

INTI INTERNATIONAL COLLEGE PENANG
SCHOOL OF ENGINEERING AND TECHNOLOGY

DIPLOMA IN COMPUTER SCIENCE

DATA STRUCTURE GROUP ASSIGNMENT
(DEVELOPING A CAKE ORDERING SYSTEM)

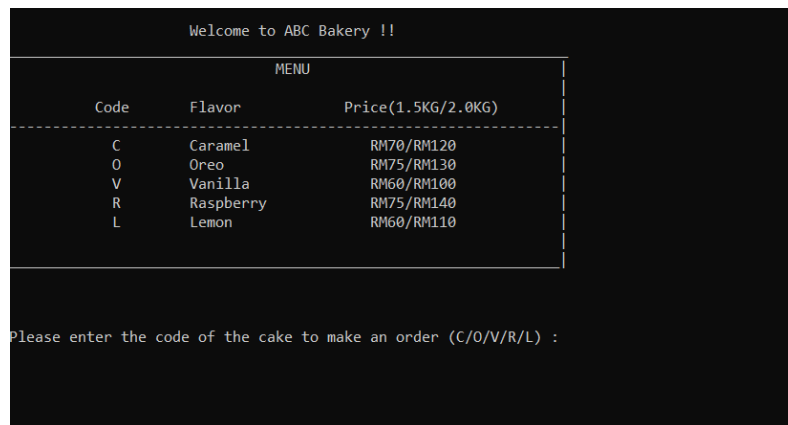
MAISARAH MAJDI - P21012976
SOMESHWAR RAO - P21013044

SUBJECT : DCS 2101
YEAR : 2022
LECTURER'S NAME : Ms. Koo Lee Chun

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1.0 Output of the system



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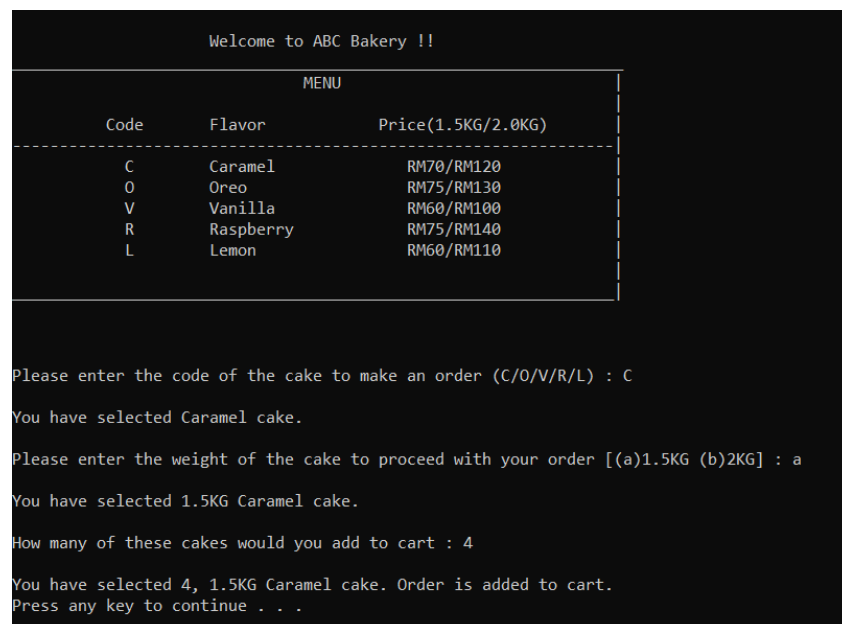
Welcome to ABC Bakery !!

MENU
-----
Code    Flavor      Price(1.5KG/2.0KG)
-----
C       Caramel      RM70/RM120
O       Oreo         RM75/RM130
V       Vanilla      RM60/RM100
R       Raspberry    RM75/RM140
L       Lemon        RM60/RM110

Please enter the code of the cake to make an order (C/O/V/R/L) :
```

Figure 1.1: Cake Menu

The first output that appears on the screen is the Cake Menu, just like the figure above. Customers will be welcomed with a welcome message and a menu with Cake Code, Flavor of cakes available and the Price per unit.



```

Welcome to ABC Bakery !!

MENU
-----
Code    Flavor      Price(1.5KG/2.0KG)
-----
C       Caramel      RM70/RM120
O       Oreo         RM75/RM130
V       Vanilla      RM60/RM100
R       Raspberry    RM75/RM140
L       Lemon        RM60/RM110

Please enter the code of the cake to make an order (C/O/V/R/L) : C
You have selected Caramel cake.

Please enter the weight of the cake to proceed with your order [(a)1.5KG (b)2KG] : a
You have selected 1.5KG Caramel cake.

How many of these cakes would you add to cart : 4
You have selected 4, 1.5KG Caramel cake. Order is added to cart.
Press any key to continue . . .
```

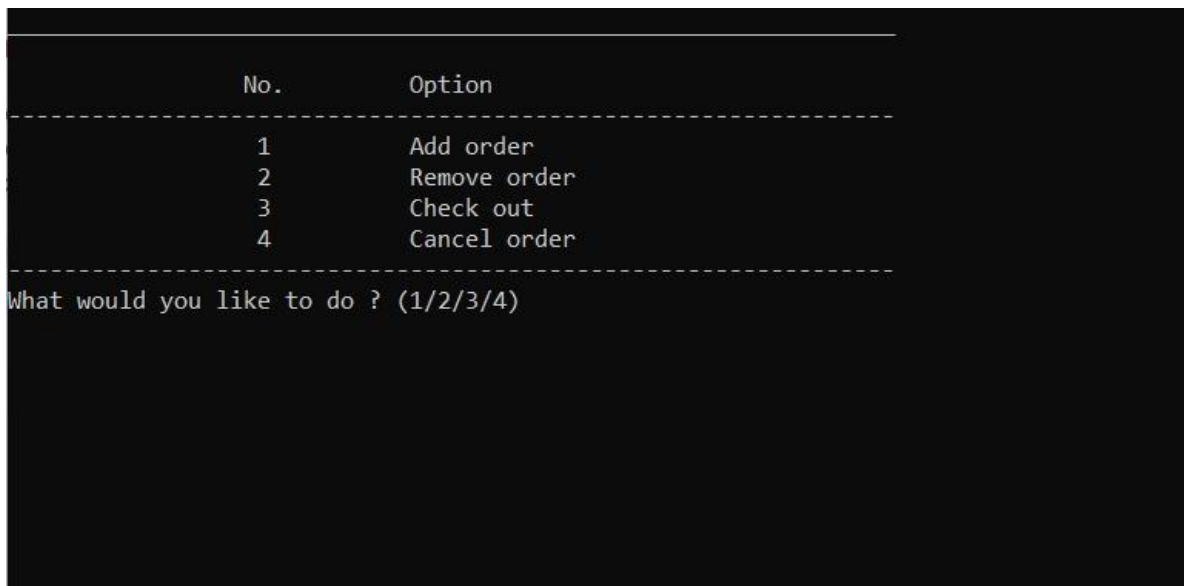
Figure 1.2: Menu & User Inputs

The program will ask users on what cake they would like to order. Based on the choices on the menu, users are required to choose the flavor of the cake they prefer then input the code of the cake flavor.

After the user has chosen a flavor by entering the code, a confirmation of what the user has ordered will appear.

Then, program will prompt user on the weight of cake they wish to add. Users are able to choose between a and b which are 1.5KG and 2.0KG respectively. A confirmation of the flavour and weight of the cake will appear.

After that, users will need to input the quantity of cake they wish to add to the cart. The program then will print out the confirmation of the quantity, weight and flavor of cake chosen.



No.	Option
1	Add order
2	Remove order
3	Check out
4	Cancel order

What would you like to do ? (1/2/3/4)

Figure 1.3: Option Page

On this page, users will have four options to choose from, they will have options to either “Add order”, “Remove Order”, “Check Out” or “Cancel Order”. Users will have to enter their preferred action by entering the number 1 – 4.

- 1.0 Add order - Customers will be able to add order by adding more cakes the cart.
- 2.0 View cart - Customers are able to look at their current cart
- 3.0 Check out - System will request for customer details and prints a receipt with their details and the cake’s details
- 4.0 Cancel Order – Customers could cancel their order completely and exit the program

If users chose the “Add order” option, users will be directed to the menu page where they can continue adding the cake flavors, they desire into the cart. Meanwhile, the “Remove Order” option allows users to delete an item from their cart permanently

```
Customer Details
Name      : Sara
Address   : 47,SunwayWalk,98000,Penang
Contact Number : +60123456789

                        Receipt
.....
Order ID   : P2926
Name      : Sara
Address   : 47,SunwayWalk,98000,Penang
Contact Number: +60123456789
Customer ID : C22314
.....

                        Your Cart
-----
No.    Flavor      Quantity    Unit Price(RM)    Price(RM)
-----
There's nothing in your cart yet.

-----
Total Price(RM):

Thank you for your time. Please visit again soon, and have a great day.
Press any key to continue . . .
```

Figure 1.4: Option 1- Customer Details & Receipt

On this page, the system will prompt users to enter their own details which are their name, address, and phone number.

After customer input all their details, a receipt with the customer details, along with their Order ID and Customer ID will be printed. A cart that consists of their order details such as “No.”, “Flavour”, “Quantity”, “Unit Price” and “Price”, will be printed below as well. The total price of the customer’s order will be printed just below the cart. If there is no order made, then “There’s nothing in your cart yet.” will be printed to let customers know that their cart is empty.

```
-----  
No.      Option  
-----  
1        Add order  
2        Remove order  
3        Check out  
4        Cancel order  
-----  
What would you like to do ? (1/2/3/4)  
4  
  
Your order has been cancelled.  
Thank you for your time. Please visit again soon, and have a great day.  
  
-----  
Process exited after 10.76 seconds with return value 0  
Press any key to continue . . .
```

Figure 1.5: Option 4 – Cancel Message & Thank You Message

In the instance where the user decides to cancel the order, users will directly be able to see a message stating their order has been canceled. We will also thank them by leaving a thank you message.

2.0 Strengths, weaknesses, and improvement areas of the system

2.1 Strengths of the system

The Cake Menu interface, which is attractive, simple, understandable and neat is the one of the strengths of the systems. Users would not be overwhelmed with its simplicity, the menu is not wordy or messy either, users would find it pleasing and this could increase user experience. Customers could make orders of their cake they desire with ease. They could input the cake flavour they want, the weight of the cake and the quantity of the cake, and the system displays a sentence of code at the end of the screen saying, “You have selected ‘quantity’, ‘weight’ ‘flavour’ cake. Order is added to cart”.

The screen changes every time from the Cake Menu screen when the user is done with selecting the flavour, the weight and the quantity of the cake to a Options screen where the user could add order, remove order, check out or exit system. This increases the neatness of the screen displayed and further improves user experience, making the screen less cluttered.

The major strength of our system is customers could input small letters and also big letters when the system seeks for user input when asking for the flavour and the weight of the code. An average user could sometimes enter small letter and big letters of code, we acknowledged it and made the effort to insert more lines of codes to solve this issue. This made a drastic impact on the overall performance of the system, and we believe it could improve user experience as well.

2.2 Weaknesses of the system

Due to bad time management and lack of understanding in Linked Lists topic, we could not apply more linked lists leading to the incomplete version of our system. Although our code is functionable, we could not add order, remove order and display our orders in the cart during check out. This is the only weakness and we need to improve on the flaws of this program, then only we could present a system that is complete that can modify its orders and more.

2.3 Improvement areas of the system

As mentioned above in 2.2, we should manage time properly for this assignment. If we did, we could allocate more time to understand Linked Lists and not be stuck during implementing it. Hence, we could overcome the issue we have in our system right now.

Moreover, we should have used more functions instead as our codes are too long in the driver file, especially in 'int main()' function. The lines of codes in it could be reduced if we implemented more functions and this would make it easier for us to navigate through our long line of codes.

3.0 Reflection

Somesh

Personally, I wish I had more time to understand the topic of Linked Lists and implement it in the system so that the system could allow customers to add and remove order, as well as view orders in cart. Although I had implemented some linked lists in the LList Class, but I was not able to implement them in the driver file due to insufficient of time and lack of understanding in the topic itself. Although I was admitted in the hospital, it was still due to my bad time management that we could only complete the assignment past the due date. I fully

take responsible for my mistake and would put an effort to complete all my assignments on time despite my circumstances.

Sara

I would say the same thing as Somesh as this was the only flaw in our system and if it was solved, our system would be functioning completely and flawlessly according to the assignment requirement. Customers could modify their orders and view their orders in their cart with no issue. I would use more functions while working on the main driver file as it could be easier to navigate for both of us, without having to scroll endlessly to find a specific part of the code.

Conclusion

We both agree that this was good lesson for both of us, as we understood the importance of time management through this assignment, and we also understood our level of understanding with the concepts of Linked Lists. We decided to improve more on our understanding in these Data Structures concepts and improve our coding knowledge as a whole, so that we ought to become successful and skillful Software Engineers in the future.

4.0 Delegation of Task

Task	Completed by
Cake Class (.h & .cpp file)	Somesh
Customer Class (.h & .cpp file)	Maisarah
LList Class	Somesh & Maisarah
Driver file	Somesh & Maisarah
Report	Somesh & Maisarah