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INSTITUTE OF SCIENCE AND TECHNOLOGY

Data Structures & Algorithm

Project Name: Emporium Management System

Project Report

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Section:

IIIC

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Acknowledgement:

We would like to express our thanks to our professors **Syed Muhammad Hassan** for giving us an opportunity and precise instructions which enabled us to complete this research report. We would also like to thank the university of SZABIST for providing us a platform to learn and demonstrate our skills. We also like to express our gratitude for the vast amount knowledge available online that we were able to learn from.

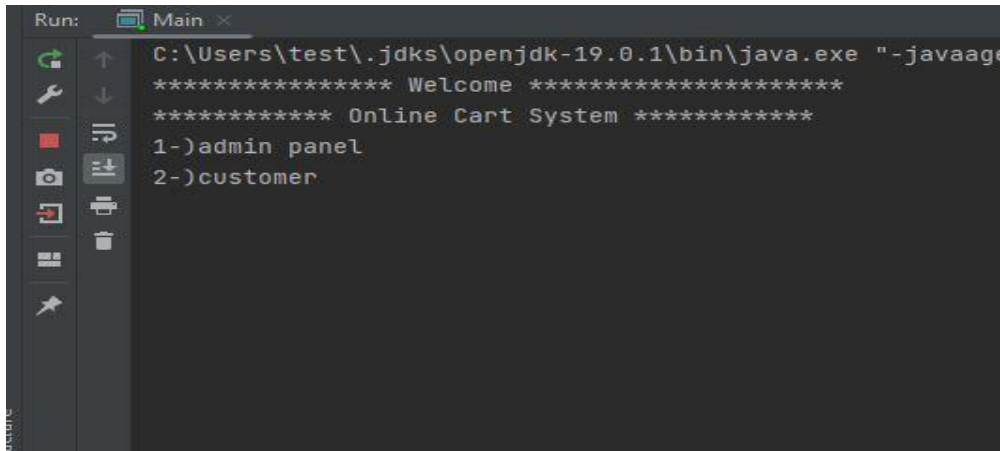
Introduction about project:

This “**Emporium Management System**” project is designed for managing manual working in system base management. In this project user can buy products online can delete the selected products also generate the total bill and behind all of it an administrator is monitoring everything.

Working of Project:

When user will run the program he will get two option:

- 1) Administrator
- 2) Customer



```
Run: Main x
C:\Users\test\jdk\openjdk-19.0.1\bin\java.exe "-javaag
***** Welcome *****
***** Online Cart System *****
1-)admin panel
2-)customer
```

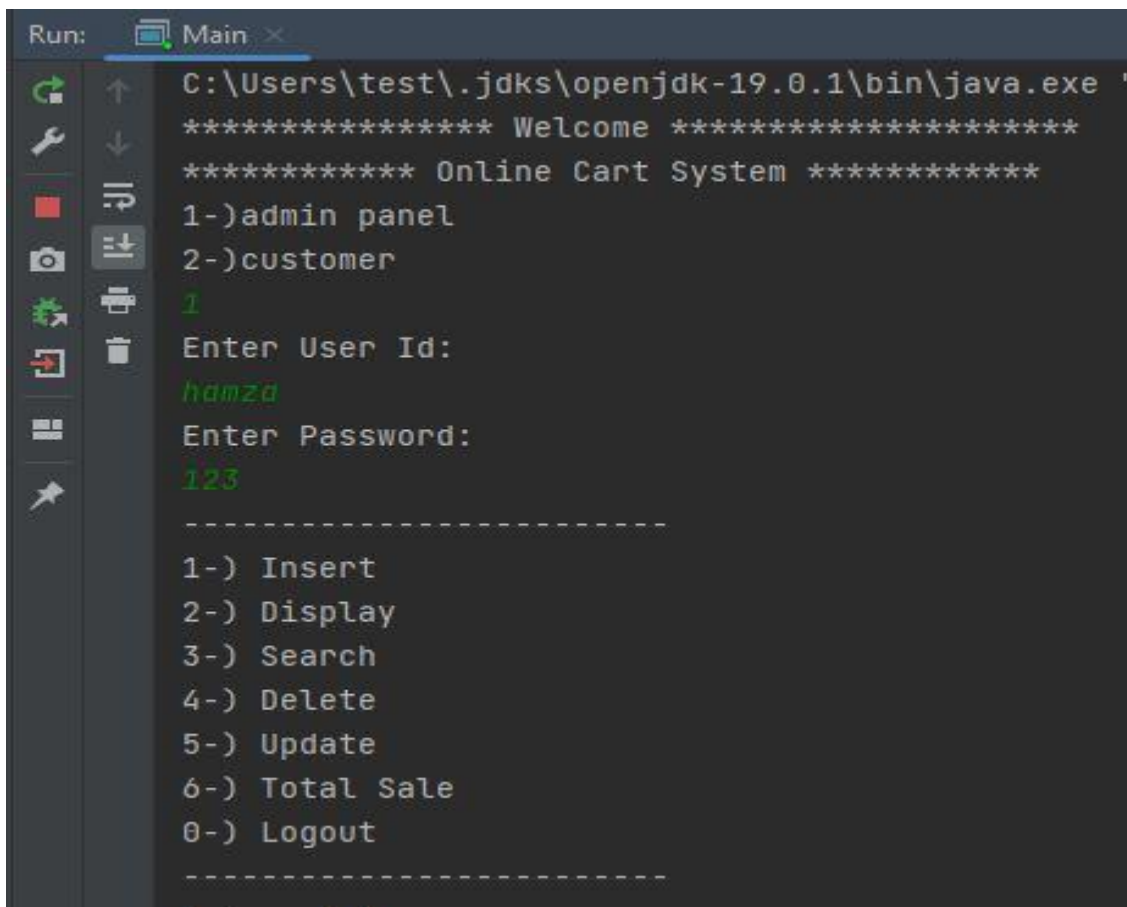
Administrator Press 01:

To access the administrator account, we have to press the 1 and then you must have to know the login id and password to access the administrator account.

Admin Panel:

In the Admin panel Array List Data Structure is used. Crud Functions are used:

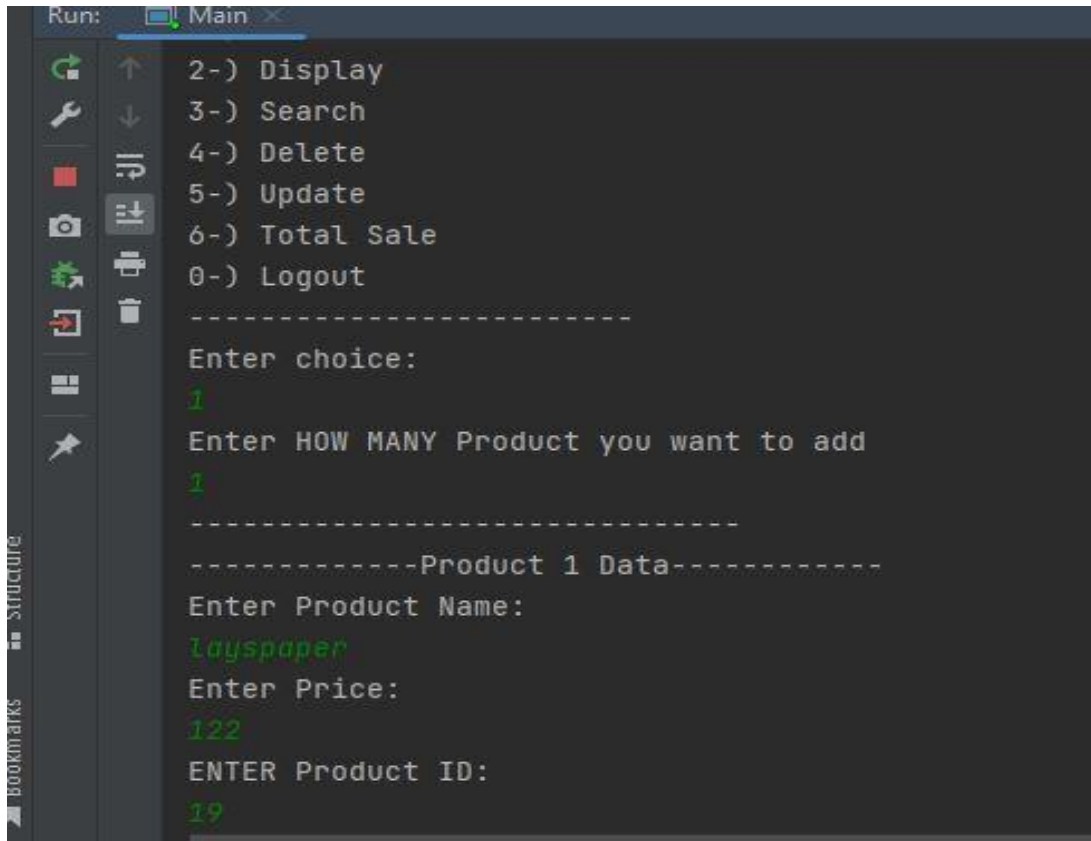
- Insert
- Display
- Search
- Delete
- Update



```
Run: Main x
C:\Users\test\.jdk\openjdk-19.0.1\bin\java.exe
***** Welcome *****
***** Online Cart System *****
1-)admin panel
2-)customer
1
Enter User Id:
hamza
Enter Password:
123
-----
1-) Insert
2-) Display
3-) Search
4-) Delete
5-) Update
6-) Total Sale
0-) Logout
-----
```

Insert:

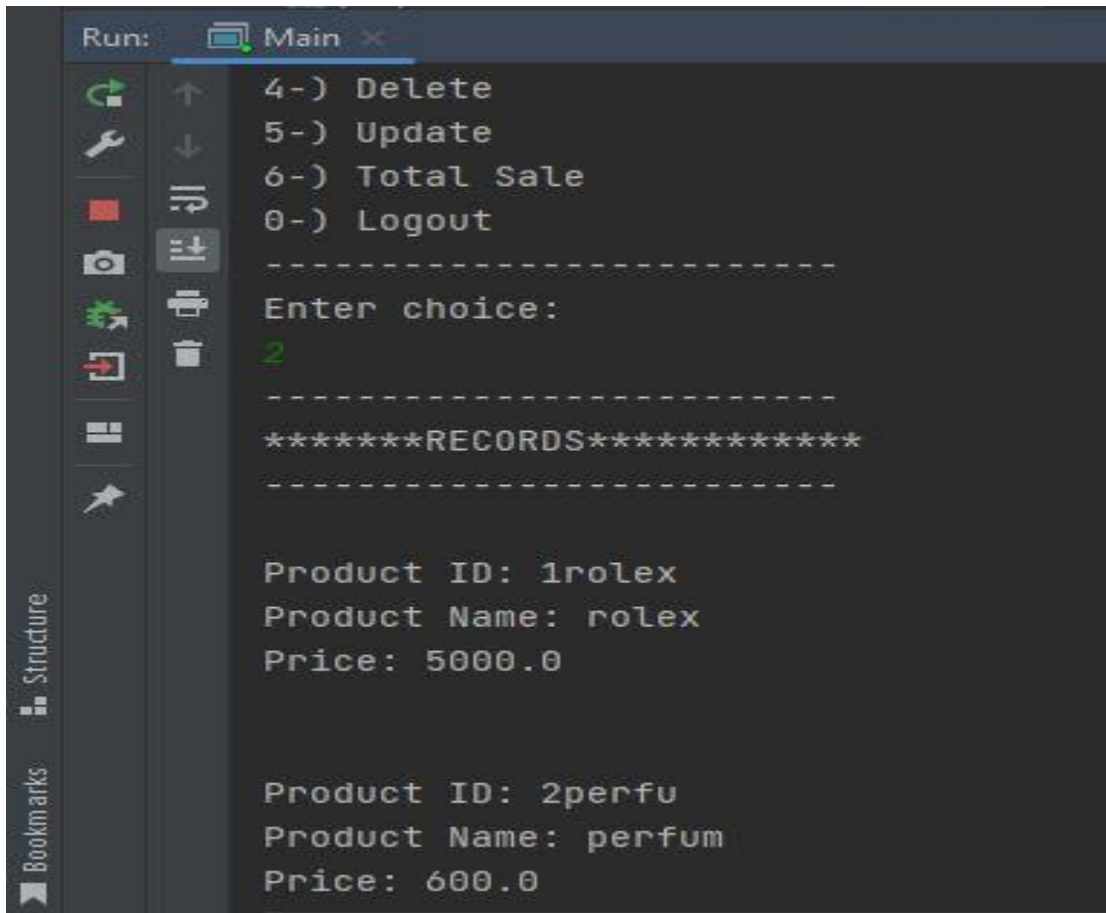
Press 1 to insert the items via administrator account all those items which administrator will add will be shown to customer and he will be able to purchase those products.



```
Run: Main x
2-) Display
3-) Search
4-) Delete
5-) Update
6-) Total Sale
0-) Logout
-----
Enter choice:
1
Enter HOW MANY Product you want to add
1
-----
-----Product 1 Data-----
Enter Product Name:
layspaper
Enter Price:
122
ENTER Product ID:
19
```

Display:

Press two to display the all products which you have been added so far.



The screenshot shows a Java IDE with a console window titled 'Run: Main'. The console displays a menu with options: 4-) Delete, 5-) Update, 6-) Total Sale, and 0-) Logout. A dashed line separates the menu from the prompt 'Enter choice:'. The user has entered '2'. Another dashed line follows, leading to a section titled '*****RECORDS*****'. Below this, two product records are displayed: Product ID: 1rolex, Product Name: rolex, Price: 5000.0; and Product ID: 2perfu, Product Name: perfum, Price: 600.0.

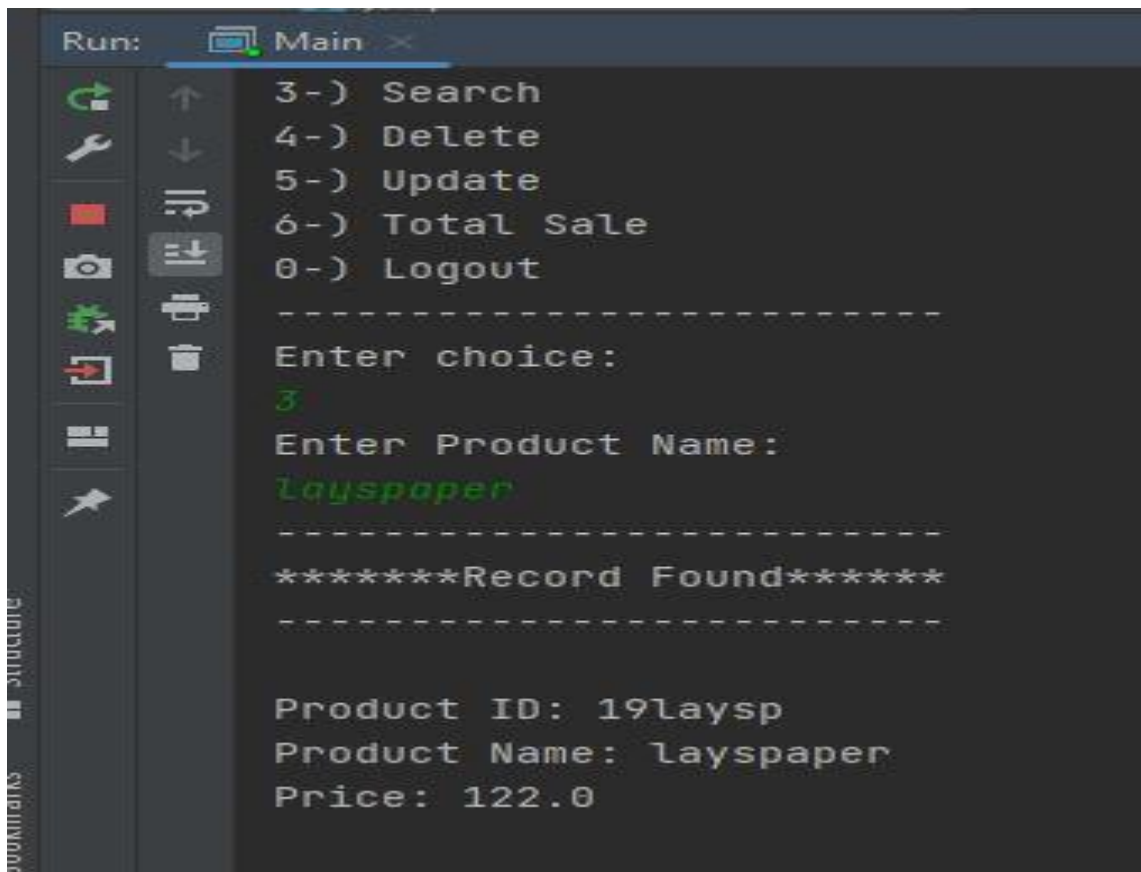
```
Run: Main x
4-) Delete
5-) Update
6-) Total Sale
0-) Logout
-----
Enter choice:
2
-----
*****RECORDS*****
-----

Product ID: 1rolex
Product Name: rolex
Price: 5000.0

Product ID: 2perfu
Product Name: perfum
Price: 600.0
```

Search:

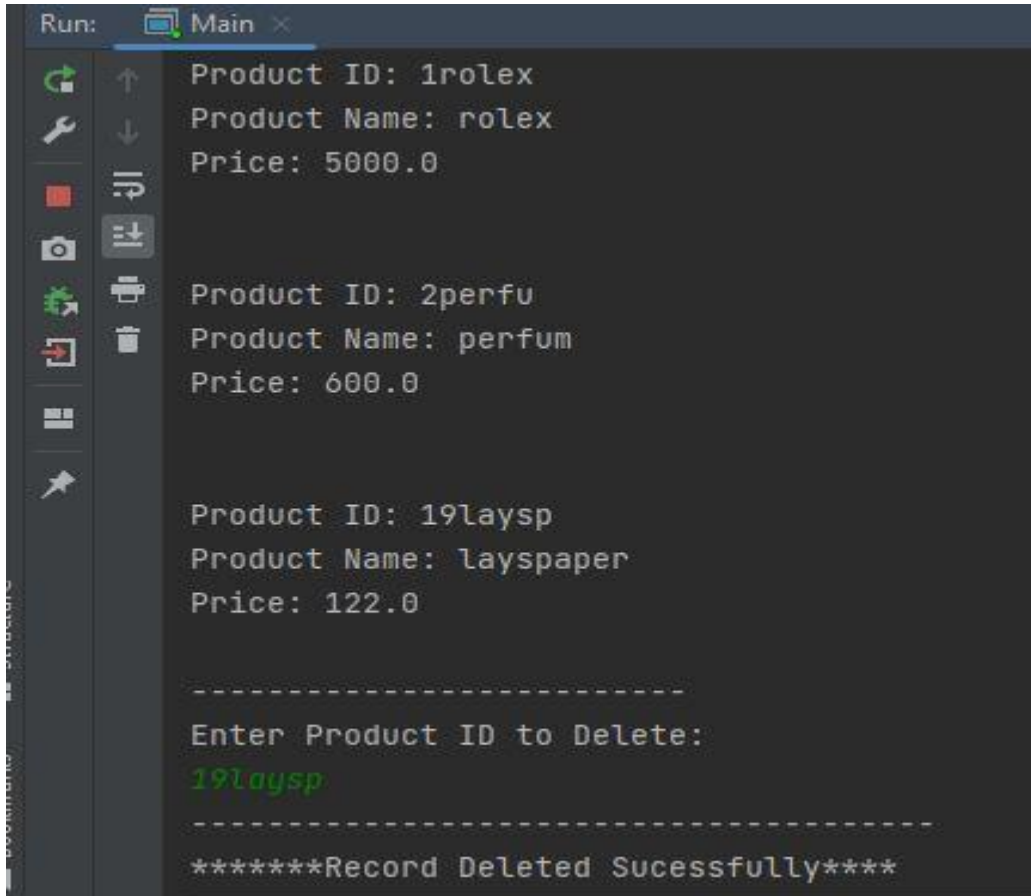
Press 3 for Search the items when you will press the 3 then you will be able to search the products.



```
Run: Main x
3-) Search
4-) Delete
5-) Update
6-) Total Sale
0-) Logout
-----
Enter choice:
3
Enter Product Name:
Layspaper
-----
*****Record Found*****
-----
Product ID: 19laysp
Product Name: layspaper
Price: 122.0
```


Delete:

When you press 4 then you will be able to delete the products.



```
Run: Main x
Product ID: 1rolex
Product Name: rolex
Price: 5000.0

Product ID: 2perfu
Product Name: perfum
Price: 600.0

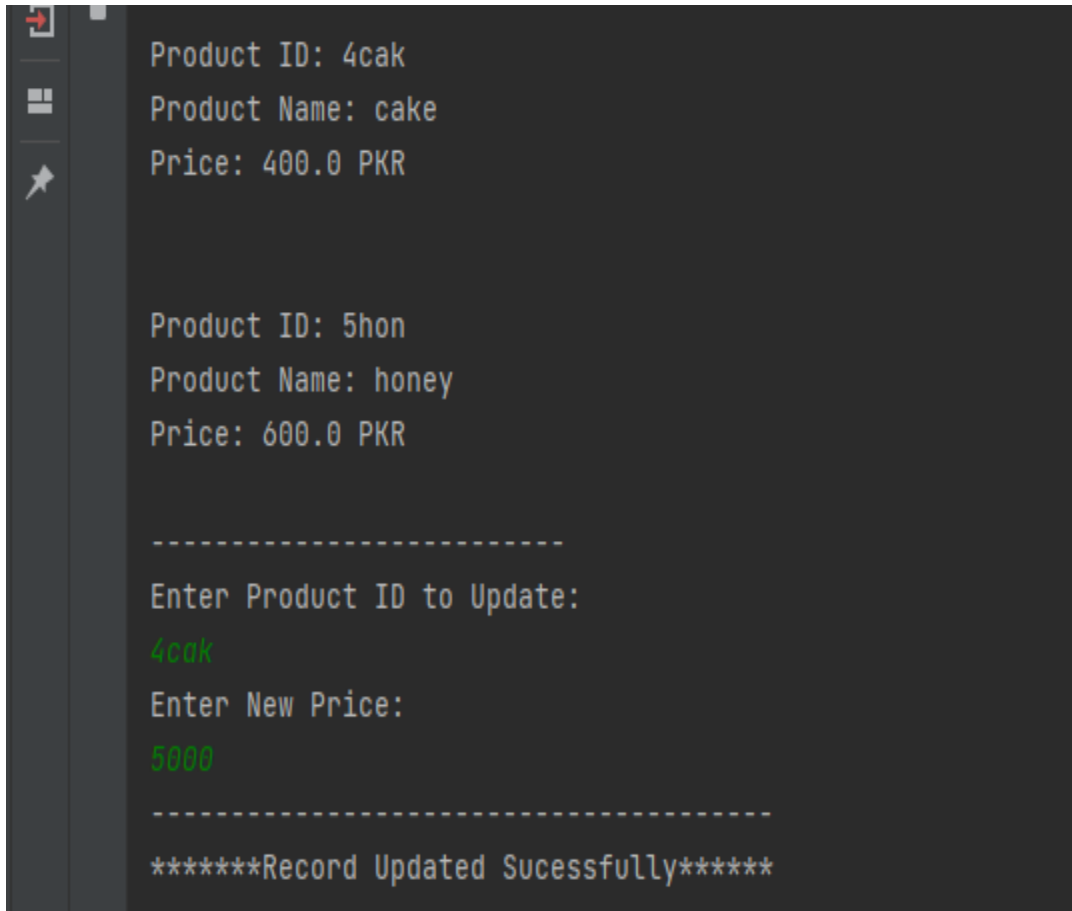
Product ID: 19laysp
Product Name: layspaper
Price: 122.0

-----
Enter Product ID to Delete:
19laysp
-----

*****Record Deleted Sucessfully*****
```

Update:

Press 5 to update the price in case admin wants the update the product price he can easily do.

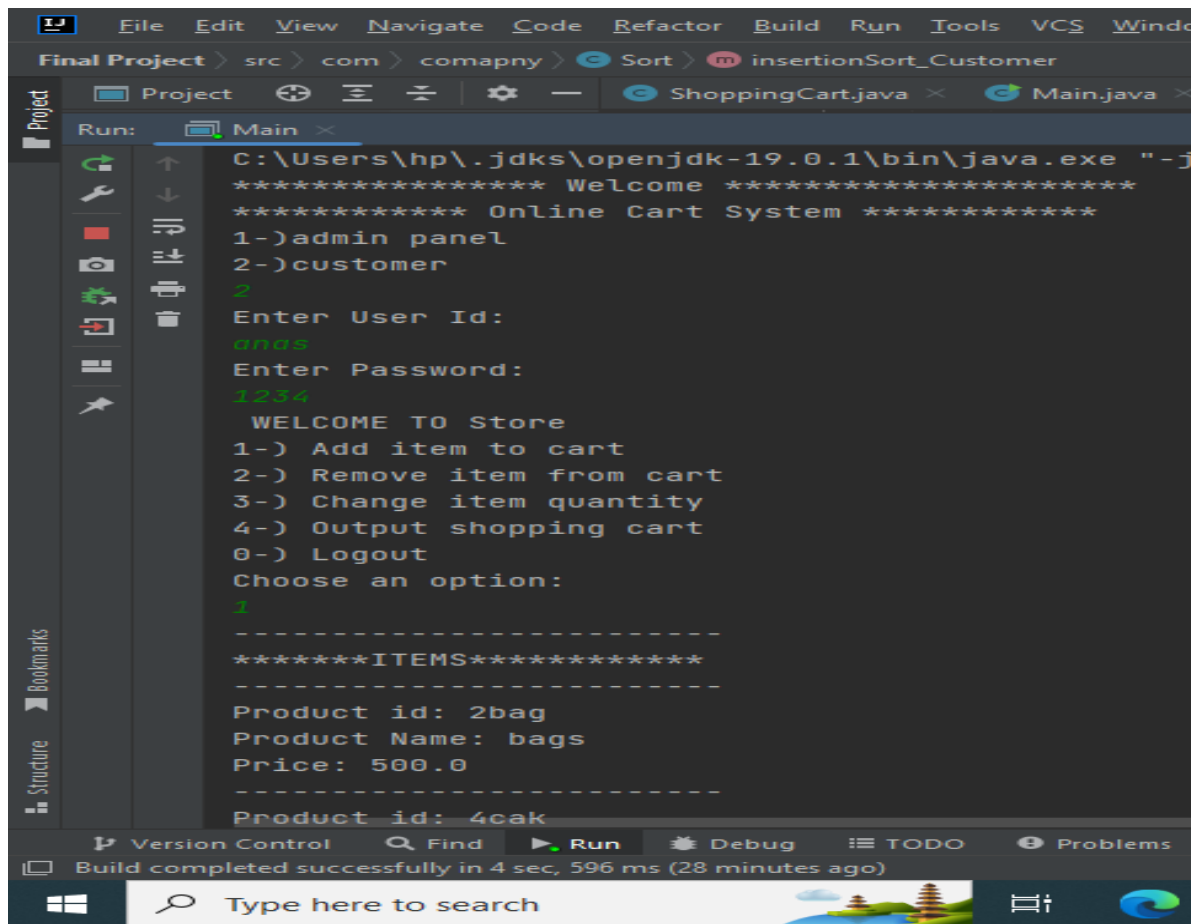
A screenshot of a terminal window with a dark background and light gray text. On the left side, there is a vertical sidebar with three icons: a red arrow pointing right, a square icon, and a white arrow pointing up. The main area of the terminal displays the following text:

```
Product ID: 4cak  
Product Name: cake  
Price: 400.0 PKR  
  
Product ID: 5hon  
Product Name: honey  
Price: 600.0 PKR  
  
-----  
Enter Product ID to Update:  
4cak  
Enter New Price:  
5000  
-----  
*****Record Updated Sucessfully*****
```

Customer panel:

In Customer panel Array List Data Structure is used. First customer can login their account and then Customer can perform CRUD operations:

- Add to cart.
- Remove from cart.
- Update Quantity.
- Display Bill.



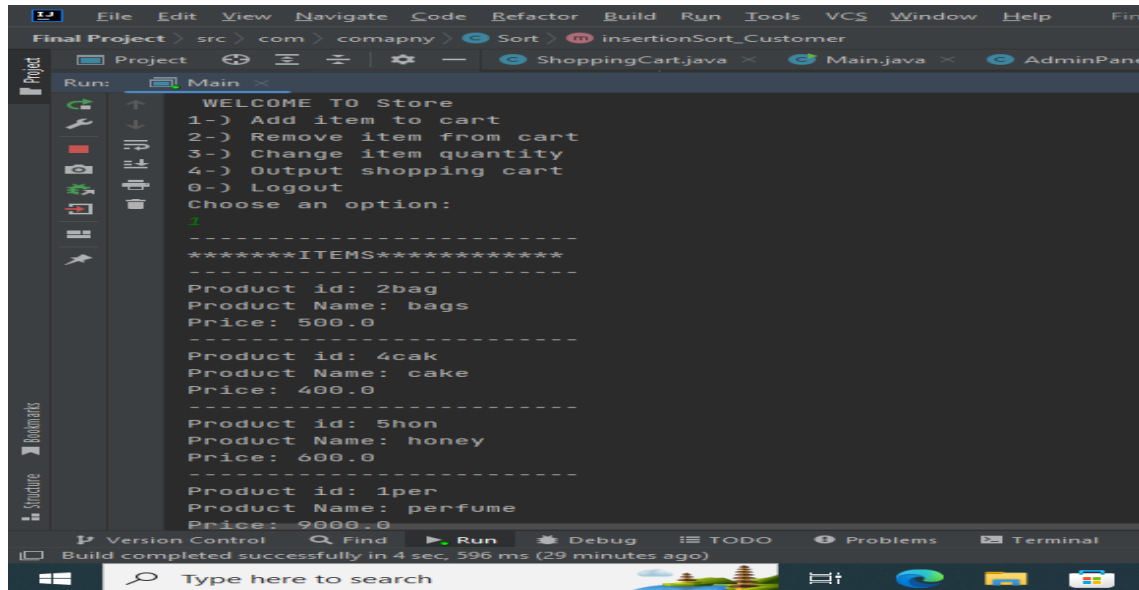
The screenshot shows an IDE window with the following content:

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window
Final Project > src > com > comapny > Sort > insertionSort_Customer
Project
Run: Main x
C:\Users\hp\.jdk\openjdk-19.0.1\bin\java.exe "-j
***** Welcome *****
***** Online Cart System *****
1-)admin panel
2-)customer
2
Enter User Id:
anas
Enter Password:
1234
WELCOME TO Store
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
1
-----
*****ITEMS*****
-----
Product id: 2bag
Product Name: bags
Price: 500.0
-----
Product id: 4cak
```

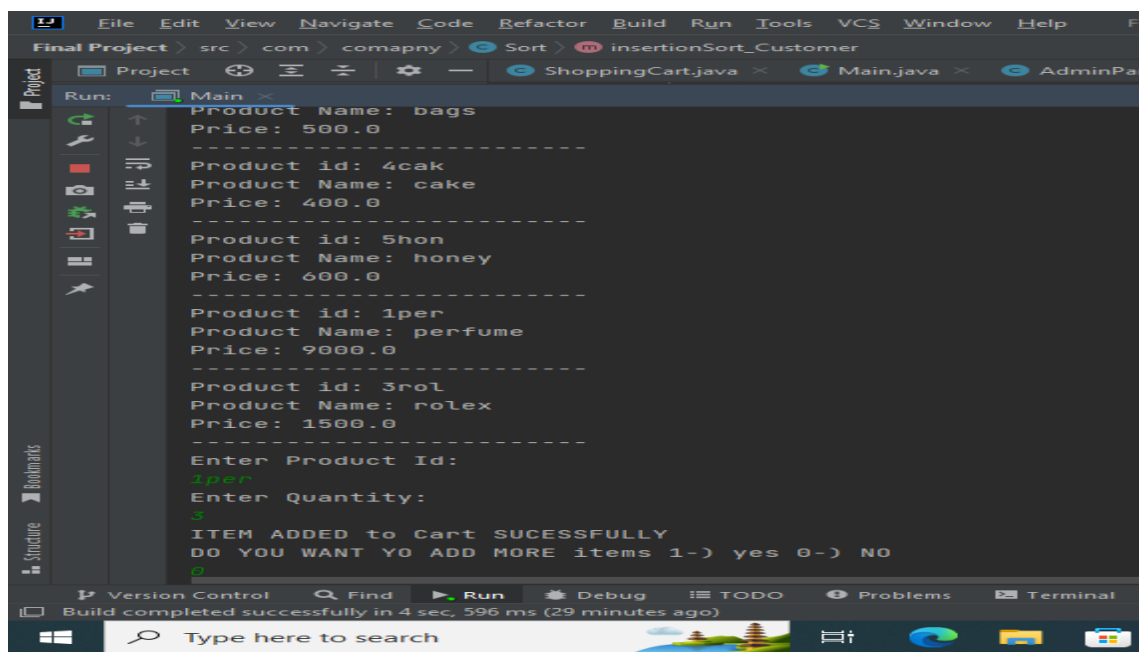
The IDE interface includes a menu bar, a toolbar, a project explorer on the left, and a status bar at the bottom showing 'Build completed successfully in 4 sec, 596 ms (28 minutes ago)'.

ADD TO CART:

Customer can see the product which is added by admin also the product is display in the alphabetical order. Customer can add product to its cart by providing Product id. If the product is available, it can ask Quantity of that Product then Added to cart.



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Final Project > src > com > comapny > Sort > insertionSort_Customer
Project
Run: Main
WELCOME TO Store
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
1
*****ITEMS*****
Product id: 2bag
Product Name: bags
Price: 500.0
Product id: 4cak
Product Name: cake
Price: 400.0
Product id: 5hon
Product Name: honey
Price: 600.0
Product id: 1per
Product Name: perfume
Price: 9000.0
Version Control Find Run Debug TODO Problems Terminal
Build completed successfully in 4 sec, 596 ms (29 minutes ago)
Type here to search
```



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Final Project > src > com > comapny > Sort > insertionSort_Customer
Project
Run: Main
Product Name: bags
Price: 500.0
Product id: 4cak
Product Name: cake
Price: 400.0
Product id: 5hon
Product Name: honey
Price: 600.0
Product id: 1per
Product Name: perfume
Price: 9000.0
Product id: 3rol
Product Name: rolex
Price: 1500.0
Enter Product Id:
1per
Enter Quantity:
1
ITEM ADDED TO Cart SUCESSFULLY
DO YOU WANT YO ADD MORE items 1-) yes 0-) NO
0
Version Control Find Run Debug TODO Problems Terminal
Build completed successfully in 4 sec, 596 ms (29 minutes ago)
Type here to search
```

The screenshot shows an IDE window with the following components:

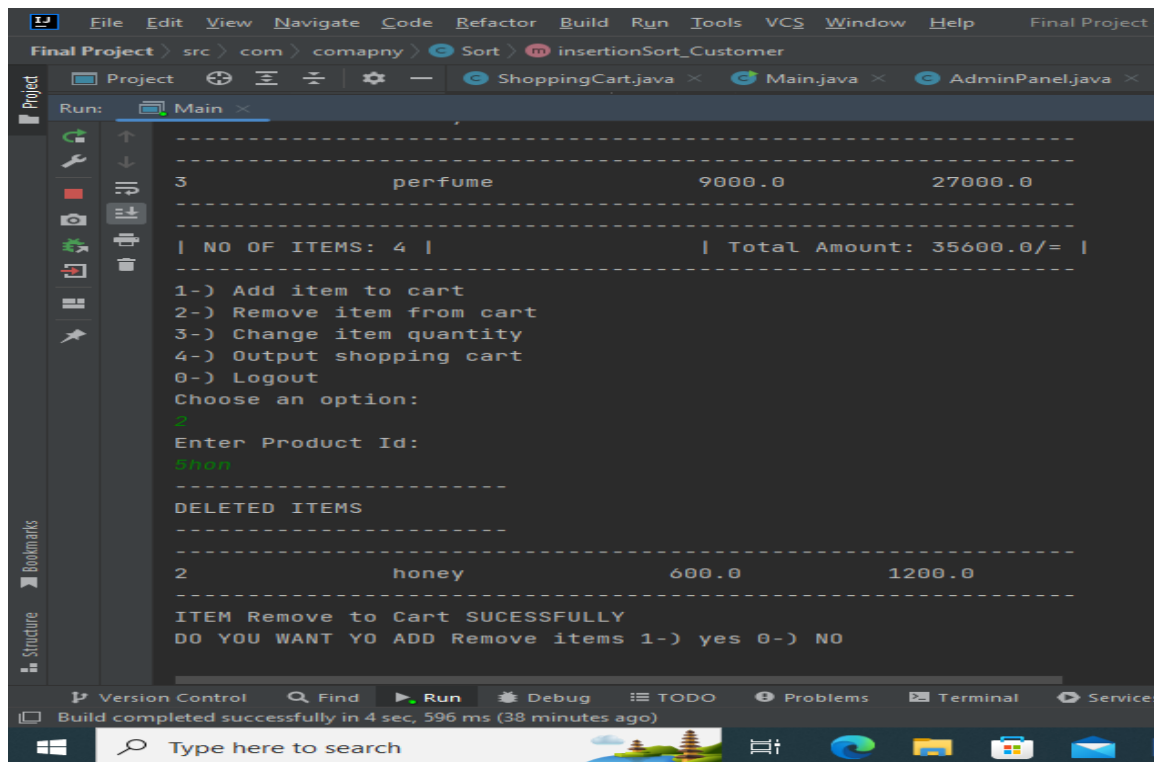
- Menu Bar:** File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, Window, Help.
- Project Explorer:** Final Project > src > com > comapny > Sort > insertionSort_Customer
- Run Console:**

```
Run: Main x
Product id: 2bag
Product Name: bags
Price: 500.0
-----
Product id: 4cak
Product Name: cake
Price: 400.0
-----
Product id: 5hon
Product Name: honey
Price: 600.0
-----
Product id: 1per
Product Name: perfume
Price: 9000.0
-----
Product id: 3rol
Product Name: rolex
Price: 1500.0
-----
Enter Product Id:
5hon
Enter Quantity:
2
ITEM ADDED to Cart SUCESSFULLY
DO YOU WANT YO ADD MORE items 1-) yes 0-) NO
```
- Bottom Bar:** Version Control, Find, Run, Debug, TODO, Problems, Terminal. A status message reads: "Build completed successfully in 4 sec, 596 ms (30 minutes ago)".
- Taskbar:** Windows Start button, search bar ("Type here to search"), and system tray icons.

Remove from cart:

Customer can only Remove those Product which is added to its cart.

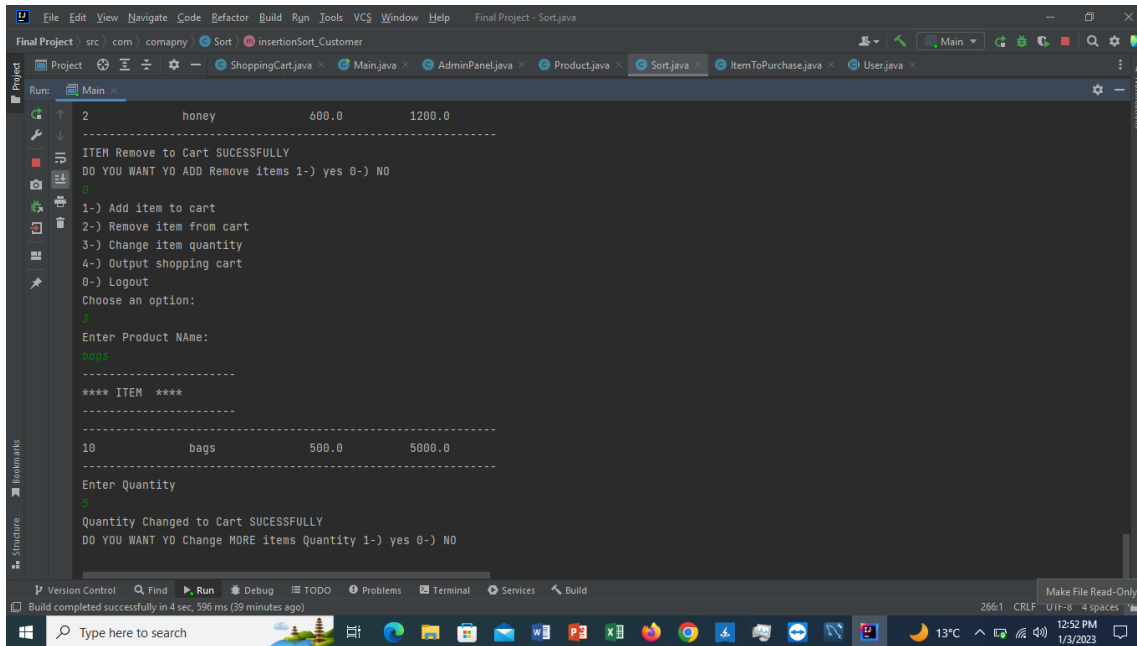
Customer can remove item from its cart by providing Product id. If the product is available in the cart then Product is removed.



```
Final Project > src > com > comapny > Sort > insertionSort_Customer
Project | Run: Main x
ShoppingCart.java x Main.java x AdminPanel.java x
Run: Main x
-----
3 perfume 9000.0 27000.0
-----
| NO OF ITEMS: 4 | | Total Amount: 35600.0/= |
-----
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
2
Enter Product Id:
2
-----
DELETED ITEMS
-----
2 honey 600.0 1200.0
-----
ITEM Remove to Cart SUCESSFULLY
DO YOU WANT YO ADD Remove items 1-) yes 0-) NO
-----
Version Control Find Run Debug TODO Problems Terminal Services
Build completed successfully in 4 sec, 596 ms (38 minutes ago)
```

Update Quantity:

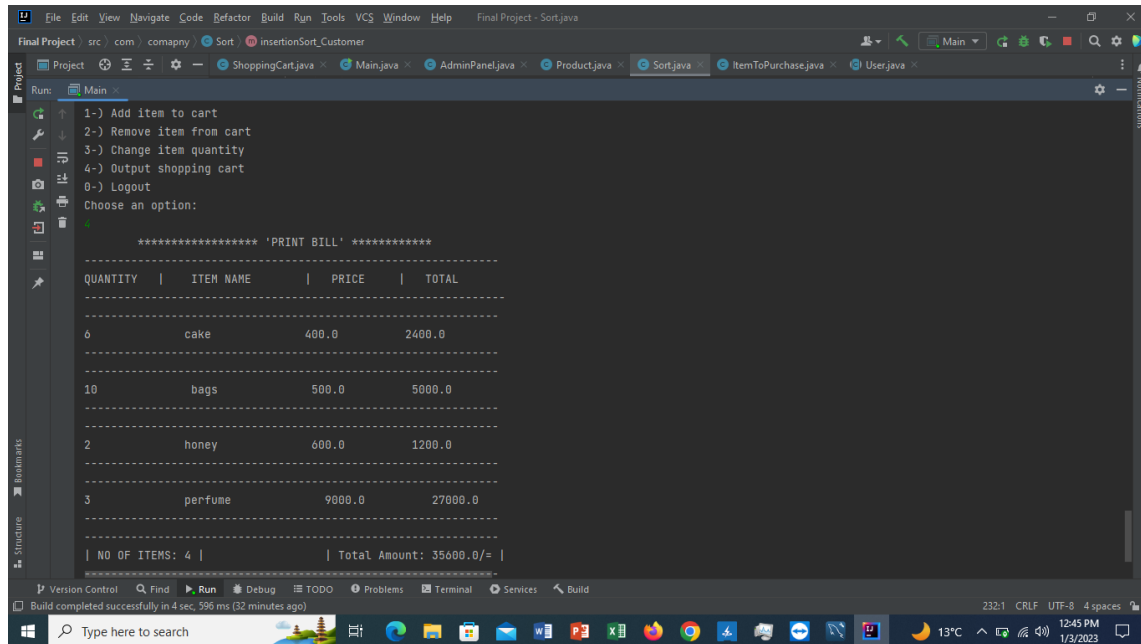
Customer can only Update Quantity of those Product which is added to its cart. Customer can Update Quantity of that item by providing Product id. If the product is available in the cart, it display record then it can ask New Price of that Product and then set the price into Array List.



```
Final Project - Sort.java
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
Final Project / src / com / compny / Sort / InsertionSort_Customer
Project ShoppingCart.java Main.java AdminPanel.java Product.java Sort.java ItemToPurchase.java User.java
Run: Main
2 honey 600.0 1200.0
-----
ITEM Remove to Cart SUCCESSFULLY
DO YOU WANT YO ADD Remove items 1-) yes 0-) NO
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
Enter Product Name:
bags
**** ITEM ****
-----
10 bags 500.0 5000.0
-----
Enter Quantity
Quantity Changed to Cart SUCCESSFULLY
DO YOU WANT YO Change MORE items Quantity 1-) yes 0-) NO
```

Display Bill:

Customer can see his Bill which is also sorted by price. In this Bill function Customer can see Product Quantity which is inserted by Customer, Product Name, Price and Amount of that product. Lastly it is Display the total bill Amount and the No of Items In cart.



```
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:

***** 'PRINT BILL' *****

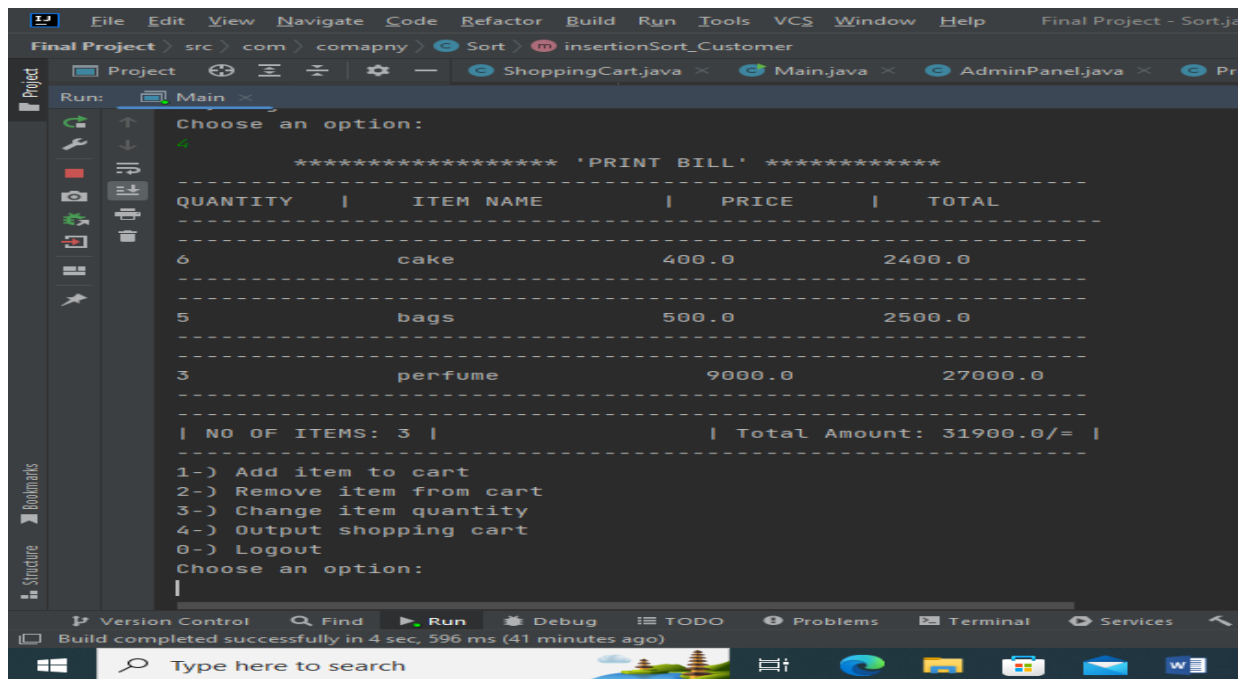
=====
QUANTITY | ITEM NAME | PRICE | TOTAL
=====
6        | cake     | 400.0 | 2400.0
=====
10       | bags     | 500.0 | 5000.0
=====
2        | honey    | 600.0 | 1200.0
=====
3        | perfume  | 9000.0| 27000.0
=====
| NO OF ITEMS: 4 | | Total Amount: 35600.0/- |
=====
```

Build completed successfully in 4 sec, 396 ms (32 minutes ago)

232.1 CRLF UTF-8 4 spaces

12:45 PM 1/3/2023

Then after perform delete and update Display Final Bill



```
Choose an option:
***** 'PRINT BILL' *****
-----
QUANTITY | ITEM NAME | PRICE | TOTAL
-----
6         cake         400.0   2400.0
-----
5         bags         500.0   2500.0
-----
3         perfume      9000.0  27000.0
-----
| NO OF ITEMS: 3 | | Total Amount: 31900.0/= |
-----
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
|
```

The screenshot shows an IDE window titled 'Final Project - Sort.java'. The 'Run' tab is active, displaying the output of a Java application. The output starts with a prompt 'Choose an option:'. Below this, a separator line is followed by the text '***** 'PRINT BILL' *****'. A table with four columns: 'QUANTITY', 'ITEM NAME', 'PRICE', and 'TOTAL' is displayed. The table contains three rows of data: 6 cakes at 400.0 each (total 2400.0), 5 bags at 500.0 each (total 2500.0), and 3 perfumes at 9000.0 each (total 27000.0). Below the table, a summary line shows 'NO OF ITEMS: 3' and 'Total Amount: 31900.0/='. Another separator line follows, then a list of menu options: '1-) Add item to cart', '2-) Remove item from cart', '3-) Change item quantity', '4-) Output shopping cart', and '0-) Logout'. The output ends with the prompt 'Choose an option:' and a cursor. The IDE interface includes a menu bar, a toolbar, a project structure view on the left, and a status bar at the bottom indicating 'Build completed successfully in 4 sec, 596 ms (41 minutes ago)'.

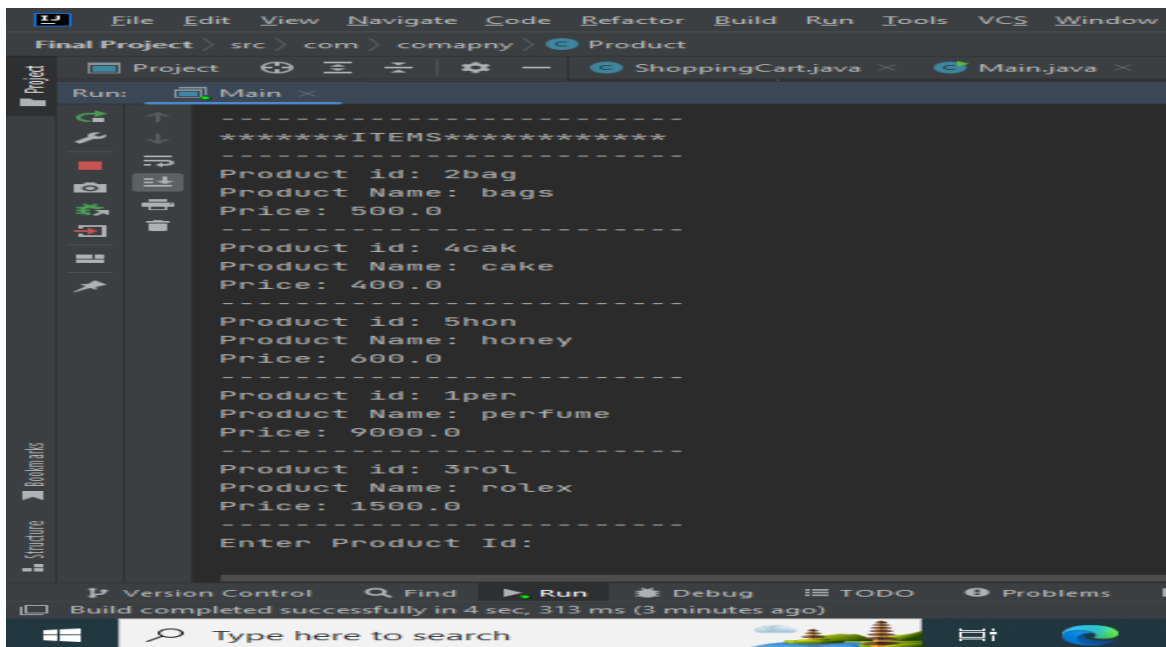
Sorting Algorithm :

The Sorting Algorithm we can use is Insertion Sort because our data set is small, so in small data set insertion sort is more efficient than Bubble Sort or Selection Sort.

We have place this algorithm in two places:

1 place:

When Customer are select items into their cart, it see data is sorted with the Name of product in alphabetical Order.

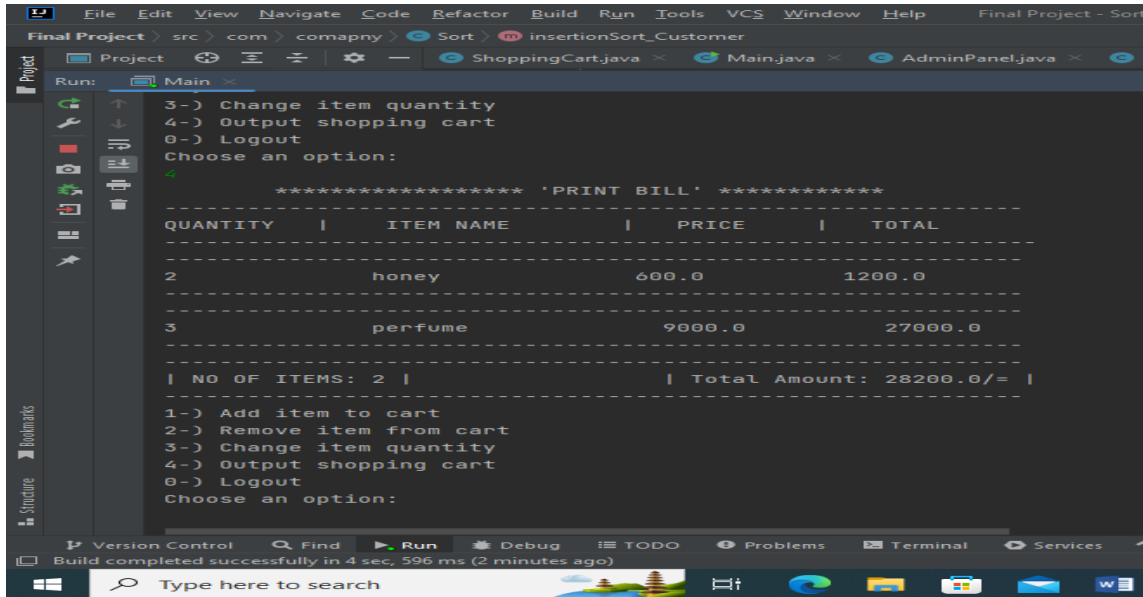
A screenshot of an IDE window showing the output of a Java program. The output is displayed in a console window with a dark background. The text is as follows:

```
-----  
*****ITEMS*****  
-----  
Product id: 2bag  
Product Name: bags  
Price: 500.0  
-----  
Product id: 4cak  
Product Name: cake  
Price: 400.0  
-----  
Product id: 5hon  
Product Name: honey  
Price: 600.0  
-----  
Product id: 1per  
Product Name: perfume  
Price: 9000.0  
-----  
Product id: 3rol  
Product Name: rolex  
Price: 1500.0  
-----  
Enter Product Id:
```

The IDE interface includes a menu bar at the top with options like File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, and Window. Below the menu bar is a breadcrumb trail: Final Project > src > com > comapny > Product. The left sidebar shows a Project view with a tree structure. The bottom status bar indicates 'Build completed successfully in 4 sec, 313 ms (3 minutes ago)'.

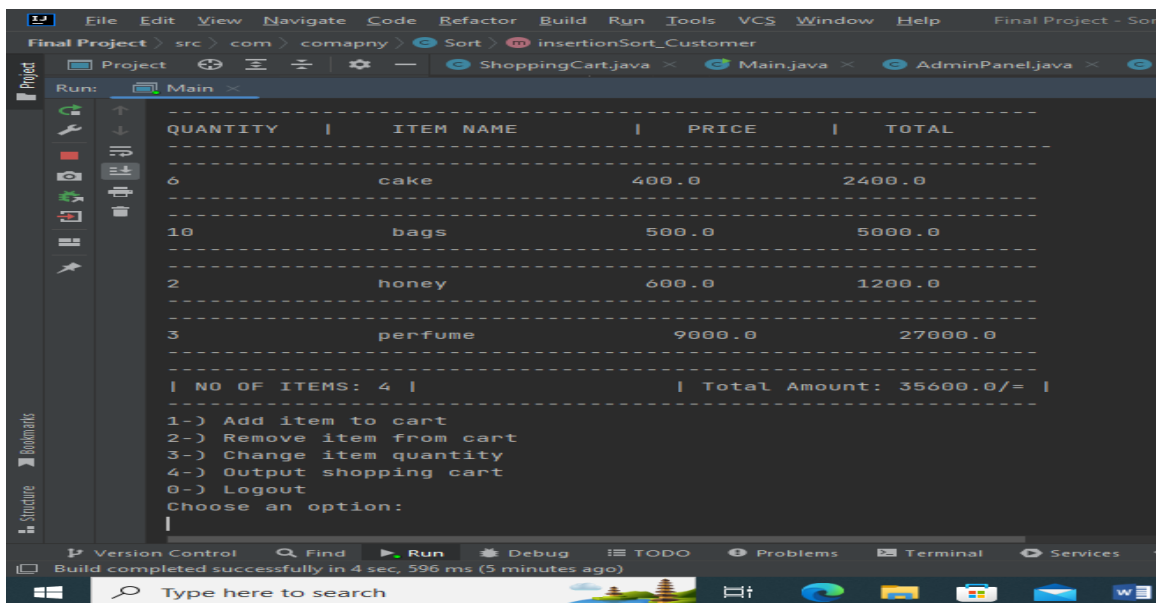
2nd place:

When Customer print their cart, it see data is sorted with the Price of that item in Ascending Order.



```
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:

***** 'PRINT BILL' *****
-----
QUANTITY | ITEM NAME | PRICE | TOTAL
-----
2         | honey    | 600.0 | 1200.0
-----
3         | perfume  | 9000.0| 27000.0
-----
| NO OF ITEMS: 2 | | Total Amount: 28200.0/= |
-----
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
```



```
QUANTITY | ITEM NAME | PRICE | TOTAL
-----
6         | cake     | 400.0 | 2400.0
-----
10        | bags     | 500.0 | 5000.0
-----
2         | honey    | 600.0 | 1200.0
-----
3         | perfume  | 9000.0| 27000.0
-----
| NO OF ITEMS: 4 | | Total Amount: 35600.0/= |
-----
1-) Add item to cart
2-) Remove item from cart
3-) Change item quantity
4-) Output shopping cart
0-) Logout
Choose an option:
|
```

Conclusion:

We made emporium management system/online shopping management our aim was to providing online shopping management system where user can buy anything easily without any inconvenience.

THANK YOU