and beverage industry is no exception. Therefore, we are tasked to develop an enhanced food ordering system for the restaurant to increase the efficiency and convenience in operation.

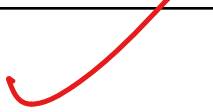
1.2 Company Background

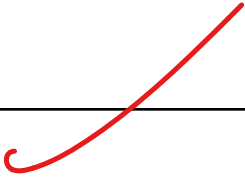


The A Plus Nasi Lemak House is a restaurant first founded in Malaysia where it is well-known for its Nasi Lemak and chicken drumstick. Not to mention, there are several types of local food and beverages sold in the restaurant. They have also grown abroad which is beloved by many others. One of many are India, the United Kingdom and many more. In our proposed system, it will integrate the main functions and substantiate the operation flow with a good user-interface that caters the needs of all customers.

1.3 Functionality

Function	Description	Arithmetic Equation
Login/Register/Logout (Junyao's)	Users can use they want to login as staff or customers. If they log in as a customer, they can choose to become a member and a code will be provided as a discount that can be used in payment. If login as a staff, there will be a choice of report, stock available. User also can logout to end the program	
Cancellation (Nicholas')	In short, during payment users can opt to remove certain items from the total orders where they can choose to remove food or beverage. However, when there are no orders left to cancel, users will then be redirected to specific menus.	Food $Fqty - cancelAmount$ $Fsqty + cancelAmount$ Beverage $Bqty - cancelAmount$ $Bsqty + cancelAmount$
Ordering System(Jessie's)	<p>The order function consists of three types which includes dine in order, delivery and take away order. When a delivery order is chosen, the users can straight begin the order and a charge of RM5.00 for delivery fee will be added and also the 5% of each food and beverage for packaging. When a take-away order is chosen, the interface and condition is similar to the delivery order except the charge of delivery fee.</p> <p>Then this function will display an organized product listing. The products will be sorted according to the categories which are food and beverage. Every food or beverage will have its own description with the original price. After viewing the menu, the customer can choose food and beverage to order. There will be a confirmation and add on for the user before they proceed.</p> <p>Next, a small menu will prompt the user to cancel or make payment. In payment, users will be able to observe the price</p>	$SST = (subtotal) * 6\%$ $ServiceTax = (subtotal) * 5\%$ $PackagingTax = (subtotal) * 5\%$ $DeliveryFee = RM5$ Dine in $total = subtotal + SST + ServiceTax$ Delivery $total = subtotal + SST + ServiceTax + PackagingTax + DeliveryFee$ Take away $total = subtotal + SST + ServiceTax + PackagingTax$

	as well as the food ordered. Subtotal of each food, delivery fee, sst, packaging tax, discount , rounding adj and total will be displayed for users information. Only cash will be accepted as a payment.	
Restock(Jessie's)	This is one of a function inside the staff module which displays stock remaining and able to restock for insufficient product. The price used to restock will be reduced in daily summary report to count the net earning.	stock =currentStock+restock restockPrice
Membership (Nicholas')	<p>To summarize, users will be divided into 2 categories. Example, users with a membership and without a membership. Membership can be renewed by new users as well as existing users. Users with membership will be benefited with various discounts and favours etc. Depending on the price of each order. Lastly, it will display the duration of the membership before its termination.</p> <p>In addition, users with members can choose to review their membership duration as well as validate the date for their liking which could be useful for planning and validation of membership expiration.</p>	<p>Membership renewal systemDay + userDays systemMonth + userMonth systemYear + userYear</p> <p>Membership days left systemDay - userDays systemMonth - userMonth systemYear - userYear</p>
Price adjustment (Kae Lun's)	<p>Under the staff module, price adjustment is one of the functions that allows the staff to control the pricing by exact value or percentage. I believe this will ease the staff when there is a need of adjusting the prices whether it is to raise or to drop.</p> <p>Firstly, the function will print out the list of products and prices according to the category chosen for the staff to refer to. Then, a prompt of adjustment methods will be indicated. There are several choices of adjustment methods which include increasing all products by percentage, increasing all</p>	<p>Increase all by value(Using Loop) productPrice += value</p> <p>Decrease particular by value productPrice -= value</p> <p>Increase all by percentage(Using Loop) productPrice+= (productPrice*percentage/100)</p>

	<p>products by value, decreasing all products by percentage and decreasing a particular product by value. When accepting the user input, proper validations will be implemented to ensure the program is free of any error.</p> <p>Next, different prompting messages will be displayed respectively to the adjustment method. In particular, the input field of percentage requires a '%' symbol to proceed as well as the limitation up to 200% per adjustment, also the input field of value is set to be a maximum of RM99.99 per adjustment. If anonymous characters are being input into the field, validation will take action upon it then print out error messages and prompt and read recursively until it is correct.</p> <p>Finally, modification upon the prices will be performed after confirmation. Afterwards, the new prices will be displayed, the staff can choose to continue the next adjustment or return to the staff module from the current one. As to ensure a clean and tidy output is produced, an appropriate clear screen is applied.</p>	<p>Decrease all by percentage(Using Loop)</p> <p>productPrice-= (productPrice*percentage/100)</p>
<p>Report (Daily Summary Report) (Kae Lun's)</p>	<p>The report function is specifically designed to produce an output for analyzing purposes. The types of report prepared are Daily Summary Sales Report and Daily Summary Expenses Report. Literally, a sales report records every single information regarding the earning of the day while an expenses report jots down the amount used for the daily expenditure. Easy to say, it provides an organized layout, title and attributes to convenient the reader.</p> <p>As we enter the report module, the program will request for the type of report which the staff wish to view. As usual, confirmation to proceed will be asked for every choice.</p>	<p>Total Quantity of Product Sold(Accumulative)</p> <p>Qty+= qtySold</p> <p>Total collection(Using Loop to collect all sales)</p> <p>subtotal=productSellingPrice*qty totalCollection=subtotal</p> <p>Total SST(5% calculated in 3 decimal points)</p> <p>totalSST=totalCollection*sstPercent</p>

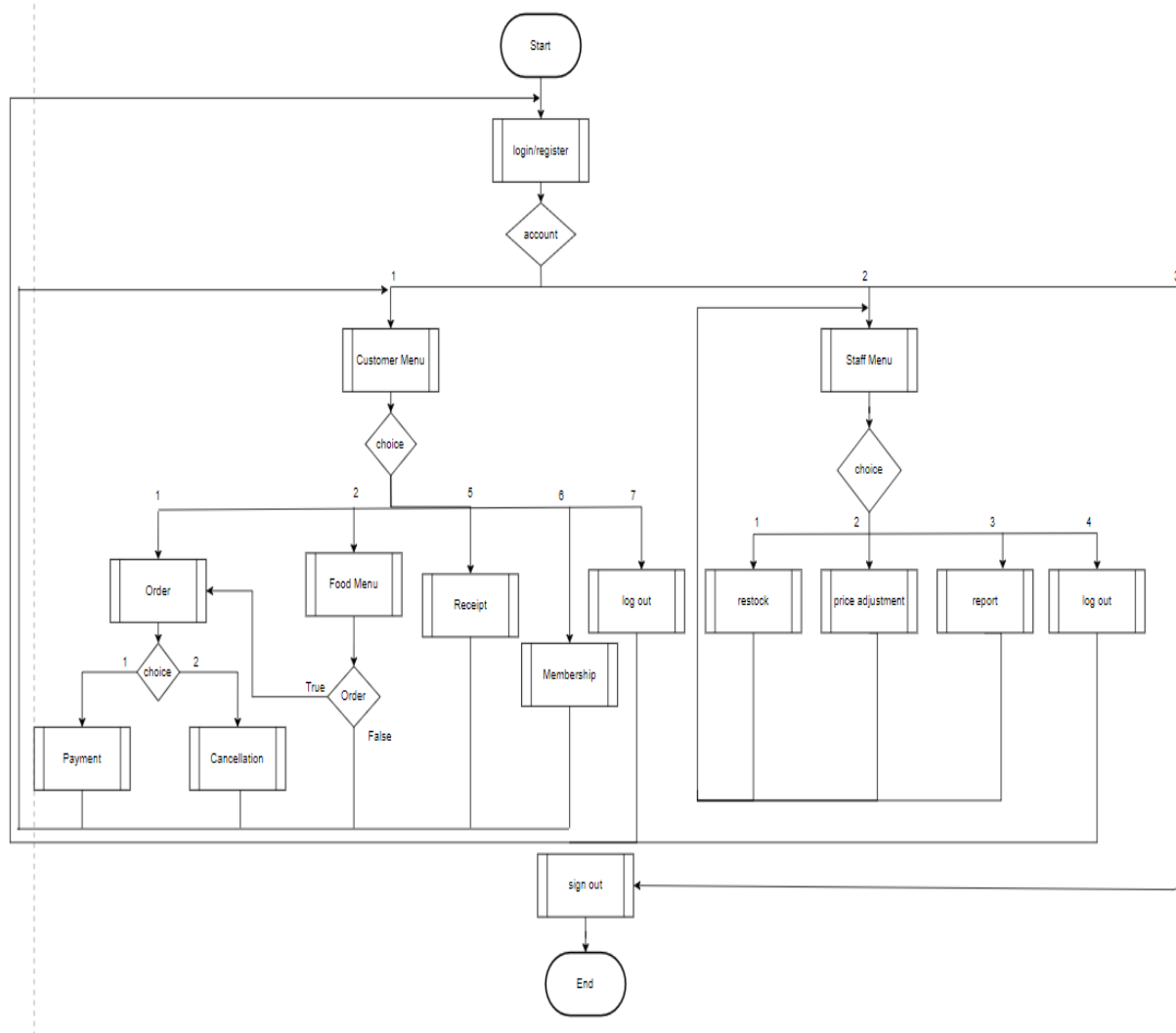
	<p>Moving on, on the top of both reports, a title with date will be printed. Example: 'Earning Report on DD-MM-YYYY'. Since the date is automatically gotten from the system itself, it will require no input or any insertion from the staff.</p> <p>First of all, to make a sales report, the subtotal for each product, sst, extra charge and discount amount will be calculated. Then, the net earning is to be obtained by performing summation and subtraction upon the relevant amount. In the end of this report, a comparison will be implemented to conclude the best-selling Nasi Lemak of the day.</p> <p>Moving to the expenses report, it will track all the quantities of products restocking. Then, total up the amount paid for restocking. Both of the reports will remain on the screen for reading purposes as long as the user does not enter any key as it will quit when any of the key on keyboard is entered.</p>	<p>age/100</p> <p>Total Extra Charge $\text{extraCharge} += (\text{deliveryfee})$ $\text{extraCharge} += (\text{packagingfee})$</p> <p>Total discount $\text{totalDiscount} += \text{discountOfEachPayment}$</p> <p>Net earning $\text{netEarning} = \text{totalCollection} - \text{totalDiscount}$</p> <p>Total Quantity of Restock $\text{qty} += \text{restockQty}$</p> <p>Total Expenses(Restock amount) $\text{totalExpenses} += \text{restockPaid}$</p>
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1.4 Assumption

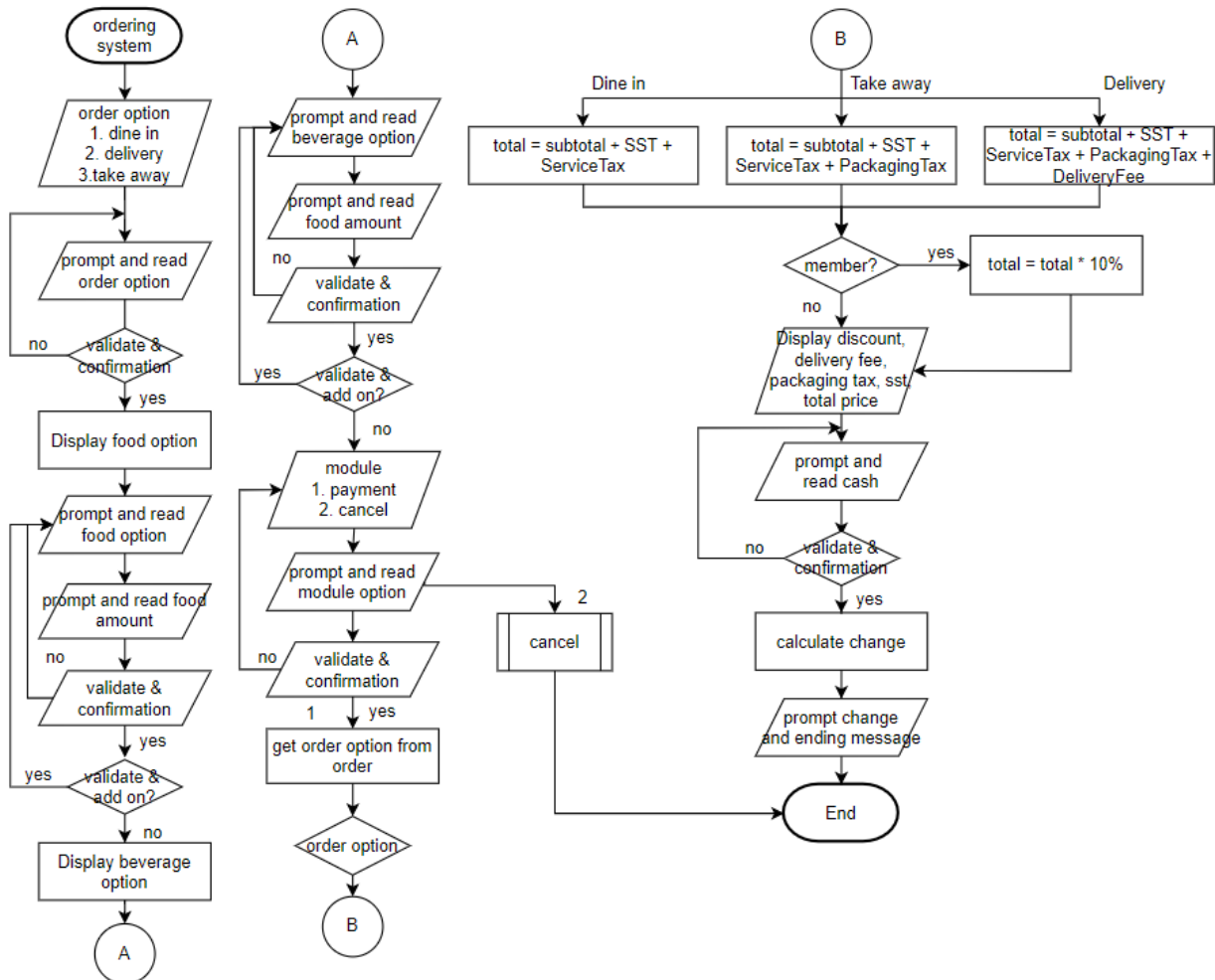
1. Every delivery order will require a RM5.00 delivery charge.
2. For every order of take away services, a 5% packaging charge on each product will be applied.
3. For customers who are members of the restaurant, a 10% discount will be applied on the total bill as a membership benefit.
4. No cancellation of order is allowed after payment.

1.5 FlowChart

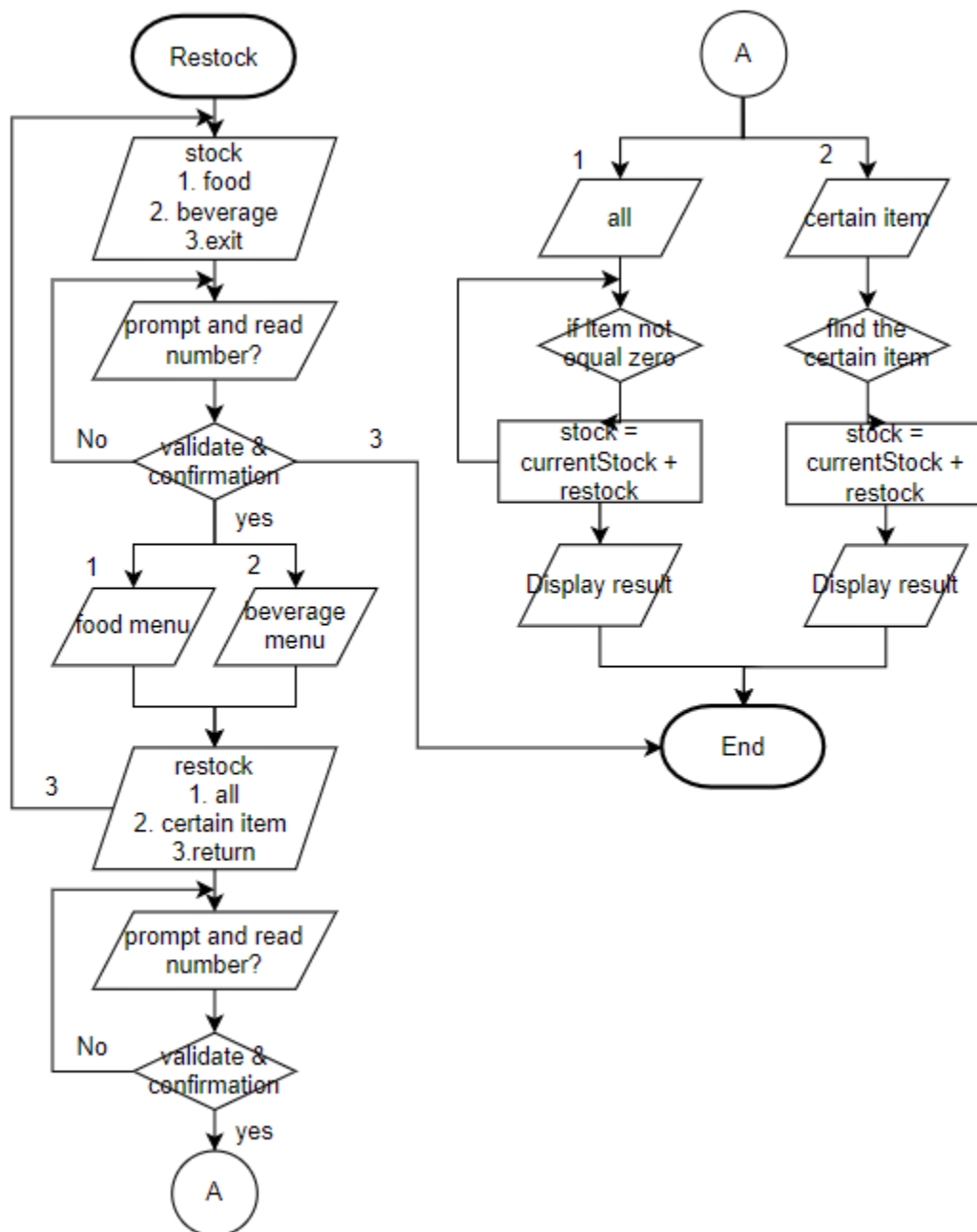
(Overall Flowchart)



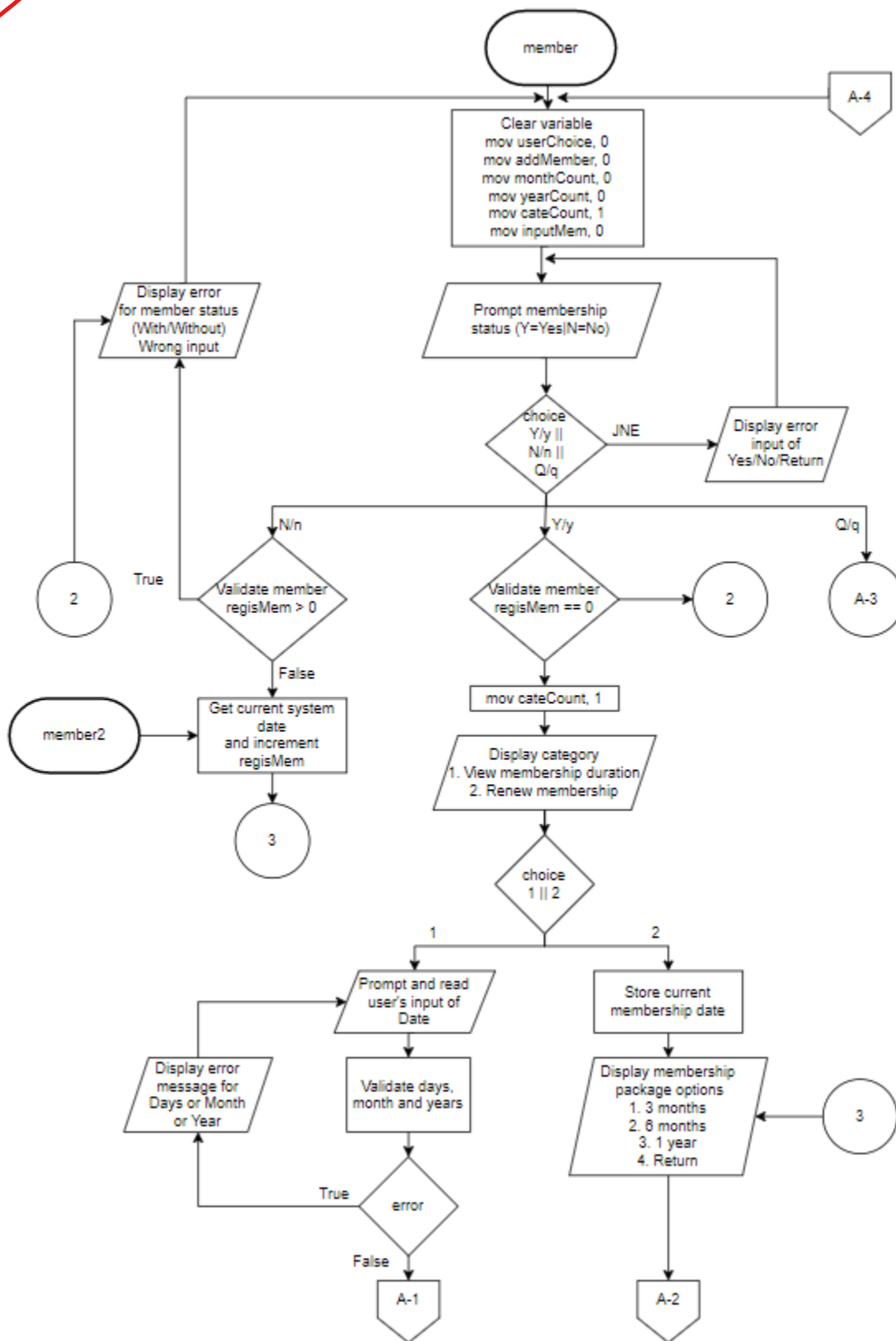
(Sub-flowchart) - Ordering System

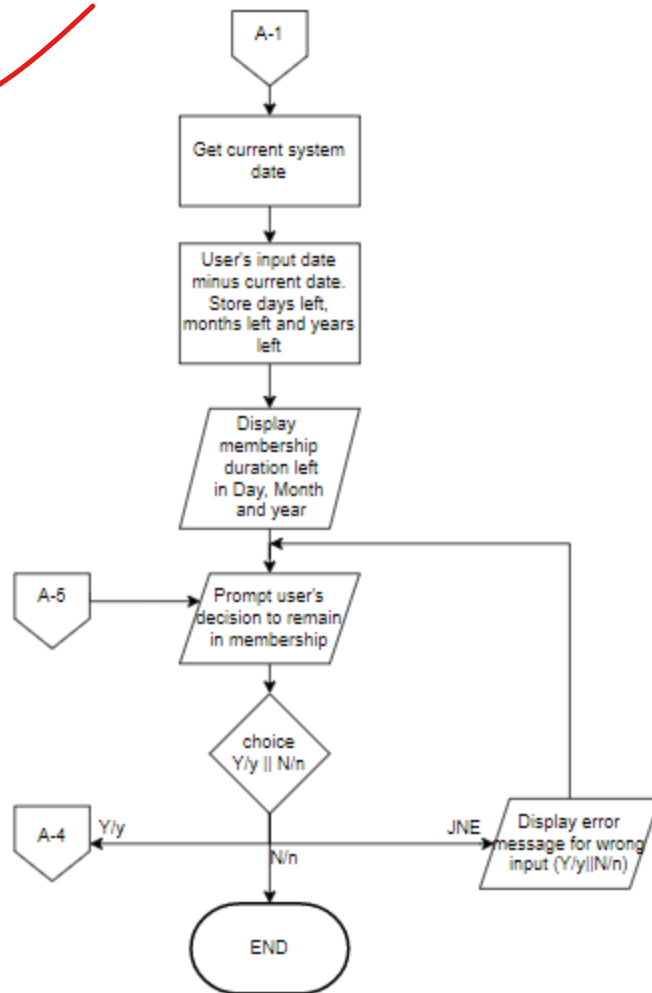


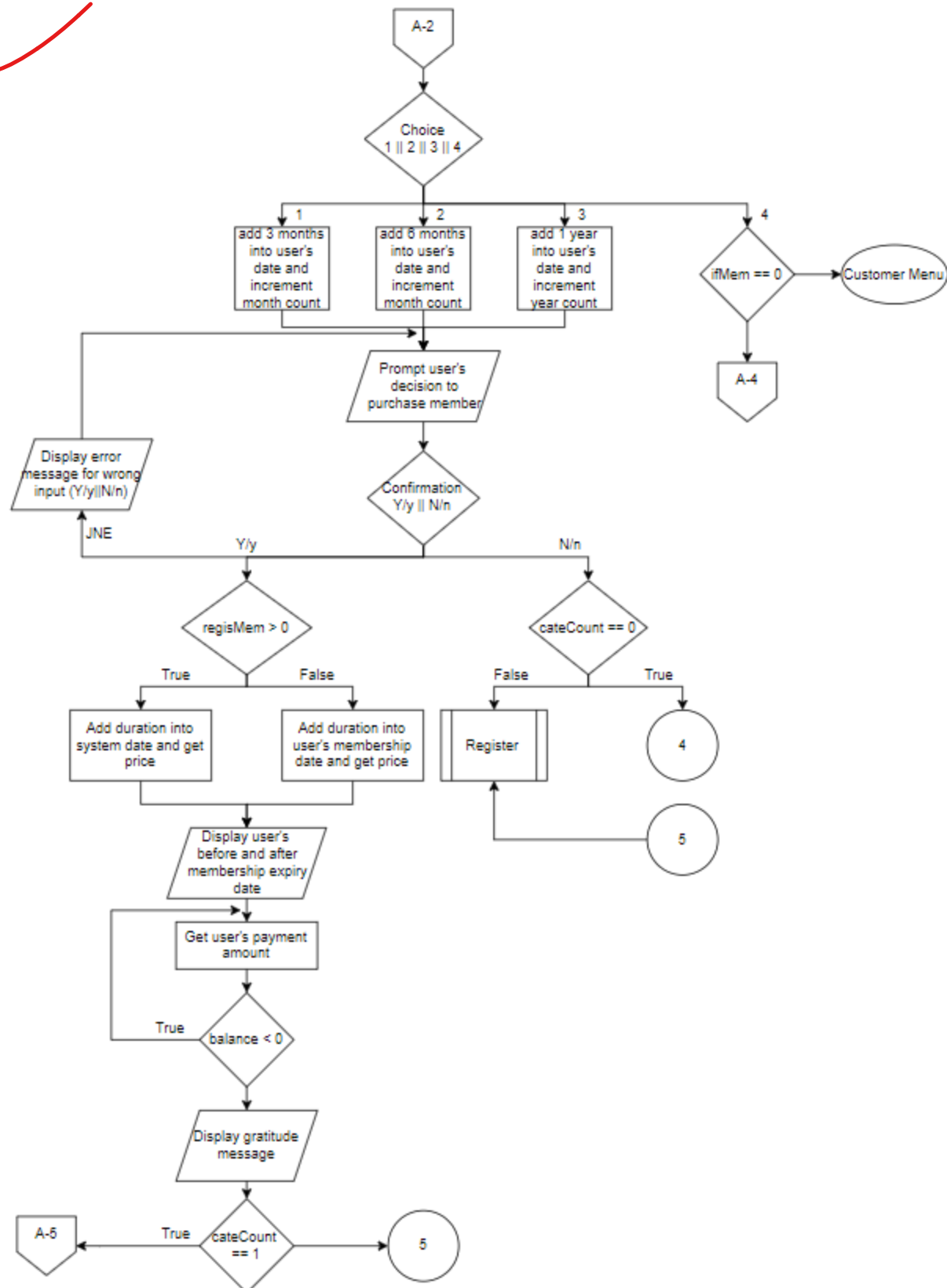
(Sub-flowchart) - Restock



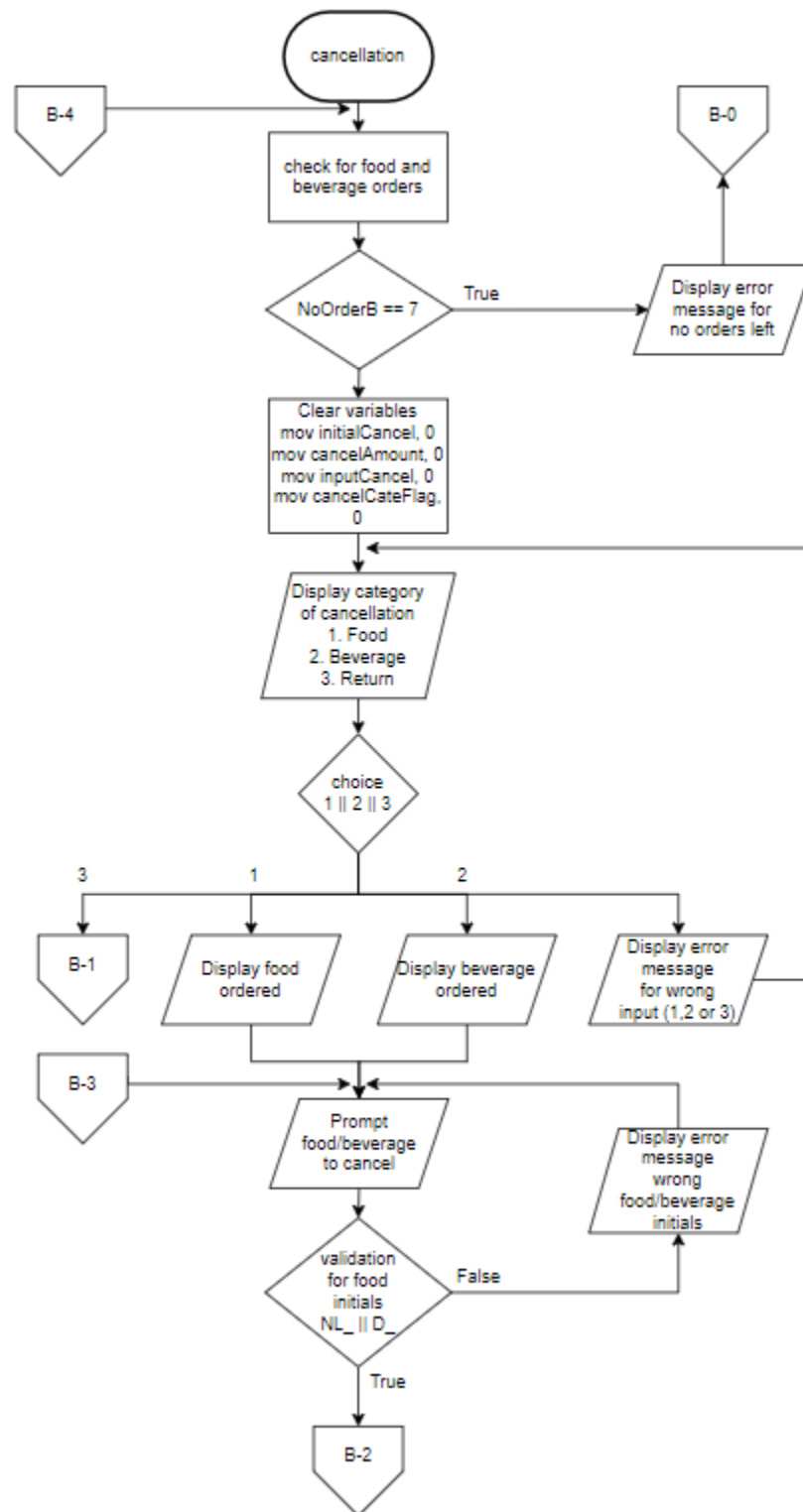
(Sub-flowchart) - Membership

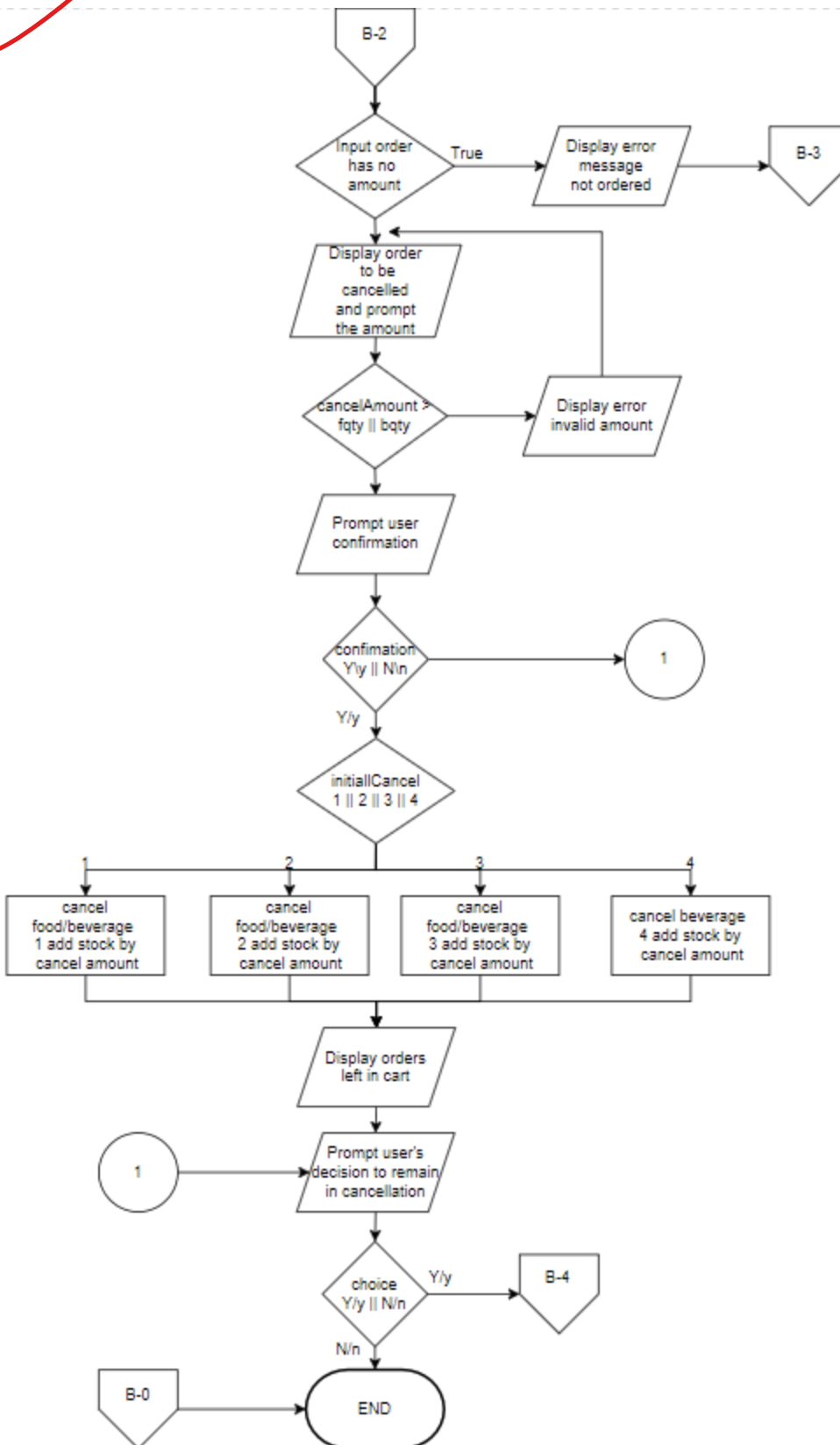




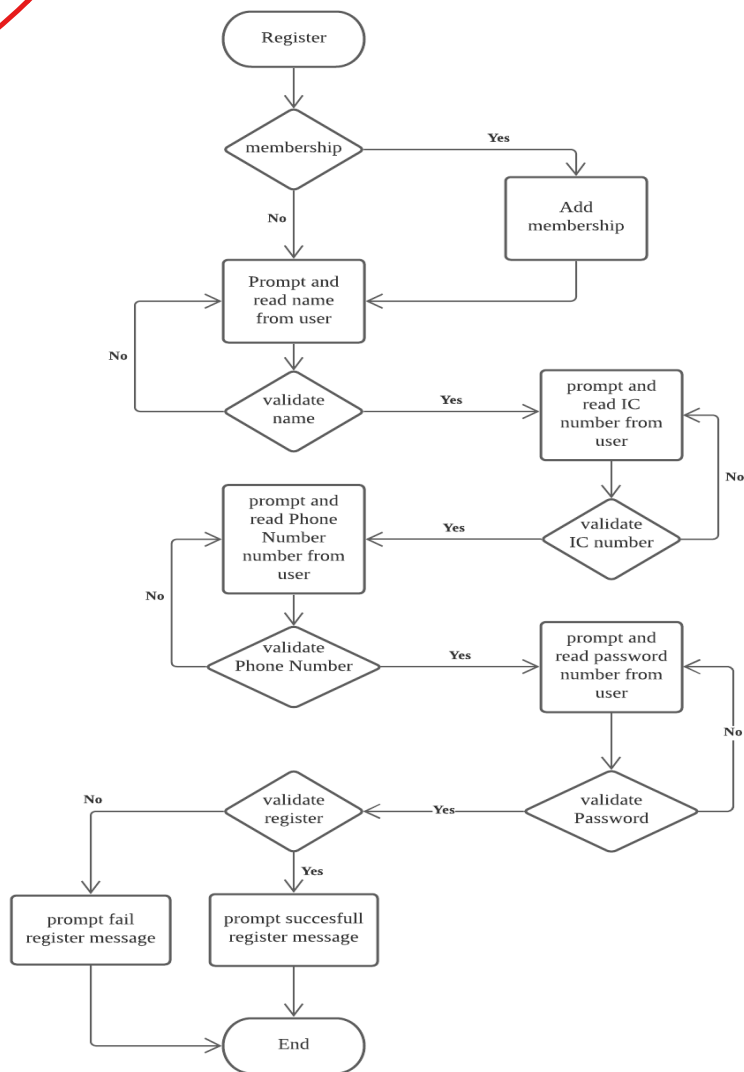


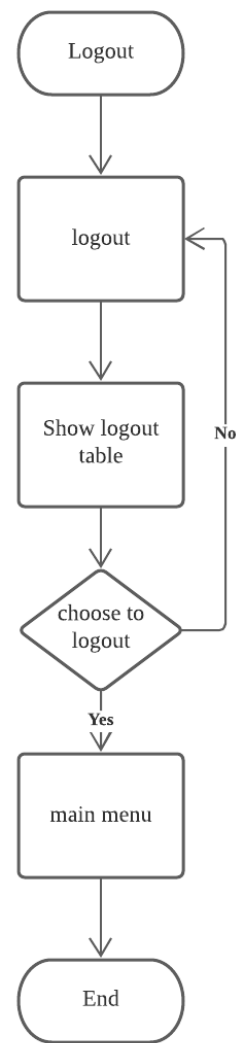
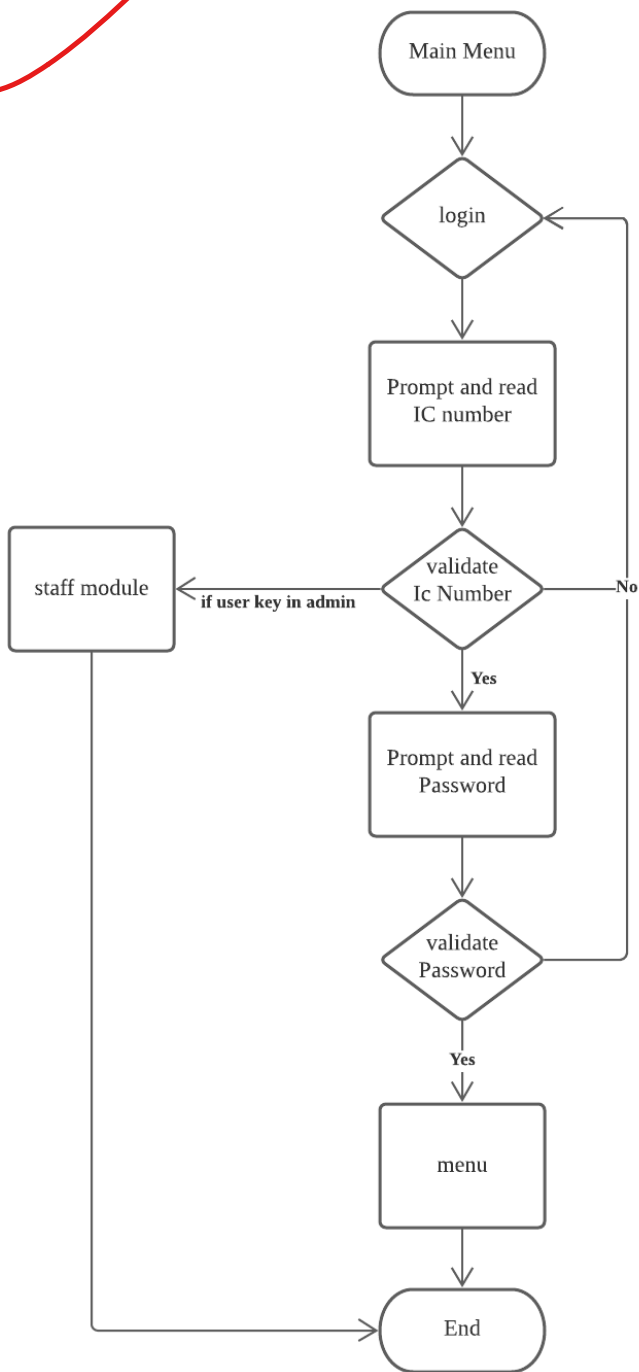
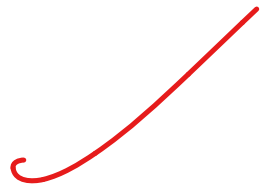
(Sub-flowchart) - Cancellation



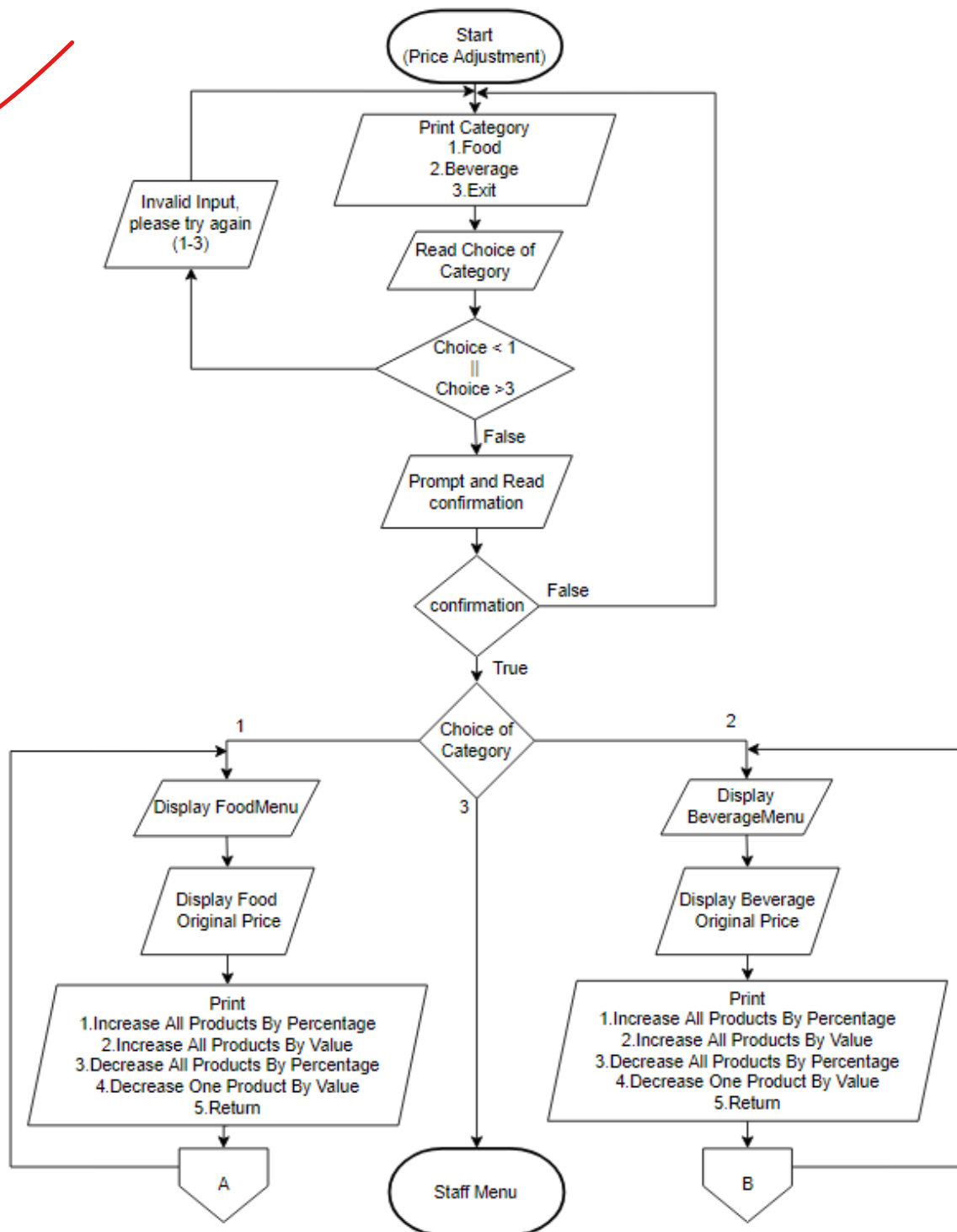


(Sub-flowchart) - Registration

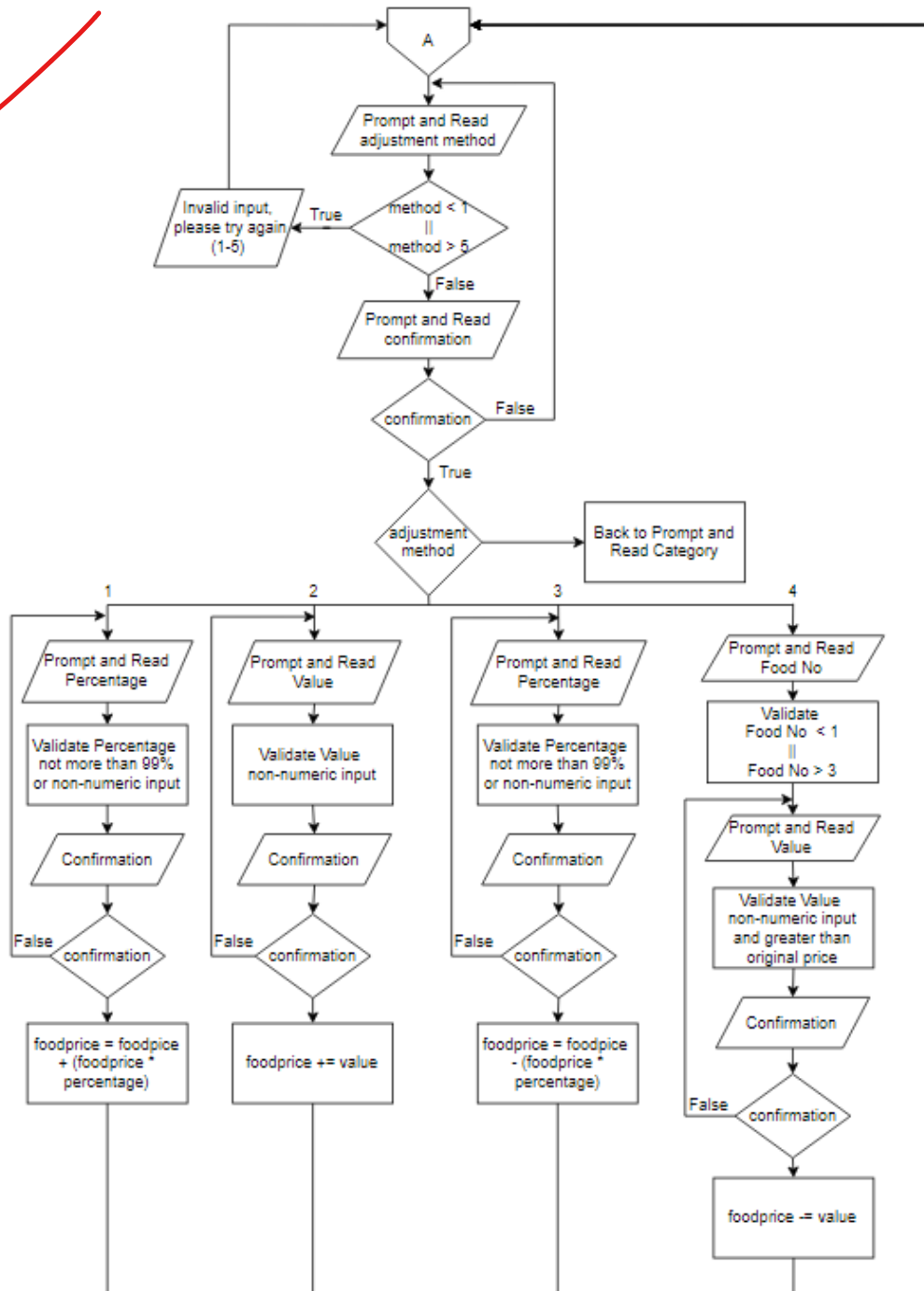




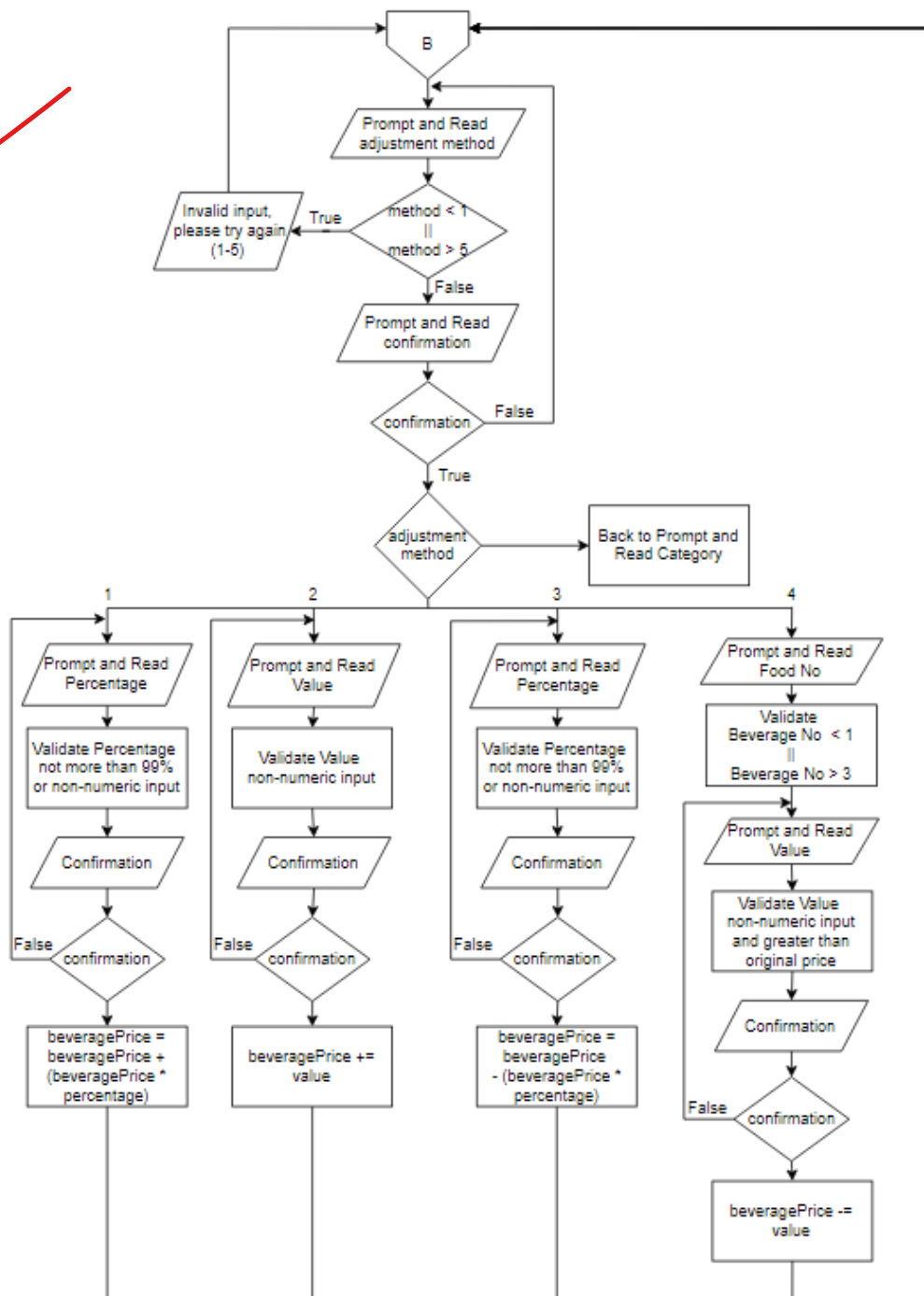
(Sub-flowchart) - Price Adjustment



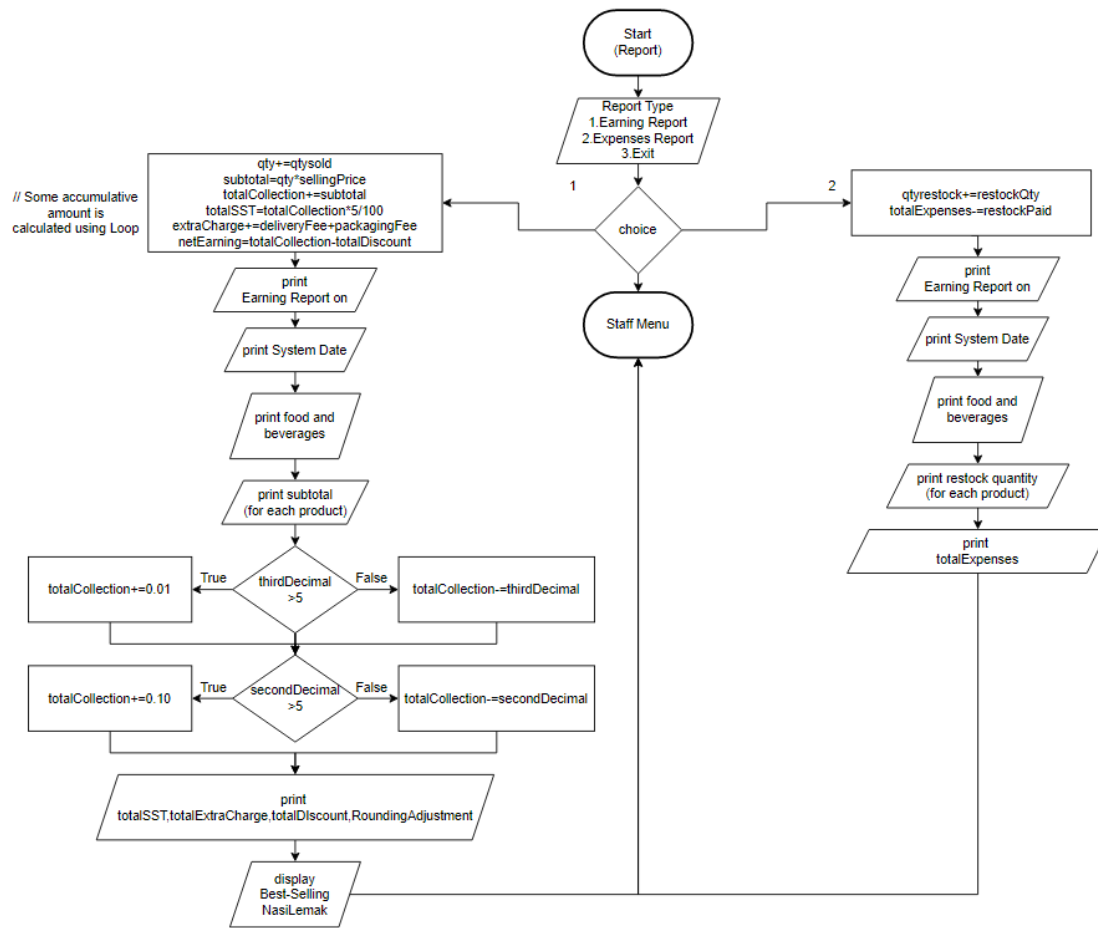
(Sub-flowchart) - Price Adjustment[Continue]



(Sub-flowchart) - Price Adjustment[Continue]



(Sub-flowchart) - Report



Results & Discussion

Customer module



This is the first page and also the main menu of A Plus Nasi Lemak House's food ordering system. At first, the logo of our company is displayed and followed by a sentence that welcomes the users. Users get to choose to log in, register, guest or exit and there will be a confirmation being prompt.


Login module

In the first page, the user may enter 1 to do the login function. After it will prompt a confirmation message to confirm that user key in.



Key in IC number

After choosing the login function, the user can key in the IC number and password to login to order. When the user key in the IC number, if the IC number is matched with the system, it will proceed to let the user to key in the password else it will prompt the error message and back to the main page.



```
Welcome to Login Page!
Please Fill in the IC number and Password to Login.
Please enter your IC number(without [-]) :
```

```
Welcome to Login Page!
Please Fill in the IC number and Password to Login.
Please enter your IC number(without [-]) :asdfghrtr
Wrong IC Number! Please any to login again!
_
```

```
Welcome to Login Page!
Please Fill in the IC number and Password to Login.
Please enter your IC number(without [-]) :021025141065
Please enter your Password :_
```

Key in Password

After validating the IC number, the system will let the user to key in the password. If the user key in the correct password it will proceed to the Customer Menu, else it will prompt error message and back to the main page

```
Welcome to Login Page!
Please Fill in the IC number and Password to Login.
Please enter your IC number(without [-]) :021025141065
Please enter your Password :1234567
Wrong Password! Please any to login agin!
```

```
Welcome to Login Page!
Please Fill in the IC number and Password to Login.
Please enter your IC number(without [-]) :021025141065
Please enter your Password :_
```



(Login successful then will proceed to this customer menu)

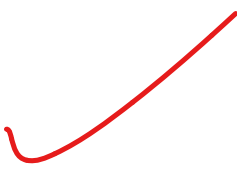
Register Module



When the user chooses 2 then it will go to the register function.

Register name

First of the register, the user needs to key in three words above for a name. If the user key is less than three words then it will prompt an error message and let the user key in the name again, else it will continue the register.



```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) > n
Please enter your name :yong
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yong

Please enter your IC number not including(-) :
```

```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) > n
Please enter your name :yo
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yo

Please key in 3 word or above name!!
Please enter your name :_
```

Register IC

After validating the name, the user may key in the IC number not less than 12 numbers. If the user key is less than 12 words the system will prompt an error message and let the user key in again, else it will continue the register.

```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) > n
Please enter your name :yong
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yong

Please enter your IC number not including(-) :1234
Confirm your Ic Number ? [Y=yes, N=no] :y
Your ic number is 1234
```

```
Please key in just 12 numbers!!
Please enter your IC number not including(-) :_
```

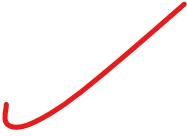
```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) > n
Please enter your name :yong
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yong

Please enter your IC number not including(-) :021025141065
Confirm your Ic Number ? [Y=yes, N=no] :y
Your ic number is 021025141065

Please enter your Phone Number not including(-) :
```

Register Phone Number

After validating the IC number , the user may key in the phone number not less than 10 numbers. If the user key is less than 10 words the system will prompt an error message and let the user key in again, else it will continue the register.



```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) > n
Please enter your name :yong
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yong

Please enter your IC number not including(-) :021025141065
Confirm your Ic Number ? [Y=yes, N=no] :y
Your ic number is 021025141065

Please enter your Phone Number not including(-) :0102351151
Confirm your Phone Number ? [Y=yes, N=no] :y
Your Phone Number is 0102351151


Please enter your Password in any 8 or above Alphanumeric symbols :
```

```
Please enter your Phone Number not including(-) :01234
Confirm your Phone Number ? [Y=yes, N=no] :y
Your Phone Number is 01234

Please key in just 10/11 numbers!!
Please enter your Phone Number not including(-) :_
```

Register Password

After validating the phone number , the user may key in the password not less than 7 words. If the user key is less than 7 words the system will prompt an error message and let the user key in again, else it will prompt all the details of the user.



```
Do you want to be a member ? (Y=Yes;N=No;Q=Main Menu) > n
Please enter your name :yong
Confirm your Name ? [Y=yes, N=no] :y
Your Name is yong

Please enter your IC number not including(-) :021025141065
Confirm your Ic Number ? [Y=yes, N=no] :y
Your ic number is 021025141065

Please enter your Phone Number not including(-) :0102351151
Confirm your Phone Number ? [Y=yes, N=no] :y
Your Phone Number is 0102351151

Please enter your Password in any 8 or above Alphanumeric symbols :0123456789
Confirm Your Password? [Y=yes, N=no] :y
Your Password is 0123456789
```

```
Please enter your Password in any 8 or above Alphanumeric symbols :123
Confirm Your Password? [Y=yes, N=no] :y
56789Password is 123

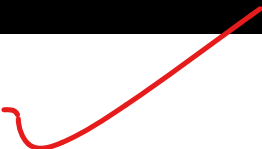
Please key in 8 or above as password!!
Please enter your Password in any 8 or above Alphanumeric symbols :
```

Confirm to register

After all the details are keyed in by the user, it will show all the details and let the user confirm to register. If the user chooses yes for the register, it will save all the data to the system and let the user do the login function. Else, the user chose no for the register, it did not save the data of the user into the system and the user will not be able to do login function. When the register is done the system will automatically back to the main page.

```
Your Name is yong
Your ic number is 021025141065
Your Phone Number is 0102351151
Your Password is 0123456789

Please confirm Your details.
Confirm to register [Y=yes, N=no] :y
Register Successful! Press any back to home Page.
```



```
Your Name is yong
Your ic number is 021025141065
Your Phone Number is 0102351151
Your Password is 123456789

Please confirm Your details.
Confirm to register [Y=yes, N=no] :n
Fail to register.Press any back to home Page.
```



```

FOOD MENU
-----MAIN DISH-----
NL1 Nasi Lemak with Fried Chicken 100
NL2 Nasi Lemak with Rendang Chicken 100
NL3 Nasi Lemak with Curry Chicken 100

RESTOCK
1. All
2. Certain Item
3. Return

Enter the Category to Restock : 1
Do you want to confirm(Y=yes;N=no)? y
Enter the Restock quantity (Max Stock Qty = 999) :10
Do you want to confirm(Y=yes;N=no)? y
Enter the price used to Restock : RM 7.00
Do you want to confirm(Y=yes;N=no)? _

```

```

FOOD MENU
-----MAIN DISH-----
NL1 Nasi Lemak with Fried Chicken 110
NL2 Nasi Lemak with Rendang Chicken 110
NL3 Nasi Lemak with Curry Chicken 110

RESTOCK
1. All
2. Certain Item
3. Return

Enter the Category to Restock : 2
Do you want to confirm(Y=yes;N=no)? _

```

The food menu is used to demonstrate the function of restock. Staff can restock all in one go or only certain items. It will return back to the previous stock menu if 3 was entered. When 1 is entered, a confirmation is prompted and followed by restock quantity and price used to restock. Each input from the user will be validated and an error message will be prompted followed by a chance to reenter. The price used to restock does not have a fixed value as the price of restock can be changed according to the economy. On the right is the result of restock by all and the staff can proceed to restock. Next is restock by only certain items.

```

FOOD MENU
-----MAIN DISH-----
NL1 Nasi Lemak with Fried Chicken 110
NL2 Nasi Lemak with Rendang Chicken 110
NL3 Nasi Lemak with Curry Chicken 110

RESTOCK
1. All
2. Certain Item
3. Return

Enter the food : NL1
Do you want to confirm(Y=yes;N=no)? y
Enter the Restock quantity (Max Stock Qty = 999) :10
Do you want to confirm(Y=yes;N=no)? y
Enter the price used to Restock : RM 4.00
Do you want to confirm(Y=yes;N=no)? _

```

```

FOOD MENU
-----MAIN DISH-----
NL1 Nasi Lemak with Fried Chicken 120
NL2 Nasi Lemak with Rendang Chicken 110
NL3 Nasi Lemak with Curry Chicken 110

RESTOCK
1. All
2. Certain Item
3. Return

Enter the Category to Restock : _

```

Number of the food to restock is entered and others are the same as the restock by all. Result as in the picture on the right.

Logout

When the user chooses to logout the system will confirm the user's choice. If the user chooses yes then it will go back to the main menu, else it will remain at the page .

[illegible][illegible]

Price Adjustment (Discussion)

FOOD MENU	
MAIN DISH	
	Price(RM)
NL1 Nasi Lemak with Fried Chicken	09.50
NL2 Nasi Lemak with Rendang Chicken	10.00
NL3 Nasi Lemak with Curry Chicken	11.20

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) >

Food Category

BEVERAGE MENU	
BEVERAGES	
	Price(RM)
D1 Coffee	02.50
D2 Orange Juice	05.30
D3 Apple Juice	05.30
D4 Sky Juice	01.00

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) >

Beverage Category

FOOD MENU	
MAIN DISH	
	Price(RM)
NL1 Nasi Lemak with Fried Chicken	11.40
NL2 Nasi Lemak with Rendang Chicken	12.96
NL3 Nasi Lemak with Curry Chicken	13.44

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) > _

Food Increase By 20%

BEVERAGE MENU	
BEVERAGES	
	Price(RM)
D1 Coffee	04.50
D2 Orange Juice	07.30
D3 Apple Juice	07.30
D4 Sky Juice	03.00

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) >

Beverage Increase By RM2.00

FOOD MENU	
MAIN DISH	
	Price(RM)
NL1 Nasi Lemak with Fried Chicken	99.99
NL2 Nasi Lemak with Rendang Chicken	99.99
NL3 Nasi Lemak with Curry Chicken	99.99

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) >

Price Capped at RM99.99

BEVERAGE MENU	
BEVERAGES	
	Price(RM)
D1 Coffee	00.00
D2 Orange Juice	00.00
D3 Apple Juice	00.00
D4 Sky Juice	00.00

ADJUSTMENT MENU	
METHODS	
1.Increase All By Percentage	
2.Increase All Products By Value	
3.Decrease All By Percentage	
4.Decrease Value(Particular Product)	
5.Return	

Enter the Adjustment(1-5) > _

Negative Price Set to be RM00.00

```

FOOD MENU
-----
MAIN DISH      Price(RM)
NL1 Masi Lemak with Fried Chicken  09.50
NL2 Masi Lemak with Rendang Chicken 10.00
NL3 Masi Lemak with Curry Chicken  11.20

ADJUSTMENT MENU
-----
METHODS
1.Increase All By Percentage
2.Increase All Products By Value
3.Decrease All By Percentage
4.Decrease Value(Particular Product)
5.Return

Enter the Adjustment(1-5) > 4
Enter the food > NL1
Enter the Value to Decrease(00.00 to quit) > 15.50
Confirm to Proceed(Y=yes/N=no) > y
Input is greater than original price!
Press any key to return..._

FOOD MENU
-----
MAIN DISH      Price(RM)
NL1 Masi Lemak with Fried Chicken  09.50
NL2 Masi Lemak with Rendang Chicken 10.00
NL3 Masi Lemak with Curry Chicken  11.20

ADJUSTMENT MENU
-----
METHODS
1.Increase All By Percentage
2.Increase All Products By Value
3.Decrease All By Percentage
4.Decrease Value(Particular Product)
5.Return

Enter the Adjustment(1-5) > 1
Enter the percentage to Increase
(MAXIMUM 200% - including %) > 205%
Invalid input, maximum is only 200%!
Press any key to return..._

```

Error Input examples

In the price adjustment module, users can choose to modify the price based on category. Example, there are food and beverage categories. Then, there are a total of four methods for price adjustment available which are increase all by percentage, increase all by value, decrease all by percentage and decrease a particular by value. As for percentage adjustment, since it is illogical to raise the price sharply in a sudden. There is a limitation for percentage input at a maximum of 200%. When looking at the adjustment by value, there are also some restrictions which only allow a maximum of RM99.99 to be imputed. In particular for decreasing by percentage, even though 200% can be entered into the input field, but there is no negative pricing and hence all the price that is less than 0 will be set as zero. Additionally, since the memory size for the price variable is defined as byte, the price will be capped at RM99.99 for any raise above RM100.00.

As to ensure the user enters correct input, prompting messages are given such as 00.00 to quit, '%' needs to be included in the percentage input field etc. In order to make the user be clear with the some uncertainties and errors that happen, an appropriate notice message is shown when incorrect input, invalid range of amount and other mistakes occur. For instance, when the value to be decreased in price is larger than the original value, the action is not allowed and suitable guidance is provided for the user.

This module is considered flexible where it allows the user to return from the selection in case the user does not want to perform any changes while has chosen an adjustment method. Besides that, the module is also tidy and clean because a suitable clear screen and cursor pointing are set to ensure no confusion is being caused.

Apparently, this function is playing a crucial role where the price at the market nowadays is fluctuating up and down. Hence, it provides the opportunity for the owner to determine the new pricing using different methods which are based on the original price.

Daily Summary Report(Discussion)

Earning Report on 09-09-2021

EARNING		
ITEMS	Qty	Subtotal (RM)
FOOD		
NL1 Nasi Lemak with Fried Chicken	24	228.00
NL2 Nasi Lemak with Rendang Chicken	31	334.80
NL3 Nasi Lemak with Sambal Petai	34	381.80
Beverages		
D1 Coffee	15	37.50
D2 Orange Juice	21	111.30
D3 Apple Juice	14	74.20
D4 Sky Juice	9	09.00
Total SST Collection : RM 58.830		
Extra Charges : RM 43.430		
Total Discount : - RM 25.000		
Rounding Adj : + RM 00.020		
Total Earning : RM 1253.80		
! BEST-SELLING NASI LEMAK OF THE DAY NL3 !		

Press any key to return...

Expenses Report on 09-09-2021

EXPENSES	
ITEMS	Qty
NL1 Nasi Lemak with Fried Chicken	024
NL2 Nasi Lemak with Rendang Chicken	101
NL3 Nasi Lemak with Sambal Petai	034
D1 Coffee	029
D2 Orange Juice	000
D3 Apple Juice	000
D4 Sky Juice	000
Cash Out Amount : RM 406.00	

Press any key to return...

In the reporting module, there are two types of reports that can be generated which include Daily Earning Report and Daily Expenses Report. In both, the system date will be retrieved as the date of the report generated. In the Daily Sales Report, respective amounts such as 5% of SST, extra charges, total discount and total earning will be calculated. In order to make it more precise, the third decimal point of each amount is considered during the calculation. After all, an overall total earning is produced with rounding adjustments. The rounding adjustments is to make rounding off upon the second and third decimal point for total earning. For example, if the third decimal point is more than five, it will be a carry of 1 to the second decimal and respectively for the second decimal. As the image shows, the amount of total earnings can support up to the thousandth place. Then, as a footer of the report, a comparison will be made among the quantity sold of Nasi Lemak. The best-selling Nasi Lemak will be shown for reader knowledge. Secondly, the Daily Sales Report is much easier than the Earning Report. It keeps track of the restocking of the products then records down and sum up the total amount paid for restocking of the day. In order to allow the user to read the reports, it will remain on the screen until the user presses any key to quit.

When looking at the importance of reports, it is undeniable that it can help the owner or staff in summarizing the flow of money. For example, by analyzing the earnings report, the owner can know what is the amount of SST tax which cannot be considered as the profit of the day. Other than that, the staff or owner also can make decisions like promotion or discount which help to know the customer's preference based on the report information. On the other hand, the expense report will ensure that the staff will not be confused when managing the money flow. Example, the total amount paid out is clearly recorded to avoid missing money.

Customer Module

Membership

```
Do you want to be a member ? (Y=Yes!N=No!Q=Main Menu) >
```

- Users will be able to opt for a membership during registration.

```
|-----|
|      | Membership      |
|-----|
|      | Are you a member ? (Y=Yes!N=No)
|      |
|      | (Q/q = Return to menu)
|-----|
Enter choice here >
```

```
|-----|
|      | Membership      |
|-----|
|      | CATEGORY
|      |
|      | 1. View Membership Duration
|      | 2. Renew Membership
|-----|
```

- Users with membership will be able to access category

```
|-----|
|      | Membership      |
|-----|
|      | CATEGORY
|      |
|      | 1. View Membership Duration
|      | 2. Renew Membership
|-----|
1
When is your membership expiry date ? (DD/MM/YYYY)
11/11/2023
Confirm date ? (Y=Yes!N=No!Q=return)
_
```

```
|-----MEMBERSHIP-----|
|-----DAYS LEFT-----|
|      | Membership Day(s) Left      : 02
|      | Membership Month(s) Left    : 02
|      | Membership Year(s) Left     : 0002
|-----|
Do you wish to be in the Membership function ? (Y=Yes!N=No) >
```

- System date used = 9/9/2021


```

      _____
      | Membership |
      |-----|
      |-----|
      | 1. 3 Months  | RM 20.00 |
      | 2. 6 Months  | RM 35.00 |
      | 3. 1 Year    | RM 45.00 |
      | 4. Return    |          |
      |-----|
      |
Enter Duration of renewal :
2
Confirm membership renewal? (Y=Yes;N=No) > _

```

- Users without membership will automatically be directed to membership options
- Recurring members can renew theirs here too

```

      _____
      | Membership |
      |-----|
      |-----|
      | Membership before : None |
      | Membership left   : 09/03/2022 |
      |-----|
Package Price : RM 35
Enter amount for payment RM(Min. 20;Max. 99) :
40
Balance : RM 5.00
Thank you for being a member !! Happy Ordering~!
Do you wish to be in the Membership function ? (Y=Yes;N=No) >

```

```

      _____
      | Membership |
      |-----|
      |-----|
      | Membership before : 09/03/2022 |
      | Membership left   : 09/03/2023 |
      |-----|
Package Price : RM 45
Enter amount for payment RM(Min. 20;Max. 99) :
45
Balance : RM 0.00
Thank you for being a member !! Happy Ordering~!
Do you wish to be in the Membership function ? (Y=Yes;N=No) >

```

- Renewed from previous expiry date

Sample Errors

```
You are already a member. :)

Membership
-----
Are you a member ? (Y=Yes;N=No)
(Q/q = Return to menu)
-----
Enter choice here >S
Invalid input, please try again!
Press any key to return...

Membership
-----
CATEGORY
-----
1. View Membership Duration
2. Renew Membership
-----
1
When is your membership expiry date ? (DD/MM/YYYY)
30/02/2022
Invalid input, days out of range
```

To go into further details about the membership function, there are several points for the existence of this module. To begin, memberships are generally used to boost the income as well as the popularity of its customers. Which means it is treated as a stepping stone for members to become part of the company or restaurant. Naturally, this function is highly dependent on its customer. Hence, both functionality and user-friendliness is the key factor here.

There are 2 ways in which the membership module is utilized. Firstly, through registration where new customers get to relish on the discounts as soon as becoming a member. However, this system encourages flexibility where customers have the freedom to choose the things they want to purchase, functions they wish to access and so on. Though it is clear that guests will not be able to be a member as they will not have an account to hold its membership, they can always create one for the register module. Now, membership comes in 3 different packages that vary in prices. Example, 3 months, 6 months, and a year which is RM 20, RM 35 and RM 45 respectively. Apart from just renewing or purchasing membership, customers with recurring membership can choose to review their membership duration or plan for upcoming memberships by checking on the dates. Where customers will have to prompt for future dates in order for this to work.

All in all, membership has a major impact on the sales which helps in retaining customers. The discounts you get are based on the orders that customers' have made. Hence, why it plays a major role in it. Though the price may seem cumbersome, the benefits of membership outweigh the losses.

Ordering System

```
Your are in Guest Mode

      /---\
     /     \
    /       \
   /         \
  /           \
 /             \
/               \
(               )
(   NASI LEMAK HOUSE   )
(               )
 \             /
  \           /
   \         /
    \       /
     \     /
      \---/

ORDER OPTION
1. Dine In
2. Delivery
3. Take Away
4. Back to Menu

Enter order option : 2
Do you want to confirm(Y=yes;N=no)? _
```

There are two modes in the ordering system, one is guest mode and the other is member mode. Order using as guests did not have a discount, where members have. There are 3 order options, customers need to pay for packaging tax (5%) when Delivery and Take Away are chosen and extra delivery fee (RM5) for those who choose Delivery.

```
FOOD MENU
-----
MAIN DISH-----Price(RM)
: NL1 Nasi Lemak with Fried Chicken : 09.50 :
: NL2 Nasi Lemak with Rendang Chicken : 10.80 :
: NL3 Nasi Lemak with Curry Chicken : 11.20 :
:-----:-----:-----:
Enter food choice and amount (max amount is 9, 0 to skip): NL1,2
Do you want to confirm(Y=yes;N=no)? y
Do you want to add on(Y=yes;N=no)? y
Enter food choice and amount (max amount is 9, 0 to skip): NL2,1
Do you want to confirm(Y=yes;N=no)? y
Do you want to add on(Y=yes;N=no)? y
Enter food choice and amount (max amount is 9, 0 to skip): NL3,2
Do you want to confirm(Y=yes;N=no)? y
Do you want to add on(Y=yes;N=no)? _

BEVERAGE MENU
-----
BEVERAGES-----Price(RM)
: D1 Coffee : 02.50 :
: D2 Orange Juice : 05.30 :
: D3 Apple Juice : 05.30 :
: D4 Sky Juice : 01.00 :
:-----:-----:-----:
Enter beverage choice and amount (max amount is 9, 0 to skip): D2,3
Do you want to confirm(Y=yes;N=no)? y
Do you want to add on(Y=yes;N=no)? y
Enter beverage choice and amount (max amount is 9, 0 to skip): D1,2
Do you want to confirm(Y=yes;N=no)? y
Do you want to add on(Y=yes;N=no)? _
```

Customers can enter food and amount desired where confirmation and add on will be prompted to ensure customers' order. Customers can proceed to the order beverage after finishing ordering food by entering 0.

```
BEVERAGE MENU
-----
BEVERAGES-----Price(RM)
: D1 Coffee : 02.50 :
: D2 Orange Juice : 05.30 :
: D3 Apple Juice : 05.30 :
: D4 Sky Juice : 01.00 :
:-----:-----:-----:
Enter beverage choice and amount (max amount is 9, 0 to skip): D0
Press any key to return..._
```

The program will return to the main menu if direct enter skip for food and beverage as there

would not have any payment and cancellation that can be performed.

```

MODULE
1. Make Payment
2. Cancel order
-----
Enter module option : 1
Do you want to confirm(Y=yes!N=no)?

PAYMENT
-----
ITEMS-----Qty-----Subtotal (RM)-----
NL1 Nasi Lemak with Fried Chicken 2 19.00
NL2 Nasi Lemak with Rendang Chicken 1 10.80
NL3 Nasi Lemak with Curry Chicken 2 22.40
D1 Coffee 2 05.00
D2 Orange Juice 3 15.90
-----
Delivery Fee : RM 05.00
Packaging Tax : RM 03.66
SST(5%) : RM 03.66
Rounding Adj : RM -0.02
TOTAL : RM 85.40

Enter Cash amount : RM 100.00
Do you want to confirm(Y=yes!N=no)? y
Change : RM 14.60
\Thank you for coming/
\Please come again next time./
Press any to proceed..... _

```

The module menu will be prompted after the customer finished ordering. By choosing to make payment, a summary of every item the customer ordered will be displayed followed by the total amount (qty) and the subtotal. As order option number 2 (delivery) has been chosen, the customer will need to pay for the extra delivery fee and packaging tax, where SST (5%) is required for each payment made. Rounding adjustment will be made as this system only accepts cash as payment method. Customers need to enter a cash amount equal or greater than the total as for the validation. Customers will return to the main menu after completing the payment.

Cancellation

Directory and Cancel Category

```

MODULE
1. Make Payment
2. Cancel order

Enter module option : 2
Do you want to confirm(Y=yes!N=no)?

```

```

CANCELLATION
CATEGORY
1. Food
2. Beverage
3. Return

```

Cancellation Process for Food and Beverage

Food

```

CANCELLATION
ITEMS-LEFT Qty
NL1 Nasi Lemak with Fried Chicken 1
NL2 Nasi Lemak with Rendang Chicken 4
NL3 Nasi Lemak with Curry Chicken 3

Choose an item to cancel (0_ to return! NL_ for food) :

```

Beverage

```

CANCELLATION
ITEMS-LEFT Qty
D1 Coffee 4
D2 Orange Juice 5
D3 Apple Juice 2
D4 Sky Juice 2

Choose an item to cancel (0_ to return! D_ for bev) :

```

```

CANCELLATION
ITEMS Qty
NL2 Nasi Lemak with Rendang Chicken 4

Enter the amount that you wish to cancel :
2
Confirm cancellation (Y=Yes!N=No)?

```

```

CANCELLATION
ITEMS Qty
D4 Sky Juice 2

Enter the amount that you wish to cancel :
2
Confirm cancellation (Y=Yes!N=No)?

```

Display result after cancellation

```

CANCELLATION
ITEMS-LEFT Qty
NL1 Nasi Lemak with Fried Chicken 1
NL2 Nasi Lemak with Rendang Chicken 2
NL3 Nasi Lemak with Curry Chicken 3
D1 Coffee 4
D2 Orange Juice 5
D3 Apple Juice 2

Do you wish to remain in the cancel function ? (Y=Yes!N=No)

```

```

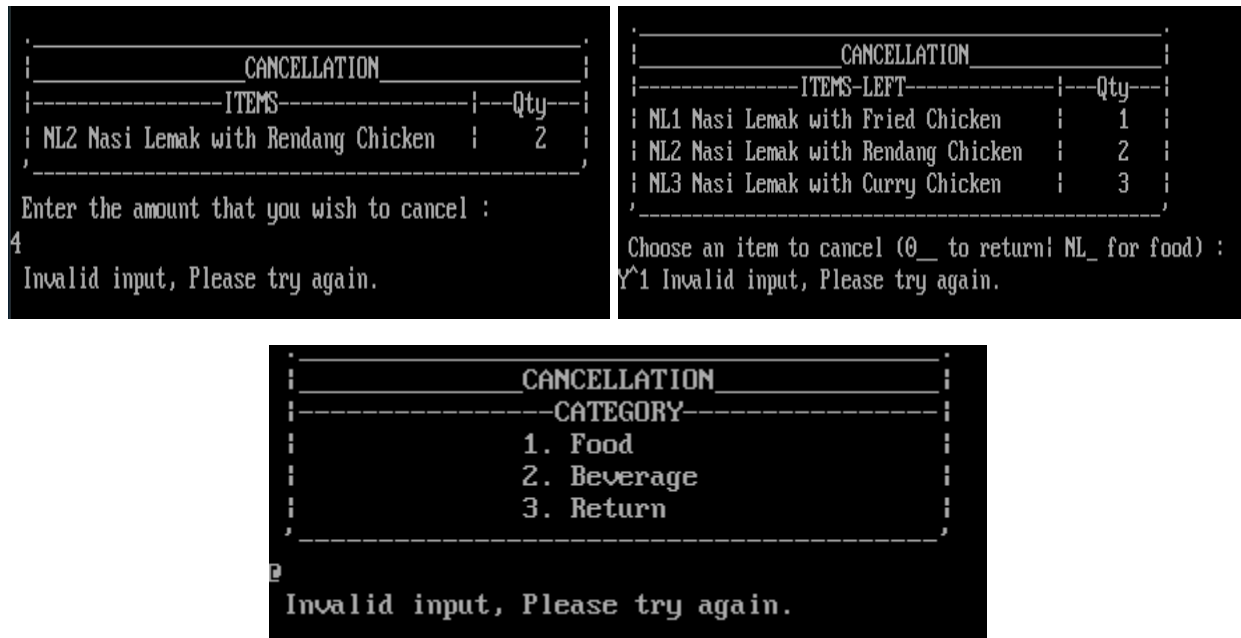
CANCELLATION
CATEGORY
1. Food
2. Beverage
3. Return

Enter choice here >
You have no orders left ! Press to continue.

```

- When there are no orders left, customers will be directed back to the menu.

Sample Errors



Cancellation is derived from orders and is within the same menu as the payment function. It is accessible only when there are at least 1 order. Consequently, customers who tried to remain in the cancel function will be redirected to the appropriate menu. Example, members will be redirected to the customer menu while guests will be redirected to the main menu. Hence, there will not be a hassle of logging in and out once the program deterred an action.

Upon selecting the cancellation option, a menu will be displayed along with the options for cancellation where customers can opt to cancel their orders based on food or beverage. On the other hand, customers who fancy a return to the previous menu can pick the third option as shown from the sample image. After selecting the desired category, customers will be greeted with a display of their respective orders along with its quantity. This is where they can cancel their food or beverage where the initials are to be entered. Example, NL1 or D1 for food and beverage respectively. Then the system will prompt for the quantity to be cancelled followed by the customers' confirmation. Then, the orders will be cancelled from the database and the quantity of stock will be incremented based on its cancellation amount. Lastly, the result of the amount of orders left will be displayed which includes both food and beverage.

As mentioned before, cancellation is a crucial part in both orders and payment because it has high coupling, any data mishandled will lead to more errors down the line. Hence, to avoid errors validation is implemented for customers' input. It is also important to note that every customers' input

will be accounted for therefore marginal errors will occur which enhances efficiency.

Conclusion

In conclusion, the program is designed to cater the needs of customers in the food and beverage industry. It is tremendously important to note that in order to entice customers we need to have a good base program idea which focuses solely on user friendliness, simplicity and its functionality. This goes without saying for the fellow backend staff, the work flow as well as the maintainability of the program should be prioritized as well. In our program, there are several main functions that allow the users to gain access or stay connected with the restaurant. Having modules like accounts, orders, price adjustments and reports are part of the program which help enhance the overall capabilities and experience of the program.

