

Tunku Abdul Rahman University College

BACS2023 Object-Oriented Programming

Assignment 2020/2021

Programme : RMM - Bachelor of Science (Honours) in
Management Mathematics With Computing
Year 2 Semester 1

Tutorial Group : Group 1

Date Submitted to Tutor : 4 September 2020

Team Members:

No.	Student Name	Student ID
1.	Chew Hwa Ern	19WMR04184
2.	Hee Sze Wei	19WMR05920
3.	Lee Shu Ern	19WMR05933

No.	Team Member	Task(s) Allocated
1.	Chew Hwa Ern	UML Diagram Drive Program Exception Handling and Validation Ala Carte : Burger, Fries and Drinks Staff Report
2.	Hee Sze Wei	UML Diagram Drive Program Exception Handling and Validation Payment : Cash and Credit Card Order Combo
3.	Lee Shu Ern	UML Diagram Drive Program Exception Handling and Validation Customer : Member OrderItem Menu Compilation of Program

Coursework Declaration

We confirm that we have read and shall comply with all the terms and conditions of TAR University College's plagiarism policy.

We declare that this assignment is free from all forms of plagiarism and for all intents and purposes is our own properly derived work.

Signature :	<i>HwaErn</i>	<i>SereneHee</i>	<i>ShuErn</i>
Name :	Chew Hwa Ern	Hee Sze Wei	Lee Shu Ern
Date :	4 September 2020	4 September 2020	4 September 2020

Peer Evaluation Form

Name : Chew Hwa Ern

The following is a list of statements to be answered by each of your group members. Think carefully about assigning rating values for each of the statements. Rate each group member, in terms of the contributions made towards the overall group project. Write the name in the space provided. Then, allocate points among your group members in such a fashion as to express your beliefs about each person's contributions to the overall group project.

Scale:

5-Strongly Agree 4-Agree 3-Neutral 2-Disagree 1/0-Strongly Disagree

No	Criteria	Group Members	
	Name:	Hee Sze Wei	Lee Shu Ern
1	Was dependable in attending team meetings.	4	5
2	Willingly accepted assigned tasks.	5	5
3	Contributed positively to group discussions.	5	5
4	Completed work on time or made alternative arrangements.	4	5
5	Helped team members finish their tasks on time.	5	5
6	Did work accurately and completely.	4	5
7	Produced high quality works.	4	5
8	Contributed a fair share to weekly works.	4	5
9	Worked well with other group members.	5	5
10	Overall was a valuable member of the team	5	5
Total:		45	50

Signature : *HwaErn*

Name : Chew Hwa Ern

Date : 4 September 2020

Peer Evaluation Form

Name : Hee Sze Wei

The following is a list of statements to be answered by each of your group members. Think carefully about assigning rating values for each of the statements. Rate each group member, in terms of the contributions made towards the overall group project. Write the name in the space provided. Then, allocate points among your group members in such a fashion as to express your beliefs about each person's contributions to the overall group project.

Scale:

5-Strongly Agree 4-Agree 3-Neutral 2-Disagree 1/0-Strongly Disagree

No	Criteria	Group Members	
	Name:	Chew Hwa Ern	Lee Shu Ern
1	Was dependable in attending team meetings.	4	5
2	Willingly accepted assigned tasks.	4	5
3	Contributed positively to group discussions.	5	5
4	Completed work on time or made alternative arrangements.	4	5
5	Helped team member to finish their tasks on time.	5	5
6	Did work accurately and completely.	4	5
7	Produced high quality works.	5	5
8	Contributed a fair share to weekly works.	4	5
9	Worked well with other group members.	5	5
10	Overall was a valuable member of the team	5	5
Total:		45	50

Signature : *SereneHee*

Name : Hee Sze Wei

Date : 4 September 2020

Peer Evaluation Form

Name : Lee Shu Ern

The following is a list of statements to be answered by each of your group members. Think carefully about assigning rating values for each of the statements. Rate each group member, in terms of the contributions made towards the overall group project. Write the name in the space provided. Then, allocate points among your group members in such a fashion as to express your beliefs about each person's contributions to the overall group project.

Scale:

5-Strongly Agree 4-Agree 3-Neutral 2-Disagree 1/0-Strongly Disagree

No	Criteria	Group Members	
	Name:	Chew Hwa Ern	Hee Sze Wei
1	Was dependable in attending team meetings.	4	4
2	Willingly accepted assigned tasks.	4	4
3	Contributed positively to group discussions.	5	5
4	Completed work on time or made alternative arrangements.	4	4
5	Helped team members finish their tasks on time.	4	4
6	Did work accurately and completely.	4	4
7	Produced high quality works.	4	4
8	Contributed a fair share to weekly works.	4	4
9	Worked well with other group members.	5	5
10	Overall was a valuable member of the team	4	4
Total:		42	42

Signature : *ShuErn*

Name : Lee Shu Ern

Date : 4 September 2020

Food Ordering System Description:-

The food ordering system is created to automate the food ordering process in WeeDonald's Fast Food Restaurant to reduce man power and reduce human-to-human contact in the midst of the COVID-19 pandemic. This system is controlled by staff and is bound by the business rules as follows:-

Business Rules:

1. Operating hours from 8am to 8pm daily.
2. Menu divided into 2 different kinds: AlaCarte Menu and Combo Menu respectively.
3. AlaCarte Menu consists of 3 food categories: Burgers, Fries and drinks.
4. Combo Menu consists of a combination of items derived from the AlaCarte Menu offered at a combo price.
5. Customers can choose to order from either Ala Carte Menu or Combo Menu.
6. Customers get a free upgrade in size from medium to large with any combo order.
7. Customers can only place up to 10 order items per transaction.
8. Active members are eligible for a 10% discount off total bill.
9. Customers can choose their preferred payment method by cash or credit card.
10. Receipts will be generated after each purchase is made.
11. Only Staff are allowed to view reports generated by the system.
12. Daily Sales Reports can only be generated when there are no new customers.

System Summary:

The console displays the logo of WeeDonald's along with the Ala Carte Menu and Combo Menu. Then, the user will be prompted with a question to verify if the customer is a member of the WeeDonald's fast food restaurant. If the customer is a member, the system prompts the input of the customer's IC number to check the validity of the member as well as the expiration date of the member's profile. If the member is a valid and active member, 10% discount is applied off the total bill. However, if the customer is not an existing member, the system prompts the input of the customer's name, contact number and email address. Exceptions are handled.

Next, the system prompts the user to choose from either the Ala Carte menu or the combo menu to place an order. If the user keys in the correct input that represents each menu, the system will display respective chosen menus. In the Ala Carte menu, the user has to select a food category among burgers, fries and drinks before placing an order. The system will then prompt the user to input the food ID of the selected order item and the quantity desired. On the other hand, after the combo menu has been selected and displayed, the user can enter the food ID of desired combo item and the quantity of said item.

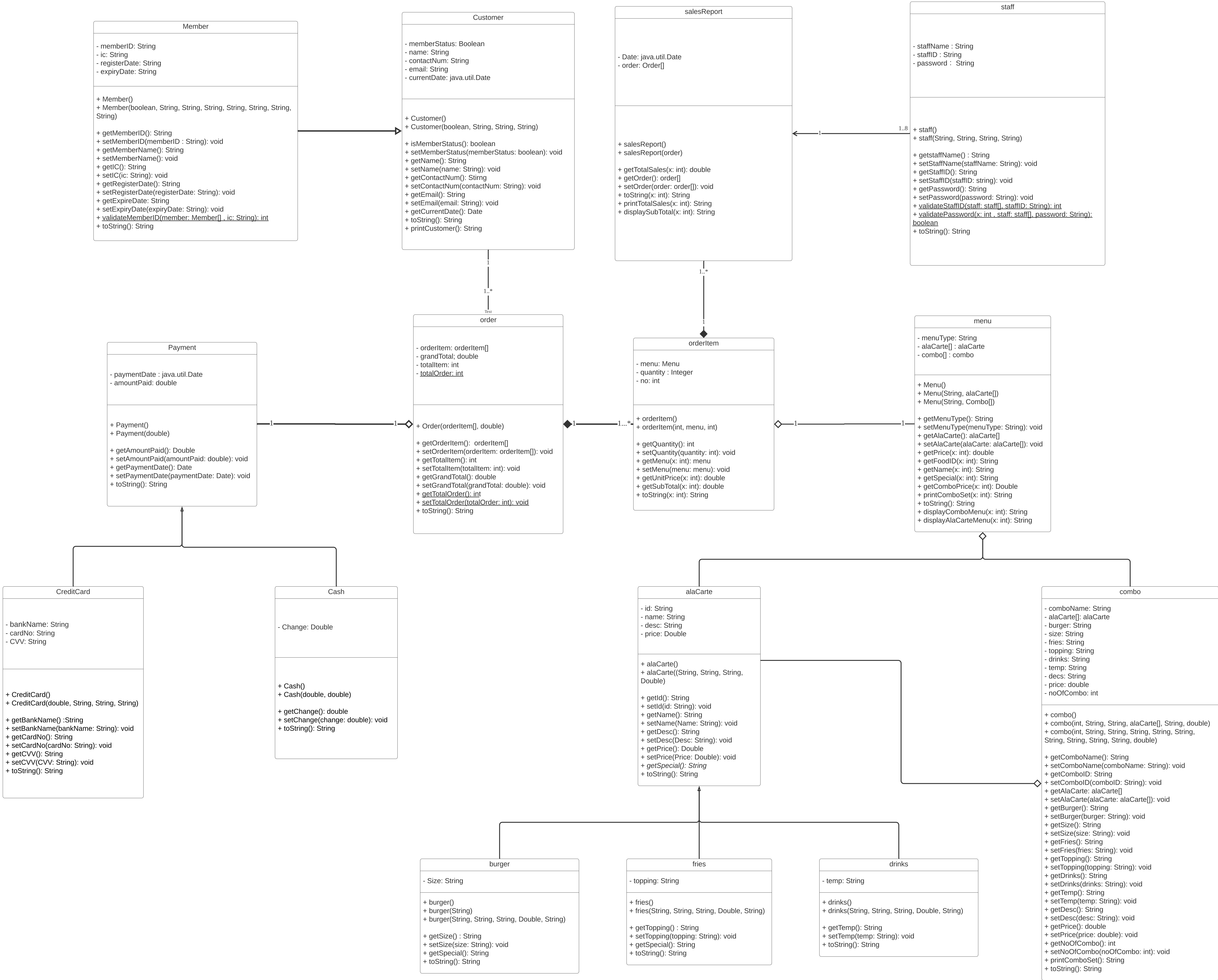
If the customer wishes to place another order, the system loops back to prompt the user to select a menu until the customer no longer wishes to place another order.

The system will then compile the order and generate a list of their order details that includes the items selected, quantity, unit price, subtotal and the grand total after member discount (if any).

The customer can choose to either pay by cash or by credit card. If the customer prefers to pay by cash, the system will calculate change needed with the amount paid. If the customer pays by credit card, the system will prompt for the bank name, card no and CVV.

The system will then loop to the next customer and repeat the ordering process. When there are no longer new customers, the system will ask if the user wants to access the daily sales report. If yes, the system will ask if the user is a staff member. If the user is a staff, the system will prompt for staff ID and password and allow the user to view the daily sales report if login is successful. Exceptions are handled. However, if login is unsuccessful, the system will deny the user from viewing the report.

Finally, the system will log out upon confirmation.



Sample Output :

----- WELCOME TO WEEDONALD'S -----				
Food ID	Food Name	Remark	Description	Unit Price

Ala Carte Menu				
B[01]	Signature Chicken	Large	Grilled Chicken with Signature Sauce	RM12.00
B[02]	Signature Chicken	Medium	Grilled Chicken with Signature Sauce	RM10.00
B[03]	Signature Beef	Large	Smoked Grilled Beef with Signature Sauce	RM15.00
B[04]	Signature Beef	Medium	Smoked Grilled Beef with Signature Sauce	RM13.00
B[05]	Fish Fillet	Large	Fillet with Signature Sauce	RM14.00
B[06]	Fish Fillet	Medium	Fillet with Signature Sauce	RM12.00
F[01]	French Fries	Salted Egg	Fresh Cut Potato Fries	RM6.00
F[02]	French Fries	Cheese	Fresh Cut Potato Fries	RM4.00
F[03]	Sweet Potato Fries	Salted Egg	Fresh Cut Sweet Potato Fries	RM6.00
F[04]	Sweet Potato Fries	Cheese	Fresh Cut Sweet Potato Fries	RM4.00
F[05]	Curly Fries	Salty Egg	Fresh Cut Curly Potato Fries	RM6.00
F[06]	Curly Fries	Cheese	Fresh Cut Curly Potato Fries	RM4.00
D[01]	Coke	Ice	Soft Drink	RM4.00
D[02]	Coke	No Ice	Soft Drink	RM2.00
D[03]	Sprite	Ice	Soft Drink	RM4.00
D[04]	Sprite	No Ice	Soft Drink	RM2.00
D[05]	Lemon Tea	Ice	Soft Drink	RM4.00
D[06]	Lemon Tea	No Ice	Soft Drink	RM2.00

Figure 1.1 Display AlaCarte Menu

No	Combo ID	Combo Name	Food	Description	Price

Combo Menu					
1	C01	Combo [1]	Signature Chicken [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern's PICK!	RM 18.00
2	C02	Combo [2]	Signature Chicken [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Shu Ern went FARMING!	RM 18.00
3	C03	Combo [3]	Signature Chicken [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Serene's homegrown POTATO!	RM 18.00
4	C04	Combo [4]	Signature Beef [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Serene's PICK!	RM 18.00
5	C05	Combo [5]	Signature Beef [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern's FAV!	RM 18.00
6	C06	Combo [6]	Signature Beef [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Shu Ern' PICK!	RM 18.00
7	C07	Combo [7]	Fish Fillet [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern went FISHING!	RM 18.00
8	C08	Combo [8]	Fish Fillet [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Serene's FAV!	RM 18.00
9	C09	Combo [9]	Fish Fillet [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Shu Ern's CURLYHAIR!	RM 18.00

Figure 1.2 Display Combo Menu

Is this customer a member? Yes[Y]/No[N]: y

Enter IC number[000000-00-0000]: 000901-14-1426

Valid Member

YOU ARE ENTITLED TO A 10% DISCOUNT !!!

Please select menu type: AlaCate[A]/Combo[C]: a

Choose a food category. Burger[B]/Fries[F]/Drinks[D]:f

FRIES

Food ID	Food Name	Remarks	Description	Unit Price
F[01]	French Fries	Salted Egg	Fresh Cut Potato Fries	RM6.00
F[02]	French Fries	Cheese	Fresh Cut Potato Fries	RM4.00
F[03]	Sweet Potato Fries	Salted Egg	Fresh Cut Sweet Potato Fries	RM6.00
F[04]	Sweet Potato Fries	Cheese	Fresh Cut Sweet Potato Fries	RM4.00
F[05]	Curly Fries	Salty Egg	Fresh Cut Curly Potato Fries	RM6.00
F[06]	Curly Fries	Cheese	Fresh Cut Curly Potato Fries	RM4.00

Select item [1|2|3|4|5|6]: 2

Quantity: 1

Figure 1.3 Customer enters IC number and is identified as a valid member.

Add Order? Yes[Y]/No[N] y

Please select menu type: AlaCate[A]/Combo[C]: a

Choose a food category. Burger[B]/Fries[F]/Drinks[D]:d

DRINKS

Food ID	Food Name	Remarks	Description	Unit Price
D[01]	Coke	Ice	Soft Drink	RM4.00
D[02]	Coke	No Ice	Soft Drink	RM2.00
D[03]	Sprite	Ice	Soft Drink	RM4.00
D[04]	Sprite	No Ice	Soft Drink	RM2.00
D[05]	Lemon Tea	Ice	Soft Drink	RM4.00
D[06]	Lemon Tea	No Ice	Soft Drink	RM2.00

Select item [1|2|3|4|5|6]: 1

Quantity: 1

Figure 1.4 Add order, Select Ala Carte > food category > item > quantity.

Add Order? Yes[Y]/No[N] n

Order Details

Total Item:2

No | Food ID | Food Name | Quantity | Unit Price | Sub Total

1 | F[02] | French Fries [Cheese] | 1 | RM4.00 | RM4.00
2 | D[01] | Coke [Ice] | 1 | RM4.00 | RM4.00

Member Discount:

RM0.80

Total Price:

RM7.20

Payment method

Cash [1]

Credit Card [2]

Enter your payment choice: 1

Enter amount paid: RM 8

Figure 1.5 No longer add order. Display Order Details with Member Discount and Total Price
Choose Payment choice and enter the amount paid.

```
-----  
| WEEDONALD'S |  
-----  
[ Receipt ]  
Customer Name      : Lee Shu Ern  
Member Status      : true  
Date/Time          : Fri Sep 04 20:02:38 SGT 2020  
  
Order Num          : 1001  
Total Price:       : RM7.20  
Payment Method     : Cash  
Payment Date       : Fri Sep 04 20:03:01 SGT 2020  
Amount Paid        : RM8.00  
Change             : RM0.80  
  
Thank you  
See you again !  
  
*****  
  
Next Customer? Yes[Y]/No[N]:y
```

Figure 1.6 Print Receipt (Cash Payment)

Is this customer a member? Yes[Y]/No[N]: n

Enter customer name: ern

Enter contact number[123-4567890]: 011-1111111

Enter email address: ern@gmail.com

Please select menu type: AlaCate[A]/Combo[C]: c

No	Combo ID	Combo Name	Food	Description	Price
Combo Menu					
1	C01	Combo [1]	Signature Chicken [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern's PICK!	RM 18.00
2	C02	Combo [2]	Signature Chicken [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Shu Ern went FARMING!	RM 18.00
3	C03	Combo [3]	Signature Chicken [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Serene's homegrown POTATO!	RM 18.00
4	C04	Combo [4]	Signature Beef [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Serene's PICK!	RM 18.00
5	C05	Combo [5]	Signature Beef [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern's FAV!	RM 18.00
6	C06	Combo [6]	Signature Beef [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Shu Ern' PICK!	RM 18.00
7	C07	Combo [7]	Fish Fillet [Large] + French Fries [Cheese] + Lemon Tea [Ice]	Hwa Ern went FISHING!	RM 18.00
8	C08	Combo [8]	Fish Fillet [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	Serene's FAV!	RM 18.00
9	C09	Combo [9]	Fish Fillet [Large] + Curly Fries [Cheese] + Lemon Tea [Ice]	Shu Ern's CURLYHAIR!	RM 18.00

Select a Combo[1|2|3|4|5|6|7|8|9]: 1

Quantity: 2

Figure 2.1 Non Member. Enter customer details.

Add Order? Yes[Y]/No[N] n

Order Details

Total Item:4

No	Food ID	Food Name	Quantity	Unit Price	Sub Total
1	C01 (Combo [1])	Signature Chicken [Large] + French Fries [Cheese] + Lemon Tea [Ice]	2	RM18.00	RM36.00
2	C02 (Combo [2])	Signature Chicken [Large] + Sweet Potato Fries [Cheese] + Lemon Tea [Ice]	1	RM18.00	RM18.00

Member Discount: RM0.00

Total Price: RM54.00

Payment method

Cash [1]

Credit Card [2]

Enter your payment choice: 2

Enter the bank name of the card : pbb

Enter the card number [1234567890] : 1234137890

Enter the cvv of the card [123] : 456

Figure 2.2 Display Order Details with no member discount.

Payment method: credit card.

Enter valid bank name, card number and CVV.


```
-----  
| WEEDONALD'S |  
-----  
[ Receipt ]  
Customer Name      : ern  
Member Status      : false  
Date/Time          : Fri Sep 04 20:03:20 SGT 2020  
  
Order Num          : 1002  
Total Price:       : RM54.00  
Payment Method     : Credit Card  
Payment Date       : Fri Sep 04 20:03:46 SGT 2020  
AmountPaid         : RM54.00  
Bank Name          : pbb  
Card No            : 1234137890  
CVV                : 456  
  
Thank you  
See you again !  
  
*****  
  
Next Customer? Yes[Y]/No[N]:y
```

Figure 2.3 Print Receipt (credit card)

```
Is this customer a member? Yes[Y]/No[N]: i
Invalid Input
Please enter again.

Is this customer a member? Yes[Y]/No[N]: y

Enter IC number[000000-00-0000]: 000218-02-6666
```

```
Please select menu type: AlaCate[A]/Combo[C]: qawawrfh
Invalid Input
Please enter again.

Please select menu type: AlaCate[A]/Combo[C]: a

Choose a food category. Burger[B]/Fries[F]/Drinks[D]:sdfg
Invalid Input
Please enter again.
```

```
Enter the bank name of the card : cimb
Enter the card number [1234567890] : 098790076534565e
Invalid Card Number
Please enter the right card number.
Enter the card number [1234567890] : 1297653890
Enter the cvv of the card [123] : 122
```

```
Is this customer a member? Yes[Y]/No[N]: y

Enter IC number[000000-00-0000]: 123456789076543
Invalid IC Number
Please enter a valid IC number. You have 2more attempt(s)

Enter IC number[000000-00-0000]: 1234574686
Invalid IC Number
Please enter a valid IC number. You have 1more attempt(s)

Enter IC number[000000-00-0000]: 132436578966
Invalid IC Number
Please enter a valid IC number. You have 0more attempt(s)

Do you want to continue to place order at normal price? Yes[Y]/No[N]n

Next Customer? Yes[Y]/No[N]:y
```

```
D[04]      | Sprite                      | No Ice

D[05]      | Lemon Tea                          | Ice

D[06]      | Lemon Tea                          | No Ice

Select item [1|2|3|4|5|6]: 8
Invalid Input.
Please enter [1|2|3|4|5|6] to select.
Select item [1|2|3|4|5|6]: 0
Invalid Input.
Please enter [1|2|3|4|5|6] to select.
Select item [1|2|3|4|5|6]: 2
Quantity: 1
```

Figures 3.1-5

Invalid Inputs

```
Next Customer? Yes[Y]/No[N]:n  
  
Access Report? (Yes[Y]/No[N]) :y  
  
Are You a Staff? (Yes[Y]/No[N]) :y
```

Figure 4.1 Non staff denied report access.

```
Next Customer? Yes[Y]/No[N]:n  
  
Access Report? (Yes[Y]/No[N]) :y  
  
Are You a Staff? (Yes[Y]/No[N]) :y  
  
*****  
Staff Login  
Staff ID: 1901234  
Password: SIA01234  
  
-----Logged in Successfully.-----
```

Figure 4.2 Staff allowed access to report.

```

*****:
----- WEEDONALD'S SALES REPORT AS AT 04-Sep-2020 20:09 -----
*****:
Order No. | Customer Name      | Member Status      | Discount Applied   | Payment Method      | Sub Total |
-----|-----|-----|-----|-----|-----|
1001      | Lee Shu Ern        | true               | RM0.80             | Cash                 | RM7.20    |
1002      | ern                | false             | RM0.00             | Credit Card          | RM54.00    |
1003      | lee                | false             | RM0.00             | Cash                 | RM18.00    |
1004      | err                | false             | RM0.00             | Credit Card          | RM12.00    |
1005      | Dylon Tan          | true               | RM1.80             | Credit Card          | RM16.20    |
Total Sales:                                     RM107.40
*****:

*****:
----- Customer List 04-Sep-2020 20:09 -----
*****:
Total Customer: 5
Name      | Contact Number      | Member Status      | Date Created
-----|-----|-----|-----
Lee Shu Ern | 012-985 2633        | true               | Fri Sep 04 20:02:38 SGT 2020
ern        | 011-1111111         | false             | Fri Sep 04 20:03:20 SGT 2020
lee        | 011-1232345         | false             | Fri Sep 04 20:05:04 SGT 2020
err        | 019-1111111         | false             | Fri Sep 04 20:06:06 SGT 2020
Dylon Tan  | 010-300 6566        | true               | Fri Sep 04 20:07:37 SGT 2020

```

Figure 4.3 Display Sales Report and Customer List

```
Closed. Please come back tomorrow

Access Report? (Yes[Y]/No[N]) :n
You have exit the program.
```

Figure 5.1 After 8pm. (Closing Time)

```
Next Customer? Yes[Y]/No[N]:n

Access Report? (Yes[Y]/No[N]) :n
You have exit the program.
```

Figure 5.2 Exit Program

```
Next Customer? Yes[Y]/No[N]:n

Access Report? (Yes[Y]/No[N]) :y

Are You a Staff? (Yes[Y]/No[N]) :n

You are not a staff, Access Denied.
```

Figure 6.1 Non staff denied report access.

```
Staff Login
Staff ID: 1212121212
Invalid Staff ID

Do you want to continue login? y

Staff ID: 1901234
Password: 1324547t=87utgssda
Invalid Password. Please Try Again.

Do you want to continue login? y

Staff ID: 1901234
Password: SIA1901234
Invalid Password. Please Try Again.

Do you want to continue login? y

Staff ID: 1901234
Password: SIA01234

-----Logged in Successfully.-----
```

Figure 6.2 Staff allowed access after 3 wrong attempts