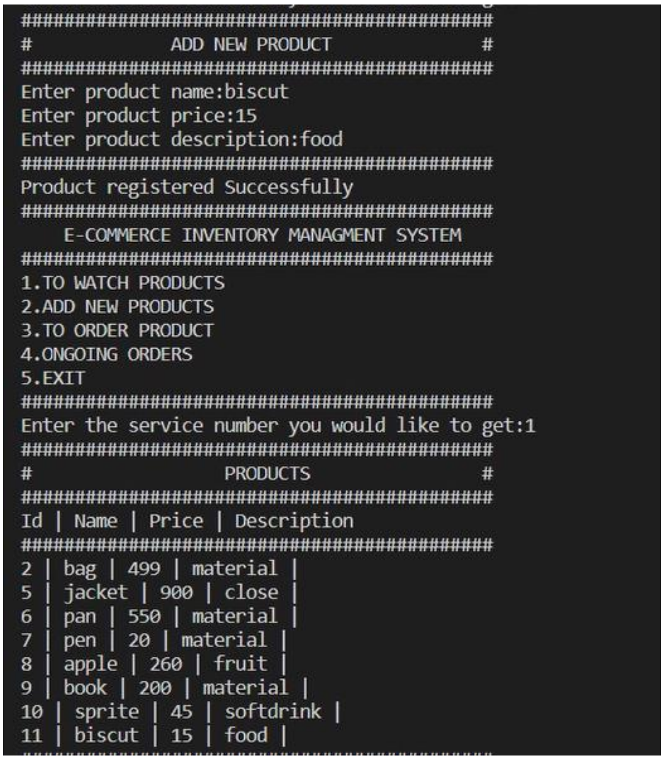

```
############################################
#              ADD NEW PRODUCT             #
############################################
Enter product name:biscut
Enter product price:15
Enter product description:food
############################################
Product registered Successfully
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.EXIT
############################################
Enter the service number you would like to get:1
############################################
#                  PRODUCTS                #
############################################
Id | Name | Price | Description
############################################
2 | bag | 499 | material |
5 | jacket | 900 | close |
6 | pan | 550 | material |
7 | pen | 20 | material |
8 | apple | 260 | fruit |
9 | book | 200 | material |
10 | sprite | 45 | softdrink |
11 | biscut | 15 | food |
```

DSA PROJECT DOCUMENATION

E-COMMERCE INVENTORY MANAGEMENT SYSTEM

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INTRODUCTION

An E-commerce inventory management system is a project that is all about calculating the total amount for the items selected by the customer, showing the available products, registering products, and also registering users and admins to check up on the stack of products and availability.

Features of E-commerce inventory management system

The E-commerce inventory management system will be able to provide the following functions to the users:

- Users will be able to watch products.
- Users will be able to add new products.
- Users will be able to order products available.
- Users will be able to sign up and sign in.

Design choice and data structure used

A simple interactive USSD type of interface is used on the compiled-to-be. Pieces of information are displayed and the user chooses the ones they want.

The programming language used is C++ and the software used is VS code and SQLite for database management.

When working on the project the data structural elements applied are Queues and stacks which are ideal when it comes to E-commerce management and inventory construction.

Queues help in creating a flow

Queues are like a line waiting to purchase tickets, where the first person in line is the first person served. (i.e. First come first serve).

The position of the entry in a queue ready to be served, that is, the first entry that will be removed from the queue, is called the front of the queue (sometimes, head of the queue), similarly, the position of the last entry in the queue, that is, the one most recently added, is called the rear (or the tail) of the queue.

Based on this concept users will be forced to be queued based on what time they have placed orders.

The other Data structural element used is the stack

Stack follows the LIFO(Last In First Out) strategy that states that the element that is inserted last will come out first. You can take a pile of plates kept on top of each other as a real-life example. The plate that we put last is on the top and since we remove the plate that is at the top, we can say that the plate that was put last comes out first. It can be implemented through an array or linked lists. Some of its main operations are: push(), pop(), top(), isEmpty(), size(), etc.

Based on this we can use stacks to know the number of items left in the inventory and also when a new order is placed the inventory stack is updated.

The code operation

Let's go through each function and understand what it does.

#### Products()

This function retrieves and displays the products from the database. It opens the "items.db" database file, executes an SQL query to select all rows from the "product_info" table, and prints the results to the console.

#### orders_ongoing()

This function retrieves and displays the ongoing orders from the database. It opens the "items.db" database file, executes an SQL query to select all rows from the "orders" table, and prints the results to the console.

#### registerProduct()

This function allows the user to add a new product to the database. It prompts the user to enter the product name, price, and description. It then opens the "items.db" database file, prepares an SQL INSERT statement with the provided values, and executes the statement to insert a new row into the "product_info" table.

#### order_product()

This function allows the user to order a product. It first calls the Products() function to display the available products. Then, it prompts the user to enter the name of the product they want to order. It opens the "items.db" database file, prepares an SQL INSERT statement to insert a new row into the "orders" table with the selected product's ID and the current date/time. Finally, it executes the statement to place the order and prints a success message.

#### intro()

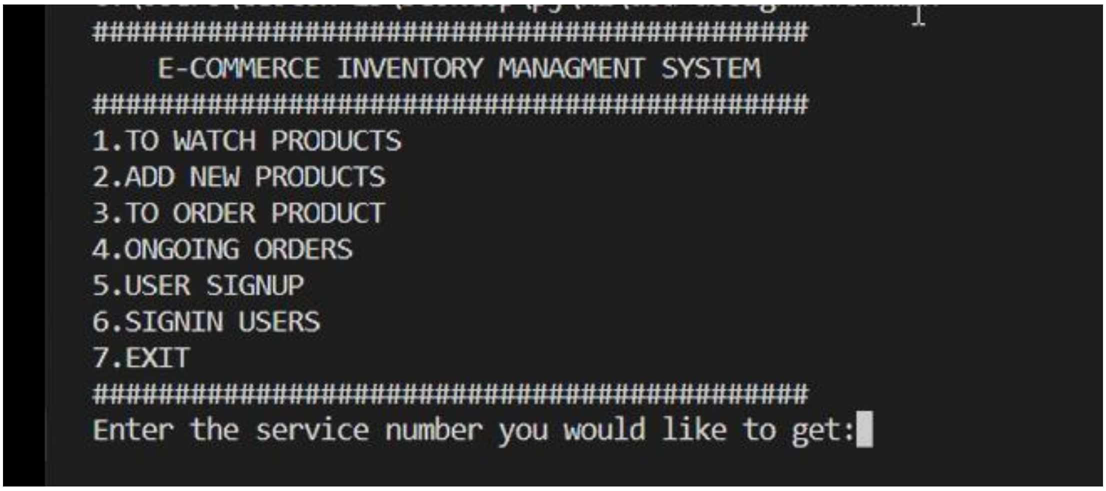
This function serves as the main menu of the program. It displays the available options to the user and prompts them to enter a service number. Based on the user's input, it calls the corresponding function (Products(), registerProduct(), order_product(), or orders_ongoing()). If the user chooses to exit, the program terminates.

#### main()

This is the entry point of the program. It calls the intro() function to start the inventory management system.

Approach and how to use

Firstly a menu will be displayed to the customer showing all the available services.

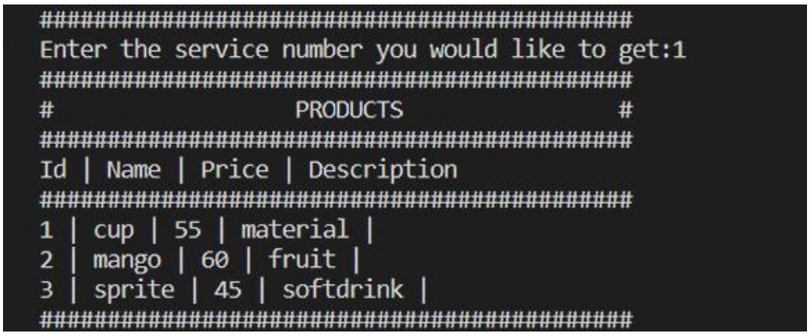


```
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.USER SIGNUP
6.SIGNIN USERS
7.EXIT
############################################
Enter the service number you would like to get:
```

And will be able to input numbers between 1-7. Let's say 1 is inputted. So based on this input 1 = “watch products” which will display the available products registered in the E-commerce inventory.

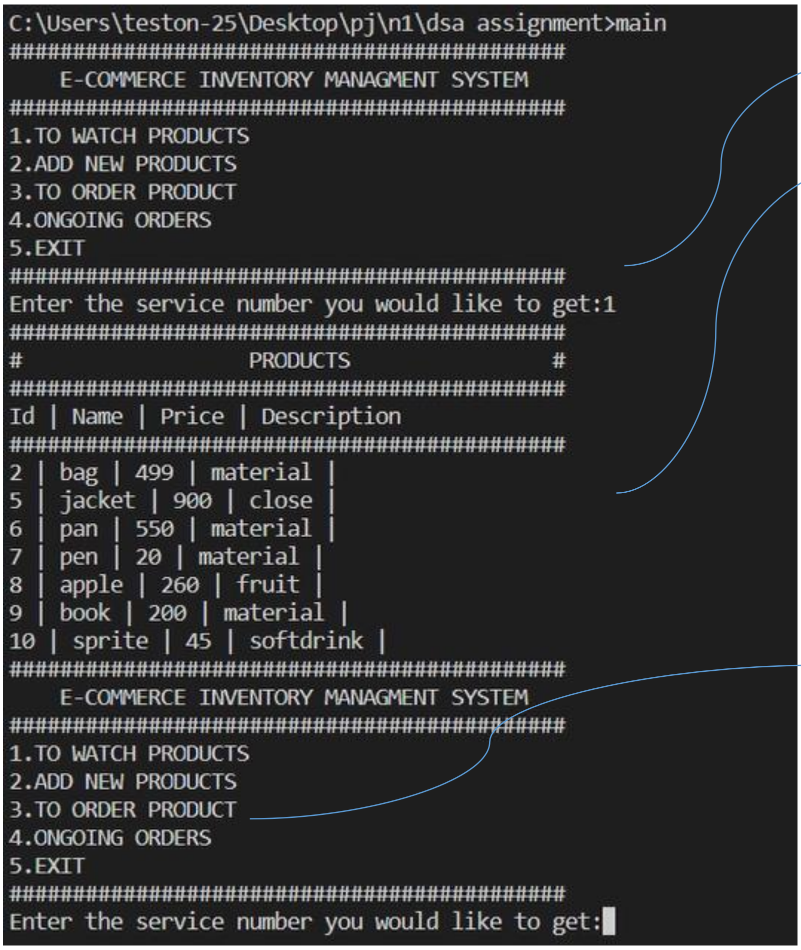
After the selection, all the products with their prices will be displayed.

Then the customer will select the products they want to buy.



```
############################################
Enter the service number you would like to get:1
############################################
#                PRODUCTS                  #
############################################
Id | Name | Price | Description
############################################
1 | cup | 55 | material |
2 | mango | 60 | fruit |
3 | sprite | 45 | softdrink |
############################################
```

Typical example we will get when product list is asked



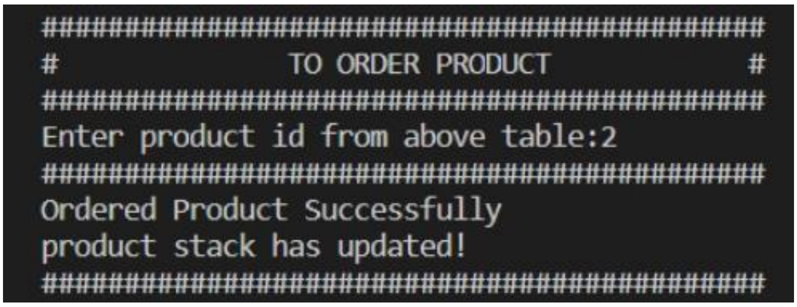
```
C:\Users\teston-25\Desktop\pj\n1\dsa assignment>main
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.EXIT
############################################
Enter the service number you would like to get:1
############################################
#                  PRODUCTS                 #
############################################
Id | Name | Price | Description
############################################
2 | bag | 499 | material |
5 | jacket | 900 | close |
6 | pan | 550 | material |
7 | pen | 20 | material |
8 | apple | 260 | fruit |
9 | book | 200 | material |
10 | sprite | 45 | softdrink |
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.EXIT
############################################
Enter the service number you would like to get:
```

1 is inputted

The list of items available is displayed including their ID, names, price, and description

Whenever the user gets the desired product they can place an order by inputting "3" which will place an order.

If more items are needed to be ordered they can still place orders based on the product ID

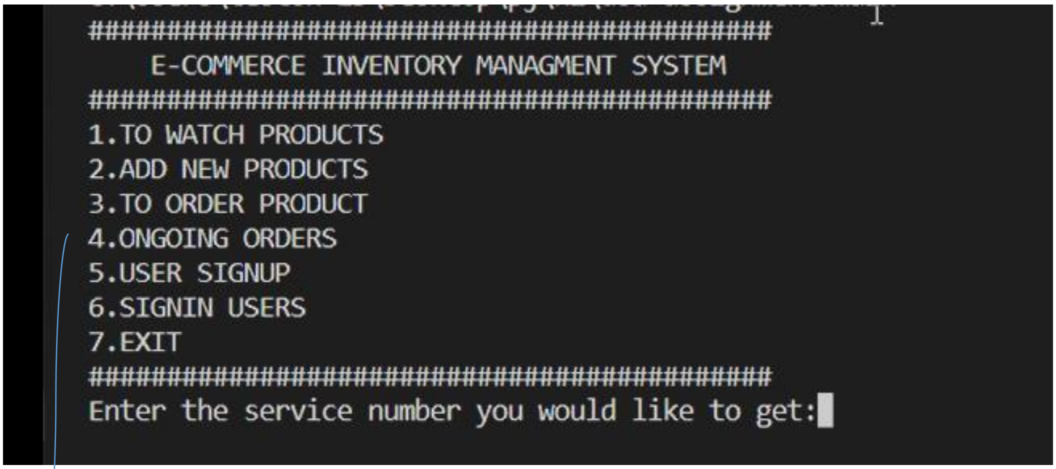


```
############################################
#               TO ORDER PRODUCT            #
############################################
Enter product id from above table:2
############################################
Ordered Product Successfully
product stack has updated!
############################################
```

After inputting the order, the product ID from the above table of items available shall be chosen

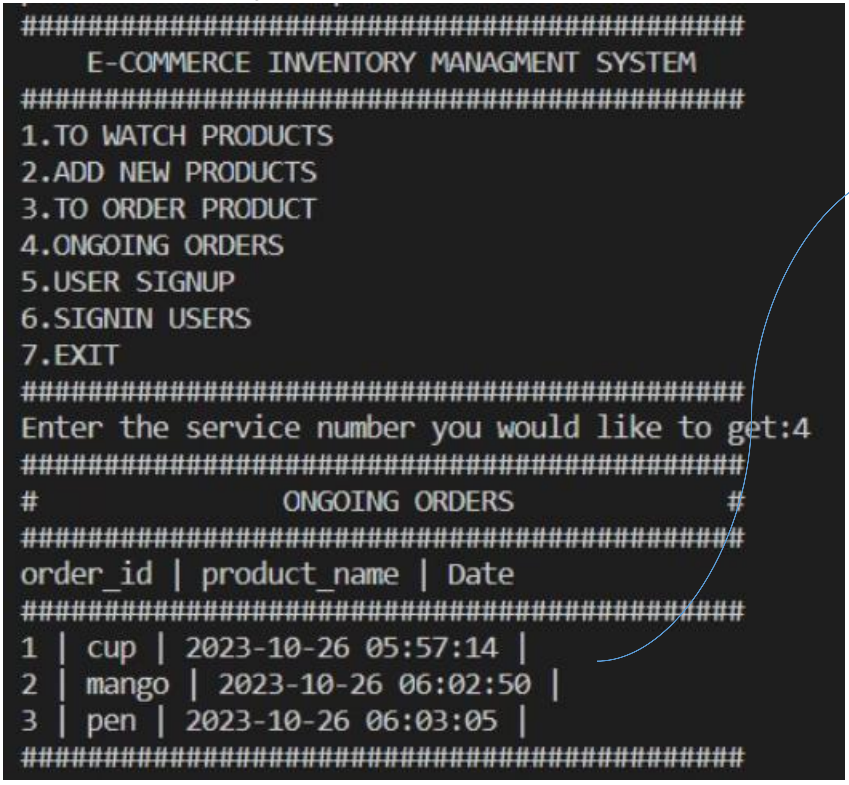
In order to place up a new product in the inventory we are required to add up necessary information which are required (the id, name, price and description).

This will affect the stack inventory and will force it to update the stack level.



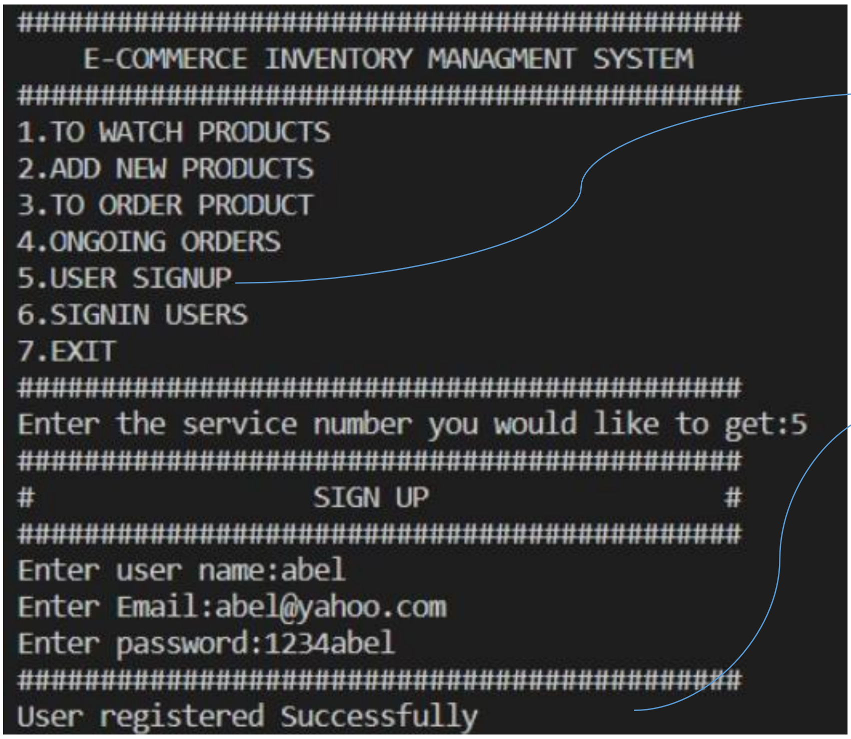
```
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.USER SIGNUP
6.SIGNIN USERS
7.EXIT
############################################
Enter the service number you would like to get:
```

After placing our orders we can see the list of items id we have ordered



```
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.USER SIGNUP
6.SIGNIN USERS
7.EXIT
############################################
Enter the service number you would like to get:4
############################################
#                ONGOING ORDERS            #
############################################
order_id | product_name | Date
############################################
1 | cup | 2023-10-26 05:57:14 |
2 | mango | 2023-10-26 06:02:50 |
3 | pen | 2023-10-26 06:03:05 |
############################################
```

Set of orders placed including the ID, name, Date

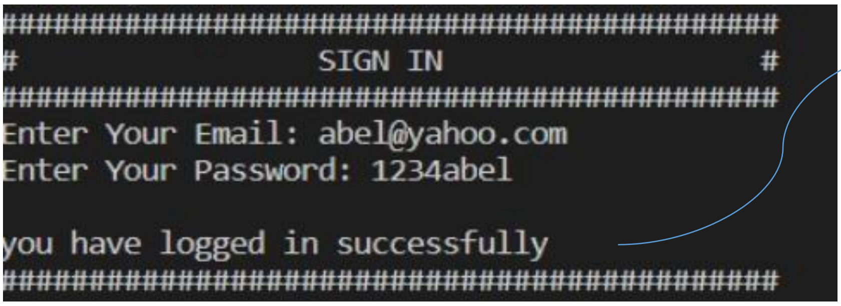


```
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.USER SIGNUP
6.SIGNIN USERS
7.EXIT
############################################
Enter the service number you would like to get:5
############################################
#                 SIGN UP                  #
############################################
Enter user name:abel
Enter Email:abel@yahoo.com
Enter password:1234abel
############################################
User registered Successfully
```

User signup

A new user is signed up by adding name, email and a password

User successfully signed up

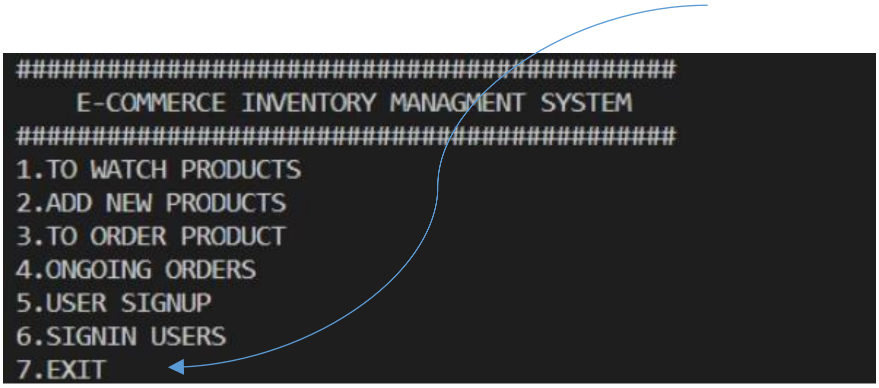


```
############################################
#                 SIGN IN                  #
############################################
Enter Your Email: abel@yahoo.com
Enter Your Password: 1234abel

you have logged in successfully
############################################
```

Once the user has registered in order to sign in the user just enters Email and password and then we can have access.

And lastly to close the program input number “7” =exit



```
############################################
    E-COMMERCE INVENTORY MANAGMENT SYSTEM
############################################
1.TO WATCH PRODUCTS
2.ADD NEW PRODUCTS
3.TO ORDER PRODUCT
4.ONGOING ORDERS
5.USER SIGNUP
6.SIGNIN USERS
7.EXIT
```