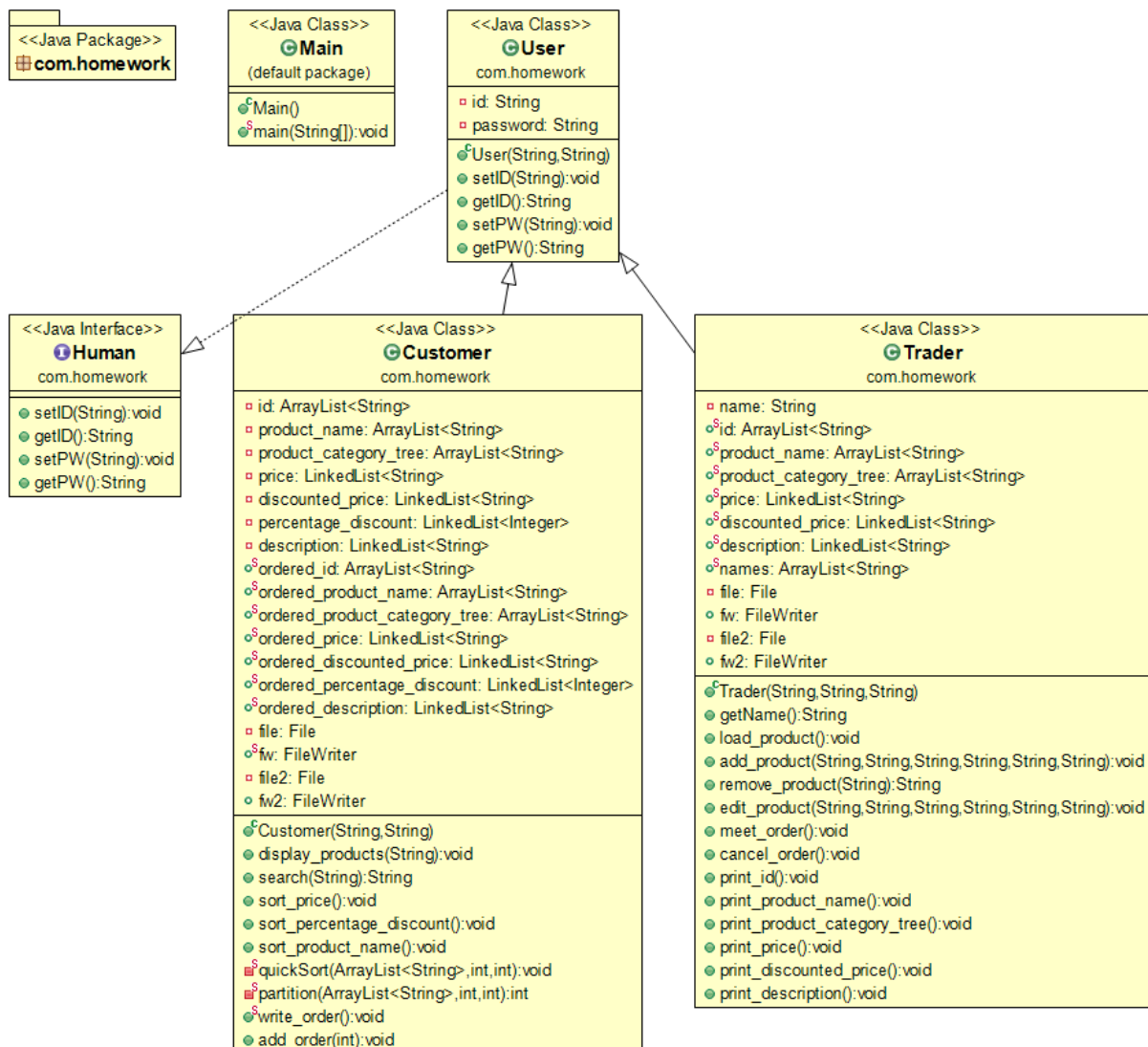


**GIT Department of Computer Engineering  
CSE 222/505 - Spring 2021  
Homework # Report**

**Mehmet Acar  
1801042095**

## 1-CLASS DIAGRAM



## 2-PROBLEM SOLUTION APPROACH

### 1-Identify The Problem

Problem is designing and implementing an e-shopping application that has two user roles: traders and customers.

### 2-Gather Information

Users authenticate to the system by using their user IDs and passwords. The user ID is an eight-digit unique number and the password consists of six characters. Traders add, remove, and edit products on their shop. Traders see the list of orders from customers and can meet or cancel the orders. Customers can search and

query the products by their names. Customers can sort the products in the search results by their prices, the percentage of the discount. Customers can display all the products of a trader.

### 3-Iterate Potential Solutions

I created Human.java interface. I implement this interface in User.java class. After that, in Trader.java and in Customer.java class, I extend User.java class. In Trader.java class, I hold all traders' products informations. In Customer.java class, I hold searching products informations and ordered products informations.

## 3-TEST CASES

### DRIVER TEST CASES

#### 1- Printing all products' informations of traders currently

```
Current products infos
id
Product 1 id: SRTEH2FF9KEDEFGF
Product 2 id: SRTEH2F6HUZMQ6SJ
Product 3 id: SRTEH2FVVKRBAXHB
Product 4 id: SRTEH2FVUHAAPH9X
Product 5 id: SRTEH2FGBDJGX8FW
Product 6 id: SRTEH2FECMGNZJXJ

product_name
Product 1 name: Alisha Solid Women's Cycling Shorts
Product 2 name: Alisha Solid Women's Cycling Shorts
Product 3 name: Alisha Solid Women's Cycling Shorts
Product 4 name: Alisha Solid Women's Cycling Shorts
Product 5 name: Alisha Solid Women's Cycling Shorts
Product 6 name: Alisha Solid Women's Cycling Shorts

price
Product 1 price: 999
Product 2 price: 699
Product 3 price: 1199
Product 4 price: 1199
Product 5 price: 999
Product 6 price: 999

discounted_price
Product 1 discounted_price: 379
Product 2 discounted_price: 267
Product 3 discounted_price: 479
Product 4 discounted_price: 479
Product 5 discounted_price: 379
Product 6 discounted_price: 379
```

description

Product 1 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, Navy, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH\_3P\_21 In the Box 3 shorts

Product 2 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH\_11 In the Box 2 shorts

Product 3 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTH\_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

Product 4 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH\_39 In the Box 4 shorts

Product 5 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH\_17 In the Box 3 shorts

Product 6 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH\_2 In the Box 3 shorts

## 2- New product is added by trader

Product which has SRTEH2FVYZABCDEF id is added

## 3- When trader wants to remove existed product

Removed product id:SRTEH2FF9KEDEFGF

## 4- When trader wants to remove non existing product

Trader does not have this product. So, Trader can not remove this.

## 5- When trader wants to edit existed product

Edited product id: SRTEH2F6HUZMQ6SJ

## 6- When trader wants to remove non existing product

Trader does not have this product. So, Trader can not edit this.

## 7- When customer searches product with their name, if proper product name is found, it is returned in the results

Alisha Solid Man's T-Shirt product name is found

## 8- When customer searches product with their name, if proper product name is not found

Any trader in the system does not have this product

## 9- When customer sorts the products by their prices with decreasing order

```
Sorting according to price
1- Product 1's price is 250
2- Product 2's price is 200
```

## 10- When customer sorts the products by their percentage of the discount with decreasing order

```
Sorting according to percentage discount
1- Product 1 has % 100 discount
2- Product 2 has % 50 discount
```

## 11- When customer add order

```
Product which has SRTEH2FVYZPRSTUV id is added to order
```

## 12- When order is meeted by trader

```
Last order which has SRTEH2FVYZPRSTUV product id is meeted by trader
```

## 13- When order is canceled by trader

```
Last order which has SRTEH2FVYZABCDEF product id is canceled by trader
```

## 14- When customer display all the products of a trader

```
Display all products

ID: SRTEH2F6HUZMQ6SJ
Product name: Alisha Solid Man's Cycling Shorts
Product category tree: Clothing >> Man's Clothing
Price: 799
Discounted price: 367
Description: Green Short

ID: SRTEH2FVVKRBAXHB
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGHT4P_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

ID: SRTEH2FVUHAHVHX
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT4P_39 In the Box 4 shorts
```

```

ID: SRTEH2FGBDJCKX8FW
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]]"
Price: 999
Discounted price: 379
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHT_3P_17 In the Box 3 shorts

ID: SRTEH2FECMNZJXJ
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]]"
Price: 999
Discounted price: 379
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHT_3P_2 In the Box 3 shorts

ID: SRTEH2FVVZABCDEF
Product name: Alisha Solid Man's T-Shirt
Product category tree: Clothing >> Man's Clothing
Price: 200
Discounted price: 100
Description: Black T-Shirt

```

## MENU TEST CASES

**1-When traders authenticates to system, if he/she enters wrong name, program asks trader name again.**

```

1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:Mehmet

Enter your name:

```

**2-When traders authenticates to system, if he/she enters id length wrong, program asks trader id again.**

```

1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:Alisha
Enter your id:11111
Enter your id:

```

3- When traders authenticates to system, if he/she enters password length wrong, program asks trader password again.

```
1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:Alisha
Enter your id:11111
Enter your id:11111111
Enter your password:111
Enter your password:
```

4- When traders authenticates to system, if he/she enters token id from another user, program asks trader id again.

```
1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:BigCompany
Enter your id:11111111
Enter your id:
```

5- When traders authenticates to system, if he/she enters token password from another user, program asks trader password again.

```
1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:BigCompany
Enter your id:11111111
Enter your id:22222222
Enter your password:111111
Enter your password:
```

2. , 3. , 4. and 5. Test cases are valid in customer authentication too.

6- When user login to system, if he/she enters wrong id or password

```
1-Authenticate
2-Login
3-Exit
Enter your choice:2

Enter your id:12345678
Enter your password:123456
Wrong id or password
```

7- New product is added by trader

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:1

Enter product id:ABCDEFG123
Enter product name:T-Shirt
Enter product category tree:Clothing
Enter product price:200
Enter product discounted price:100
Enter product description:Black T-Shirt
Product which has ABCDEFG123 id is added
```

8- When trader wants to remove existed product

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:2
Enter product id:SRTEH2FF9KEDEFGF
Removed product id:SRTEH2FF9KEDEFGF
```

9- When trader wants to remove non existing product

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:2
Enter product id:ABC123
Trader does not have this product. So, Trader can not remove this.
```



#### 10- When trader wants to edit existed product

```
Enter wanted to edit product id:SRTEH2F6HUZMQ6SJ
Enter new product name:T-Shirt
Enter new product category tree:Clothing
Enter new product price:250
Enter new product discounted price:200
Enter new product description:Red T-Shirt
Edited product id: SRTEH2F6HUZMQ6SJ
```

#### 11- When trader wants to edit non existing product

```
Enter wanted to edit product id:PRSTVYZ237
Enter new product name:Trousers
Enter new product category tree:Clothing
Enter new product price:350
Enter new product discounted price:300
Enter new product description:Blue Trousers
Trader does not have this product. So, Trader can not edit this.
```

#### 12- When customer searches product, if this product name is found

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:1

Enter searching product name:Alisha Solid Women's Cycling Shorts
Alisha Solid Women's Cycling Shorts product name is found
```

#### 13- When customer sorts products with decreasing order according to their prices

```
1-Sort product according to price
2-Sort product according to percentage discount
Enter sorting choice:1
Sorting according to price
1- Product 1's price is 1199
2- Product 2's price is 1199
3- Product 3's price is 999
4- Product 4's price is 999
```

#### 14- When customer sorts products with decreasing order according to their percentage discount

```
1-Sort product according to price
2-Sort product according to percentage discount
Enter sorting choice:2
Sorting according to percentage discount
1- Product 1 has % 43 discount
2- Product 2 has % 43 discount
3- Product 3 has % 42 discount
4- Product 4 has % 42 discount
```

#### 15- When customer searches product, if this product name is not found

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:1

Enter searching product name:Sweater
Wrong choice
```

#### 16- When customer give order

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:3

Which product num do you want to order from sorted products
3
Product which has SRTEH2FGBDJGX8FW id is added to order
```

#### 17- When trader meet order

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:4
Last order which has SRTEH2FGBDJGX8FW product id is meeted by trader
```

#### 18- When trader cancel order

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:5
Last order which has SRTEH2FVUHAAPH9X product id is canceled by trader
```

## 19- When customer display all the products of the trader

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:2

Enter trader name:Alisha
ID: SRTEH2FGHJZMQ65J
Product name: T-Shirt
Product category tree: Clothing
Price: 250
Discounted price: 200
Description: Red T-Shirt

ID: SRTEH2FVVKRBAXHB
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package
Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGH74P_26 Fabric Care Gentle Machine Wash in Lukewarm W
ater, Do Not Bleach

ID: SRTEH2FVUHMVH9X
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Packa
ge Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGH74P_
39 In the Box 4 shorts

ID: SRTEH2FGBDJCX8FW
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 999
Discounted price: 379
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pa
ck of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALHTHT_3P_17 In
the Box 3 shorts

ID: SRTEH2FECMNZ7XJ
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 999
Discounted price: 379
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pa
ck of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALHTHT_3P_2 In
the Box 3 shorts

ID: ABCDEFG123
Product name: T-Shirt
Product category tree: Clothing
Price: 200
Discounted price: 100
Description: Black T-Shirt
```

### 3-RUNNING AND RESULTS

#### DRIVER

```
Would you like to run program with driver or menu
1-Run with driver
2-Run with menu
Enter your choice:1

Current products infos
id
Product 1 id: SRTEH2FF9KEDEFGF
Product 2 id: SRTEH2F6HUZMQ6SJ
Product 3 id: SRTEH2FVVKRBAXHB
Product 4 id: SRTEH2FVUHAAPH9X
Product 5 id: SRTEH2FGBDJGX8FW
Product 6 id: SRTEH2FECMGNZJXJ

product_name
Product 1 name: Alisha Solid Women's Cycling Shorts
Product 2 name: Alisha Solid Women's Cycling Shorts
Product 3 name: Alisha Solid Women's Cycling Shorts
Product 4 name: Alisha Solid Women's Cycling Shorts
Product 5 name: Alisha Solid Women's Cycling Shorts
Product 6 name: Alisha Solid Women's Cycling Shorts

price
Product 1 price: 999
Product 2 price: 699
Product 3 price: 1199
Product 4 price: 1199
Product 5 price: 999
Product 6 price: 999

discounted_price
Product 1 discounted_price: 379
Product 2 discounted_price: 267
Product 3 discounted_price: 479
Product 4 discounted_price: 479
Product 5 discounted_price: 379
```

```
description

Product 1 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, Navy,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH_T_21 In the Box 3 shorts

Product 2 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH_T_11 In the Box 2 shorts

Product 3 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTH_T_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

Product 4 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH_T_39 In the Box 4 shorts

Product 5 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH_T_3P_17 In the Box 3 shorts

Product 6 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH_T_3P_2 In the Box 3 shorts
```

Product which has SRTEH2FVYZABCDEF id is added  
Product which has SRTEH2FVYZPRSTUV id is added

Current products infos  
id

Product 1 id: SRTEH2FF9KEDEFGF  
Product 2 id: SRTEH2F6HUZMQ6SJ  
Product 3 id: SRTEH2FVVKRBAXHB  
Product 4 id: SRTEH2FVUHA AVH9X  
Product 5 id: SRTEH2FGBDJGX8FW  
Product 6 id: SRTEH2FECMGNZJXJ  
Product 7 id: SRTEH2FVYZABCDEF  
Product 8 id: SRTEH2FVYZPRSTUV

product\_name

Product 1 name: Alisha Solid Women's Cycling Shorts  
Product 2 name: Alisha Solid Women's Cycling Shorts  
Product 3 name: Alisha Solid Women's Cycling Shorts  
Product 4 name: Alisha Solid Women's Cycling Shorts  
Product 5 name: Alisha Solid Women's Cycling Shorts  
Product 6 name: Alisha Solid Women's Cycling Shorts  
Product 7 name: Alisha Solid Man's T-Shirt  
Product 8 name: Alisha Solid Man's T-Shirt

price

Product 1 price: 999  
Product 2 price: 699  
Product 3 price: 1199  
Product 4 price: 1199  
Product 5 price: 999  
Product 6 price: 999  
Product 7 price: 200  
Product 8 price: 250

discounted\_price

Product 1 discounted\_price: 379  
Product 2 discounted\_price: 267  
Product 3 discounted\_price: 479  
Product 4 discounted\_price: 479  
Product 5 discounted\_price: 379  
Product 6 discounted\_price: 379  
Product 7 discounted\_price: 100  
Product 8 discounted\_price: 200

description

Product 1 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, Navy, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHI\_3P\_21 In the Box 3 shorts

Product 2 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGH\_11 In the Box 2 shorts

Product 3 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGH4P\_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

Product 4 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGH4P\_39 In the Box 4 shorts

Product 5 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHI\_3P\_17 In the Box 3 shorts

Product 6 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHI\_3P\_2 In the Box 3 shorts

Product 7 description: Black T-Shirt

Product 8 description: Red T-Shirt

Trader does not have this product. So, Trader can not remove this.  
Removed product id:SRTEH2FF9KEDEFGF

#### Current products infos

##### id

Product 1 id: SRTEH2F6HUZMQ6SJ  
Product 2 id: SRTEH2FVVKRBAXHB  
Product 3 id: SRTEH2FVUHAAPH9X  
Product 4 id: SRTEH2FGBDJGX8FW  
Product 5 id: SRTEH2FECMGNZJXJ  
Product 6 id: SRTEH2FVYZABCDEG  
Product 7 id: SRTEH2FVYZPRSTUV

##### product\_name

Product 1 name: Alisha Solid Women's Cycling Shorts  
Product 2 name: Alisha Solid Women's Cycling Shorts  
Product 3 name: Alisha Solid Women's Cycling Shorts  
Product 4 name: Alisha Solid Women's Cycling Shorts  
Product 5 name: Alisha Solid Women's Cycling Shorts  
Product 6 name: Alisha Solid Man's T-Shirt  
Product 7 name: Alisha Solid Man's T-Shirt

##### price

Product 1 price: 699  
Product 2 price: 1199  
Product 3 price: 1199  
Product 4 price: 999  
Product 5 price: 999  
Product 6 price: 200  
Product 7 price: 250

##### discounted\_price

Product 1 discounted\_price: 267  
Product 2 discounted\_price: 479  
Product 3 discounted\_price: 479  
Product 4 discounted\_price: 379  
Product 5 discounted\_price: 379  
Product 6 discounted\_price: 100  
Product 7 discounted\_price: 200

#### description

Product 1 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGH7\_11 In the Box 2 shorts

Product 2 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGH74P\_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

Product 3 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGH74P\_39 In the Box 4 shorts

Product 4 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH7\_3P\_17 In the Box 3 shorts

Product 5 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH7\_3P\_2 In the Box 3 shorts

Product 6 description: Black T-Shirt

Product 7 description: Red T-Shirt



Trader does not have this product. So, Trader can not edit this.  
Edited product id: SRTEH2F6HUZMQ6SJ

#### Current products infos

##### id

Product 1 id: SRTEH2F6HUZMQ6SJ  
Product 2 id: SRTEH2FVVKRBAXHB  
Product 3 id: SRTEH2FVUHAAPH9X  
Product 4 id: SRTEH2FGBDJGX8FW  
Product 5 id: SRTEH2FECMGNZJXJ  
Product 6 id: SRTEH2FVYZABCDEF  
Product 7 id: SRTEH2FVYZPRSTUV

##### product\_name

Product 1 name: Alisha Solid Man's Cycling Shorts  
Product 2 name: Alisha Solid Women's Cycling Shorts  
Product 3 name: Alisha Solid Women's Cycling Shorts  
Product 4 name: Alisha Solid Women's Cycling Shorts  
Product 5 name: Alisha Solid Women's Cycling Shorts  
Product 6 name: Alisha Solid Man's T-Shirt  
Product 7 name: Alisha Solid Man's T-Shirt

##### price

Product 1 price: 799  
Product 2 price: 1199  
Product 3 price: 1199  
Product 4 price: 999  
Product 5 price: 999  
Product 6 price: 200  
Product 7 price: 250

##### discounted\_price

Product 1 discounted\_price: 367  
Product 2 discounted\_price: 479  
Product 3 discounted\_price: 479  
Product 4 discounted\_price: 379  
Product 5 discounted\_price: 379  
Product 6 discounted\_price: 100  
Product 7 discounted\_price: 200

#### description

Product 1 description: Green Short

Product 2 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGHT4P\_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

Product 3 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT4P\_39 In the Box 4 shorts

Product 4 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH T\_3P\_17 In the Box 3 shorts

Product 5 description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTH T\_3P\_2 In the Box 3 shorts

Product 6 description: Black T-Shirt

Product 7 description: Red T-Shirt

```
Any trader in the system does not have this product
Alisha Solid Man's T-Shirt product name is found
```

```
Sorting according to price
1- Product 1's price is 250
2- Product 2's price is 200
```

```
Sorting according to percentage discount
1- Product 1 has % 100 discount
2- Product 2 has % 50 discount
```

```
Product which has SRTEH2FVYZPRSTUV id is added to order
Last order which has SRTEH2FVYZPRSTUV product id is meeted by trader
Product which has SRTEH2FVYZABCDEF id is added to order
Last order which has SRTEH2FVYZABCDEF product id is canceled by trader
```

```
Display all products
```

```
ID: SRTEH2F6HUZMQ6SJ
```

```
Product name: Alisha Solid Man's Cycling Shorts
```

```
Product category tree: Clothing >> Man's Clothing
```

```
Price: 799
```

```
Discounted price: 367
```

```
Description: Green Short
```

```
ID: SRTEH2FVVKRBAXHB
```

```
Product name: Alisha Solid Women's Cycling Shorts
```

```
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
```

```
Price: 1199
```

```
Discounted price: 479
```

```
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGHT4P_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach
```

```
ID: SRTEH2FVUHAHV9X
```

```
Product name: Alisha Solid Women's Cycling Shorts
```

```
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
```

```
Price: 1199
```

```
Discounted price: 479
```

```
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT4P_39 In the Box 4 shorts
```

```
ID: SRTEH2FGBDJGX8FW
```

```
Product name: Alisha Solid Women's Cycling Shorts
```

```
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
```

```
Price: 999
```

```
Discounted price: 379
```

```
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, Black, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHT_3P_17 In the Box 3 shorts
```

```
ID: SRTEH2FECMNZJXJ
```

```
Product name: Alisha Solid Women's Cycling Shorts
```

```
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
```

```
Price: 999
```

```
Discounted price: 379
```

```
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, White, White, Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 3 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTHT_3P_2 In the Box 3 shorts
```

```
ID: SRTEH2FVYZABCDEF
```

```
Product name: Alisha Solid Man's T-Shirt
```

```
Product category tree: Clothing >> Man's Clothing
```

```
Price: 200
```

```
Discounted price: 100
```

```
Description: Black T-Shirt
```

```
cse312@ubuntu:~/Desktop/data_hw6$ █
```



## MENU

```
Would you like to run program with driver or menu
1-Run with driver
2-Run with menu
Enter your choice:2

1-Authenticate
2-Login
3-Exit
Enter your choice:1

1-Trader
2-Customer
3-Back to main menu
Enter your choice:1

Enter your name:Alisha
Enter your id:11111111
Enter your password:111111

1-Authenticate
2-Login
3-Exit
Enter your choice:2

Enter your id:11111111
Enter your password:111111

1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:1

Enter product id:ABC123
Enter product name:T-Shirt
Enter product category tree:Clothing
Enter product price:400
Enter product discounted price:250
Enter product description:White T-Shirt
Product which has ABC123 id is added
```

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:2
Enter product id:SRTEH2FECMGNZJXJ
Removed product id:SRTEH2FECMGNZJXJ
```

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:3
```

```
Enter wanted to edit product id:SRTEH2FF9KEDEFGF
Enter new product name:Alisha Solid Man's Cycling Shorts
Enter new product category tree:Clothing >> Man's Clothing
Enter new product price:700
Enter new product discounted price:500
Enter new product description:Yellow Short
Edited product id: SRTEH2FF9KEDEFGF
```

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:6
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:1
```

```
1-Trader
2-Customer
3-Back to main menu
Enter your choice:2
Enter your id:22222222
Enter your password:222222
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:2

Enter your id:22222222
Enter your password:222222

1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:1

Enter searching product name:Alisha Solid Women's Cycling Shorts
Alisha Solid Women's Cycling Shorts product name is found

1-Sort product according to price
2-Sort product according to percentage discount
Enter sorting choice:1
Sorting according to price
1- Product 1's price is 1199
2- Product 2's price is 1199
3- Product 3's price is 999
4- Product 4's price is 699

1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:3

Which product num do you want to order from sorted products
3
Product which has SRTEH2FGBDJGX8FW id is added to order

1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:4
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:2

Enter your id:11111111
Enter your password:111111

1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:4
Last order which has SRTEH2FGBDJGX8FW product id is meeted by trader

1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:6

1-Authenticate
2-Login
3-Exit
Enter your choice:2

Enter your id:22222222
Enter your password:222222
```

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:1
```

```
Enter searching product name:Alisha Solid Women's Cycling Shorts
Alisha Solid Women's Cycling Shorts product name is found
```

```
1-Sort product according to price
2-Sort product according to percentage discount
Enter sorting choice:2
Sorting according to percentage discount
1- Product 1 has % 44 discount
2- Product 2 has % 43 discount
3- Product 3 has % 43 discount
4- Product 4 has % 42 discount
```

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:3
```

```
Which product num do you want to order from sorted products
```

```
1
Product which has SRTEH2F6HUZMQ6SJ id is added to order
```

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:4
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:2
```

```
Enter your id:11111111
Enter your password:111111
```

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:5
Last order which has SRTEH2F6HUZMQ6SJ product id is canceled by trader
```

```
1-Add products
2-Remove products
3-Edit products
4-Meet orders
5-Cancel orders
6-Back to main menu
Enter your choice:6
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:2
```

```
Enter your id:22222222
Enter your password:222222
```

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:2

Enter trader name:Alisha
ID: SRTEHZFF9KEDEFGF
Product name: Alisha Solid Man's Cycling Shorts
Product category tree: Clothing >> Man's Clothing
Price: 700
Discounted price: 500
Description: Yellow Short

ID: SRTEHZF6HUZMQ6SJ
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 699
Discounted price: 267
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Black, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 2 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT_11 In the Box 2 shorts
```

```
ID: SRTEHZFVVKRBAXHB
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, White, Red,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's In the Box 4 shorts Additional Details Style Code ALTGHT4P_26 Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach

ID: SRTEHZFVUHAIVHX
Product name: Alisha Solid Women's Cycling Shorts
Product category tree: "["Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Shorts"]"
Price: 1199
Discounted price: 479
Description: Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra White, Black, Red, Black,Specifications of Alisha Solid Women's Cycling Shorts Shorts Details Number of Contents in Sales Package Pack of 4 Fabric Cotton Lycra Type Cycling Shorts General Details Pattern Solid Ideal For Women's Fabric Care Gentle Machine Wash in Lukewarm Water, Do Not Bleach Additional Details Style Code ALTGHT4P_39 In the Box 4 shorts

ID: ABC123
Product name: T-Shirt
Product category tree: Clothing
Price: 400
Discounted price: 250
Description: White T-Shirt
```

```
1-Search product with name and sort according to price or percentage discount
2-All the products of a trader
3-Give order
4-Back to main menu
Enter your choice:4
```

```
1-Authenticate
2-Login
3-Exit
Enter your choice:3
cse312@ubuntu:~/Desktop/data_hw6$
```

I used ArrayList and LinkedList in Trader.java and Customer.java class in order to hold product informations and order informations. I used Queue in Main.java's menu part in order to reading trader names from "e-commerce-samples.csv" file.