

DSA5541

Data Structure and Algorithms

PROJECT REPORT

STATIONARY SHOP MANAGEMENT SYSTEM

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OVERVIEW

In this rapidly of technologies landscape, having a sufficient management system is a fundamental and a good investment in running a company. Our current project, is developing a Stationary Shop Management System. In this system, we have divided our system into two modules which is customer and admin modules. With this approach, we are able to enhance the system for the future maintainability and scalability.

The main objectives of this system is to allow customer to purchase the inventory by checking out the items individually and for admin to manage the shop with an ease and convenience during managing the inventory stock of the shop. On the other hand, as an admin also able to view and check the records of the inventory stock and total sales of the shop as a record purposes.

By using the algorithms of linked list, for adding, editing, displaying, deleting inventory. In order to ensure that admin can to have a sharper view during managing the inventory stock, we included sorting by using insertion sort to sort the data into an alphabetical order list. Besides, we also implemented binary search algorithms inside our system to let the customer and admin able to get the targeted results in a fastest way.

In summary, we developed this system is to provide a well-structured system for customer to increase the speed to purchase their items and create an effective inventory management for admin to minimise some unpredictable errors and incidents caused by human, like data redundancy, missing data or some common issues.

FUNCTION OF ALGORITHM

1. LINKED LIST ALGORITHM

In the both side of the modules, we implemented the linked list as our algorithm during insertion, editing, displaying and also deletion. In detailed, we implement this algorithm function inside the manage inventory, view member, view records for admin side modules. Furthermore, we performed it in the register and login page, view inventory, manage cart page for customer side modules.

When a new item is added to the inventory list, linked list algorithm will be performed by creating a new node into the appropriate position within the list and ensure that all the pointers are correctly connected. Follow with that, when we comes to editing the linked list algorithm will travel starting from the head of the list and once the targeted item being founded, the data will be able to be modify and stored within the node. Once, the data has been updated the linked list structure will be maintained and show the modification in the data list. In order to perform deletion, linked list algorithms also travel from the head of the list and look for the node to be deleted based on the instructions being given. Once, the data being deleted they will be a free for the memory located for the deleted node.

In brief, linked list provide flexibility by managing the structures of the data as compared with the normal array where it can perform the data more dynamically. Linked list algorithms will be the suitable option for managing inventory system.

2. INSERTION SORT ALGORITHM

In our inventory management system, good inventory item categorization and sorting are crucial for ensuring seamless management and access to product information. To do this, we used the Insertion Sort algorithm, a basic yet effective sorting technique that is best suited for tiny datasets like our inventory.

This method works by iteratively sorting elements in an array and creating a sorted segment as it goes through each one. Our implementation of the Insertion Sort algorithm is specifically designed to sort inventory items in ascending order using their unique item codes. Beginning with the second item in the inventory list, each item is compared to its predecessors to ensure proper placement inside the sorted segment. Following that, in the receipt page we sorted the item name to be displayed in ascending order as well which is A – Z .

We ensure that inventory data is organized efficiently by using a custom function, `insertion_sort_code()`, which is designed for sorting inventory items by their item codes. Using a similar method, our system uses the Insertion Sort algorithm to sort inventory items alphabetically by name, resulting in a logical and user-friendly display customers alike. Our system enables efficient inventory sorting and organizing using these sorting functionalities, improving inventory management operations for administrators and providing a streamlined browsing experience for customers.

3. BINARY SEARCH ALGORITHM

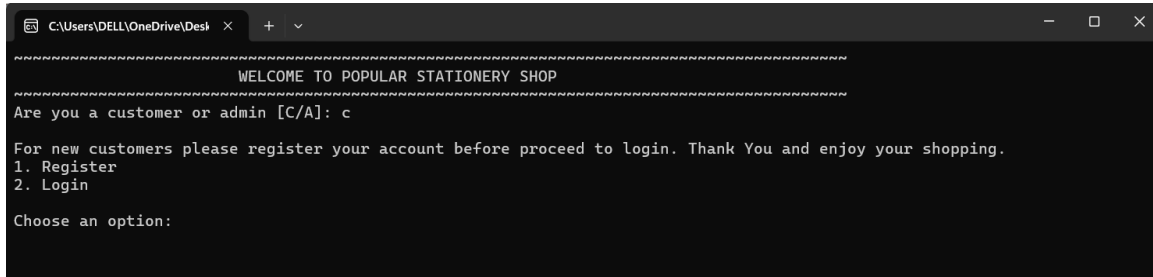
In both side of modules in admin and customer side, we using binary search to found the specific targeted item within the array list. In specific, we implemented this binary search algorithm in managing inventory, by allowing admin to found the items by using the search function. Besides, for the customer are also allowed to enable this binary search during view inventory before they make purchasing the items.

The basic idea for performing binary search is start by comparing the targeted value with the middle value of the array. In our system, we conduct binary search by locating the item code which is an unique identifiers. The admin and customers are able to execute the binary search function during view the inventory and manage inventory. This algorithm have a criteria of fast responses time and will be optimal the use of system resources.

In sum, binary search algorithm offer a effortless experience for admin and customers when they are required to access the data based on their preferences. Binary search is works accurately for sorting data in an array or list.

RESULT/OUTPUT

1. CUSTOMER MODULE



```
C:\Users\DELL\OneDrive\Desktop x + v
WELCOME TO POPULAR STATIONERY SHOP
Are you a customer or admin [C/A]: c
For new customers please register your account before proceed to login. Thank You and enjoy your shopping.
1. Register
2. Login
Choose an option:
```

Figure 1 : Landing page for customer

Above figure is showing the landing page, for the customer and admin to choose the their identity. The user is allowed to enter C or A only. Once the user enter a correct option, they will be directed to the according page which is customer page or admin page.

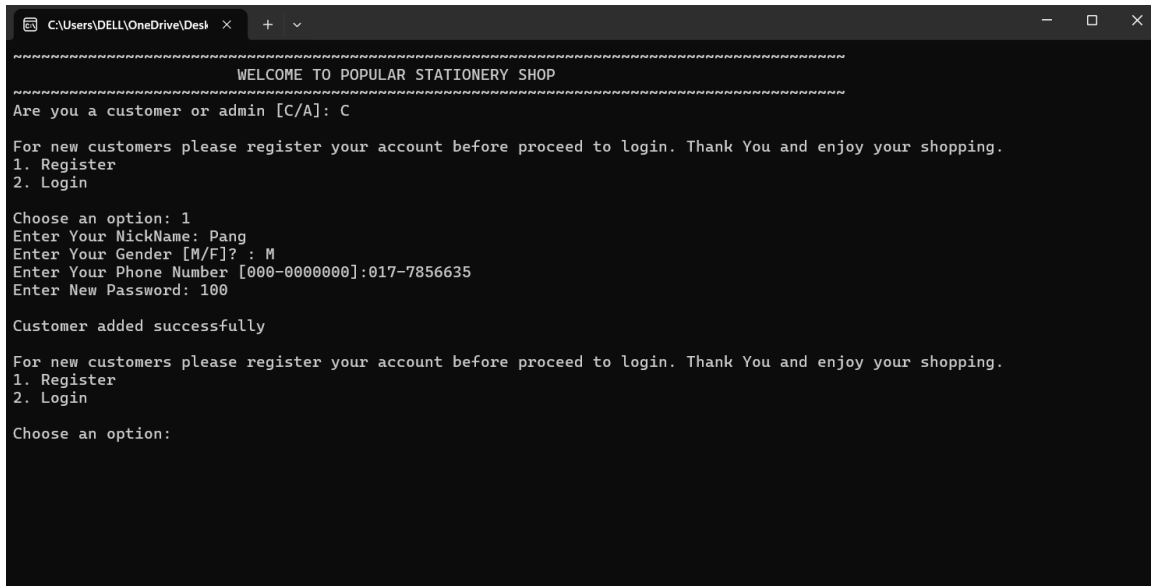


Figure 2 : Register Page

Above figure is showing the page for customer to register their account before navigating the system. For the new customers, they are requested to register their own account before proceed to the login and making purchasing. New customer are requested to enter their nicknames, gender, phone number, and password in order to create an account successfully. Once the customer details has been added, they will be able to login to the system and start purchasing the items.

```
C:\Users\DELL\OneDrive\Desktop x + v
For new customers please register your account before proceed to login. Thank You and enjoy your shopping.
1. Register
2. Login

Choose an option: 2
Enter Username: Pang
Enter Your Password: 100
Login Successful

Item Code      Item Name                                     Price      Stock
01      Pencil-and-sharpener(1-set)                 5.5         1
02      Blue-Pen                                     3.5        14
03      Red-Pen                                      3.5        96
04      Black-Pen                                    3.5       127
05      Highlighter(Yellow)                         5          41
06      Highlighter(Green)                         5          17
07      Glue                                         4           9
08      Ruler(15cm)                                3          41
09      Ruler(20cm)                                4          15
10      Ruler(30cm)                                5.5         9
11      Permanent-marker(Red)                      6          11
12      Permanent-marker(Blue)                    6          13
13      Permanent-marker(Black)                   6           8
14      Colour-Pencil(1box,12-colour)             20         10
15      Colour-Pencil(1box,24-colour)             35         12
16      Colour-Pencil(1box,36-colour)             45         11
17      Colour-Pencil(1box,48-colour)             55         2
18      Stapler(20-Sheet)                          8           9
19      Liquid-Paper(7ml)                         6           9
20      Liquid-Paper(18ml)                       10           8
21      Correction-tape(5mm*6M)                   8          50
22      A4-paper(1pack-50sheets)                  50          25
23      File                                       2.5         58
25      Paper Clips                              5.00       100
28      Pencil                                    4.00         2
30      Pocket File                              0.00    4803072

What would you like to buy?
Enter Item Code:
```

Figure 3 : Login Page

Above figure is showing the login page where customer can login to their account by the username they entered and the password they entered after registered successfully. Once they login successful, they will be directed to the page showing the inventory list of stationary item available in our system. Customer will be prompt to enter the item code to make purchasing.

```
C:\Users\DELL\OneDrive\Desk  x + -
Item Code      Item Name      Price  Stock
01      Pencil-and-sharpener(1-set)    5.5    1
02      Blue-Pen      3.5    14
03      Red-Pen       3.5    96
04      Black-Pen     3.5    127
05      Highlighter(Yellow)    5    41
06      Highlighter(Green)    5    17
07      Glue          4    9
08      Ruler(15cm)    3    41
09      Ruler(20cm)    4    15
10      Ruler(30cm)    5.5    9
11      Permanent-marker(Red)    6    11
12      Permanent-marker(Blue)    6    13
13      Permanent-marker(Black)    6    8
14      Colour-Pencil(1box,12-colour)    20    10
15      Colour-Pencil(1box,24-colour)    35    12
16      Colour-Pencil(1box,36-colour)    45    11
17      Colour-Pencil(1box,48-colour)    55    2
18      Stapler(20-Sheet)    8    9
19      Liquid-Paper(7ml)    6    9
20      Liquid-Paper(18ml)    10    8
21      Correction-tape(5mm*6M)    8    50
22      A4-paper(1pack-50sheets)    50    25
23      File          2.5    58
25      Paper Clips    5.00    100
28      Pencil        4.00    2
30      Pocket File    0.00    4803072

What would you like to buy?
Enter Item Code: 15
Item found: Colour-Pencil(1box,24-colour)

Enter Quantity: 3

Is there anything else? (Y/N):
```

Figure 4 : Binary search function for inventory list if data found

Above figure shows the item found details where the customer entered the available item code. We used Binary Search algorithm method, as the item is founded by the item code entered by the customer the corresponds item name will be displayed. After the item name founded, customer will be prompt to enter the number of the items they would like to purchase after the item name has been found. By continuing the process, customer is prompt to entered Y or N to continue the program.

```
C:\Users\DELL\OneDrive\Desktop x + v
Choose an option: 2
Enter Username: Selvi
Enter Your Password: 111
Login Successful

Item Code    Item Name                                Price    Stock
01           Pencil-and-sharpener(1-set)             5.5      -1
02           Blue-Pen                                3.5      14
03           Red-Pen                                 3.5      96
04           Black-Pen                               3.5     126
05           Highlighter(Yellow)                      5        41
06           Highlighter(Green)                      5        17
07           Glue                                     4         9
08           Ruler(15cm)                             3        41
09           Ruler(20cm)                             4        15
10           Ruler(30cm)                             5.5         9
11           Permanent-marker(Red)                   6         11
12           Permanent-marker(Blue)                  6         9
13           Permanent-marker(Black)                 6         8
14           Colour-Pencil(1box,12-colour)           20        10
15           Colour-Pencil(1box,24-colour)           35         9
16           Colour-Pencil(1box,36-colour)           45        11
17           Colour-Pencil(1box,48-colour)           55         1
18           Stapler(20-Sheet)                       8         8
19           Liquid-Paper(7ml)                      6         9
20           Liquid-Paper(18ml)                     10         5
21           Correction-tape(5mm*6M)                 8        50
22           A4-paper(1pack-50sheets)                50        25
23           File                                    2.5       57
25           Paper                                    0         1
28           Pencil                                   4         0
29           Eraser                                  0.5       51

What would you like to buy?
Enter Item Code: 41
Item with code 41 not found.
```

Figure 5 : Binary search function for inventory list if data found

Above figure shows the item found details where the customer entered the item code which is unavailable. We used Binary Search algorithm method, as the item is not founded by the item code entered by the customer the error message will be noticed to the customer and customer will confirm again to continue the process. By continuing the process, customer is prompt to entered Y or N to continue the program.

```
C:\Users\DELL\OneDrive\Desktop >
17      Colour-Pencil(1box,48-colour)      55      1
18      Stapler(20-Sheet)                   8        9
19      Liquid-Paper(7ml)                   6        9
20      Liquid-Paper(18ml)                  10       5
21      Correction-tape(5mm*6M)              8       50
22      A4-paper(1pack-50sheets)            50      25
23      File                               2.5     58
25      Paper                               0        1
28      Pencil                              4        0
30      Pocket                              0       58

What would you like to buy?
Enter Item Code: 23
Item found: File

Enter Quantity: 1

Is there anything else? (Y/N): y

What would you like to buy?
Enter Item Code: 28
Item found: Pencil
OUT OF STOCK...
Is there anything else? (Y/N): y

What would you like to buy?
Enter Item Code: 18
Item found: Stapler(20-Sheet)
```

Figure 6 : If user entered itemcode out of stock

Above figure shows the item that the customer entered is not available currently and will be noticed to the customer that is out of stock and if they continue would like to continue purchasing they can entered 'Y' to continue the purchasing process until they entered 'N'.

```
What would you like to buy?  
Enter Item Code: 15  
Item found: Colour-Pencil(1box,24-colour)  
  
Enter Quantity: 3  
  
Is there anything else? (Y/N): Y  
  
What would you like to buy?  
Enter Item Code: 20  
Item found: Liquid-Paper(18ml)  
  
Enter Quantity: 3  
  
Is there anything else? (Y/N): N
```

Figure 7 : If customer want to continue purchase

Above figure illustrates that how the customer entered 'Y', they will be repeating the process by purchasing more than one item at one time until the customer entered 'N', the purchasing process will be stopped and proceed to the next step.

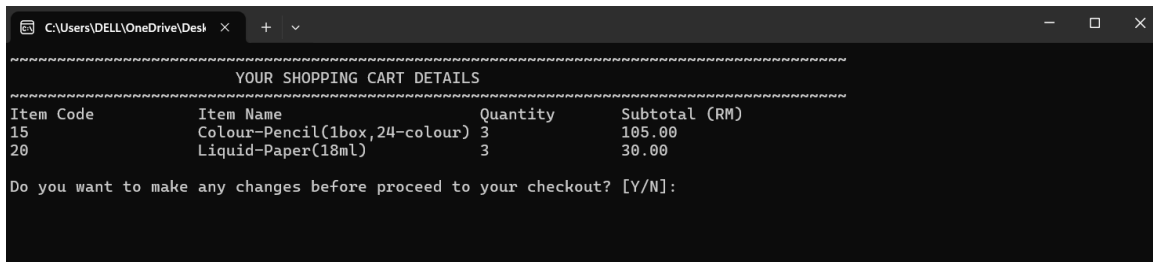


Figure 8 : The products in the shopping cart

Above figure indicate that the shopping cart details that the customer entered in the previous page. In the shopping cart page, will be showing the details of each item the customer selected in the purchasing page. Also, the customer will be asked to final confirmation before proceed to check out page. Once the customer closes the program without complete purchasing, the data in cart cannot be retrieve again means they need to key-in again the item details.

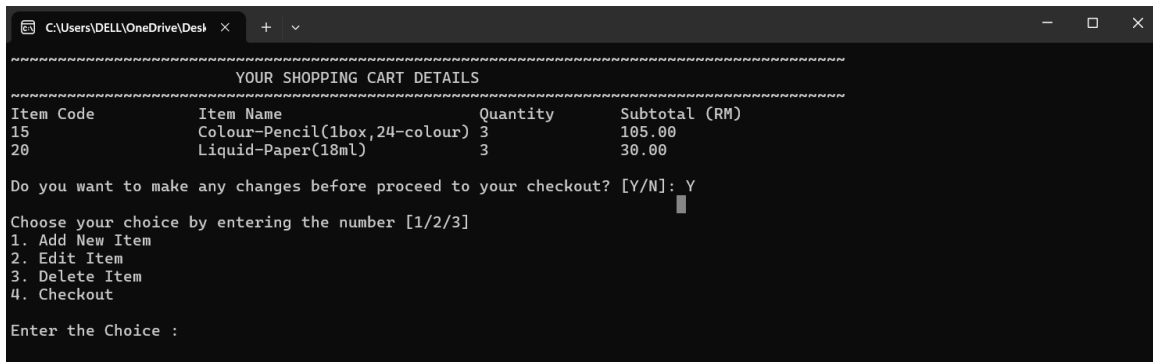


Figure 9 : If customer want to make changes in the shopping cart

Above figure is showing once the customer entered 'Y' to before proceeding to check out page, customer will be allowed to make changes for the item they added into the shopping cart. Once the customer entered 'Y', they will be showing with the option that they would like to perform.


```

Choose your choice by entering the number [1/2/3]
1. Add New Item
2. Edit Item
3. Delete Item
4. Checkout

Enter the Choice :1
Item Code      Item Name      Price      Stock
01             Pencil-and-sharpener(1-set)      5.5      1
02             Blue-Pen      3.5      14
03             Red-Pen      3.5      96
04             Black-Pen      3.5      127
05             Highlighter(Yellow)      5      41
06             Highlighter(Green)      5      17
07             Glue      4      9
08             Ruler(15cm)      3      41
09             Ruler(20cm)      4      15
10             Ruler(30cm)      5.5      9
11             Permanent-marker(Red)      6      11
12             Permanent-marker(Blue)      6      13
13             Permanent-marker(Black)      6      8
14             Colour-Pencil(1box,12-colour)      20      10
15             Colour-Pencil(1box,24-colour)      35      9
16             Colour-Pencil(1box,36-colour)      45      11
17             Colour-Pencil(1box,48-colour)      55      2
18             Stapler(20-Sheet)      8      9
19             Liquid-Paper(7ml)      6      9
20             Liquid-Paper(18ml)      10      5
21             Correction-tape(5mm*6M)      8      50
22             A4-paper(1pack-50sheets)      50      25
23             File      2.5      58
25             Paper      0      2
28             Pencil      4      2
30             Pocket      0      58

What would you like to add?
Enter Item Code: 01
Item found: Pencil-and-sharpener(1-set)

Enter Quantity: 2
Is there anything else? (Y/N):

```

Figure 10 : If the customer wants to add new item in the cart

Above figure is displaying the once the customer '1' as their option is to add new item, and they will be directed to show the list of the inventory list, where they can add new item into the shopping cart before proceed to checkout. In the adding process, it's same function during on the purchasing page, where they also implemented Binary Search function in the adding items page where customer can search the items by entering the item code, and if the item is available the item name will be displayed and customer will be prompt to enter the quantity they would like to purchase for.

```
C:\Users\DELL\OneDrive\Desk  X + v
YOUR SHOPPING CART DETAILS
Item Code      Item Name      Quantity      Subtotal (RM)
28             Pencil         2             8.00

Do you want to make any changes before proceed to your checkout? [Y/N]: y

Choose your choice by entering the number [1/2/3]
1. Add New Item
2. Edit Item
3. Delete Item
4. Checkout

Enter the Choice :2
Enter Item Code to edit: 28
Item found: Pencil

YOU ARE ONLY ALLOWED TO EDIT THE QUANTITY OF THE ITEM

Enter the new quantity: 3

Your quantity updated successfully

Item Code      Item Name      Quantity      Subtotal (RM)
28             Pencil         3             12.00
```

Figure 11 : If customer wants to edit the items in the cart

Above figure is displaying the if the customer entered '2' as their option is to edit the item that placed into the shopping cart. Customer will be prompt to enter the item code in the shopping details and if the item is being founded by the Binary Search function is implemented in the shopping cart details, customer will be only allowed to modify on the amount of the items. Customer will be prompted to enter the new quantity and once it's entered the updating process will be completed and the shopping cart details will be printed again with the updated item quantity.

```
C:\Users\DELL\OneDrive\Desk  X + -
YOUR SHOPPING CART DETAILS
Item Code      Item Name      Quantity      Subtotal (RM)
17             Colour-Pencil(1box,48-colour) 1 55.00
04             Black-Pen      1 3.50

Do you want to make any changes before proceed to your checkout? [Y/N]: y

Choose your choice by entering the number [1/2/3]
1. Add New Item
2. Edit Item
3. Delete Item
4. Checkout

Enter the Choice :3
Enter Item Code to delete: 04
Item deleted successfully

Item Code      Item Name      Quantity      Subtotal (RM)
17             Colour-Pencil(1box,48-colour) 1 55.00
```

Figure 12 : If the customer wants to delete the item in the cart

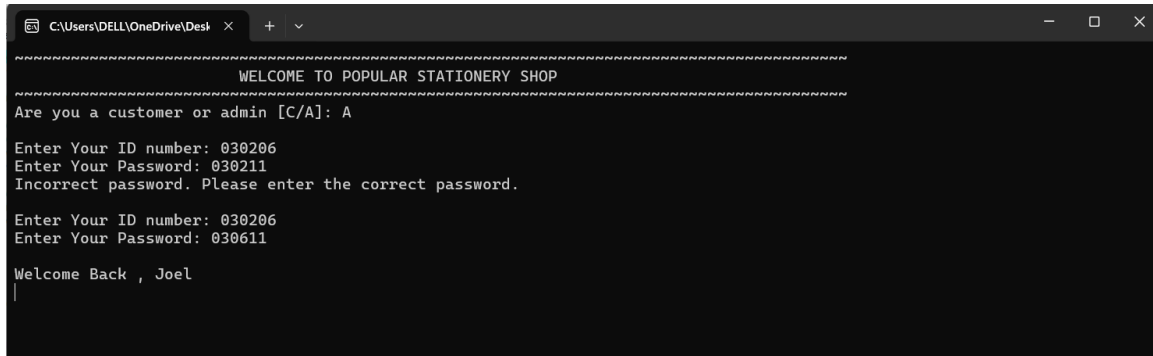
Above figure is showing if the customer entered '3' as their option is to delete the item in the shopping cart. The customer will be prompt to enter the item code that they would like remove for and the item will be removed from the shopping cart. The new shopping cart details will be printed with the updated item remained in the shopping cart.

```
C:\Users\DELL\OneDrive\Desk x + v
-----
POPULAR STATIONERY SHOP
AEON MALL (GROUND FLOOR)
Lot G57, Persiaran Indahpura 7, Bandar Indahpura
81000 Kulaijaya Johor Bahru
-----
Item Code      Item Name      Quantity      Subtotal (RM)
23             File           1             2.50
18             Stapler(20-Sheet) 1             8.00
Grand Total: RM 10.50
Thank You and Come Again
-----
Process exited after 67.64 seconds with return value 0
Press any key to continue . . .
```

Figure 13 : The receipt page

Above figure shows the receipt page. Once the customer proceed to the checkout, they will be directed to the receipt showing the details of the item they decided to purchase. In the receipt page, it is clearly show the item code, item name, quantity with the subtotal of the item and below is showing the grand total of the price in this purchasing process. Once the customer reached to this receipt page, the program will be terminated and exit.

2. ADMIN MODULE



```
C:\Users\DELL\OneDrive\Desktop >
=====
WELCOME TO POPULAR STATIONERY SHOP
=====
Are you a customer or admin [C/A]: A

Enter Your ID number: 030206
Enter Your Password: 030211
Incorrect password. Please enter the correct password.

Enter Your ID number: 030206
Enter Your Password: 030611

Welcome Back , Joel
|
```

Figure 14 : The landing page for admin

Above figure is showing the landing page, for the customer and admin to choose their identity. The user is allowed to enter C or A only. Once the user enter 'A', they will be requested to enter the admin ID and password in order to proceed to the managing page for the shop. If the password is incorrect it will be repeat again for admin to enter id number.

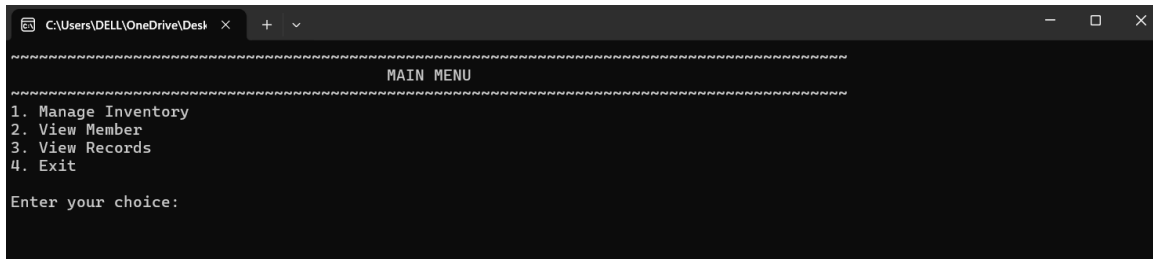


Figure 15 : Main menu page for admin after login

Above figure is showing the main menu page after the admin has entered their correct admin ID. In the main menu page will be showing different option for admin to choose on will be directed to the selected option page to manage the system for the Stationary Shop.

```

Enter your choice: 1

Item Code      Item Name                                     Price  Stock
01             Pencil-and-sharpener(1-set)                5.5    -1
02             Blue-Pen                                    3.5    14
03             Red-Pen                                    3.5    96
04             Black-Pen                                   3.5   126
05             Highlighter(Yellow)                   5     41
06             Highlighter(Green)                   5     17
07             Glue                                    4     9
08             Ruler(15cm)                               3    41
09             Ruler(20cm)                               4    15
10             Ruler(30cm)                               5.5     9
11             Permanent-marker(Red)                 6    11
12             Permanent-marker(Blue)                6     9
13             Permanent-marker(Black)               6     8
14             Colour-Pencil(1box,12-colour)         20    10
15             Colour-Pencil(1box,24-colour)         35     9
16             Colour-Pencil(1box,36-colour)         45    11
17             Colour-Pencil(1box,48-colour)         55     1
18             Stapler(20-Sheet)                     8     8
19             Liquid-Paper(7ml)                     6     9
20             Liquid-Paper(18ml)                   10     5
21             Correction-tape(5mm*6M)               8    50
22             A4-paper(1pack-50sheets)              50    25
23             File                                   2.5    57
25             Paper                                    0     1
28             Pencil                                    4     0
30             Pocket                                    0    58

Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice:

```

Figure 16 : The manage inventory page

Above figure is showing the manage inventory page once the admin has entered '1' as their option. In the manage inventory page, admin will be able to perform add, edit, delete function. Before making any changes, admin will be prompt to enter the option that they would like to modify for.

```
Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 1
Enter Item Code: 29
Enter Item Name: Eraser
Enter Price: RM 0.50
Enter Stock: 52

Item added successfully
Do you want to continue? (Y/N):
```

Figure 17 : Add new item in inventory list

Above figure is displayed the add item page. Once the admin has entered choice '1'. Admin will be able to add a new item by entering the item code, item name, price of the item and the stock of the item. Once all information has entered accordingly the item will be added successfully and updated into the text file.


```
C:\Users\DELL\OneDrive\Desk  X + v - □ X
03      Red-Pen      3.5  96
04      Black-Pen    3.5  126
05      Highlighter(Yellow)  5  41
06      Highlighter(Green)  5  17
07      Glue         4    9
08      Ruler(15cm)   3    41
09      Ruler(20cm)   4    15
10      Ruler(30cm)   5.5  9
11      Permanent-marker(Red)  6  11
12      Permanent-marker(Blue)  6  9
13      Permanent-marker(Black)  6  8
14      Colour-Pencil(1box,12-colour)  20  10
15      Colour-Pencil(1box,24-colour)  35  9
16      Colour-Pencil(1box,36-colour)  45  11
17      Colour-Pencil(1box,48-colour)  55  1
18      Stapler(20-Sheet)  8  8
19      Liquid-Paper(7ml)  6  9
20      Liquid-Paper(18ml)  10  5
21      Correction-tape(5mm*6M)  8  50
22      A4-paper(1pack-50sheets)  50  25
23      File         2.5  57
25      Paper        0    1
28      Pencil       4    0
29      Eraser       0.5  51

Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 1
Enter Item Code: 29
Item code already exists. Cannot add item.

Do you want to continue? (Y/N): |
```

Figure 18 : If the entered item code already exists for add item

Above figure is displayed the add item page. Once the admin has entered choice '1'. Admin should enter the item code to proceed with add new item, if admin enter the existing itemcode then the item cannot be added.

```
Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 2
Enter Item Code to edit: 30
Item found: Pocket

What would you like to edit?
1. Item Name
2. Price
3. Quantity
Enter your choice: 1

Enter New Item Name: Pocket-File

Item edited successfully
Do you want to continue? (Y/N):
```

Figure 19 : If edit the item by name

Above figure is displayed the edit item page. Once the admin has entered choice '2'. Admin will be able to make modify for the item. During the modification process, admin will be prompt to enter which option they would like to edit for. Admin is allowed to edit the item name, price and the quantity of the item by entering the different choice. In this figure , admin able to edit the item name by choosing choice '1'. Once done edit the name it will be updated in the inventory text file.

```
C:\Users\DELL\OneDrive\Desk x + v
14 Colour-Pencil(1box,12-colour) 20 10
15 Colour-Pencil(1box,24-colour) 35 9
16 Colour-Pencil(1box,36-colour) 45 11
17 Colour-Pencil(1box,48-colour) 55 1
18 Stapler(20-Sheet) 9.00 8
19 Liquid-Paper(7ml) 6 9
20 Liquid-Paper(18ml) 10 5
21 Correction-Tape(5mm*6M) 8.90 88
22 A4-Paper(1pack-50sheets) 50.00 25
23 Files 2.60 65
24 WhiteBoard-Marker 6.00 54
25 Papers 0.90 800
28 Pencil 1.20 65
29 Stabilo-Eraser 0.60 95

Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 2
Enter Item Code to edit: 20
Item found: Liquid-Paper(18ml)

What would you like to edit?
1. Item Name
2. Price
3. Quantity
Enter your choice: 2

Enter New Price: 10.50

Item edited successfully

Do you want to continue? (Y/N): |
```

Figure 20 : If edit the item by price

Above figure is displayed the edit item page for the inventory price. Once the admin has entered choice '2'. Admin can enter new price to be updated in the inventory list. Once done edit the price it displayed the item edited successfully and updated into the text file.

```
C:\Users\DELL\OneDrive\Desk x + v - □ x
13 Permanent-marker(Black) 6 8
14 Colour-Pencil(1box,12-colour) 20 10
15 Colour-Pencil(1box,24-colour) 35 9
16 Colour-Pencil(1box,36-colour) 45 11
17 Colour-Pencil(1box,48-colour) 55 1
18 Stapler(20-Sheet) 9.00 8
19 Liquid-Paper(7ml) 6 9
20 Liquid-Paper(18ml) 10.50 5
21 Correction-Tape(5mm*6M) 8.90 88
22 A4-Paper(1pack-50sheets) 50.00 25
23 Files 2.60 65
24 WhiteBoard-Marker 6.00 54
25 Papers 0.90 800
28 Pencil 1.20 65
29 Stabilo-Eraser 0.60 95

Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 2
Enter Item Code to edit: 19
Item found: Liquid-Paper(7ml)

What would you like to edit?
1. Item Name
2. Price
3. Quantity
Enter your choice: 3

Enter New Stock: 54

Item edited successfully

Do you want to continue? (Y/N):
```

Figure 21 : If edit the item by stock

Above figure is displayed the edit item page for the inventory stock. Once the admin has entered choice '2'. Admin can enter new stock to be updated in the inventory list. Once done edit the stock it displayed the item edited successfully and updated into the text file.

```
Please choose an option:
1. Add Item
2. Edit Item
3. Delete Item
4. Back

Enter your choice: 3
Enter Item Code to delete: 30

Item deleted successfully!
Do you want to continue? (Y/N):
```

Figure 22 : Delete the item in the inventory list

Above figure is displayed the delete item page. Once the admin has entered choice '3'. Admin will be able to delete the item by entering the item code. Once the item code had entered the item will be deleted successfully and the information will be removed in the text file.

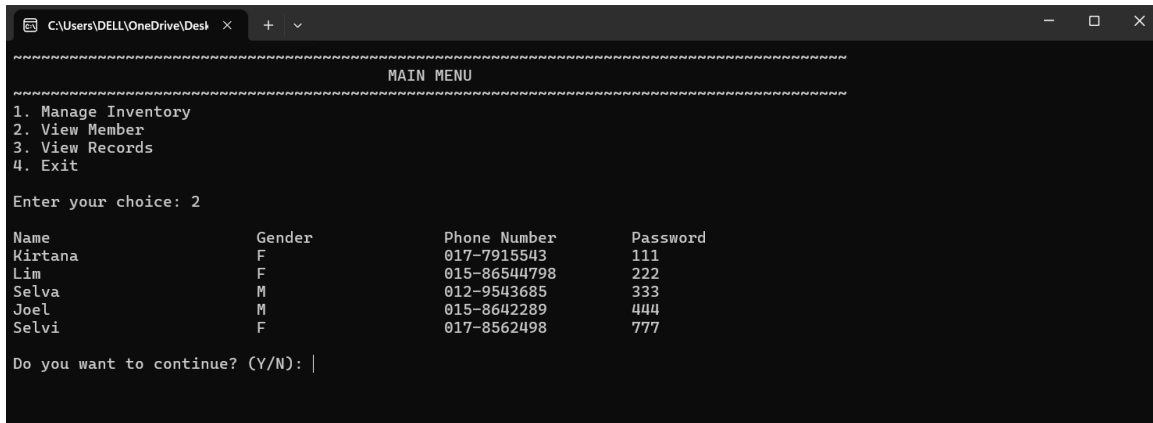


Figure 23 : View Members

Above figure is showing the full records of the customer successfully register their account in the login page. Admin will be able to view the full records of the customer details by able to see the name, gender, phone number and password for the customer registered.

Enter your choice: 3

Item Code	Item Name	Quantity	Price(RM)
22	A4-paper(1pack-50sheets)	2	50.00
04	Black-Pen	4	3.50
04	Black-Pen	3	3.50
04	Black-Pen	5	3.50
04	Black-Pen	2	3.50
04	Black-Pen	2	3.50
04	Black-Pen	5	3.50
02	Blue-Pen	1	3.50
26	Blue-Pen	3	3.50
02	Blue-Pen	2	3.50
02	Blue-Pen	1	3.50
02	Blue-Pen	2	3.50
14	Colour-Pencil(1box,12-colour)	1	20.00
15	Colour-Pencil(1box,24-colour)	2	35.00
15	Colour-Pencil(1box,24-colour)	3	35.00
23	File	5	2.50
23	File	1	2.50
23	File	4	2.50
23	File	4	2.50
23	File	2	2.50
30	Filess	1	1.20
26	Filess	5	1.20
30	Filess	1	1.20
30	Filess	2	1.20
20	Liquid-Paper(18ml)	3	10.00
28	Pencil	2	2.60
14	Pencil-and-sharpener(1-set)	1	5.50
01	Pencil-and-sharpener(1-set)	1	5.50
01	Pencil-and-sharpener(1-set)	1	5.50
01	Pencil-and-sharpener(1-set)	4	5.50
01	Pencil-and-sharpener(1-set)	1	5.50
12	Permanent-marker(Blue)	1	6.00
12	Permanent-marker(Blue)	1	6.00
12	Permanent-marker(Blue)	1	6.00
12	Permanent-marker(Blue)	1	6.00
12	Permanent-marker(Blue)	1	6.00
14	Red-Pen	2	3.50
03	Red-Pen	2	3.50
03	Red-Pen	2	3.50
08	Ruler(15cm)	2	3.00

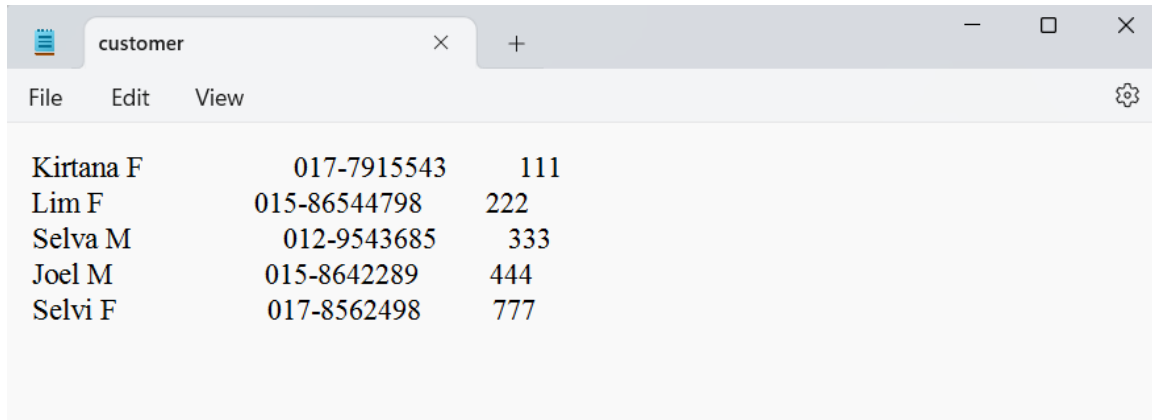
- POPULAR STATIONARY SHOP -

TOTAL SALES : RM 587.00

Figure 24 : View all the purchased records

Above figure is showing the full records of the order successfully purchased by the customer. Admin will be able to view the full records in this page and the total sales of the inventory sold in the shop.

3. TEXT FILE

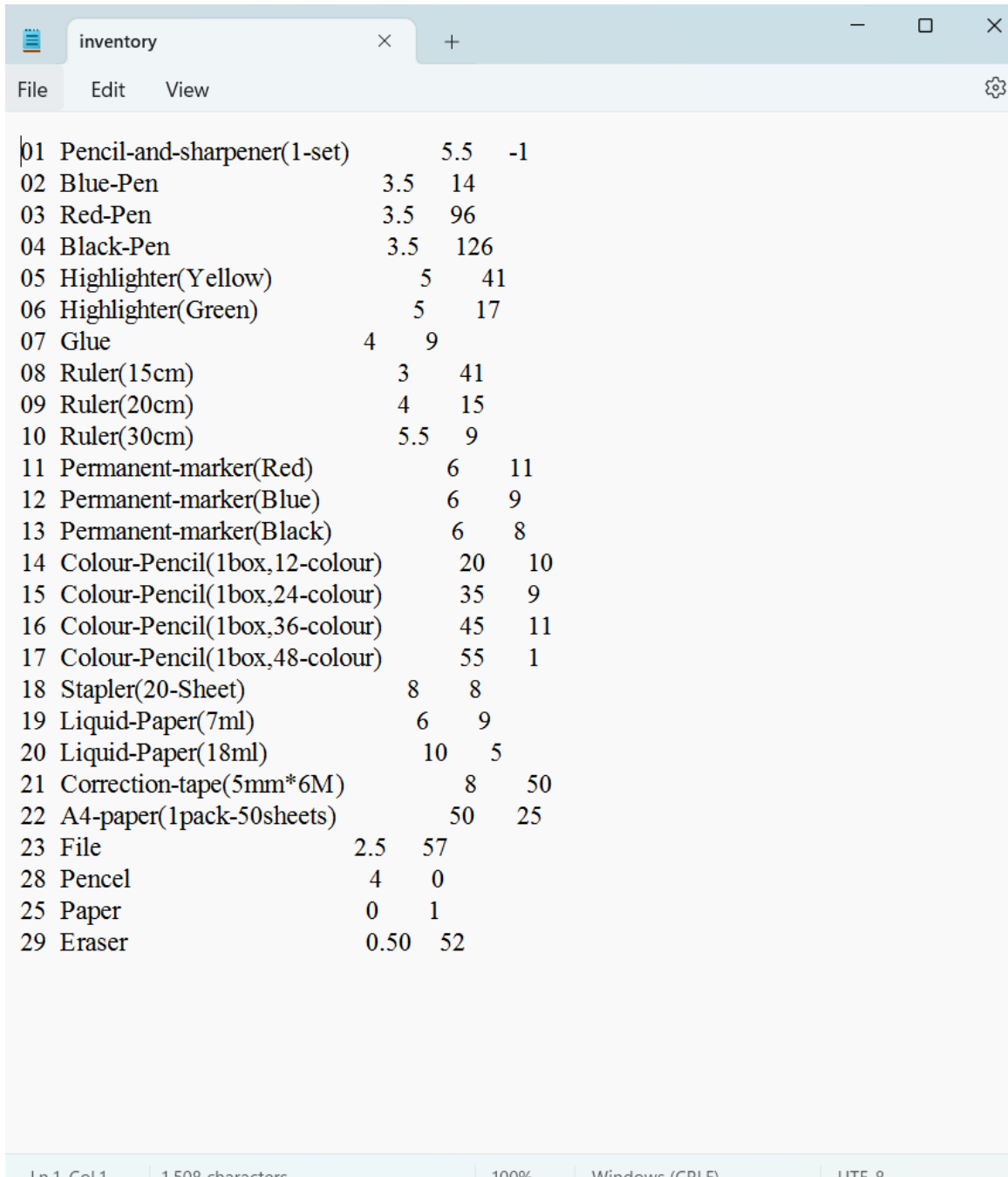


The image shows a text editor window with a single tab titled 'customer'. The window has a menu bar with 'File', 'Edit', and 'View' options, and a settings icon on the right. The text content is as follows:

Kirtana F	017-7915543	111
Lim F	015-86544798	222
Selva M	012-9543685	333
Joel M	015-8642289	444
Selvi F	017-8562498	777

Figure 25 : Customer text file

Above figure is showing the text file for the customer registered their account in the system. In the text file shows the customer name, gender, phone number, and password which they entered during the register process and the purpose for in this text file is to ensure that when the customer want to login to their account, the system will get the data from this text file.



01	Pencil-and-sharpener(1-set)	5.5	-1
02	Blue-Pen	3.5	14
03	Red-Pen	3.5	96
04	Black-Pen	3.5	126
05	Highlighter(Yellow)	5	41
06	Highlighter(Green)	5	17
07	Glue	4	9
08	Ruler(15cm)	3	41
09	Ruler(20cm)	4	15
10	Ruler(30cm)	5.5	9
11	Permanent-marker(Red)	6	11
12	Permanent-marker(Blue)	6	9
13	Permanent-marker(Black)	6	8
14	Colour-Pencil(1box,12-colour)	20	10
15	Colour-Pencil(1box,24-colour)	35	9
16	Colour-Pencil(1box,36-colour)	45	11
17	Colour-Pencil(1box,48-colour)	55	1
18	Stapler(20-Sheet)	8	8
19	Liquid-Paper(7ml)	6	9
20	Liquid-Paper(18ml)	10	5
21	Correction-tape(5mm*6M)	8	50
22	A4-paper(1pack-50sheets)	50	25
23	File	2.5	57
28	Pencil	4	0
25	Paper	0	1
29	Eraser	0.50	52

Figure 26 : Inventory text file

Above figure is showing the text file for the inventory of the stationary stock item available in the shop. In the text file shows the item code, item name, price of the stock and the amount of the stock available.

order				
File	Edit	View		
23	File	5	2.5	
04	Black-Pen	4	3.5	
14	Pencil-and-sharpener(1-set)	1	5.5	
01	Pencil-and-sharpener(1-set)	1	5.5	
01	Pencil-and-sharpener(1-set)	1	5.5	
12	Permanent-marker(Blue)	1	6	
30	Filess	1	1.2	
12	Permanent-marker(Blue)	1	6	
14	Red-Pen	2	3.5	
03	Red-Pen	2	3.5	
12	Permanent-marker(Blue)	1	6	
12	Permanent-marker(Blue)	1	6	
02	Blue-Pen	1	3.5	
12	Permanent-marker(Blue)	1	6	
14	Colour-Pencil(1 box,12-colour)	1	20	
26	Filess	5	1.2	
30	Filess	1	1.2	
26	Blue-Pen	3	3.5	
02	Blue-Pen	2	3.5	
23	File	1	2.5	
22	A4-paper(1pack-50sheets)	2	50	
02	Blue-Pen	1	3.5	
23	File	4	2.5	
01	Pencil-and-sharpener(1-set)	4	5.5	
04	Black-Pen	3	3.5	
02	Blue-Pen	2	3.5	
15	Colour-Pencil(1 box,24-colour)	2	35	
23	File	4	2.5	
01	Pencil-and-sharpener(1-set)	1	5.5	
08	Ruler(15 cm)	2	3	
30	Filess	2	1.2	
28	Pencil	2	2.6	
04	Black-Pen	5	3.5	
23	File	2	2.5	
04	Black-Pen	2	3.5	
04	Black-Pen	2	3.5	
03	Red-Pen	2	3.5	
04	Black-Pen	5	3.5	
15	Colour-Pencil(1 box,24-colour)	3	35	
20	Liquid Pen(18ml)	2	10	
Ln 1, Col 3 2,899 characters 80% Windows (CRLF) UTF-8				

Figure 27 : Order text file

Above figure is showing the text file for the order list of the customer purchased. In this text file will be storing all the item code, item name, quantity purchased by the customer and the subtotal price of each item as a record purposes.

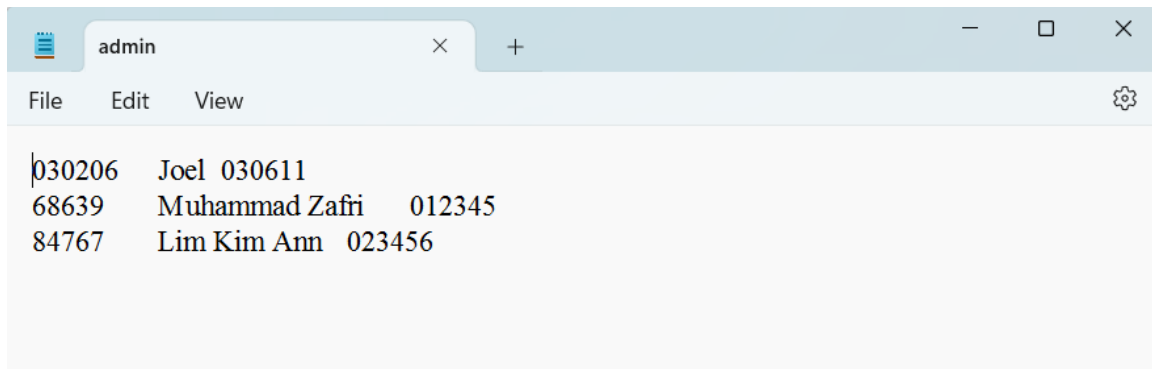
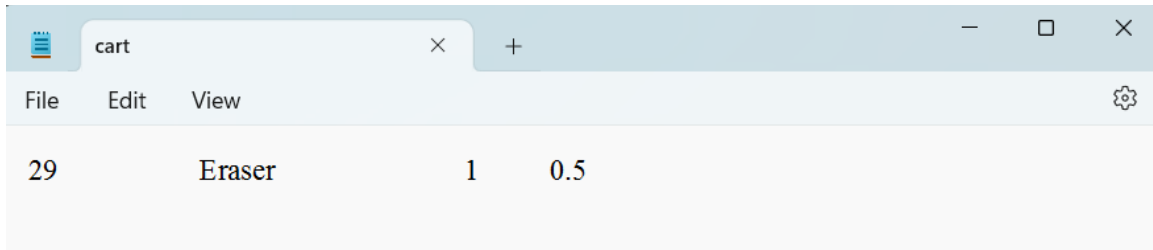


Figure 28 : Admin text file

Above figure is showing the text file for the admin details available in the stationary shop. In this text file is storing the admin details of admin ID, admin name, admin password where it will allowed the admin to login to the admin page by entering the admin ID and password to manage the system.



29	Eraser	1	0.5
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Figure 29 : Cart text file

Above figure is showing the cart details. In this text file will be storing all the shopping cart details during adding process. The purpose for this text file will be printed for customer to check before proceed to the checkout page, when customer adding product the cart details in this text file will be updated, and during editing the quantity of the item, the details in this cart text file will be changes and printed for customer.

CONCLUSION

To conclude, this Stationary Shop Management System is developed to create the seamless management for the shop's inventory by having an efficiently and conveniently. By having the customer and admin modules, and carry out the fundamental algorithms concept such as linked list for managing the inventory, insertion algorithms by sorting in an alphabetical order, and binary search for a rapid data retrieval. The system allowed customer and admin to have a straightforward operations and boost the user experiences by having an user-friendly system.

Moreover, with the combination of technologies and the algorithms we implemented is to empower for admin and customer to navigate and manage the inventory with minimal of effort. With the aim of this project is to provide a systematic system for the Stationary Shop in managing the shop and a better user satisfaction experiences.

APPENDIX

- [Stationery Shop Management System Project For Final Year \(lovelycoding.org\)](#)
- [https://cplusplus.com/forum/beginner/270514/](#)
- [https://www.geeksforgeeks.org/cpp-program-for-insertion-sort/](#)
- [https://www.geeksforgeeks.org/binary-search/](#)