Final Project Report

CPE100: Computer Programming for Engineers

Group name: TOP Gang

"Online Shop Management System"

Submitted to

Assoc. Prof Dr. Natasha Dejdumrong

Created By

Chawit Pimapansri 65070503411
Nichaporn Manachaiprasert 65070503446
Thanakit Chokbunsuwan 65070503448

Semester 01/2022

King Mongkut's University of Technology Thonburi

Table content

Abstract A

introduction B

Chapter 1 Introduction

1.1Flowchart 1

1.2Inventory system 2

1.3Point of sale 2

1.4finance system 2

1.5Main menu 2

1.6Login 2

Chapter 2 Functionalities

2.1 Main menu 3

2.2 Login 3

2.3 Inventory system 4

2.4 point of sale 6

2.5 finance system 7

Chapter 3 Proof of concept

3.1 Main Menu 12

3.2Login 13

3.3 Inventory system 14

3.4 POS 16

3.5 Finance 17

Chapter 4 Workload

workload 19

Abstract

This project is an online shop Management system in c language.
Our group consists of three people.
The project objective is to develop a store management system that includes two parts: the owner and the client. The owner will have both a back office and a front office. It can assist the user in managing the shop, such as seeing a summary profit for each day or week, this function will assist the user in reducing some of the positions that are unnecessary.

As I already mentioned, our project has many features. In this system, we focus on usability, which we developed based on our experience and study into what the user needs to see in the system.

Our feature is divided into three main categories, which are listed below:
1. Inventory system
2. Accounting system
3. Point of sale (POS)

Introduction

In terms of resources, as you can see, there are approximately 2.14 billion online consumers worldwide, and this figure is expected to rise between 2020 and 2021. 27% of the world's population shops online. There are 9.1 million internet retailers worldwide. As a result of the effect of technology in business, we want to design systems that can assist grow sales while reducing work time as much as possible.

Chapter 1: Introduction

1.1 Flowchart

A flow chart describes a process using symbols rather than words. Computer programmers use flow charts to show where data enters the program, what processes the data goes through, and how the data is converted to output.

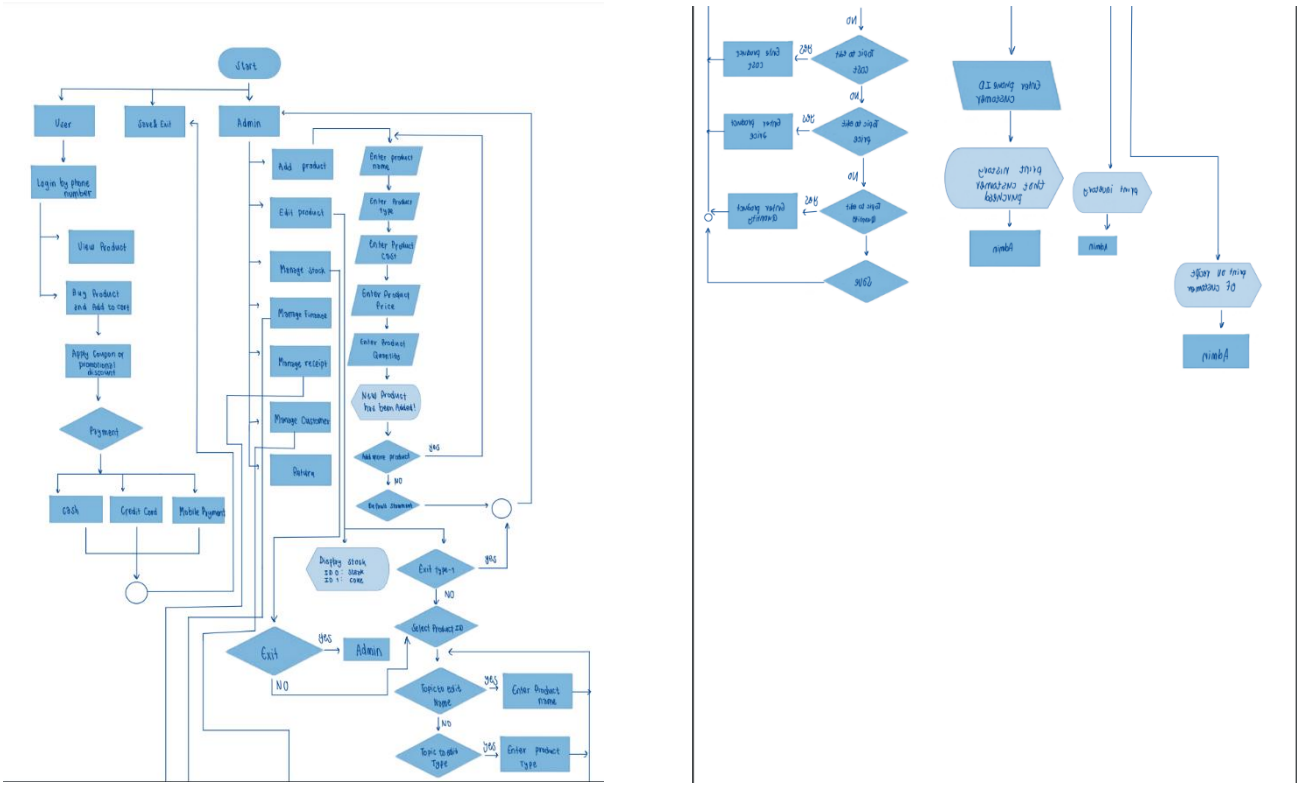

Fig1: Flowchart of this system

Inventory system

Inventory management helps companies identify which and how much stock to order at what time. It tracks inventory from purchase to the sale of goods. Also have notification reminder when product in stock less than 5 pieces.

Benefits of Inventory Management
-Saves Money
- Improves Cash Flow
- Getting Accurate Stock Details

1.3 Point of sales

A POS transaction may occur in person or online, with receipts generated either in print or electronically. Cloud-based POS systems are becoming increasingly popular among merchants.

1.4 Finance system

This system displays how many items have been sold and the total amount received for each product. This system is beneficial to the owner because it helps them to organize their orders from the manufacturer. Also have E-coupon to persuade customer come back to shopping in our shop again.

1.5 Main menu

A menu is a set of options presented to the user of a computer application Our main menu is divided into three sections: -Owner -Customer -Exit & Save

1.6 Login

logging in is the process by which an individual gains access to this system. User can access by enter phone number in ten digits.

Chapter 2: Functionality

2.1 Main page

The first output will be a main menu with three options for the user to select from: owner, customer, and exit and save.

```
void start()
{
    int ii;
    printf("Menu\n1.Owner\n2.Customer\n9.Save&Exit\nPlease Select : ");
    scanf("%d", &ii);
    if (ii == 1)
        owner();
    else if (ii == 2)
        customer();
    else if (ii == 9)
        save();
    else
        printf("Please Input again\n"), start();
}
```

Fig2: Main menu

2.2 Login page

Phone number

After choosing customer function the program will ask user to insert phone number and store in the text file as string (Sell.txt), also if the user didn't input the number correctly the program will ask to input again.

```
int customer()
{
    printf("Please type your phone number : ");
    int checkeisphonenumberornot;
    scanf("%s", receipt[Cuscount].phone);
    checkeisphonenumberornot=ft_isdigit(receipt[Cuscount].phone,10);
    if(checkeisphonenumberornot==1)
    {
        printf("Menu\n1.Drink\n2.Appetizer\n3.Main Course\n4.Desert\n5.Return\nPlease Select : ");
        scanf("%d", &i);
        if (i == 1)
            PrintItemCus(1);
        else if (i == 2)
            PrintItemCus(2);
        else if (i == 3)
            PrintItemCus(3);
        else if (i == 4)
            PrintItemCus(4);
        else if (i == 5)
            start();
        else
            printf("Please Input again\n"), customer();
    }
    else
    {
        printf("Phone number is incorrect\n");
        customer();
    }
}
```

Fig3: Customer menu

2.3 Inventory system

Product in stock

The data of each item will store in the text file (Inventory.txt) which will separated into Name, ID, Cost, Price, and Stock. The limit of inventory is 30 items

```c
int inventory()
{
const char *save_record = "Item name: %s | ID : %d | Type : %d | Cost : %.2f | Price : %.2f | Stock : %d\n";
const char *import_record = "Item name: %s | ID : %d | Type : %d | Cost : %.2f | Price : %.2f | Stock : %d\n";
const char *bill_record = "%s | %d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d | Time = %s | Cash = %f | Change = %f | Card = %s | Coupon = %s |";
FILE *file_inventory, *file_pos;
file_inventory = fopen("C:/Users/chawi/Desktop/CPE100/Inventory.txt", "r+");
file_pos = fopen("C:/Users/chawi/Desktop/CPE100/Sell.txt", "r+");
for (int i = 0; i < 30; i++)
    {
fscanf(file_inventory, "Item name: %s | ID : %d | Type : %d | Cost : %f | Price : %f | Stock : %d\n", &Product[i].name, &Product[i].id, &Product[i].type, &Product[i].cost, &Product[i].price, &Product[i].stock);

        if ((int)Product[i].price == 0)
        {
            temp = i;
            break;
        }
    }
for (int i = 0; i < 100; i++){
fscanf(file_pos, "%s | %d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d | Time = %s | Cash = %f | Change = %f | Card = %s | Coupon = %s |\n",&receipt[i].phone, &receipt[i].id[0]

if ((int)receipt[i].cash == 0)
        {
            Cuscount = i;
            break;
        }
}}
```

Fig4: Import inventory and receipt from text file

Check Stock

This function will print all of the stocks including name and amount of product left in stock, also it will alert to user if the product has less than 5 pieces

```c
int Stock()
{
    for (int x = 0; x <= temp-1; x++)
    {
        if(strlen(Product[x].name)<=7)
        {
            printf("%s", Product[x].name);
            printf("\t\t%d Left\n", Product[x].stock);
        }
        else
        {
            printf("%s", Product[x].name);
            printf("\t%d Left\n", Product[x].stock);
        }
    }
    for (int x = 0; x <= temp-1; x++)
    {
        if(Product[x].stock<=5)
        {
            printf("##########%s has only %d pieces##########\n",Product[x].name,Product[x].stock);
        }
    }
    printf("Exit Please Type 0\n");
    printf("Edit Stock Please Type 9\n");
    int z;
    scanf("%d", &z);
    if (z == 0)
        owner();
    else if (z == 9)
        EditProduct();
    else
        printf("Type again"), Stock();
}
```

Fig5: Print stock

Save program

After finish using program, user have to return to main menu and press 9 to save and exit the programs, closing program before using save function will save none of the process during using the program. Program will replace old text file with the new text file with updated data

```
int save(){
    FILE *file_inventory,*file_pos;
    const char *save_record = "Item name: %s | ID : %d | Type : %d | Cost : %.2f | Price : %.2f | Stock : %d\n";
    const char *bill_record = "%s | %d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d,%d | Time = %s | Cash = %.2f | Change = %.2f | Card = %s | Coupon = %s |\n";
    file_inventory = fopen("C:/Users/chawi/Desktop/CPE100/Inventory.txt", "w");
    file_pos = fopen("C:/Users/chawi/Desktop/CPE100/Sell.txt", "w");
    for (int i = 0;i<temp;i++)
fprintf(file_inventory, save_record, Product[i].name, Product[i].id, Product[i].type, Product[i].cost, Product[i].price, Product[i].stock);
    for (int i = 0;i<Cuscount;i++)
fprintf(file_pos, bill_record, receipt[i].phone,receipt[i].id[0],receipt[i].id[1],receipt[i].id[2],receipt[i].id[3],receipt[i].id[4],receipt[i].id[5],receipt[i].id[6],receipt[i].id[7],receipt[i].id[8],
}
```

Fig6: Save programs

2.4 Point of sale

Receipt

This function will print all of the purchased receipt by importing the data from the Sell.txt and display the information like purchased product, amount, payment type and time.

```
int bill(){
int a;
for (int i=0;i<Cuscount;i++){
    printf("Bill Number %d\n",i+1);
    printf("Phone Number : %s\n",receipt[i].phone);
for (int x=0;x<temp;x++){
if (receipt[i].id[x] >= 1){a = receipt[i].id[x],
printf("%d",receipt[i].id[x]);
printf("%s\t",Product[x].name),
printf("%d *%.2f$ = ", a,Product[x].price),
printf("%.2f$\n", receipt[i].id[x]*Product[x].price);
}}
printf("Total = %.2f$\t",receipt[i].cash);
if (receipt[i].change == -1) printf("Card Payment\n"), printf("Card Number : %s\n",receipt[i].card);
if (receipt[i].change == -2) printf("Bank Payment\n");
if (receipt[i].change >= 0)printf("Change = %.2f\n",receipt[i].change);
//if (strcmp(receipt[i].coupon,"n")==0) printf("Coupon : %s\n",receipt[i].coupon);
printf("%s\n\n",receipt[i].time);
}
owner();
}
```

Fig7: Receipt

Shopping Cart

Every time customer selected a product, the product will be added to the shopping cart by using temporary variable. Closing program will not save the shopping cart

```
        printf("%s",cart[secondfirst].name);
        int lenghtstring=strlen(cart[secondfirst].name);
        for(lenghtstring;lenghtstring<=14;lenghtstring++)
            printf(" ");
        printf("%d\t",cart[secondfirst].volum);
        printf("\t%.2f\n",cart[secondfirst].price);
    }
    secondfirst=firstcart;
    printf("Total amount: %.2f$\n", tamt);
    printf("Enter 16 digit credit/debit card number: ");
    scanf("%s",card16digits);

    checktrue=ft_isdigit(card16digits,16);
    if(checktrue==1)
```

Fig8: Shopping cart

2.5 Finance system

Total sale and income

This function will show the total profits and quentity sale from every products, also it will show total profits, top profits and best seller.

```
int Finance(){
    int max1 = 0; int a;
    float max2 = 0; float total = 0;
    int max11 = 0;
    int max22 = 0;
    int list[30]={0};
    float profit[30]={0};
    for (int i = 0; i < Cuscount;i++ )
    {
        for (int x = 0 ; x<temp; x++)
        {
            list[x] = list[x] + receipt[i].id[x];
        }
    }
        printf("########################################\n");
        printf("Product\t\tSell amount\tProfit\n");
        for (int x = 0 ; x<temp; x++)
        {
            profit[x] = list[x]*Product[x].price - list[x]*Product[x].cost;
            total = total + profit[x];
            if(list[x]> max1) max1 = list[x],max11 = x;
            if(profit[x]> max2)max2 = profit[x],max22 = x;
            int lengthstring=strlen(Product[x].name);
            printf("%s",Product[x].name);
            for(lengthstring;lengthstring<=14;lengthstring++)
                printf(" ");
            //printf("Sell amount: %d Profit: %.2f$\n",list[x], profit[x]);
            printf("\t\t  %d\t%.2f$\n",list[x], profit[x]);
        }
    printf("Total Profits = %.2f$\n",total);
    printf("Best Seller = %s\n",Product[max11].name);
    printf("Best Profits = %s\n",Product[max22].name);
        printf("########################################\n");
    printf("Return Press 9\n"); scanf("%d",&a);

    while (a!=9) scanf("%d",&a);
    owner();
}
```

Fig9: Finance function

Find customer

This function will allow user to search customer by using their phone number and if matched with the inputted numbers it will show customer receipt

```
int FindCustomer(){
    int a;
    char Cusno[10];
    printf("Customer Number : ");
    scanf("%s",Cusno);
for (int i=0;i<Cuscount;i++){
    //printf("R");
    int value = strcmp(Cusno,receipt[i].phone);
    //printf("%d",value);
    if(value == 0){
    printf("Bill Number %d\n",i+1);
    printf("Phone Number : %s\n",receipt[i].phone);
for (int x=0;x<temp;x++){
if (receipt[i].id[x] > 0){ a = receipt[i].id[x],
printf("%s\t",Product[a].name),
printf("%d*%.2f$ = ", receipt[i].id[x],Product[x].price),
printf("%.2f$\n", a*Product[x].price);
}}
printf("Total = %.2f$\t",receipt[i].cash);
if (receipt[i].change == -1) printf("Card Payment: %s\n",receipt[i].card);
if (receipt[i].change == -2) printf("Mobile Payment\n");
if (receipt[i].change >= 0)printf("Change = %.2f\n",receipt[i].change);
printf("%s\n\n",receipt[i].time);
}}
owner();
}
```

Fig10: Find function

Payment method

This system provides three payment options to customers, the first of which is cash.

Next that is the Credit/Debit Card. Finally, there is mobile banking. If the customer selects 1, which is cash, the quantity of product and total price will be displayed. The system will support administrators in calculating change examples. If a customer pays $100 but the final price is only $56, it will display the change that the administrator must give to the customer.

```
printf("Payment Method\n");
printf("[1] Cash payment\n");
printf("[2] Credit/Debit Card\n");
printf("[3] Mobile Banking\n");
scanf("%d",&paymentmethod);
if(paymentmethod==1)
{
    do
    {
        printf("Product\t\tQuantity\tPrice\n");
        for(secondfirst;secondfirst<firstcart;secondfirst++)
        {
            printf("%s",cart[secondfirst].name);
            int lenghtstring=strlen(cart[secondfirst].name);
            for(lenghtstring;lenghtstring<=14;lenghtstring++)
                printf(" ");
            printf("%d\t",cart[secondfirst].volum);
            printf("\t%.2f\n",cart[secondfirst].price);
        }
        secondfirst=firstcart;
        printf("Total amount: %.2f$\n", tamt);
        counterror++;
        printf("Cash Terdered\t:");
        scanf("%f", &cash);
    } while (cash < tamt);
    change = cash - tamt;
    receipt[Cuscount].cash = cash;
    printf("Change: %.2f$\n", change);
    printf("10$ off for 50$ purchase Coupons:(%s)\nThank you\n", DiscountCoupon[index]);
    strcpy(receipt[Cuscount].card, "Cash");
```

Fig11: Type of payment (cash)

Next that, if the customer selects2 This means that they need to pay with a credit card. It will display the message "Enter 16-digit credit card number."

```
else if(paymentmethod==2)
{
    do
    {
        if(counterror>0)
        {
            printf("The number is incorrect.Please try again\n");
        }
        printf("Product\t\tQuantity\tPrice\n");
        for(secondfirst;secondfirst<firstcart;secondfirst++)
        {
            printf("%s",cart[secondfirst].name);
            int lenghtstring=strlen(cart[secondfirst].name);
            for(lenghtstring;lenghtstring<=14;lenghtstring++)
                printf(" ");
            printf("%d\t",cart[secondfirst].volum);
            printf("\t%.2f\n",cart[secondfirst].price);
        }
        secondfirst=firstcart;
        printf("Total amount: %.2f$\n", tamt);
        printf("Enter 16 digit credit/debit card number: ");
        scanf("%s",card16digits);

        checktrue=ft_isdigit(card16digits,16);
        if(checktrue==1)
        {
            while(1)
            {
                printf("Progress.");
                sleep(1);
                printf(".");
                sleep(1);
                printf(".");
                sleep(1);
                printf(".");
                sleep(1);
                printf(".");
                float r = -1;
                receipt[Cuscount].cash= tamt;
                change = -1;
                strcpy(receipt[Cuscount].card, ("%s",card16digits));
                printf("\nPayment Payment successful\n");
                /*printf("Add line @pattysuay to get 100 THB E-coupon\n");
                do
                {
                    printf("Are you interested discount coupon(y\n)?");
                    printf("\n");
                    interested=getch();
                    if(interested==89||interested==121)
                        printf("Here is discount coupon: %s\nThank you\n", DiscountCoupon[index]);
                    else
                        printf("Thank you");
                }while(interested!=89&&interested!=121);*/
                printf("10$ off for 50$ purchase Coupons:(%s)\nThank you\n", DiscountCoupon[index]);
                sleep(1);
                break;

            }
        }
    }while(checktrue!=1);
```

Fig12: Type of payment (Credit card)

Finally, if the customer selects choice 3, it will display a message shows the number of transfer destinations

```
}
else if(paymentmethod==3)
{
        printf("Product\t\tQuantity\tPrice\n");
        for(secondfirst;secondfirst<firstcart;secondfirst++)
        {
            printf("%s",cart[secondfirst].name);
            int lenghtstring=strlen(cart[secondfirst].name);
            for(lenghtstring;lenghtstring<=14;lenghtstring++)
                printf(" ");
            printf("%d\t",cart[secondfirst].volum);
            printf("\t%.2f\n",cart[secondfirst].price);
        }
        secondfirst=firstcart;
        printf("Total amount: %.2f$\n", tamt);
        printf("Please transfer to Bank:Scb 4041492367\n");
        printf("10$ off for 50$ purchase Coupons:(%s)\nThank you\n", DiscountCoupon[index]);
        change = -2;
        receipt[Cuscount].cash= tamt;
        strcpy(receipt[Cuscount].card, "Bank");
}
```

Fig13: type of payment (Mobile payment)

Chapter 3: Proof

3.1 Main page

Menu

This is main page also be menu that have 3 parts fist is Owner second is Customer lastly is Save& Exit. Users need to select one choice

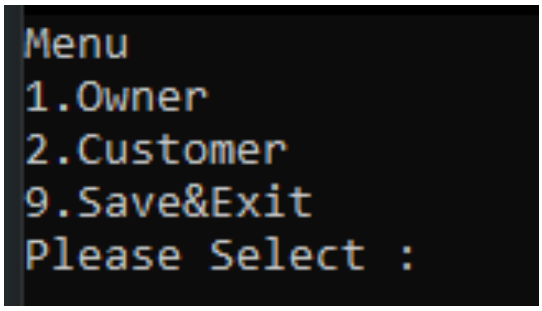

Fig14: Main menu

3.2 Login page

After the user has chosen a customer option, the login screen will appear, requiring the customer to enter their phone number and if customer input text or non-10-digits number, program will ask user to input again.

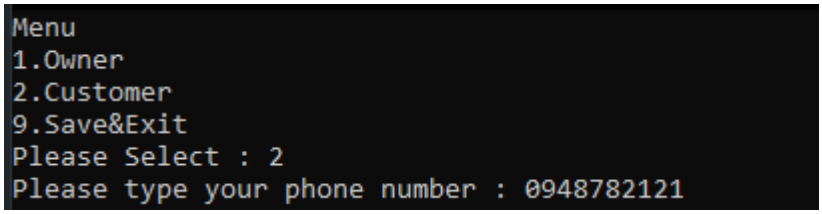

Fig15: Customer selection

3.3 Inventory system

Product in stock

After the user selects an owner choice, the menu screen appears, requiring the owner to select one of the options. If the owner has made a choice 2, this shop's product inventory will be shown.

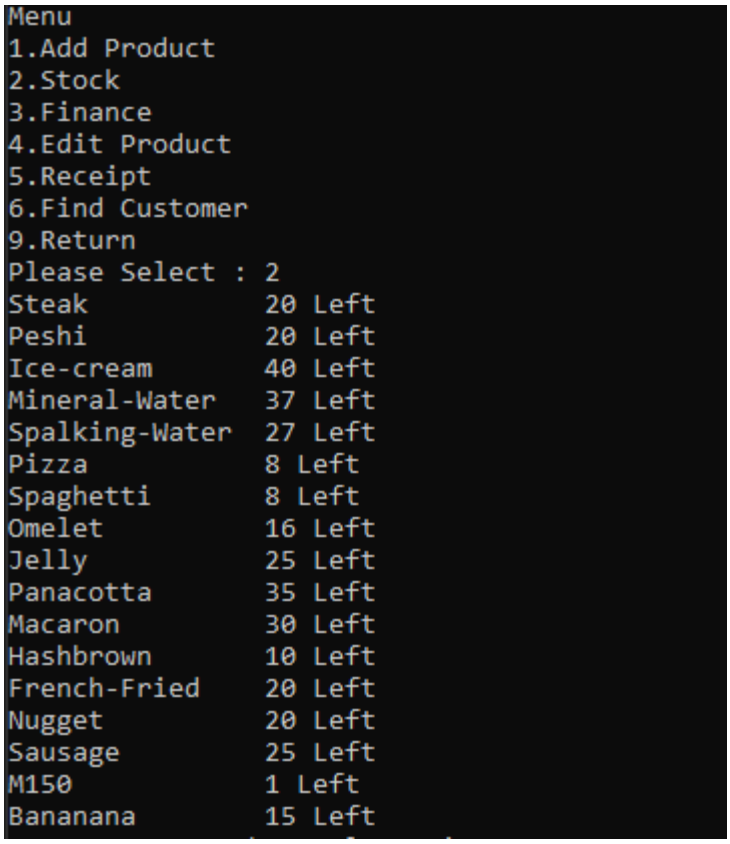

Fig16: Inventory

Product reminder

The system will show notification if product in stock have less than 5 pieces.

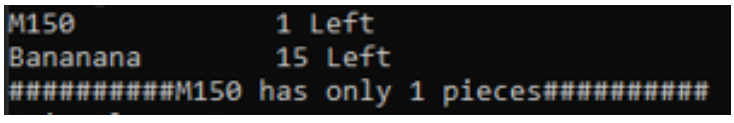

Fig17: Remind message

Add new product

Owner can add product in stock by typing Name, type, cost, prices, and quantity from owner menu.

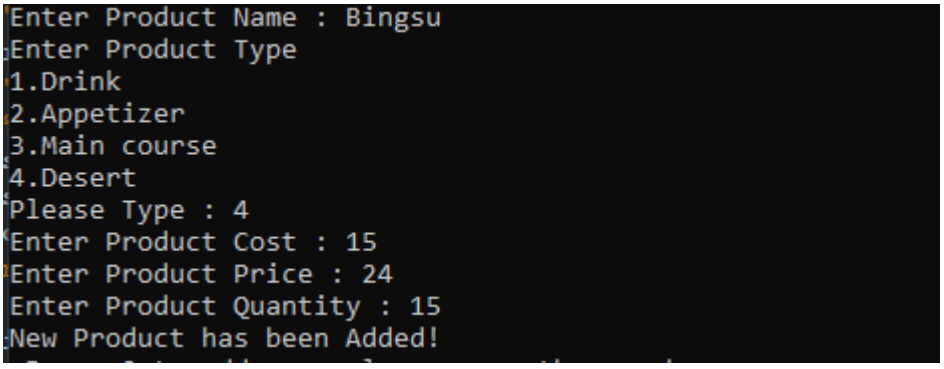

Fig18: Add new product

Edit product

This function is very useful for owners. For example, if the cost of a product has increased, they may edit the cost and change the price that they want to sell at.

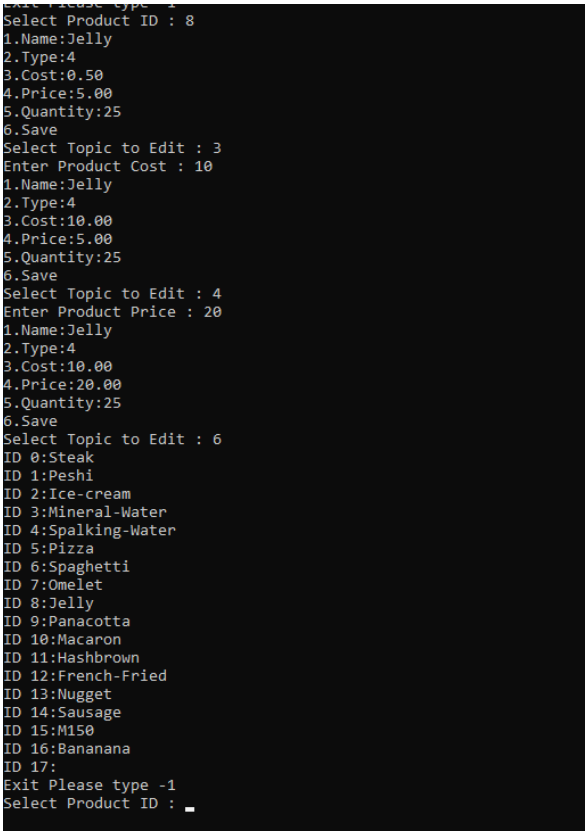

Fig19: Edit product

3.4 Point of sale

Receipt

The owner can see the sales history by receipt. The receipt will include information such as the customer's phone number, the items they have to purchase, the total price, the date and time.

```
Menu
1.Owner
2.Customer
9.Save&Exit
Please Select : 1
Menu
1.Add Product
2.Stock
3.Finance
4.Edit Product
5.Receipt
6.Find Customer
9.Return
Please Select : 5
Bill Number 1
Phone Number : 0971570427
10Omelet        10 *8.00$ = 80.00$
Total = 100.00$ Change = 20.00
16-12-2022_13:47:28

Bill Number 2
Phone Number : 0971570425
10Steak 10 *12.00$ = 120.00$
Total = 200.00$ Change = 80.00
16-12-2022_13:47:43
```

Fig20: Receipt

Shopping Cart

After the consumer has put the product in the cart and is ready to pay, the system will display the quantity and price of the product that the customer must pay.

```
Product          Quantity        Price
Ice-cream      2                 5.00
Total amount: 10.00$
Cash Terdered   :100
Change: 90.00$
10$ off for 50$ purchase Coupons:(patty10)
Thank you
```

Fig21: Shopping cart

3.5 Finance system

Quantity item& total income

The quantity item in this system will support the owner in planning which product they will need to create a promotion or which product will lose a sale. In this shop, the total profit will be displayed, and the owner will be able to see which products best sellers and which products are profitable.

```
########################################
Product         Sell amount     Profit
Steak                   30    210.00$
Peshi                   0     0.00$
Ice-cream               2     8.00$
Mineral-Water           10    17.00$
Spalking-Water          13    26.00$
Pizza                   5     55.00$
Spaghetti               0     0.00$
Omelet                  10    60.00$
Jelly                   5     22.50$
Panacotta               5     32.50$
Macaron                 15    75.00$
Hashbrown               0     0.00$
French-Fried            0     0.00$
Nugget                  0     0.00$
Sausage                 25    100.00$
M150                    9     18.00$
Bananana                0     0.00$
Total Profits = 624.00$
Best Seller = Steak
Best Profits = Steak
########################################
```

Fig22: Financial

Find customer

When a customer purchases something from the shop, the system records the history of their purchases. By entering the customer's phone number, the owner will see information such as the bill number, phone number, name of the product that the customer has to purchase, quantity, total pricing, date, and time.

```
Customer Number : 0948782121
Bill Number 9
Phone Number : 0948782121
Ice-cream       2*5.00$ = 10.00$
Total = 100.00$ Change = 90.00
17-12-2022_01:14:40
```

Fig23: Find customer

Payment method

There are three ways to payment such as cash, credit card, Mobile banking

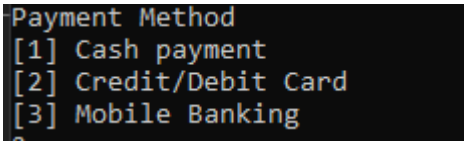

Fig24: Payment option

When the user selects cash payment, it will be required to enter cash tendered and then the system will show change

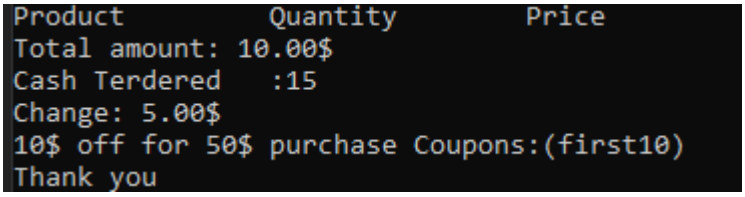

Fig25: Cash option

If the consumer chooses to pay using mobile banking, the number of transfer destinations will be shown.

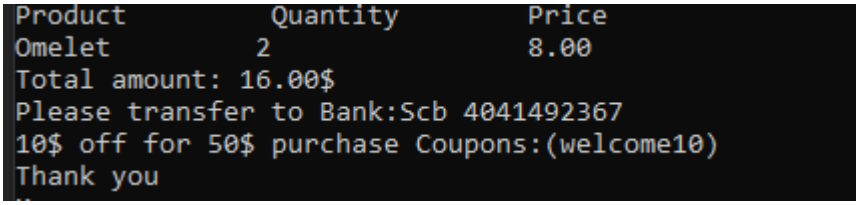

Fig26: Mobile banking option

When the user chooses to pay by credit card. It requested the customer to input their credit card information.

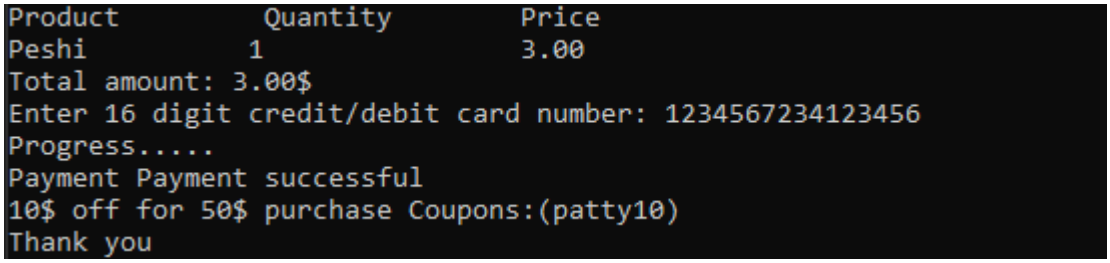

Fig27: Card option

Chapter 4 Workload

Chawit Pimapansri 65070503411

- Coding for owner part
- Presentation
- Report

Nichaporn Manachaiprasert 65070503446

- coding in part of Edit and Add product
- Flowchart
- Presentation
- Report

Thanakit Chokbunsuwan 65070503448

- Coding in All part of Customer
- Presentation
- Debugger