



اُنِيُوَرْسِيْتِي تِيكْنُوْلُوْجِي مَآرَا
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TEKNOLOGI
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CSC126 Fundamentals of Algorithms & Computer Problem Solving

GROUP PROJECT REPORT

Title: *Potato Machine*

Group: *CS1101B*

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1.0 Executive Summary

Potatoes are the go to go food for people nowadays. It is a common food that people can find anywhere. For some people, they want to grab a simple and delicious meal for their lunch or dinner but they don't have a variety of potatoes to choose from. Some restaurants just serve french fries while other restaurants sell mashed potatoes. It is hard for people to buy it because it sells in a different restaurant.

In this circumstance, people would prefer to buy a potato with a variety of choices and fast service. It is because they don't like to wait for a long time to buy food. Besides that, as a human being, people would love to experience various types of food. It is the same in our situation, which is why we want to make their life easier than before. For instance, this potato machine. They can order their favorite type of potato with a lot of other types of sauce, topping and flavor. Other than that, this system also gives 2 different types of size which are medium and large that customers can choose from. In this day and age, we can see a lot of food systems in our life because it makes things a lot easier.

Besides that, our system is easy to use, user friendly and fast. This system can be used anytime according to people's choices. They can make the order by one click away and it can be used easily. Such as, click at your choices and your order will proceed to be made.

In this system, customers can easily make their order based on their preferences of potatoes. All the customer has to do is just choose whatever they want in the system and Potato Machine will proceed the order according to the data that customer entered. Customers can choose up to 5 different types of potato, size, flavor and 4 different types of topping. Our system has a special deal for customers which is if they buy 3 potatoes, they will get 1 potato for free. Our system priority is to make sure that our customer gets what they want besides calculating the price and total price. At the end, the system will show the total price that customer's need to pay.

In addition, other than customers, this system also has an admin. Admin have 3 attempts to log in into the admin page. The system will terminate after 3 attempts. If the admin successfully logs in into the admin page, they can check the total sale for the day and the amount of potato left in the machine.

In a nutshell, our system is the perfect system for somebody who is busy with their life and if they crave something good. Potato machines can also calculate the right amount of price and as customers, they can choose whether to pay with cash, e-wallet, credit card or paypal.

1.1 Objectives

- ❖ To ease the customer into making an order.
- ❖ To attract people with a variety of potato dishes and various selection of toppings and flavors.
- ❖ To apply the use of selection, repetition, array and functions that we have learnt inside the program.

2.0 Pseudocode and flowchart

2.1 Pseudocode

START

totalSales = 0, countCustomer = 0, stock = 100

main()

END

main()

greeting()

mainMenu()

return

greeting()

prompt "WELCOME TO POTATO MACHINE"

return

```

mainMenu()

do

    Prompt "1. Administrator"

    Prompt "2. Customer"

    Prompt "3. CLOSE Program"

    Prompt "Choose Login as: "

    Read choose

while (choose!='A' || choose!='1' || choose!='C' || choose!='2' || choose!='X' || choose!='3')

If (choose == 'A' || choose == '1')

    admin()

else if (choose == 'C' || choose == '2')

    if (stock<1)

        display "Sorry, we ran out of potato :( Please come again later."

        mainMenu()

    else

        guest()

    endif

else

    logout()

```

```
endif

return

admin()

password = 12345, i = 0

for (i=0; i<3; i++)

    prompt "Enter your name: "

    read adminName

    prompt "Enter your password: "

    read passwordAdmin

    if (password == passwordAdmin)

        display "Welcome admin", adminName

        adminPage()

    else

        display "Access Denied"

        i++

    endif

endfor

display "FAILED TO LOGIN AS ADMIN, THE PROGRAM WILL TERMINATED"

logout()
```

```
return
```

```
adminPage()
```

```
    Prompt "1. Total Stock of Potato left"
```

```
    Prompt "2. Total Sale"
```

```
    Prompt "3. Main Menu"
```

```
    Prompt "Please enter the code to continue"
```

```
    Read proceed
```

```
    If (proceed == 1)
```

```
        printStock()
```

```
    else if (proceed == 2)
```

```
        printTotSale()
```

```
    else if (proceed == 3)
```

```
        mainMenu( )
```

```
    else
```

```
        Display "INVALID CODE"
```

```
    endif
```

```
return
```

```
guest()
```

```
    qty = 0, totalPrice = 0
```



```
prompt "Enter your name: "

read name

do

    display " Hi ", name

do

    prompt "Do you want to order? (Y/N): "

    read order

while (order!='Y' && order!='N')

    if ( order == 'Y' )

        qty++

        makeOrder(totalPrice, qty)

        Prompt "BUY 3 FREE 1"

        Prompt "Press [Y] to add another order: "

        Read anotherOrder

while (anotherOrder == 'Y')

    if (order == 'N')

        if (qty < 1)

            mainMenu()

        else

            payment(totalPrice, qty)
```

```

        endif

    else

        confirmationPayment(totalPrice, qty)

    endif

return

makeOrder (double&totalPrice, int&qty)

    size[0]= 5, size[1]= 7

    topping[0]= 1, topping[1]= 3, topping[2]= 1, topping[3]= 4, topping[4]= 0,

    do

        Prompt "POTATO TYPE"

        Prompt "1. Mashed Potato"

        Prompt "2. Spring Potato"

        Prompt "3. Chips"

        Prompt "4. French Fries"

        Prompt "5. Wedges"

        Prompt "Choose your potato type: "

        Read potatoType

        while (potatoType!='1' || potatoType!='2' || potatoType!='3' || potatoType!='4' || potatoType!='5')

            do

```

```
Prompt "POTATO SIZE"

Prompt "1. Medium"

Prompt "2. Large"

Prompt "Choose size: "

Read potatoSize

while (potatoSize!='1' && potatoSize!='2')

if (potatoSize == '1')

    sizePrice = size[0]

else if (potatoSize == '2')

    sizePrice = size[1]

endif

do

    Prompt "POTATO FLAVOR"

    Prompt "1. Original"

    Prompt "2. Spicy"

    Prompt "3. Hot & Spicy"

    Prompt "Choose your flavor: "

    Read flavor

while (flavor!='1' && flavor!='2' && flavor!='3')

do
```

Prompt "TOPPING"

Prompt "1. Chili Flakes (RM1)"

Prompt "2. Chicken Slice (RM3)"

Prompt "3. Black Paper (RM1)"

Prompt "4. Beef Bacon (RM4)"

Prompt "5. None (RM0)"

Prompt "Choose your topping: "

Read toppingCode

```
while (toppingCode!='1' && toppingCode!='2' && toppingCode!='3' && toppingCode!='4' &&
toppingCode!='5')
```

```
if (toppingCode == '1')
```

```
    toppingPrice=topping[0]
```

```
else if(toppingCode == '2')
```

```
    toppingPrice = topping[1]
```

```
else if(toppingCode == '3')
```

```
    toppingPrice = topping[2]
```

```
else if(toppingCode == '4')
```

```
    toppingPrice = topping[3]
```

```
else
```

```
    toppingPrice = topping[4]
```

```
endif

do

    Prompt "SAUCE"

    Prompt "1. Chili"

    Prompt "2. Tomato"

    Prompt "3. Mayonnaise"

    Prompt "4. Cheese"

    Prompt "5. Thousand Island"

    Prompt "6. None"

    Prompt "Choose your sauce: "

    Read sauceCode

    while(sauceCode!='1' && sauceCode!='2' && sauceCode!='3' && sauceCode!='4' &&
sauceCode!='5' && sauceCode!='6')

    price = sizePrice + toppingPrice

    totalPrice += price

    listCode()

    Display "Your Order: "

    Display "Type: ", potatoType

    Display "Size: ", potatoSize

    Display "Flavor: ", flavor
```

```
    Display "Topping: ", toppingCode

    Display "Sauce: ", sauceCode

    Display "Quantity of potato purchased: ", qty

    Display "Total Purchase: RM", totalPrice

    if (qty == 3)

        display "You got 1 special potato!"

    else if (qty == stock)

        display "We ran out of stock"

        confirmationPayment(totalPrice, qty)

    endif

return

confirmationPayment(totalPrice, qty)

    Prompt "Do you want to proceed to payment? [P-Payment]: "

    Read proceed

    if (proceed == 'P')

        payment(totalPrice, qty)

    else

        Prompt "Are you sure you want to cancel all order?[Y-Yes]:"

        Read cancel
```

```
        if (cancel == 'Y')

            mainMenu()

        else

            payment(totalPrice,qty)

        endif

    endif

return

payment(totalPrice, qty)

    countCustomer++

    if (qty >= 3)

        stock--

    endif

    stock = stock – qty

do

    Prompt "1. Cash"

    Prompt "2. Paypal (2%)"

    Prompt "3. E-Wallet (3%)"

    Prompt "4. Credit Card (5%)"

    Prompt "Select your payment method: "
```

```

    Read paymentType

    while(paymentType!='1'&& paymentType!='2'&& paymentType!='3'&&
    paymentType!='4')

    if (paymentType == '1')

        cash(totalPrice)

    else if (paymentType == '2')

        paypal(totalPrice)

    else if (paymentType == '3')

        eWallet(totalPrice)

    else

        creditCard(totalPrice)

    endif

return

cash(totalPrice)

    Prompt "You choose to pay in CASH."

    Prompt "Subtotal: RM ",totalPrice

    Prompt "Amount Paid: RM "

    Read pay

    display "Balance: RM ",(pay-totalPrice)

```



```

        totalSales+=totalPrice

        mainMenu()

return

paypal(double totalPrice)

    discount = 0.02

    Display "You choose to pay using PayPal"

    Display Total : RM ", totalPrice

    Display "Amount Due(-2%) : RM ", totalPrice - (totalPrice*discount)

    totalSales+=totalPrice-(totalPrice *discount)

    mainMenu()

return

eWallet(double totalPrice)

    discount = 0.03

    Display "You choose to pay using e-Wallet"

    Display Total : RM ", totalPrice

    Display "Amount Due(-3%) : RM ",totalPrice - (totalPrice*discount)

    totalSales+=totalPrice-(totalPrice *discount)

    mainMenu()

```

return

creditCard(double totalPrice)

discount = 0.05

Display "You choose to pay using CREDIT CARD"

Display Total : RM ", totalPrice

Display "Amount Due(-5%) : RM ", totalPrice-

(totalPrice*discount

totalSales+=totalPrice-(totalPrice *discount)

mainMenu()

return

printTotSale()

display "Total Sales: RM ", totalSales

display "Total Customer: ", countCustomer

adminPage()

return

printStock()

display " Total Stock of Potato Left ", stock

```
adminPage()

return

listCode()

    Display "POTATO TYPE"

    Display "1. Mashed Potato"

    Display "2. Spring Potato"

    Display "3. Chips"

    Display "4. French Fries"

    Display "5. Wedges"

    Display "POTATO SIZE"

    Display "1. Medium"

    Display "2. Large"

    Display "POTATO FLAVOR"

    Display "1. Original"

    Display "2. Spicy"

    Display "3. Hot & Spicy"

    Display "TOPPING"

    Display "1. Chili Flakes"

    Display "2. Chicken Slice"
```

Display "3. Black Paper"

Display "4. Beef Bacon"

Display "SAUCE"

Display "1. Chili"

Display "2. Tomato"

Display "3. Mayonnaise"

Display "4. Cheese"

Display "5. Thousand Island"

Display "6. None"

return

logout()

Display " Thank you for using Potato Machine "

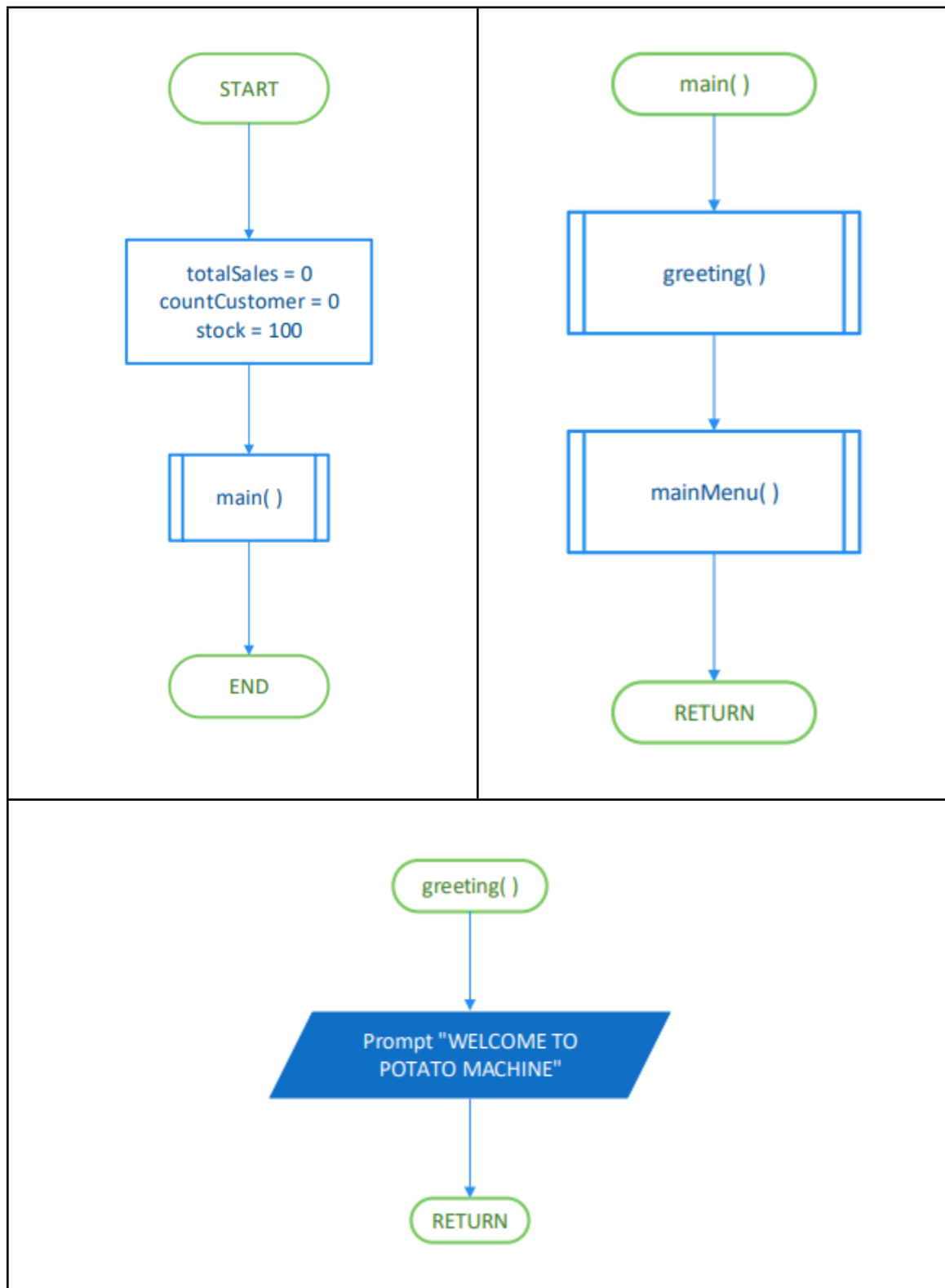
Display " Program will terminated in "

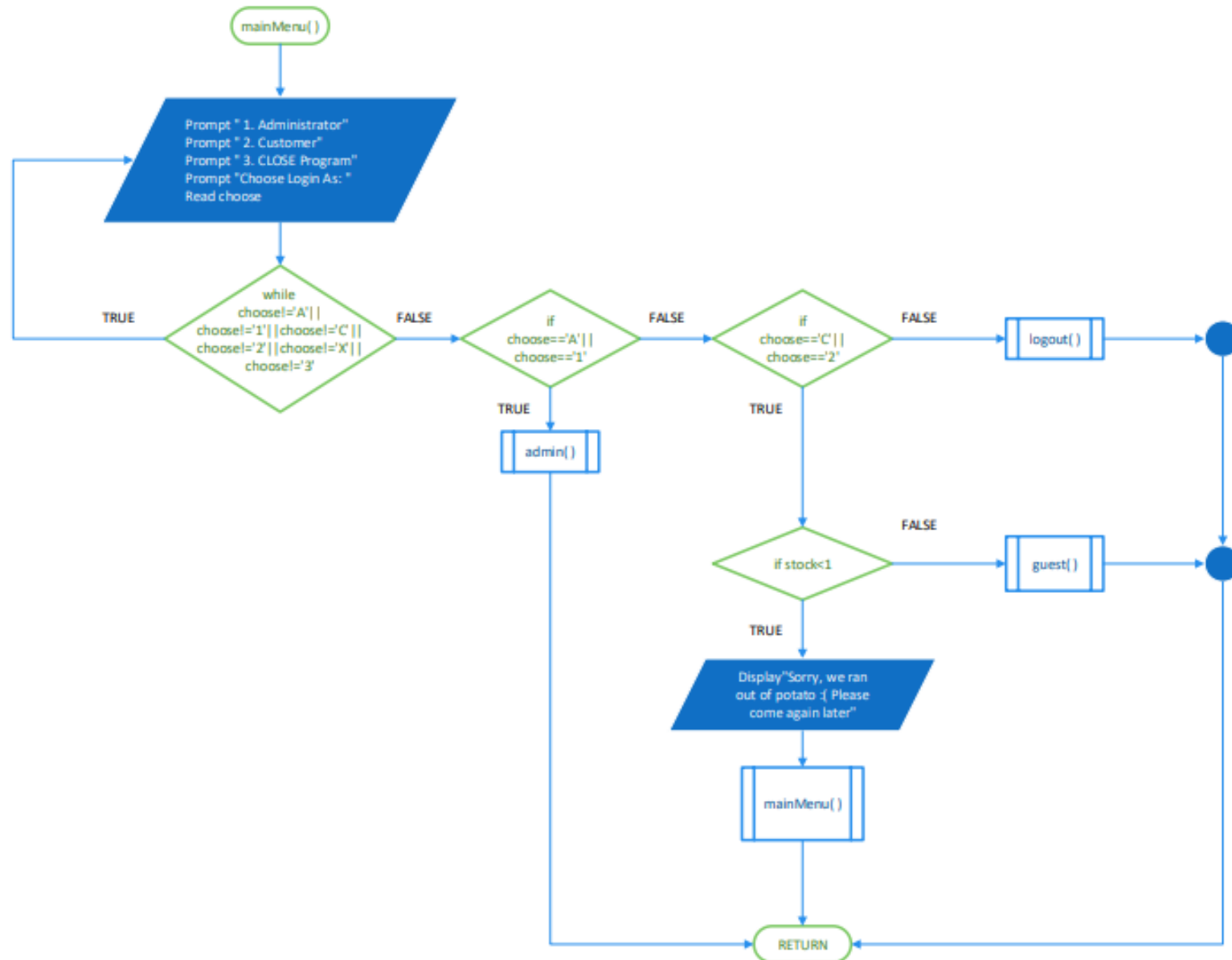
Display "Loading..."

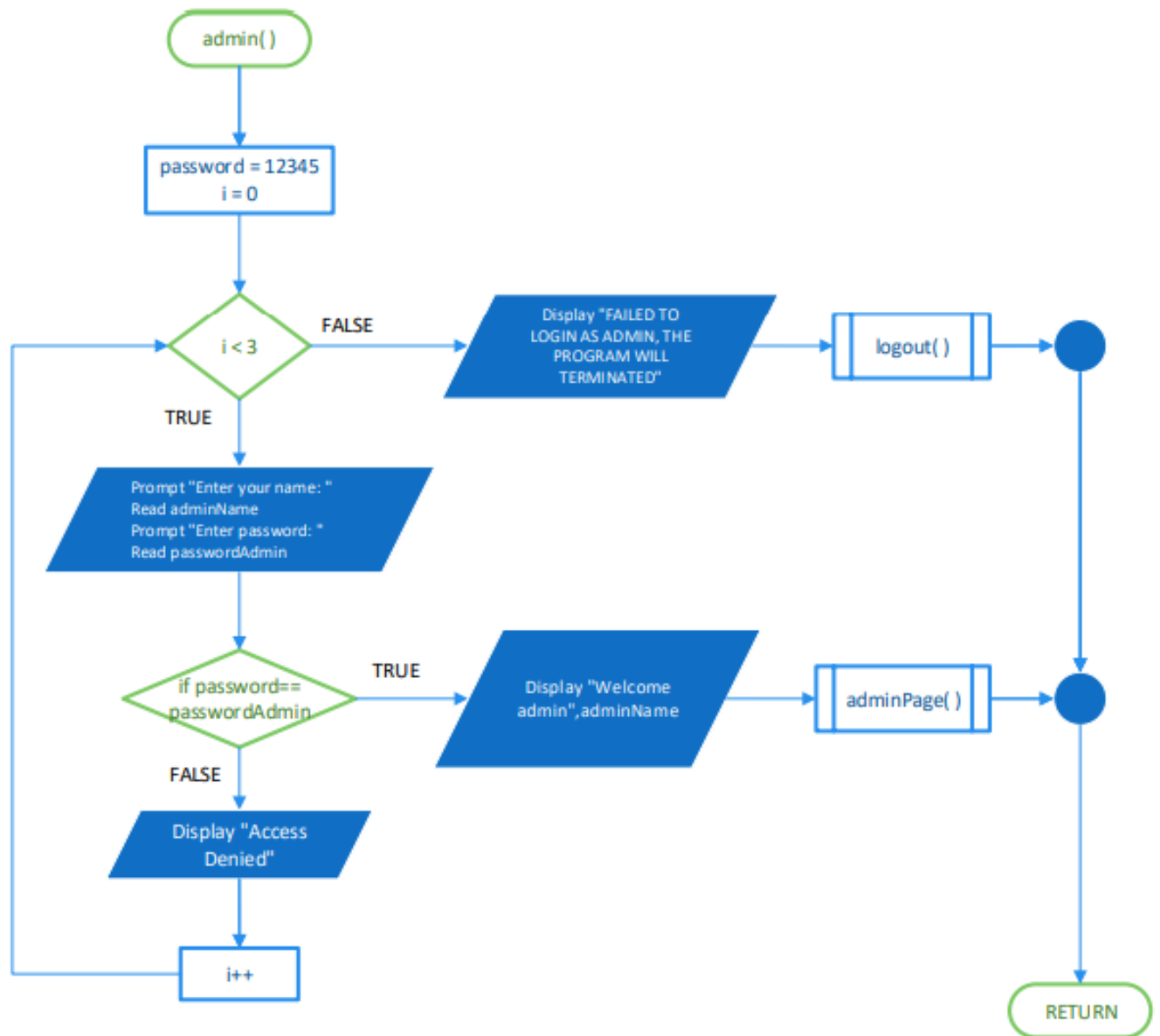
Display " PROGRAM TERMINATED SUCCESSFULLY "

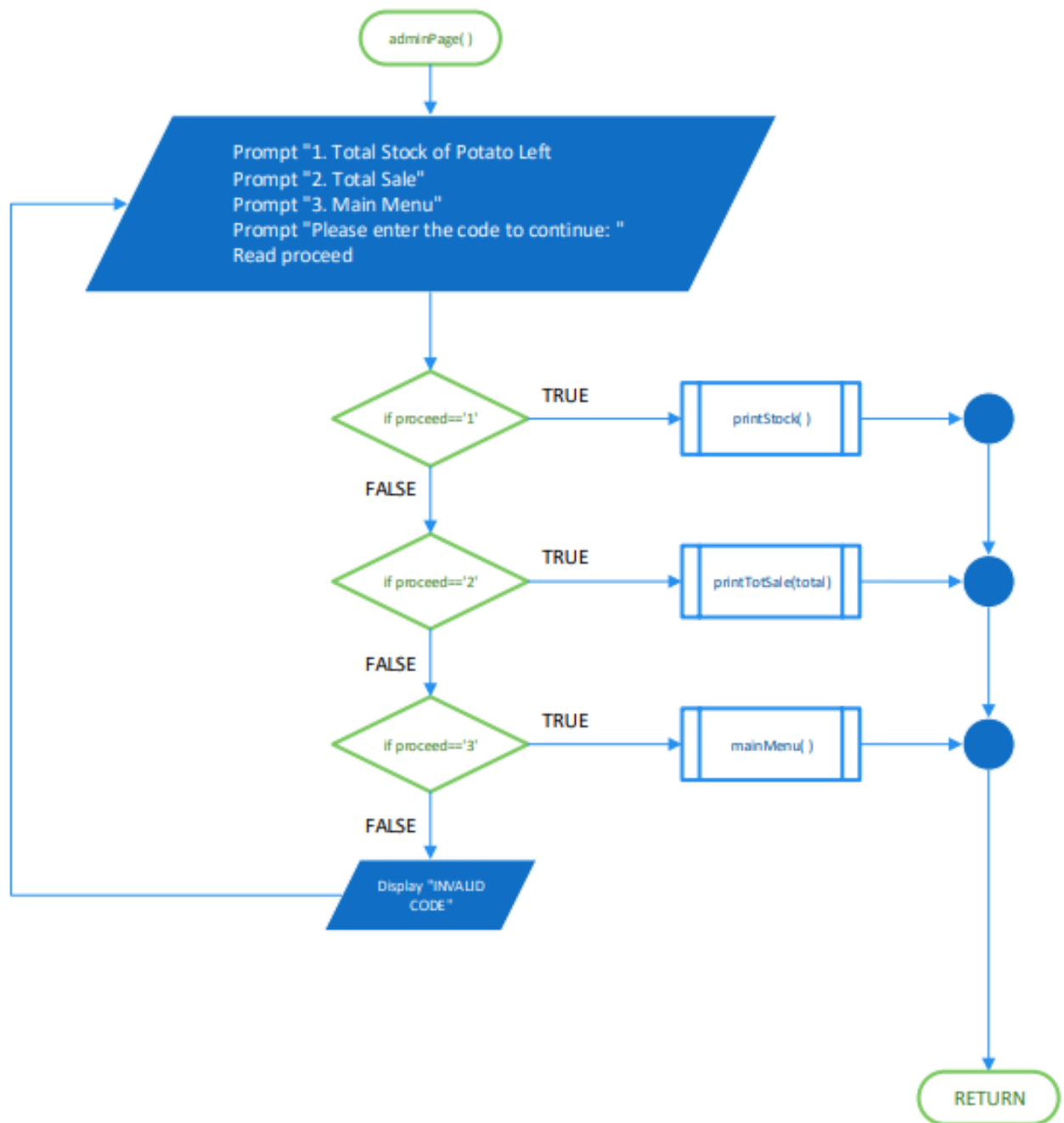
return

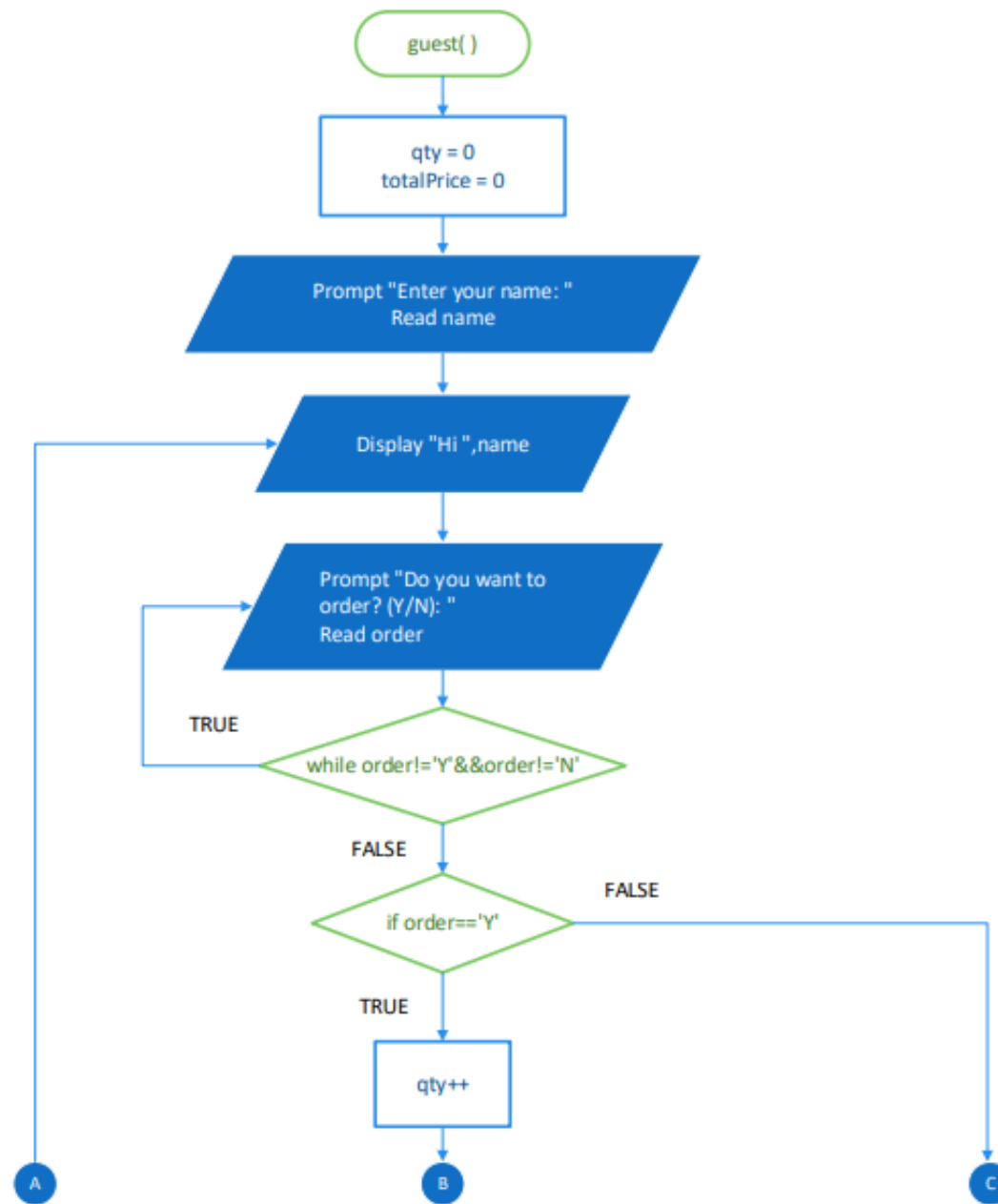
2.2 Flowchart

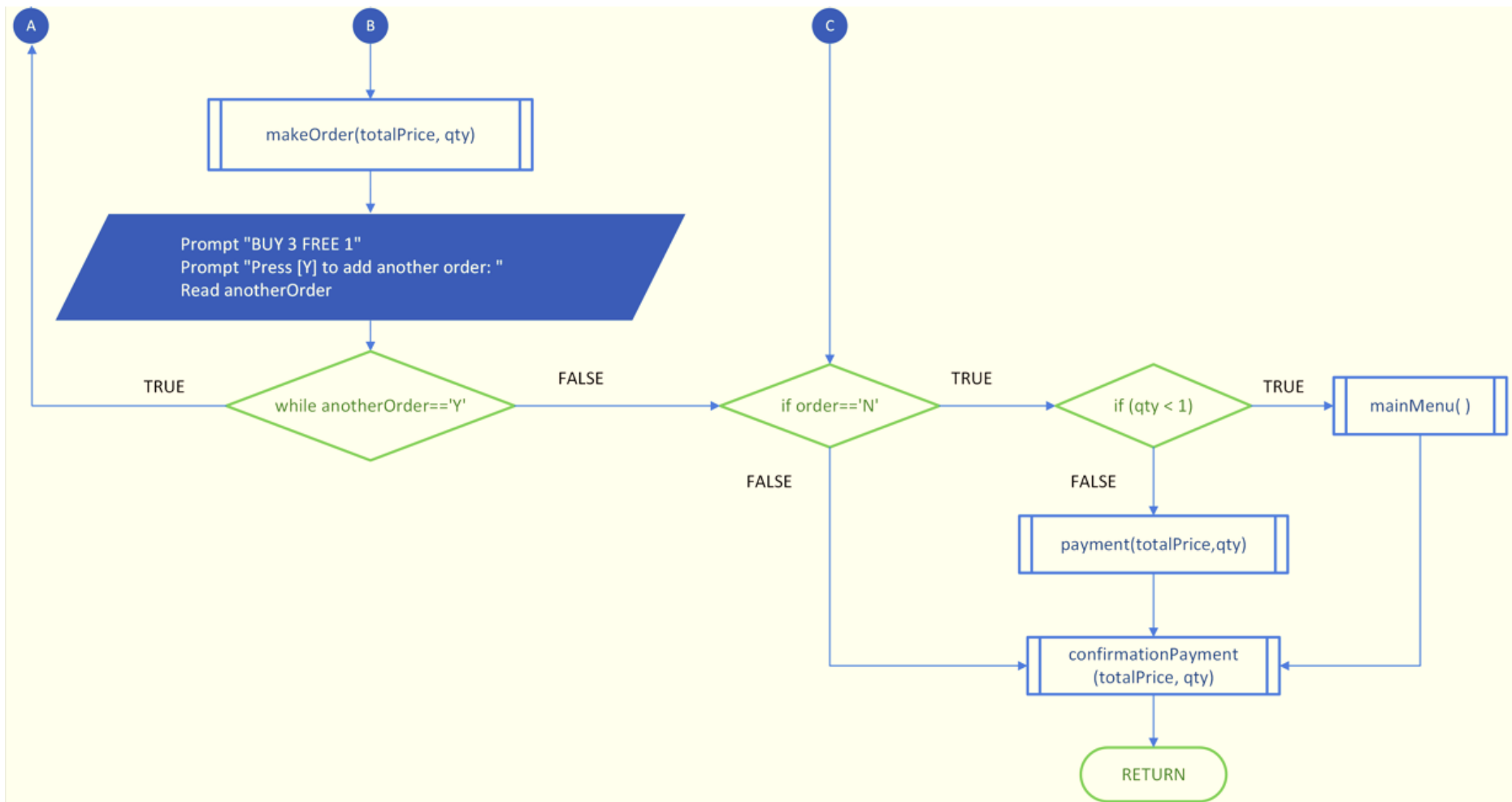


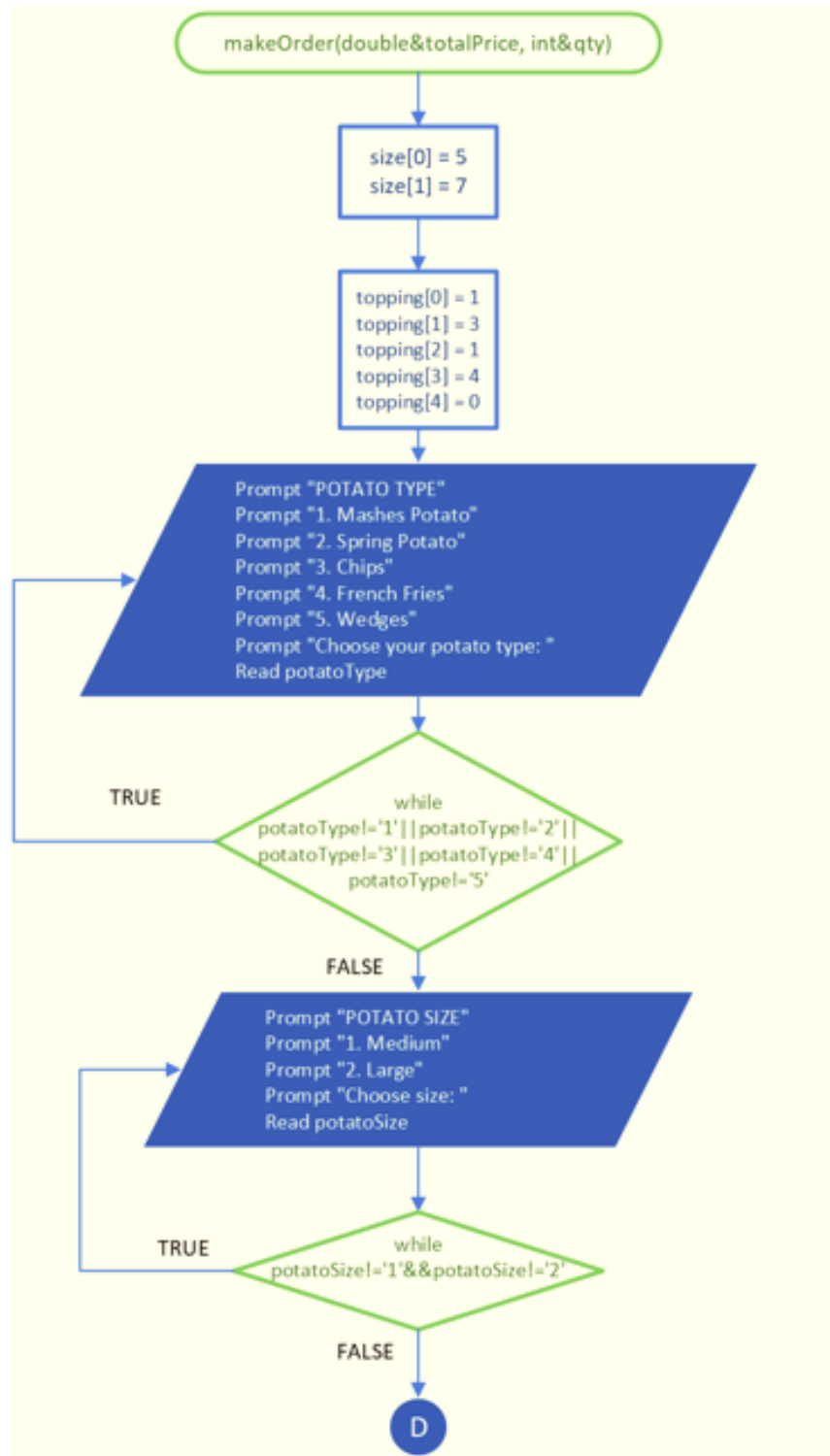


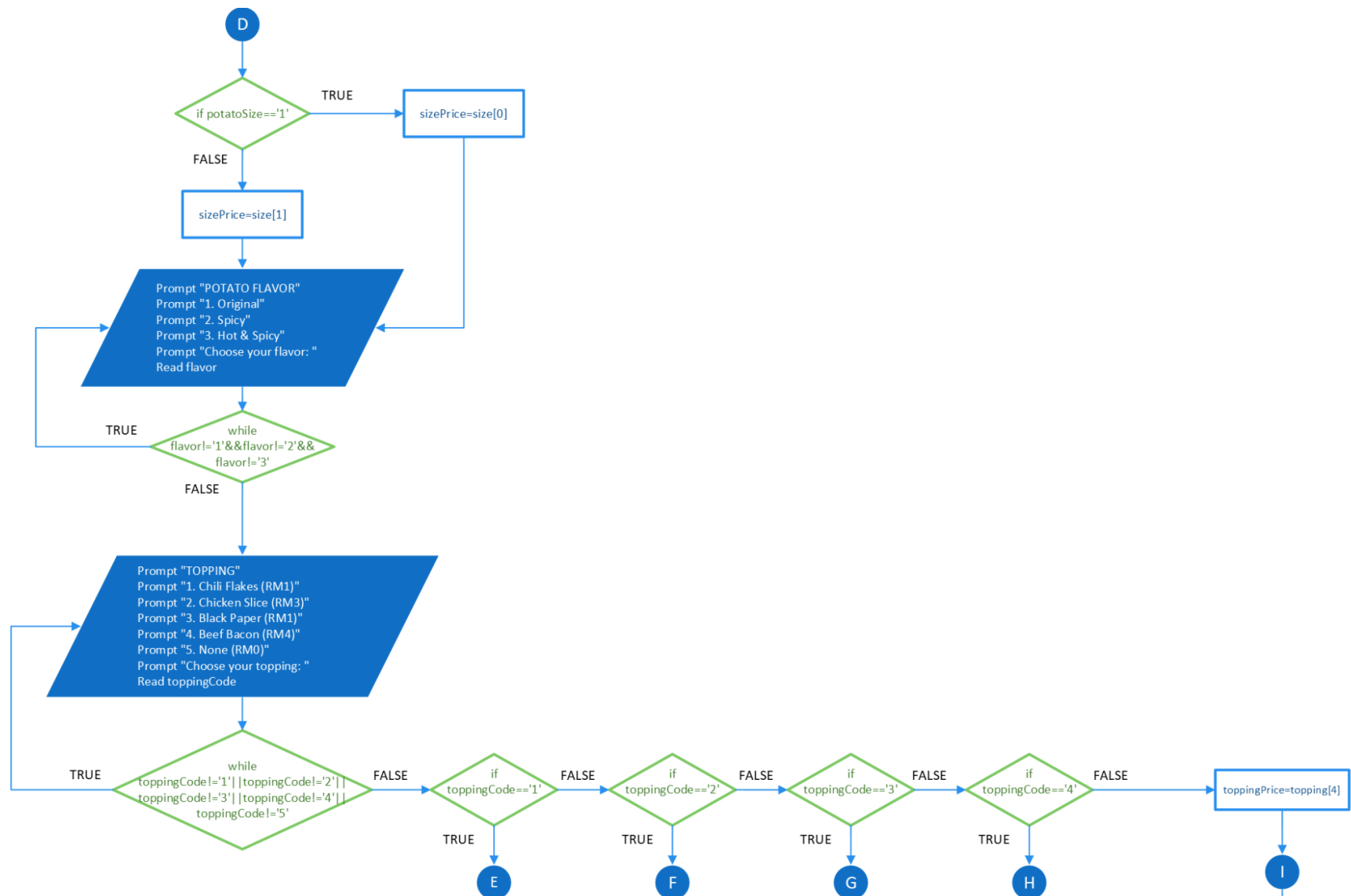


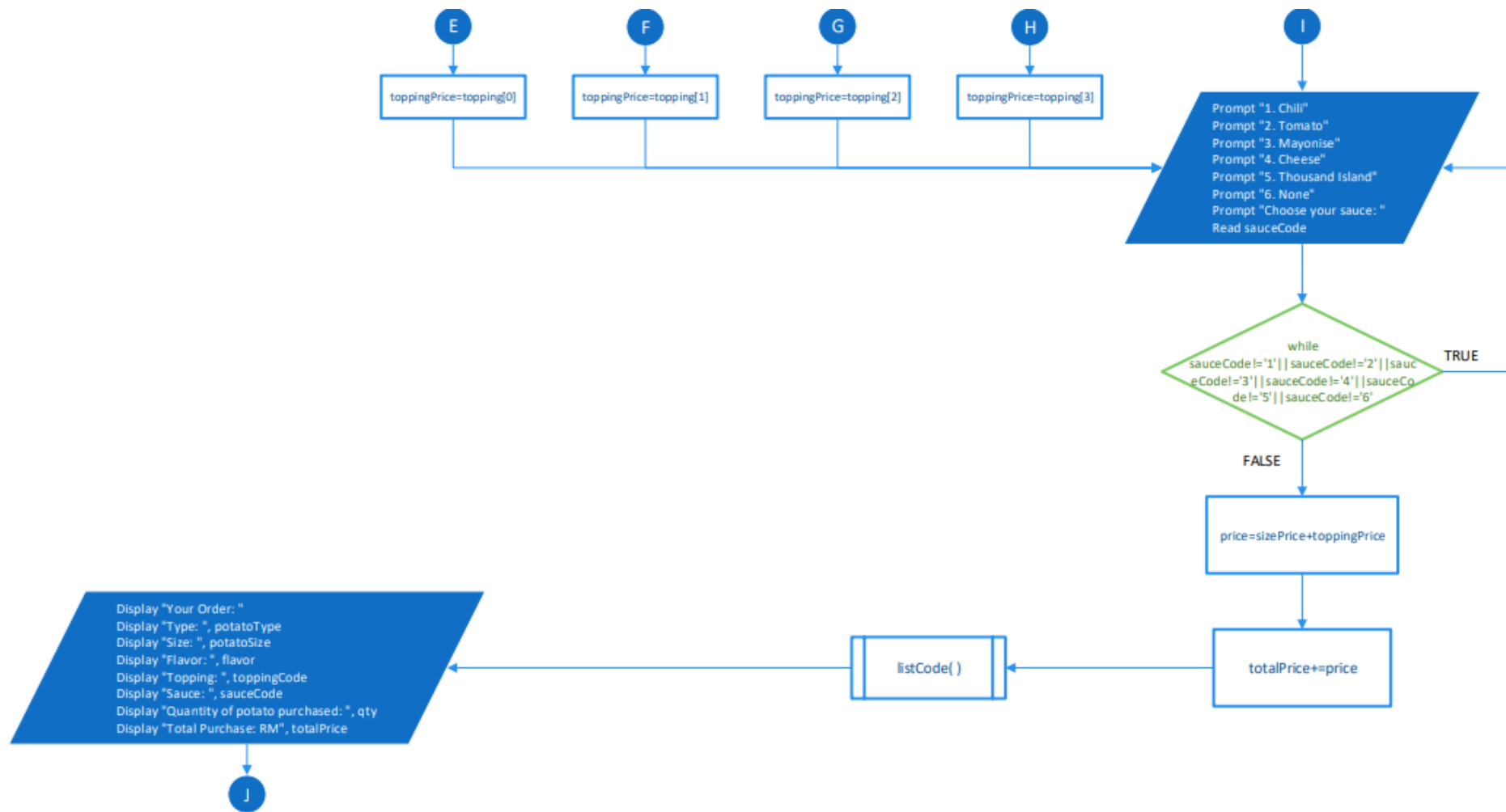


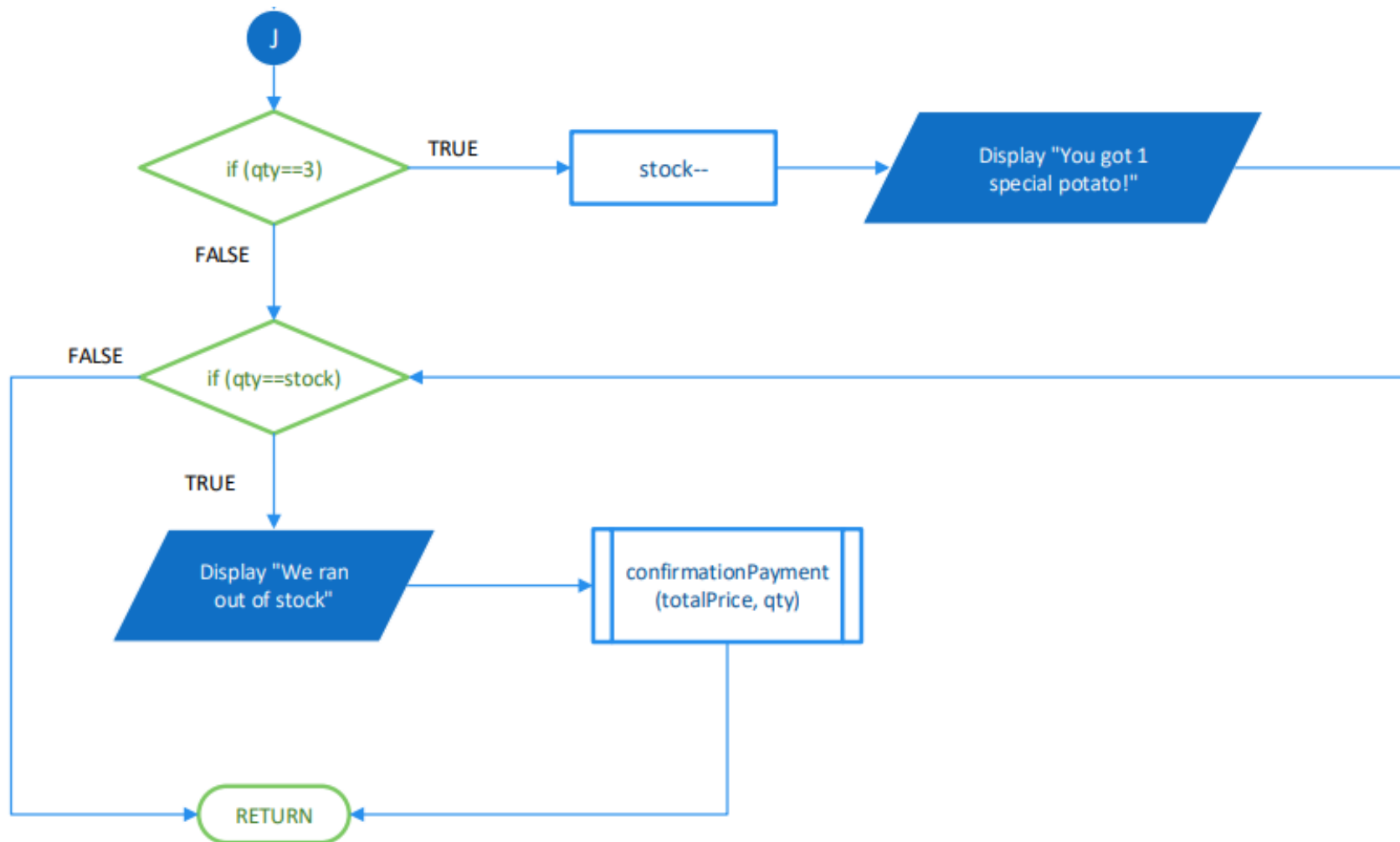


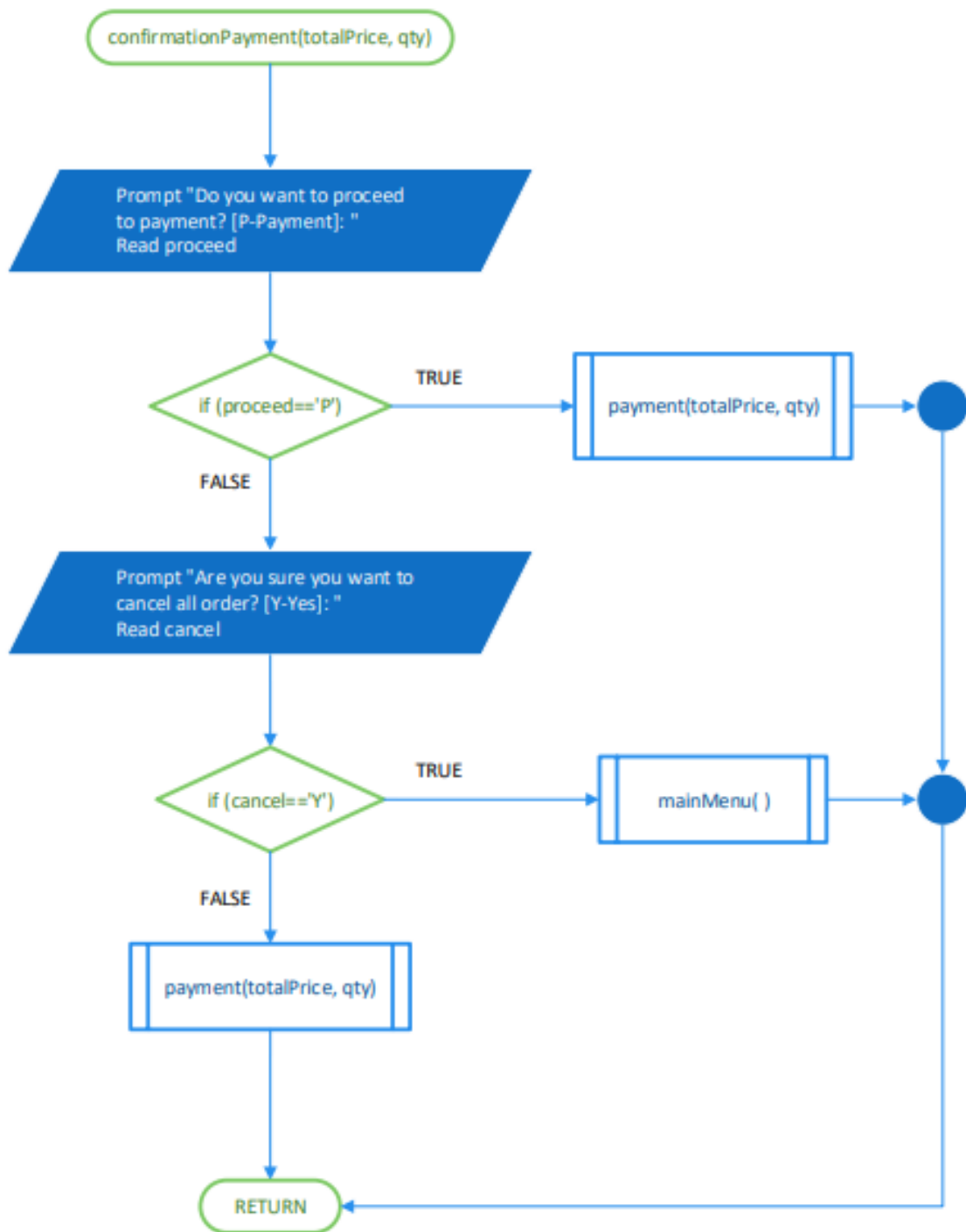


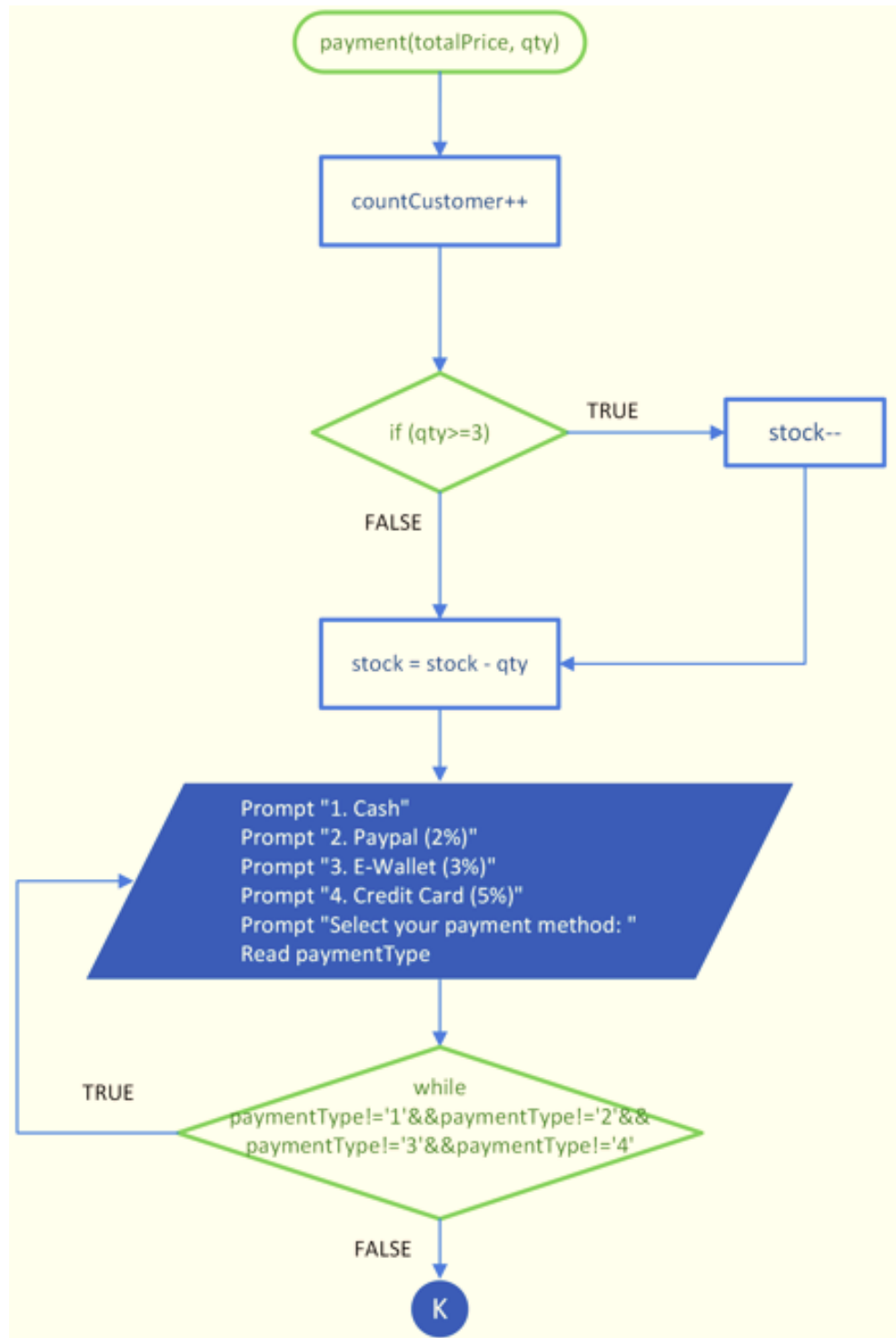


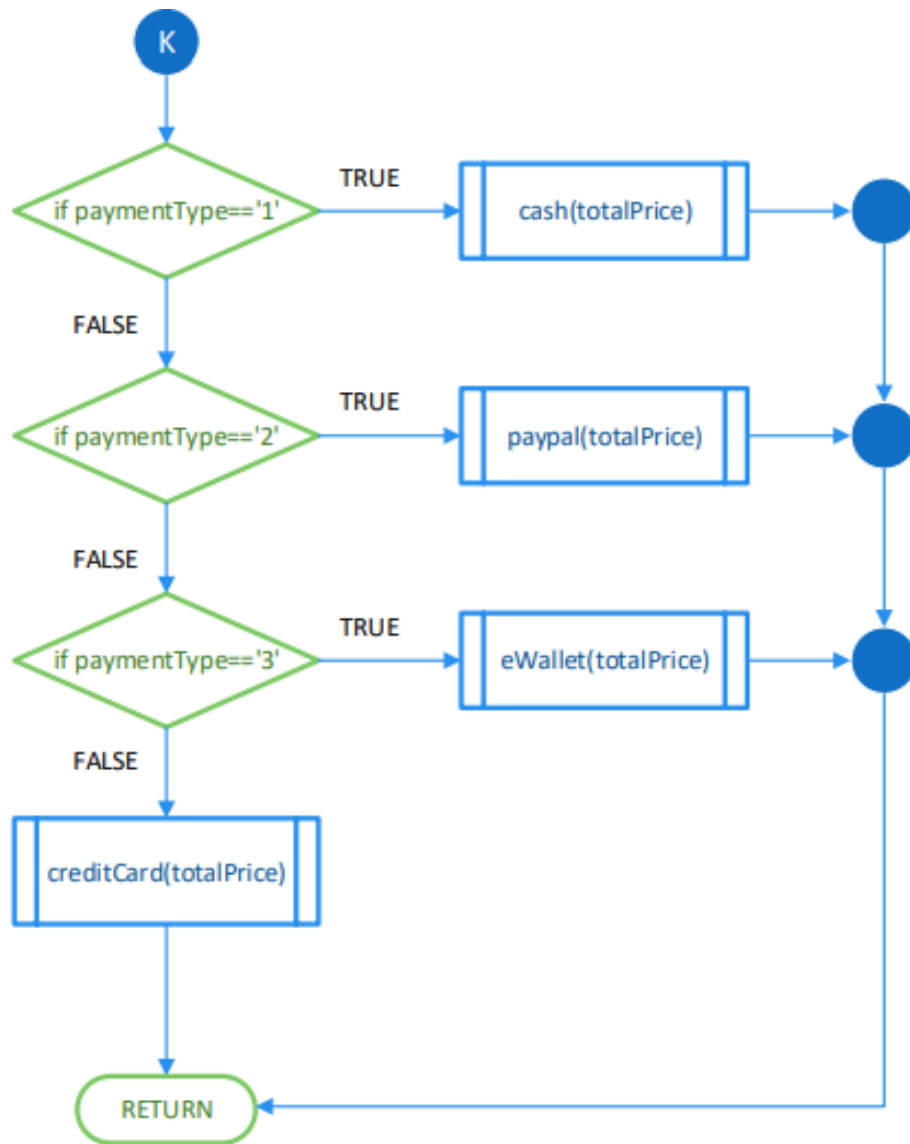


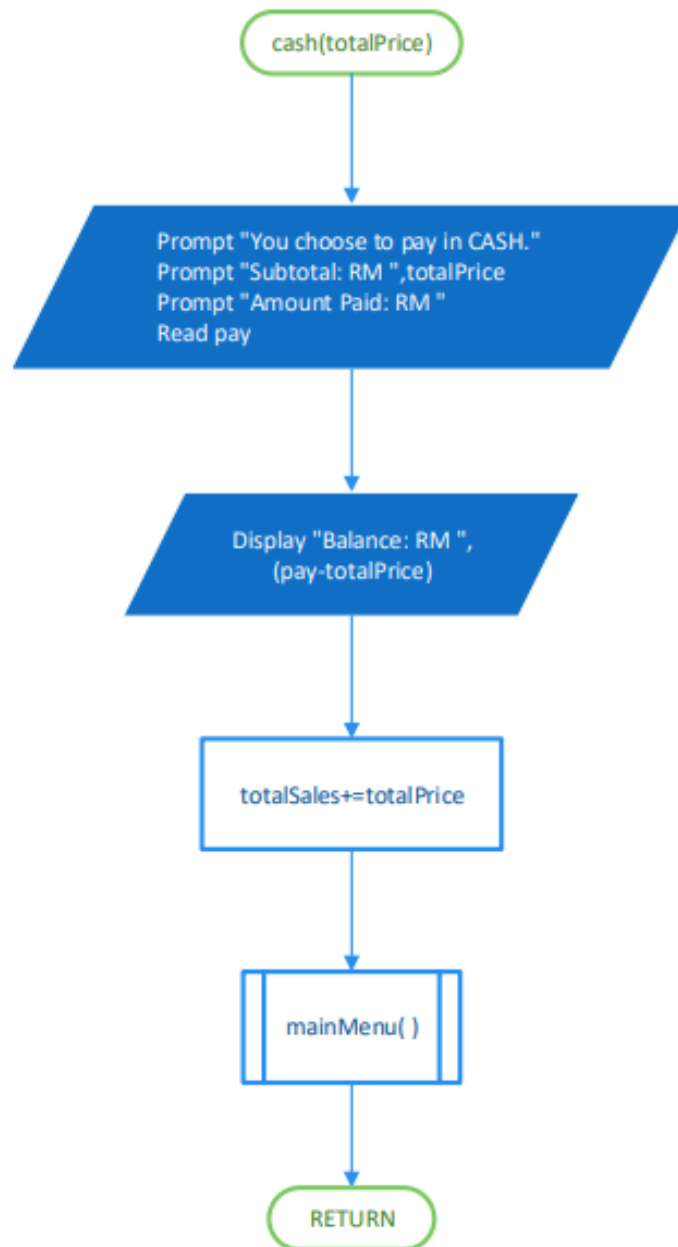


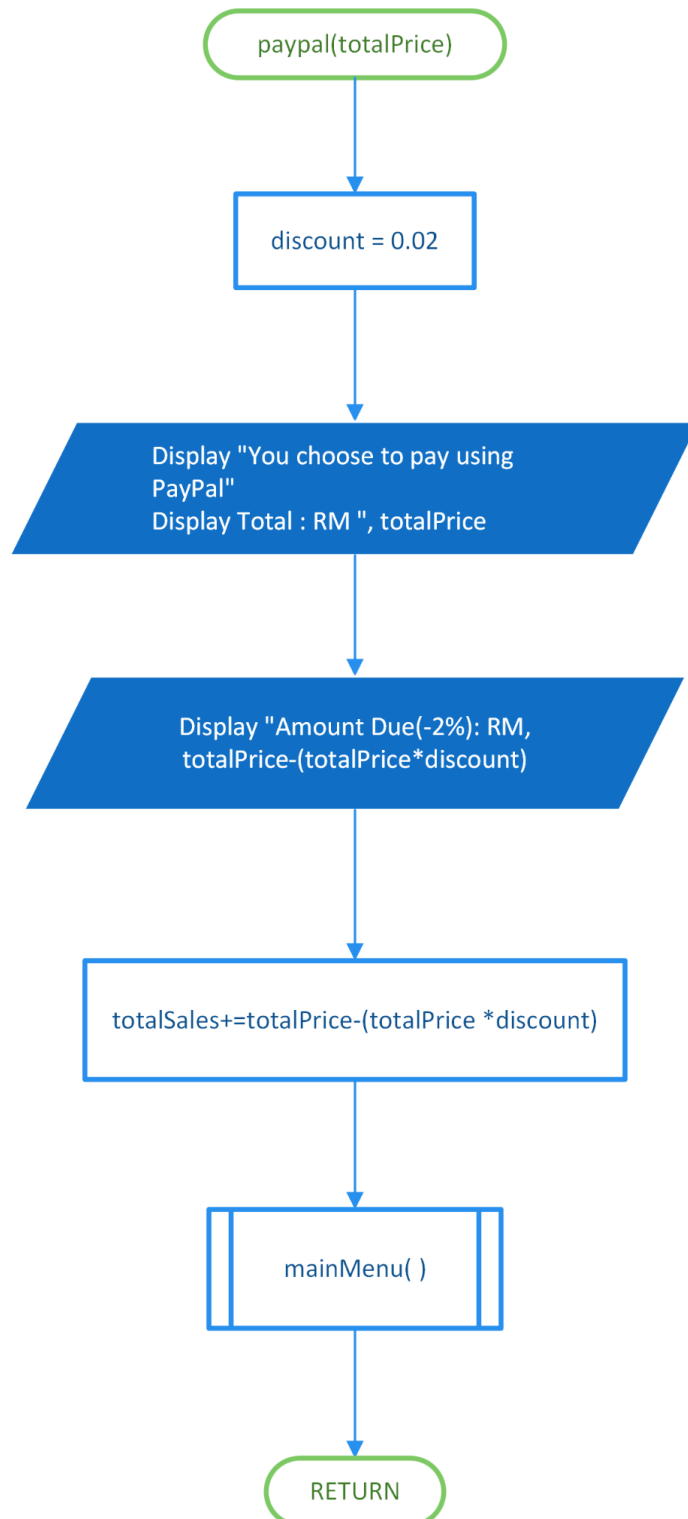


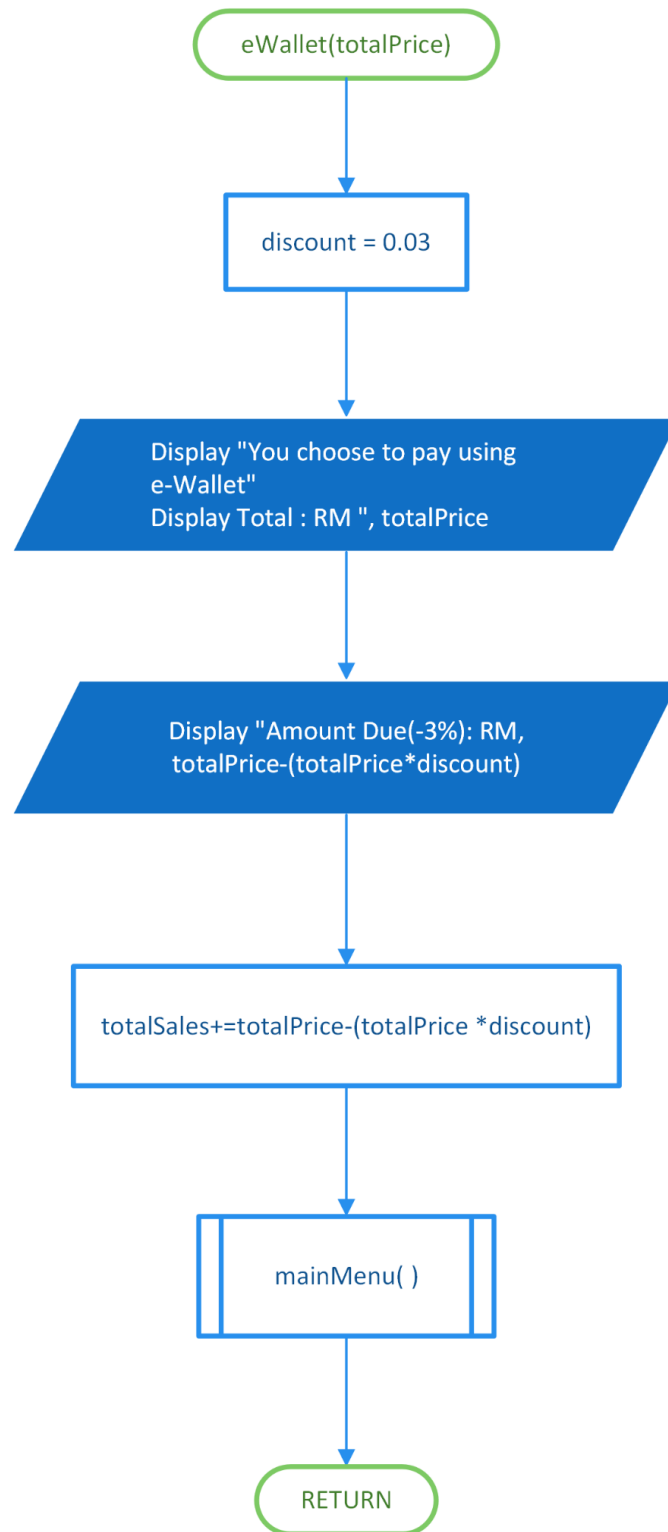


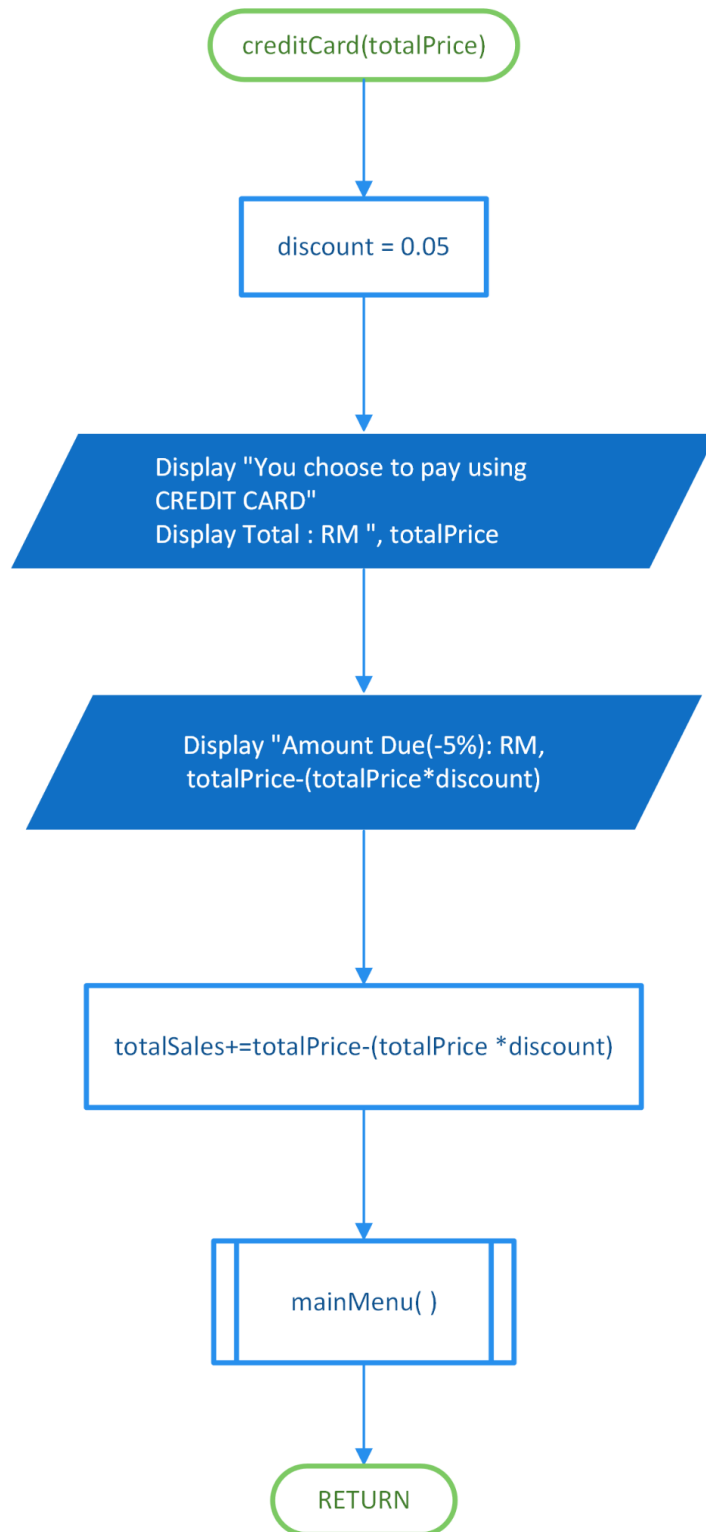


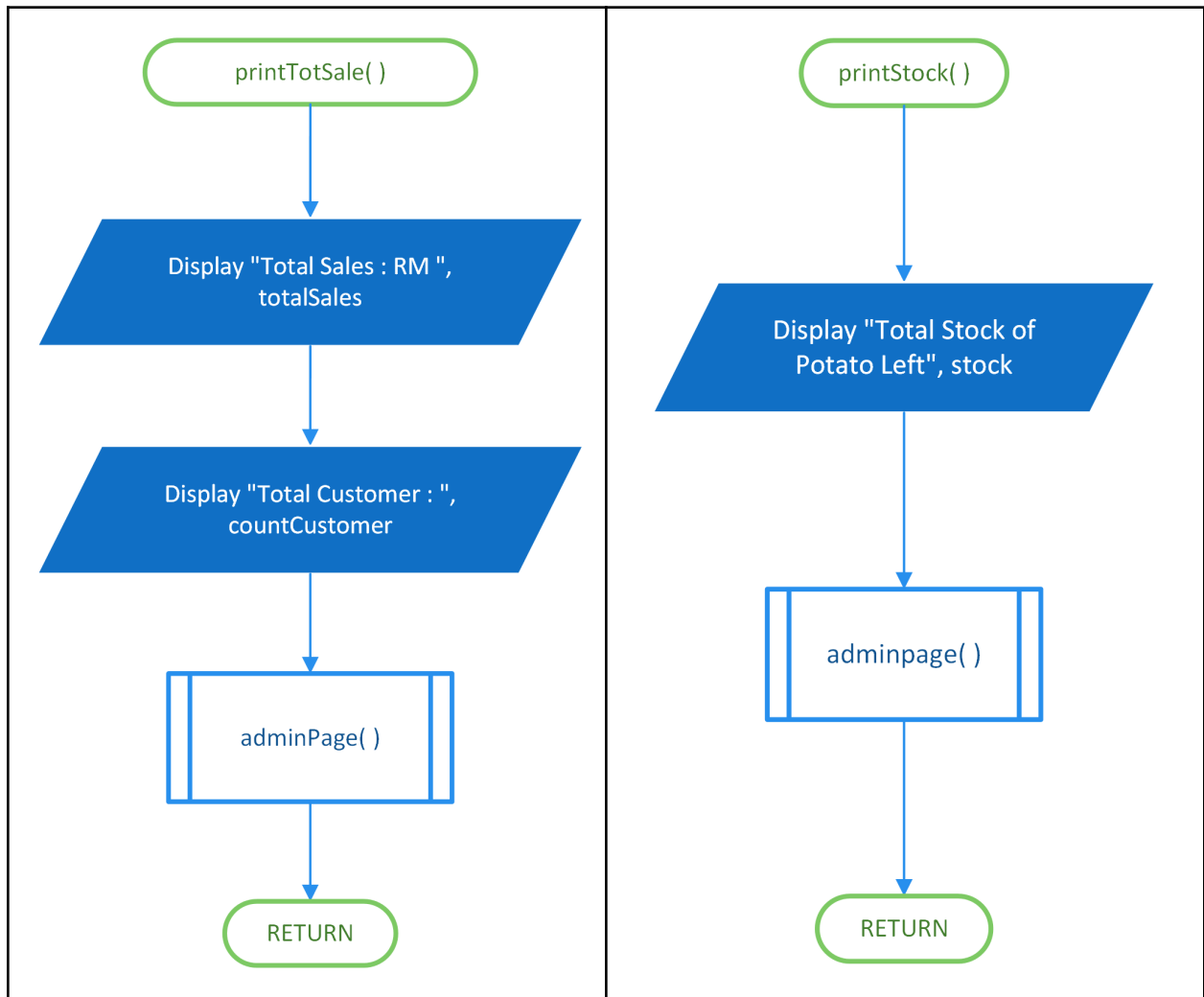


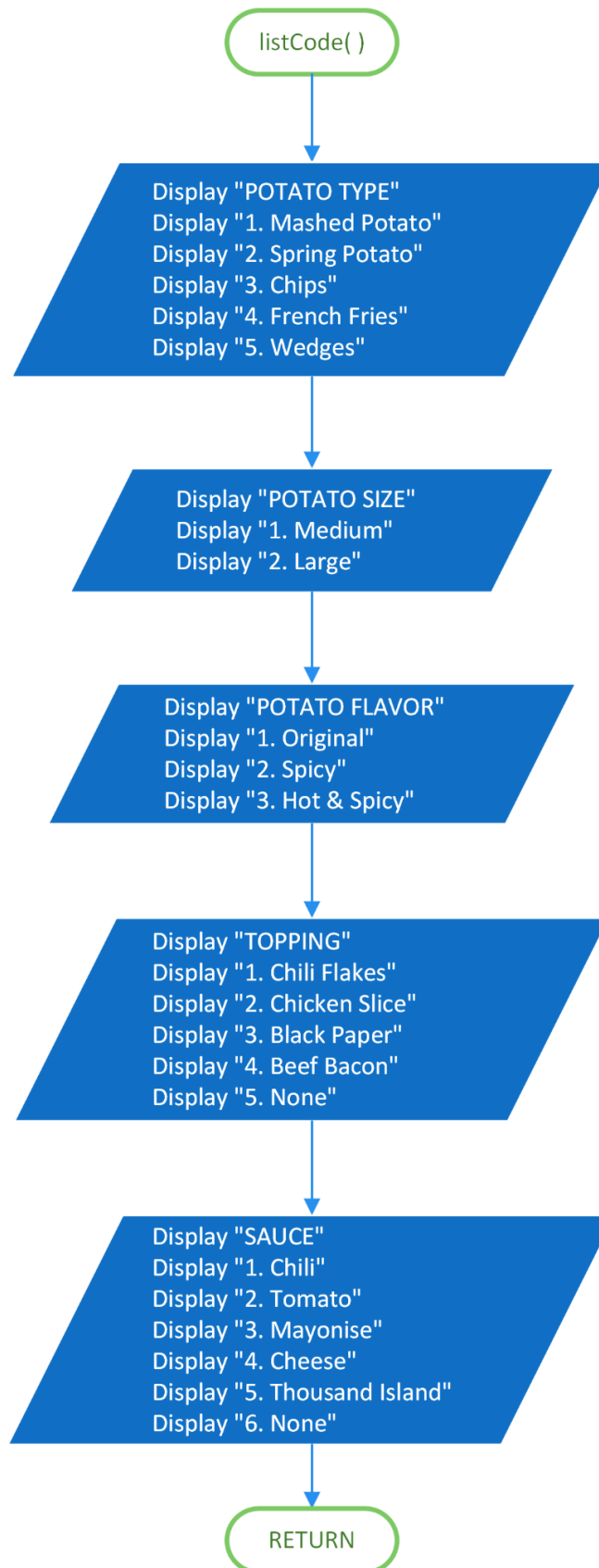


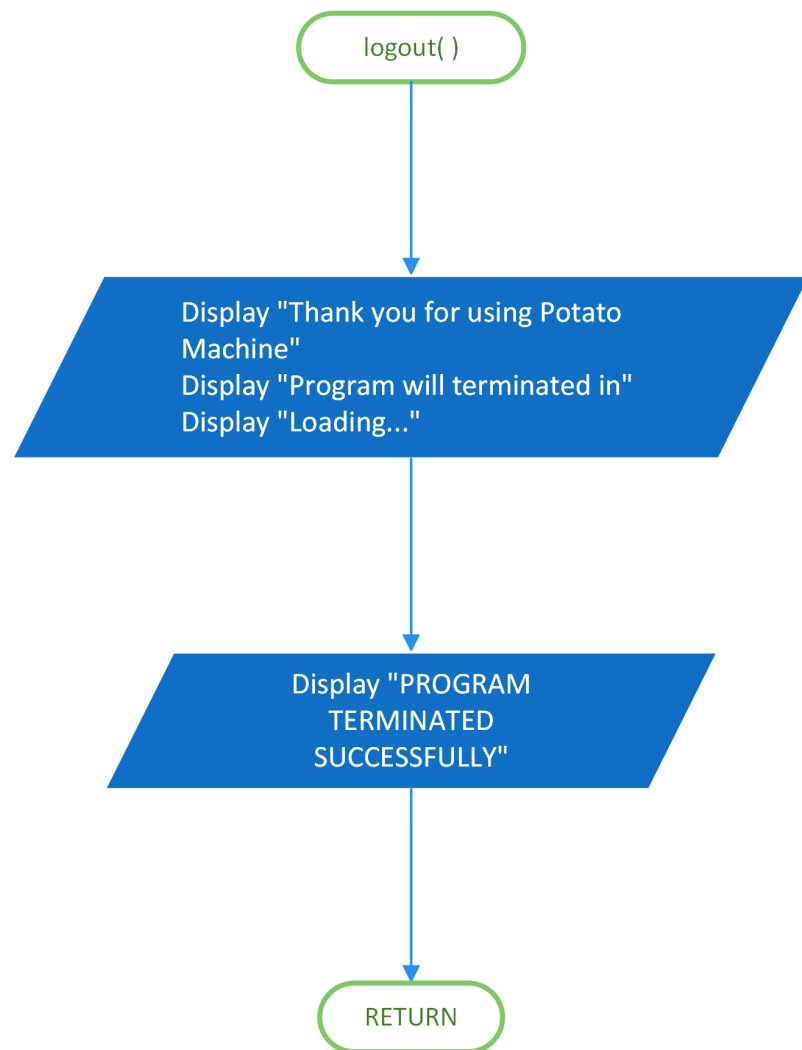












3.0 List of Codes

```
#include <iostream>
#include <string.h>
#include <iomanip>
#include <stdlib.h>
#include <conio.h>
#include <unistd.h>
using namespace std;
void greeting();
void guest();
void makeOrder(double&, int&);
void mainMenu();
void admin();
void adminPage();
void cash(double);
void creditCard(double);
void eWallet(double);
void paypal(double);
void listCode();
void confirmationPayment(double, int);
void payment(double, int);
void printStock();
void printTotSale();
void logout();
double totalSales=0;
int countCustomer=0;
int stock=100; //stock for potato
int main(){
    greeting();
    mainMenu();
    return 0;
```

```

}
void greeting(){
    cout<<"\tWELCOME TO POTATO MACHINE"<<endl<<endl;
    system("PAUSE");
}

void mainMenu(){
    char choose;
    system("cls");
    cout<<"-----+"<<endl;
    cout<<"|          MAIN MENU          |"<<endl;
    cout<<"-----+"<<endl;
    cout<<"|    1. Administrator  [A]    |"<<endl;
    cout<<"|    2. Customer      [C]    |"<<endl;
    cout<<"|    3. CLOSE Program  [X]    |"<<endl;
    cout<<"-----+"<<endl;
    do{
        cout<<" Choose Login As : ";
        cin>>choose;

        if (toupper(choose)=='A'||choose=='1'){
            admin();
        }
        else if (toupper(choose)=='C'||choose=='2'){
            cout<<"-----+"<<endl;
            sleep(2);
            if(stock<1){
                system("cls");
                cout<<"Sorry, we ran out of potato :( Please come again  
later."<<endl;
                system("PAUSE");
                system("cls");
                mainMenu();
            }
            else

```

```

        guest();
    }
    else if(toupper(choose)=='X' || choose=='3'){
        logout();
        exit(0);
    }
}while(toupper(choose)!='A' && choose!='1' && toupper(choose)!='C' && choose!='2' && toupper(choose)!='X' && choose!='3');
}

void admin(){
    char adminName[50], password[50]= "12345", passwordAdmin[50];
    cin.ignore(1024, '\n');

    for(int i=0; i<3; i++){ //3 attempts to log in to the admin page
        cout<<" Enter your name : ";
        cin.getline(adminName, 50);
        cout<<" Enter password : ";
        cin.getline(passwordAdmin, 50);
        if(strcmp(password, passwordAdmin)==0){
            sleep(2);
            system("cls");
            cout<<"\n";
            cout<<" ***** Welcome admin "<<adminName<<"! *****"<<endl;
            cout<<"\n";
            adminPage();
        }
        else{
            cout<<"\t+-----+"<<endl;
            cout<<"\t| Access denied |"<<endl;
            cout<<"\t+-----+"<<endl;
        }
    }

    cout<<" FAILED TO LOGIN AS ADMIN.\n THE PROGRAM WILL TERMINATED."<<endl;
}

```

```

        sleep(3);
        logout();
    }

    void adminPage(){
        char proceed;
        cout<<"-----+"<<endl;
        cout<<"|    Welcome to Admin Page    |"<<endl;
        cout<<"-----+"<<endl;
        cout<<"|  1  | Total Stock of Potato Left |"<<endl;
        cout<<"-----+"<<endl;
        cout<<"|  2  | Total Sale           |"<<endl;
        cout<<"-----+"<<endl;
        cout<<"|  3  | Main Menu           |"<<endl;
        cout<<"-----+"<<endl;
        do{
            cout<<"Please enter the code to continue: ";
            cin>> proceed;
            if (proceed=='1')
                printStock();
            else if(proceed=='2')
                printTotSale();
            else if(proceed=='3')
                mainMenu();
            else
                cout<<"INVALID CODE"<<endl<<endl;
        }while(proceed!='1'&&proceed!='2'&&proceed!='3');
    }

    void guest(){
        cin.ignore(1024,'\n');
        int qty=0;
        double totalPrice=0;
        char order, anotherOrder, name[20];

        system("cls");
    }

```

```

cout<<" +-----+"<<endl;
cout<<"|    WELCOME TO GUEST PAGE    |"<<endl;
cout<<" +-----+"<<endl;
cout<<"Please enter your name: ";
cin.getline(name,20);
cout<<" +-----+"<<endl;
cout<<"  Hi " <<name<<"  ^-^\t\t " <<endl;
cout<<"  Welcome to Potato Machine  " <<endl;
cout<<" +-----+"<<endl;
sleep(2);

do{
    system("cls");
    cout<<" +-----+"<<endl;
    cout<<"\tHi " << name <<"!"<<endl;
    cout<<" +-----+"<<endl;
    do{
        cout<<"Do you want to order?(Y/N): "; //to confirm in making an order
        cin>> order;
    }while(toupper(order)!='Y' && toupper(order)!='N');
    system("cls");

    if(toupper(order)=='Y'){
        qty++; //to count the total of potato purchased
        makeOrder(totalPrice, qty);
        cout<<"BUY 3 FREE 1! Add another to get a special potato."<<endl;
        cout<<"Press [Y] to add another order: ";
        cin>>anotherOrder;
    }
    else
        break;
}while(toupper(anotherOrder)=='Y');

if(toupper(order)=='N'){

```

```

        if(qty<1) //to avoid counting customer when customer doesn't wants to order
        when they first visited customer page
            mainMenu();
        else //when they make >1 order but doesn't wants to order because pressed the
        wrong code when adding another order.
            payment(totalPrice, qty);
    }

    confirmationPayment(totalPrice, qty);
}

//for making an order
void makeOrder(double&totalPrice, int&qty){
    int sizePrice, toppingPrice, price, size[2]={5,7}, topping[5]={1,3,1,4,0};
    char sauceCode, toppingCode, flavor, potatoSize, potatoType;

    //potato type
    do{
        cout<<"\n+---+-----+"<<endl;
        cout<<"|CODE|    POTATO TYPE    |"<<endl;
        cout<<"+---+-----+"<<endl;
        cout<<"[1] | MASHED POTATO        |"<<endl;
        cout<<"[2] | SPRING POTATO          |"<<endl;
        cout<<"[3] | CHIPS                      |"<<endl;
        cout<<"[4] | FRENCH FRIES                |"<<endl;
        cout<<"[5] | WEDGES                      |"<<endl;
        cout<<"+---+-----+"<<endl;
        cout<<"Choose your potato type: ";
        cin>> potatoType;
    }while(toupper(potatoType)!='1' && toupper(potatoType)!='2' &&
    toupper(potatoType)!='3' && toupper(potatoType)!='4' && toupper(potatoType)!='5');
}

```

```

//potato size
do{
    cout<<"\n+---+-----+"<<endl;
    cout<<"|CODE|   POTATO SIZE   |"<<endl;
    cout<<"+---+-----+"<<endl;
    cout<<"[[1] | MEDIUM   (RM5)   |"<<endl;
    cout<<"[[2] | LARGE     (RM7)   |"<<endl;
    cout<<"+---+-----+"<<endl;
    cout<<"Choose size: ";
    cin>> potatoSize;
}while(toupper(potatoSize)!='1' && toupper(potatoSize)!='2');
if(toupper(potatoSize)=='1')
    sizePrice=size[0];
else if(toupper(potatoSize)=='2')
    sizePrice=size[1];

//flavor
do{
    cout<<"\n+---+-----+"<<endl;
    cout<<"|CODE|   POTATO FLAVOR   |"<<endl;
    cout<<"+---+-----+"<<endl;
    cout<<"[[1] | ORIGINAL           |"<<endl;
    cout<<"[[2] | SPICY               |"<<endl;
    cout<<"[[3] | HOT & SPICY         |"<<endl;
    cout<<"+---+-----+"<<endl;
    cout<<"Choose your flavor: ";
    cin>> flavor;
}while(flavor!='1' && flavor!='2' && flavor!='3');

```

```

//topping
do{
    cout<<"\n+----+-----+"<<endl;
    cout<<"|CODE|   TOPPING       |"<<endl;
    cout<<"+----+-----+"<<endl;
    cout<<"[1] | CHILI FLAKES (RM1) |"<<endl;
    cout<<"[2] | CHICKEN SLICE (RM3) |"<<endl;
    cout<<"[3] | BLACK PAPER (RM1) |"<<endl;
    cout<<"[4] | BEEF BACON (RM4) |"<<endl;
    cout<<"[5] | NONE           |"<<endl;
    cout<<"+----+-----+"<<endl;
    cout<<"Choose your topping: ";
    cin>> toppingCode;
}while(toppingCode!='1' && toppingCode!='2' && toppingCode!='3' && toppingCode!='4'
&& toppingCode!='5');
if(toppingCode=='1')
    toppingPrice=topping[0];
else if(toppingCode=='2')
    toppingPrice=topping[1];
else if(toppingCode=='3')
    toppingPrice=topping[2];
else if(toppingCode=='4')
    toppingPrice=topping[3];
else if(toppingCode=='5')
    toppingPrice=topping[4];

//sauce
do{
    cout<<"\n+----+-----+"<<endl;
    cout<<"|CODE|   SAUCE (FREE) |"<<endl;
    cout<<"+----+-----+"<<endl;
    cout<<"[1] | CHILI           |"<<endl;
    cout<<"[2] | TOMATO           |"<<endl;

```



```

        cout<<"[[3] | MAYONNAISE      |"<<endl;
        cout<<"[[4] | CHEESE          |"<<endl;
        cout<<"[[5] | THOUSAND ISLAND  |"<<endl;
        cout<<"[[6] | NONE              |"<<endl;
        cout<<" +----+-----+"<<endl;
        cout<<"Choose your sauce: ";
        cin>> sauceCode;

}while(sauceCode!='1' && sauceCode!='2' && sauceCode!='3' && sauceCode!='4' &&
sauceCode!='5' && sauceCode!='6');

price = sizePrice + toppingPrice;
totalPrice += price;
system("cls");

//to display an order that has been made
listCode();
cout<<"\nYour order: "<<endl;
cout<<" +-----+"<<endl;
cout<<"|      |   CODE   |"<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"|TYPE    |"<<setw(6)<< potatoType <<setw(9)<<"|"<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"|SIZE     |"<<setw(6)<< potatoSize <<setw(9)<<"|"<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"|FLAVOR   |"<<setw(6)<< flavor <<setw(9)<<"|"<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"|TOPPING  |"<<setw(6)<< toppingCode <<setw(9)<<"|"<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"|SAUCE    |"<<setw(6)<< sauceCode <<setw(9)<<"|"<<endl;
cout<<" +-----+-----+"<<endl<<endl;
cout<<" +-----+-----+"<<endl;
cout<<"| Quantity of potato purchased |"<<setw(6)<<qty<<setw(6)<<"|"<<endl;
cout<<"|-----+-----+"<<endl;
cout<<"| Total Purchase          |"<<setw(4)<<" RM "<<totalPrice<<setw(6)<<"|"<<endl;

```

```

cout<<" +-----+-----+"<<endl<<endl;

//buy3free1
if(qty==3){
    cout<<" +-----+"<<endl;
    cout<<"| You got 1 special potato! |"<<endl;
    cout<<" +-----+"<<endl;
}

//when customer is making an order but the machine has ran out of stock
if(qty==stock){
    cout<<"\n";
    cout<<" +-----+"<<endl;
    cout<<"| We ran out of stock! |"<<endl;
    cout<<" +-----+"<<endl;
    confirmationPayment(totalPrice, qty);
}
}

//to avoid careless mistake when pressing code
void confirmationPayment(double totalPrice, int qty){
    char proceed, cancel;

    cout<<"\nDo you want to proceed to payment? [P-Payment]: ";
    cin>> proceed;
    if(toupper(proceed)=='P')
        payment(totalPrice, qty);
    else{
        system("cls");
        cout<<"\nAre you sure you want to cancel all order? [Y-Yes]: ";
        cin>>cancel;
        if(toupper(cancel)=='Y'){
            system("cls");
            mainMenu();
        }
    }
}

```

```

        else
            payment(totalPrice, qty);
    }
}

//methods of payment
void payment(double totalPrice, int qty){
    char paymentType;
    countCustomer++;
    if(qty>=3)
        stock--; //the free potato is included in counting the total stock
    stock=stock-qty;

    do{
        system("cls");
        cout<<"\tPAYMENT"<<endl<<endl;
        cout<<"-----"<<endl;
        cout<<"| PAYMENT METHOD | DISCOUNT |"<<endl;
        cout<<"-----"<<endl;
        cout<<"[1] CASH      |   -   |"<<endl;
        cout<<"-----"<<endl;
        cout<<"[2] PAYPAL    |  2%   |"<<endl;
        cout<<"-----"<<endl;
        cout<<"[3] E-WALLET   |  3%   |"<<endl;
        cout<<"-----"<<endl;
        cout<<"[4] CREDIT CARD |  5%   |"<<endl;
        cout<<"-----"<<endl;
        cout<<"Select your payment method: ";
        cin>> paymentType;
    }while(paymentType!='1'&&paymentType!='2'&&paymentType!='3'&&paymentType!='4');
    if (paymentType == '1')
        cash(totalPrice);
    else if (paymentType == '2')
        paypal(totalPrice);
    else if (paymentType == '3')

```

```

        eWallet(totalPrice);
    else if (paymentType == '4')
        creditCard(totalPrice);
    else
        cout<<"Invalid input. "<<endl;
}

void cash(double totalPrice) {
    system("cls");
    double pay;
    cout<<"You choose to pay in CASH."<<endl<<endl;
    cout<<"\t-----Receipt-----"<<endl;
    cout<<"\t\t\tSubtotal      :RM " <<totalPrice<<endl;
    cout<<"\t\t\tAmount Paid    :RM ";
    cin>>pay;
    cout<<"\t\t\tBalance      :RM " <<(pay-totalPrice)<<endl;
    cout<<"\t-----"<<endl;
    cout<<"\nThank you for using Potato Machine." <<endl;

    totalSales+=totalPrice;
    system("PAUSE");
    system("cls");
    mainMenu();
}

void creditCard(double totalPrice) {
    system("cls");
    double discount = 0.05;
    cout<<"You choose to pay using CREDIT CARD."<<endl;
    cout<<"-----"<<endl;
    cout<<"Total      : RM " <<totalPrice<<endl;
    cout<<"Amount Due(-5%) : RM " <<totalPrice-(totalPrice*discount)<<endl;
    cout<<"-----"<<endl;
    cout<<"PayWave";
    for(int i=0;i<4;i++){

```

```

        sleep(1);
        cout<<".";
    }
    cout<<"\nTransaction completed.\nYour Credit Card has been charged."<<endl;
    cout<<"\nThank you for using our service." <<endl;

    totalSales+=totalPrice-(totalPrice *discount);
    system("PAUSE");
    system("cls");
    mainMenu();
}

void eWallet(double totalPrice){
    system("cls");
    double discount = 0.03;
    cout<<"You choose to pay using e-Wallet."<<endl;
    cout<<"-----"<<endl;
    cout<<"Total      : RM "<<totalPrice<<endl;
    cout<<"Amount Due(-3%) : RM "<<totalPrice-(totalPrice*discount)<<endl;
    cout<<"-----"<<endl;
    cout<<"Scanning QR Code";
    for(int i=0;i<4;i++){
        sleep(1);
        cout<<".";
    }
    cout<<"\nTransaction completed. \nYour e-Wallet has been charged."<<endl;
    cout<<"\nThank you for using our service."<<endl;

    totalSales+=totalPrice-(totalPrice*discount);
    system("PAUSE");
    system("cls");
    mainMenu();
}

void paypal(double totalPrice) {
    system("cls");

```

```

    double discount = 0.02;
    cout<<"You choose to pay using PayPal."<<endl;
    cout<<"-----"<<endl;
    cout<<"Total      : RM "<<totalPrice<<endl;
    cout<<"Amount Due(-2%) : RM "<<totalPrice-(totalPrice*discount)<<endl;
    cout<<"-----"<<endl;
    cout<<"Scanning QR Code";
    for(int i=0;i<4;i++){
        sleep(1);
        cout<<".";
    }
    cout<<"\nTransaction completed. \nYour PayPal has been deducted."<<endl;
    cout<<"\nThank you for using our service." <<endl;

    totalSales+=totalPrice-(totalPrice*discount);
    system("PAUSE");
    system("cls");
    mainMenu();
}

//to display total sale for the day
void printTotSale(){
    system("cls");
    cout<<"-----+"<<endl;
    cout<<"|      Total Sale      |"<<endl;
    cout<<"-----+"<<endl;
    cout<<" \tTotal Sales   : RM "<<totalSales<<endl;
    cout<<"-----"<<endl;
    cout<<" \tTotal Customer : "<<countCustomer<<endl;
    cout<<"-----"<<endl;
    system("PAUSE");
    system("cls");
    adminPage();
}

//to display stock left

```

```

void printStock(){
    system("cls");
    cout<<"-----+"<<endl;
    cout<<"|    Total Stock of Potato Left    |"<<endl;
    cout<<"-----+"<<endl;
    cout<<"\\t\\t"<<stock<<endl;
    cout<<"-----"<<endl;
    system("PAUSE");
    system("cls");
    adminPage();
}

```

//as a reference for the customer

```

void listCode(){

    cout<<"-----+-----+-----+-----+-----+"
    <<endl;
    cout<<"|CODE|  POTATO TYPE  | POTATO SIZE | POTATO SIZE | TOPPING
    | SAUCE  |"<<endl;

    cout<<"-----+-----+-----+-----+-----+"
    <<endl;
    cout<<"[1] | MASHED POTATO  | MEDIUM      | ORIGINAL    | CHILI FLAKES  |
    CHILI      |"<<endl;
    cout<<"[2] | SPRING POTATO  | LARGE        | SPICY        | CHICKEN SLICE |
    TOMATO     |"<<endl;
    cout<<"[3] | CHIPS          | -            | HOT & SPICY  | BLACK PAPER   |
    MAYONNAISE |"<<endl;
    cout<<"[4] | FRENCH FRIES   | -            | -            | BEEF BACON    | CHEESE
    |"<<endl;
    cout<<"[5] | WEDGES         | -            | -            | NONE          | THOUSAND
    ISLAND     |"<<endl;
    cout<<"[6] | -              | -            | -            | -            | NONE          |"<<endl;
}

```

```

        cout<<" +---+-----+-----+-----+-----+-----+"
        <<endl;
    }
    void logout(){
        system("cls");
        cout<<" +-----+"<<endl;
        cout<<"|   Thank you for using Potato Machine   |"<<endl;
        cout<<" +-----+"<<endl;
        cout<<"\tProgram will terminated in\t "<<endl;
        cout<<"\tLoading";
        sleep(1);
        cout<<".";
        sleep(1);
        cout<<".";
        sleep(1);
        cout<<".";
        sleep(1);
        cout<<"\n +-----+"<<endl;
        cout<<"|   PROGRAM TERMINATED SUCCESSFULLY   |"<<endl;
        cout<<" +-----+"<<endl;
    }

```


4.0 Details of Input and Output

1. Output: Greeting
2. Output: Main menu
3. Input: Choose (press 1 or A for Administrator, 2 or B for Customer and 3 or C to Close the program)
Output: Administrator, Customer or Close the Program
4. Input: Admin's name
Output: Admin's name
5. Input: Admin's password
Output: Admin's greeting or Access Denied
6. Input: The codes of admin page (press 1 for Total stock of potato left, 2 for total sale and 3 for main menu)
Output: Total stock of potato left, total sale or Main menu
7. Input: Customer's name
Output: name
8. Input: Option to order (Y/N)
Output: yes or no
9. Input: Option of Potato type (press 1 for mashed potato, 2 for spring potato, 3 for chips, 4 for french fries and 5 for wedges)
Output: Mashed potato, Spring potato, Chips, French fries or Wedges
10. Input: The potato size (press 1 for medium[RM5] or 2 for large[RM7])
Output: Medium or Large
11. Input: The potato flavor (press 1 for original, 2 for spicy and 3 for hot and spicy)
Output: Original, Spicy or Hot and spicy
12. Input: Topping (press 1 for chili flakes[RM1], 2 for chicken slice[RM3], 3 for black paper[RM1], 4 for beef bacon[RM4] or 5 for none)
Output: Chili flakes, Chicken slice, Black paper, Beef bacon or none
13. Input: Option of Sauce (press 1 for chili, 2 for tomato, 3 for mayonnaise, 4 for cheese, 5 for thousand island or 6 for none)
Output: Chili, Tomato, Mayonnaise, Cheese, Thousand island or none
14. Output: Order that has made
15. Output: quantity
16. Output: total purchase

- 17. Input: Option to payment (press p for payment and other to cancel order)
Output: Payment or Cancel order
- 18. Input: Option to payment method (press 1 for cash, 2 for paypal, 3 for e-wallet, or 4 for credit card)
Output: Cash, Paypal, E-wallet or Credit card
- 19. Input: The amount paid by customer
Output: Total price and balance
- 20. Output: Total amount paid with credit card
- 21. Output: Total amount paid with e-wallet
- 22. Output: Total amount paid with paypal
- 23. Output: The total sales and total customer
- 24. Output: The total stock of potato left
- 25. Output: The list of order for customer reference
- 26. Output: Closing of the program

5.0 Screen Layout

As a customer

C:\Users\User\Documents\UITM\CS1101B\CSC126\final report\csc126 potato machine done 2 february 2023.exe

```
+-----+
|             MAIN MENU             |
+-----+
| 1. Administrator   [A]             |
| 2. Customer       [C]             |
| 3. CLOSE Program  [X]             |
+-----+
Choose Login As : C
```

```
+-----+
| WELCOME TO GUEST PAGE              |
+-----+
Please enter your name: Nur
+-----+
Hi Nur  ^_^
Welcome to Potato Machine
+-----+
```

```
+-----+
| Hi Nur!                           |
+-----+
Do you want to order?(Y/N): y
```

CODE	POTATO TYPE
[1]	MASHED POTATO
[2]	SPRING POTATO
[3]	CHIPS
[4]	FRENCH FRIES
[5]	WEDGES

Choose your potato type: 1

CODE	POTATO SIZE
[1]	MEDIUM (RM5)
[2]	LARGE (RM7)

Choose size: 1

CODE	POTATO FLAVOR
[1]	ORIGINAL
[2]	SPICY
[3]	HOT & SPICY

Choose your flavor: 1

CODE	TOPPING
[1]	CHILI FLAKES (RM1)
[2]	CHICKEN SLICE (RM3)
[3]	BLACK PAPER (RM1)
[4]	BEEF BACON (RM4)
[5]	NONE

Choose your topping: 1

CODE	SAUCE (FREE)
[1]	CHILI
[2]	TOMATO
[3]	MAYONISE
[4]	CHEESE
[5]	THOUSAND ISLAND
[6]	NONE

Choose your sauce: 1

CODE	POTATO TYPE	POTATO SIZE	POTATO SIZE	TOPPING	SAUCE
[1]	MASHED POTATO	MEDIUM	ORIGINAL	CHILI FLAKES	CHILI
[2]	SPRING POTATO	LARGE	SPICY	CHICKEN SLICE	TOMATO
[3]	CHIPS	-	HOT & SPICY	BLACK PAPER	MAYONISE
[4]	FRENCH FRIES	-	-	BEEF BACON	CHEESE
[5]	WEDGES	-	-	NONE	THOUSAND ISLAND
[6]	-	-	-	-	NONE

Your order:

	CODE
TYPE	1
SIZE	1
FLAVOR	1
TOPPING	1
SAUCE	1

Quantity of potato purchased	2
Total Purchase	RM 12

BUY 3 FREE 1! Add another to get a special potato.
Press [Y] to add another order: n

Do you want to proceed to payment? [P-Payment]: p

Buy 3 Free 1

Your order:	
	CODE
TYPE	1
SIZE	2
FLAVOR	1
TOPPING	2
SAUCE	1

Quantity of potato purchased	3
Total Purchase	RM 26

You got 1 special potato!

BUY 3 FREE 1! Add another to get a special potato.
Press [Y] to add another order: n

```

PAYMENT
+-----+
| PAYMENT METHOD | DISCOUNT |
+-----+
|[1] CASH       | -         |
+-----+
|[2] PAYPAL     | 2%        |
+-----+
|[3] E-WALLET   | 3%        |
+-----+
|[4] CREDIT CARD| 5%        |
+-----+
Select your payment method: 1

```

```

You choose to pay in CASH.

-----Receipt-----
Subtotal      :RM 12
Amount Paid    :RM 20
Balance       :RM 8
-----

Thank you for using Potato Machine.
Press any key to continue . . .

```

```

You choose to pay using PayPal.
-----
Total          : RM 6
Amount Due(-2%) : RM 5.88
-----
Scanning QR Code....
Transaction completed.
Your PayPal has been deducted.

Thank you for using our service.
Press any key to continue . . . █

```

```

You choose to pay using e-Wallet.
-----
Total          : RM 6
Amount Due(-3%) : RM 5.82
-----
Scanning QR Code....
Transaction completed.
Your e-Wallet has been charged.

Thank you for using our service.
Press any key to continue . . . █

```

```

You choose to pay using CREDIT CARD.
-----
Total           : RM 6
Amount Due(-5%) : RM 5.7
-----
PayWave....
Transaction completed.
Your Credit Card has been charged.

Thank you for using our service.
Press any key to continue . . .

```

If qty==stock

```

+-----+
| Total Stock of Potato Left |
+-----+
|
| 5
|
+-----+
Press any key to continue . . .

```

```

Your order:
+-----+
|      | CODE |
+-----+
| TYPE | 2 |
+-----+
| SIZE | 2 |
+-----+
| FLAVOR | 2 |
+-----+
| TOPPING | 2 |
+-----+
| SAUCE | 2 |
+-----+

+-----+
| Quantity of potato purchased | 5 |
+-----+
| Total Purchase | RM 50 |
+-----+
\

+-----+
| We ran out of stock! |
+-----+

Do you want to proceed to payment? [P-Payment]: p

```

If stock=0

```

+-----+
| Total Stock of Potato Left |
+-----+
|
| 0
|
+-----+
Press any key to continue . . .

```

```

Sorry, we ran out of potato :( Please come again later.
Press any key to continue . . .

```

As an administrator

```
+-----+
|             MAIN MENU             |
+-----+
| 1. Administrator   [A]             |
| 2. Customer       [C]             |
| 3. CLOSE Program  [X]             |
+-----+
```

```
Choose Login As : A
Enter your name  : Ali
Enter password   : 12345
```

```
***** Welcome admin Ali! *****
```

```
+-----+
| Welcome to Admin Page |
+-----+
| 1 | Total Stock of Potato Left |
+-----+
| 2 | Total Sale                 |
+-----+
| 3 | Main Menu                 |
+-----+
```

```
Please enter the code to continue: 1
```

```
+-----+
| Total Stock of Potato Left |
+-----+
| 97                         |
+-----+
```

```
Press any key to continue . . .
```

```
+-----+
| Total Sale                 |
+-----+
| Total Sales : RM 822.75    |
+-----+
| Total Customer : 11        |
+-----+
```

```
Press any key to continue . . .
```


Close Program

```
+-----+
|             MAIN MENU             |
+-----+
|      1. Administrator   [A]      |
|      2. Customer       [C]      |
|      3. CLOSE Program   [X]      |
+-----+
Choose Login As : 3
```

```
+-----+
| Thank you for using Potato Machine |
+-----+
|      Program will terminated in    |
|      Loading...                   |
+-----+
```

```
+-----+
| PROGRAM TERMINATED SUCCESSFULLY   |
+-----+
```

```
-----
Process exited after 1005 seconds with return value 0
Press any key to continue . . . █
```

6.0 References

- 1) Farrell, Joyce. Programming Logic and Design, Comprehensive. Cengage Learning, 2014.
- 2) Garcia, Carmelo. "Fast Food Ordering System In C++ With Source Code - Source Code & Projects." *Source Code & Projects*, 19 June 2022, <https://code-projects.org/fast-food-ordering-system-in-c-with-source-code/>
- 3) "Multidimensional Arrays in C / C++ - GeeksforGeeks." *GeeksforGeeks*, GeeksforGeeks, 30 May 2017, <https://www.geeksforgeeks.org/multidimensional-arrays-c-cpp/?ref=lbp>.
- 4) Skiena, Steven S. The Algorithm Design Manual. Second, Springer Science & Business Media, 2009.
- 5) W3School. "C++ Functions - Pass By Reference." *W3Schools Online Web Tutorials*, https://www.w3schools.com/cpp/cpp_function_reference.asp

Scoring Rubric

Assessment rubric for course code : CSC126

CLO 3: Demonstrate good programming practices and ethics in writing programs according to the task scopes. (PLO6, A3)

TYPE OF ASSESSMENT: Group Project
FULLMARK AS STATED IN JSUB: 35%

Attributes	Sub-attribute	No Submission 0	Poor 1	Fair 2	Good 3	Excellent 4	Weight	Marks
Coding Standard		No Submission	No name, date, or program title included. Poor use of white space (indentation, blank lines). Disorganized and messy. Poor use of variables.	Includes name, date, and program title. White space makes program fairly easy to read. Organized work. Good use of variables.	Includes name, date, and program title. Good use of white space. Organized work. Good use of variables.	Includes name, date, and program title. Excellent use of white space. Creatively organized work. Excellent use of variables.	3	
Readability		No Submission	The code is poorly organized and very difficult to read.	The code is readable only by someone who knows what it is supposed to be doing. No comment on functions, variable, statements etc.	The code is fairly easy to read. The functions, variables, statements were well documented (comment)	The code is exceptionally well organized and very easy to follow. The functions, variables, statements were well documented (comment)	2	
Efficiency		No Submission	A difficult and inefficient solution. Does not included selection control structure, repetition control structure, function and array. The code was lengthy	A logical solution, easy to follow but not the most efficient. Partially included selection control structure, repetition control structure, function and array. The code was lengthy.	Solution is efficient and easy to follow (i.e. no confusing tricks). Included selection control structure, repetition control structure, function and array. Fits a reasonable length of code.	Solution is efficient, easy to understand and maintain. Included selection control structure, repetition control structure, function and array. Fits a reasonable length of code.	2	

Runtime		No Submission	Does not execute due to errors. User prompts are misleading or non-existent. No testing/debugging has been completed.	Executes with some errors. User prompts contain little information, poor design. Some testing/debugging has been completed.	Executes without errors. User prompts are understandable, minimum use of symbols or spacing in output.	Executes without errors. Excellent user prompts, good use of symbols or spacing in output (neatly displayed).	2	
Documentation/Project Report	Introduction	No Submission	Poor introduction. The problem-to-solve was not well introduced .	Fairly good introduction. The problem-to-solve was introduced.	Good introduction. The problem-to-solve was introduced with references.	A very good introduction. The problem-to-solve was well introduced with supported of references.	2	
	Algorithm	No Submission	Poor explanation of algorithm which does not reflex the program developed.	Fairly good explanation of algorithm based on program developed.	Good explanation of algorithm based on program developed.	Excellent explanation of algorithm based on program developed.	2	
	Discussion & Conclusion	No Submission	Unrelated discussion and conclusion	Fairly good discussion and conclusion	Good and logical discussion and conclusion	well thought-out and logical discussion and conclusion.	2	
	Delivery	No Submission	The report was more than 2 weeks overdue .	The report was within 2 weeks of the due date.	The report was delivered within a week of the due date.	The report was delivered on time.	2	

Attributes	Sub-attribute	No Submission	Poor	Fair	Good	Excellent	Weight	Marks
		0	1	2	3	4		
Presentation	Readability of the Slides	No Presentation	There are many errors in spelling, grammar and punctuation.	There are some errors in spelling, grammar and punctuation.	There are a few errors in spelling, grammar and punctuation.	There are no errors in spelling, grammar and punctuation.	2	
	Overall visual Appeal	No Presentation	Background makes the slides hard to read. Graphics are confusing and not related to words. Too much movement in the slides. Many slides hard to read.	There are too few graphic elements. Appropriate background. Some slides hard to read.	Graphic elements are included sufficiently. Only one slides is hard to read and movement and sounds are used quite effectively.	Appealing graphic elements are included appropriately. Slides are easy to read and movement and sounds are used effectively.	2	
	Presentation Skills	No Presentation	Three or more of the presenters didn't know the information and got lost often. Diction and voice level made listening difficult. Role playing distracted audience attention from the presentation	Two of the presenters didn't know the information and got lost often. Diction and voice level made listening difficult. Role playing distracted audience attention from the presentation	One presenter didn't know the information and they got lost often. Diction and voice level made listening difficult from for the audience. Role playing distracted audience attention from presentation.	All presenters knew the information and progressed smoothly through the presentation. Diction and voice level engaged the audience in the presentation. Role playing enhanced the information and held the audience attention.	2	
	Organization	No Presentation	Information and graphics are disorganized	Presents findings with some degree of organization	Presents findings in an organized manner	Presents findings in an organized and conclusive manner	2	