

**GIT Department of Computer Engineering**  
**CSE 222/505 - Spring 2021**  
**Homework1 # Report**

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# System Requirements:

In this assignment, I designed an interface for automation system for Company which makes sales different model and color of products. Humans in the automation system are administrator, branch employees and customers. These administrators can add and remove branches, employees. Also add new product and inquire product in branches. Branches have their own products. First order of customer has to be a subscription. So employee has to make a new subscription. Also customer can purchase new products. It subtracts the same product from branches. Customers and employees can have a access feature to old customer orders.

Firstly, there is a need for interface for the users which is Human. This interface should include getter and setter for the user's name and surname. The class named Company has static fields of customers, branches and administrators. These branches have their own products. Admin object has access to manage these branches and employees. So Administrator class has been added with fields. Admin has to add at least one branch and employee to run the other objects like customer and branch employee.

Secondly, there is a need for interface for products which is OfficeProduct. This interface has all the data for products. Clients can add more model or color to his/her company. In product class there are two setter function and one setter minus function for subtracting. First setter function is a default function which adds every model 1, other setter function adds the new products to current product. Product class has a method which is called createProduct. It creates a new product for customer but it is a interactive method. This means user has to give an input for creating new product. This class can also checks the branches or customers products with a given product. If products are available it returns true.

In test class, all the methods has been tested. Admin object has been created and added to Company class. Branches and Employees are added and removed by admin. Products are added to default branch and be inquired by default product.

Picked up \_JAVA\_OPTIONS: -Dawt.useSystemAAFontSettings=on -  
Dswing.aatext=true

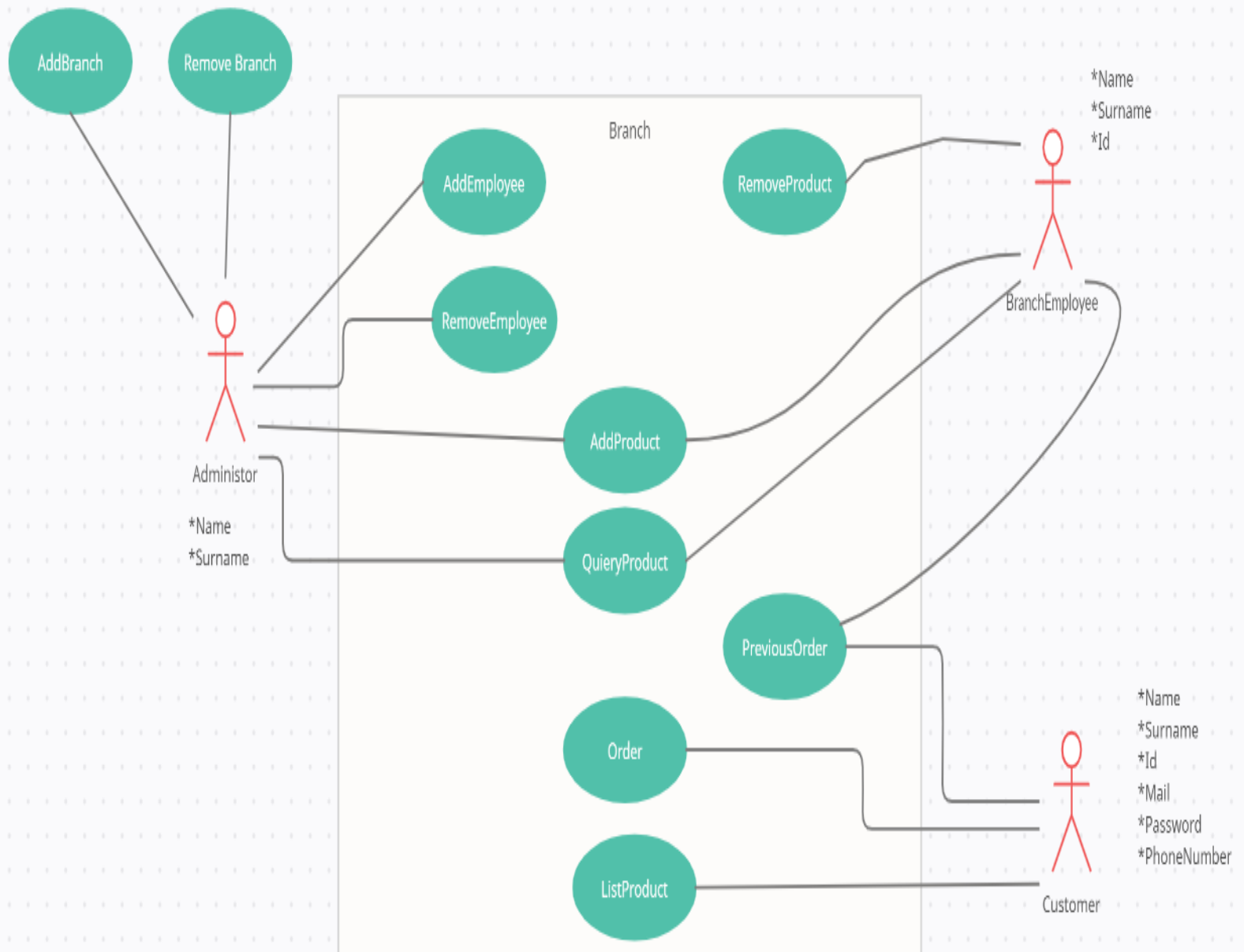
openjdk version "11.0.11-ea" 2021-04-20

OpenJDK Runtime Environment (build 11.0.11-ea+4-post-Debian-1)

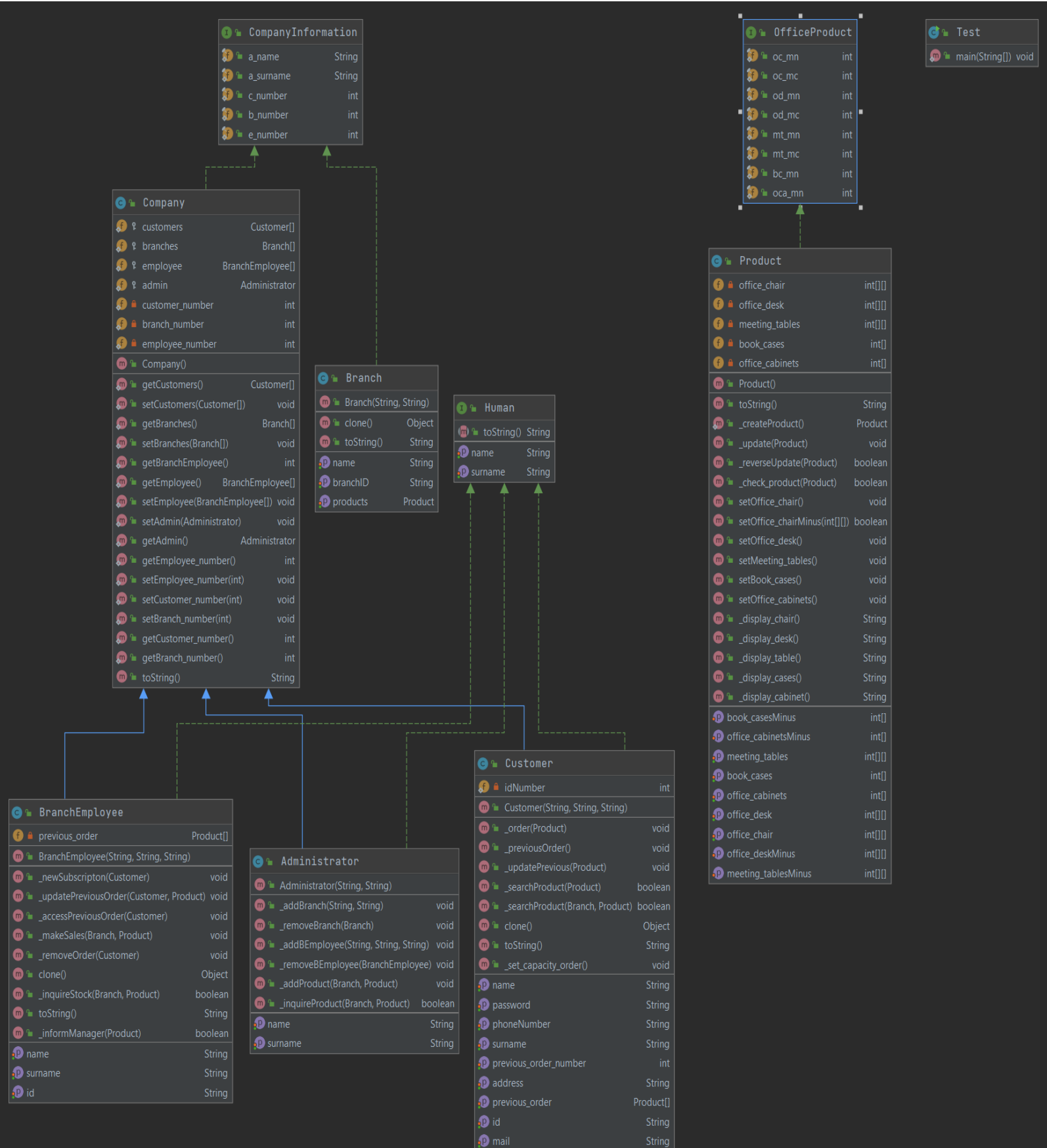
OpenJDK 64-Bit Server VM (build 11.0.11-ea+4-post-Debian-1, mixed mode,  
sharing)

# Use Case Diagram:

## Automation System



# UML Diagram:



## 4.Problem Solution Approach:

I created an interface for my client, so he/she can add some new models or colors, Also he/she can change his/her name whenever he wants, I simply create three interface, First one is a basic human interface that creates a getter/setter functions, second one is about company information like admin name or customer number, third one creates an office products interface ,so it can be improved by client. I created an company class which I can do my all customers, branches ,admin and employees. They are static fields so I can reach my fields any class without object. My methods are also available in another classes. In my main class I created an admin object and we have to make a branch and customer object. So we can continue with other menus level. Admin level we have six methods which we can add and remove branches and employees. Also add an new product or inquire product. I added to requested methods in customer level and branch employees level. My methods generally do their tasks with product class. Every branches and customers have their own product. I am adding every product to selected branches and customers. I tried to chose an employee during the employees order method.

# Running Results and Test Cases:

## Branch add and remove methods:

```
Company.getAdmin()._addBranch( name: "Konya", ID: "110101");
Company.getAdmin()._addBranch( name: "Bursa", ID: "101010");
Company.getAdmin()._addBranch( name: "Berlin", ID: "101010");
Company.getAdmin()._addBranch( name: "Istanbul", ID: "121010");

Company.getAdmin()._removeBranch(Company.getBranches()[0]);

for(int i=0 ; i<Company.getBranch_number() ; i++){
    System.out.println(Company.getBranches()[i].toString());
}
```

Konya has been added  
Bursa has been added  
Berlin has been added  
Istanbul has been added  
101010  
Bursa  
  
101010  
Berlin  
  
121010  
Istanbul

## Employee add and remove methods:

```
Company.getAdmin()._addBEmployee( name: "Adis", surname: "Jahovic", id: "1201");
Company.getAdmin()._addBEmployee( name: "Mustafa", surname: "Mohammed", id: "1221");
Company.getAdmin()._addBEmployee( name: "Edin", surname: "Dzeko", id: "1201");
Company.getAdmin()._addBEmployee( name: "Omer Ali", surname: "Sahiner", id: "1244");

Company.getAdmin()._removeBEmployee(Company.getEmployee()[0]);
Company.getAdmin()._removeBEmployee(Company.getEmployee()[1]);

for(int i=0 ; i<Company.getEmployee_number() ; i++){
    System.out.println(Company.getEmployee()[i].toString());
}
```

Adis has been added.  
Mustafa has been added.  
Edin has been added.  
Omer Ali has been added.  
Customer Name:Mustafa  
Customer Name:Mohammed  
Customer ID :1221  
  
Customer Name:Omer Ali  
Customer Name:Sahiner  
Customer ID :1244

## Add product and inquire product methods:

```
/*
 * Automatically adds 1 every product
 */
Product newProduct = new Product();
Company.getAdmin()._addProduct(Company.getBranches()[1], newProduct);
System.out.println(Company.getBranches()[1].getProducts().toString());
/*
 * inquire products if it is available
 */
System.out.println(Company.getAdmin()._inquireProduct(Company.getBranches()[1], newProduct));

Office Chair:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
Office Desk:
1st Model:1st Color:1 1st Model:2st Color:1 1st Model:3st Color:1 1st Model:4st Color:1
2st Model:1st Color:1 2st Model:2st Color:1 2st Model:3st Color:1 2st Model:4st Color:1
3st Model:1st Color:1 3st Model:2st Color:1 3st Model:3st Color:1 3st Model:4st Color:1
4st Model:1st Color:1 4st Model:2st Color:1 4st Model:3st Color:1 4st Model:4st Color:1
5st Model:1st Color:1 5st Model:2st Color:1 5st Model:3st Color:1 5st Model:4st Color:1

Office Cabinet:
1st Model:1
2st Model:1
3st Model:1
4st Model:1
5st Model:1
6st Model:1
7st Model:1

true
```



## Subscription method:

```
Company.getEmployee()[0]._newSubscripton(new Customer( name: "Mesut", surname: "Ozil", mail: "10100101"));
Company.getEmployee()[0]._newSubscripton(new Customer( name: "Cenk", surname: "Ahmet", mail: "11110110"));
for(int i=0 ; i<Company.getCustomer_number() ; i++){
    System.out.println(Company.getCustomers()[i].toString());
}
```

```
Customer Name:Mesut
Customer Name:Ozil
Customer ID :1
Customer mail:10100101
|
Customer Name:Cenk
Customer Name:Ahmet
Customer ID :10
Customer mail:11110110
```

## Ordering and Previous order method:

```
/*
 * Ordering office desk, meeting tables, office chair for every model and color
 * but it does not ordering any book cases and office cabinet
 */
newProduct.setOffice_desk();
newProduct.setMeeting_tables();
newProduct.setOffice_chair();
Company.getCustomers()[0]._order(newProduct);
Company.getCustomers()[0]._previousOrder();
```

```
Product has been added
Previous orders...
Office Chair:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
Office Desk:
1st Model:1st Color:1 1st Model:2st Color:1 1st Model:3st Color:1 1st Model:4st Color:1
2st Model:1st Color:1 2st Model:2st Color:1 2st Model:3st Color:1 2st Model:4st Color:1
3st Model:1st Color:1 3st Model:2st Color:1 3st Model:3st Color:1 3st Model:4st Color:1
4st Model:1st Color:1 4st Model:2st Color:1 4st Model:3st Color:1 4st Model:4st Color:1
5st Model:1st Color:1 5st Model:2st Color:1 5st Model:3st Color:1 5st Model:4st Color:1
Meeting Table:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
```

```
Meeting Table:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 |
8st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
9st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
10st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
Book Cases:
Office Cabinet:
```

## Ordering and removing last previous:

```
newProduct.setOffice_desk();
newProduct.setMeeting_tables();
newProduct.setOffice_chair();
Company.getCustomers()[0]._order(newProduct);
Company.getCustomers()[0]._order(newProduct);
Company.getCustomers()[0]._previousOrder();

Company.getEmployee()[1]._removeOrder(Company.getCustomers()[0]);

System.out.println(Company.getCustomers()[0].getProducts().toString());
Company.getCustomers()[0]._previousOrder();
}
```

```
10st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
Book Cases:
Office Cabinet:

Office Chair:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1
Office Desk:
1st Model:1st Color:1 1st Model:2st Color:1 1st Model:3st Color:1 1st Model:4st Color:1
2st Model:1st Color:1 2st Model:2st Color:1 2st Model:3st Color:1 2st Model:4st Color:1
3st Model:1st Color:1 3st Model:2st Color:1 3st Model:3st Color:1 3st Model:4st Color:1
4st Model:1st Color:1 4st Model:2st Color:1 4st Model:3st Color:1 4st Model:4st Color:1
5st Model:1st Color:1 5st Model:2st Color:1 5st Model:3st Color:1 5st Model:4st Color:1
Meeting Table:
1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
8st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1
```

Product has been added

Product has been added

Previous orders...

Office Chair:

1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1 5st Color:1

Office Desk:

1st Model:1st Color:1 1st Model:2st Color:1 1st Model:3st Color:1 1st Model:4st Color:1

2st Model:1st Color:1 2st Model:2st Color:1 2st Model:3st Color:1 2st Model:4st Color:1

3st Model:1st Color:1 3st Model:2st Color:1 3st Model:3st Color:1 3st Model:4st Color:1

4st Model:1st Color:1 4st Model:2st Color:1 4st Model:3st Color:1 4st Model:4st Color:1

5st Model:1st Color:1 5st Model:2st Color:1 5st Model:3st Color:1 5st Model:4st Color:1

Meeting Table:

1st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

2st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

3st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

4st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

5st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

6st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

7st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

8st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

9st Model:1st Color:1 2st Color:1 3st Color:1 4st Color:1

Last order has been removed

Office Chair:

1st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

2st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

3st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

4st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

5st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

6st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

7st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2 5st Color:2

Office Desk:

1st Model:1st Color:2 1st Model:2st Color:2 1st Model:3st Color:2 1st Model:4st Color:2

2st Model:1st Color:2 2st Model:2st Color:2 2st Model:3st Color:2 2st Model:4st Color:2

3st Model:1st Color:2 3st Model:2st Color:2 3st Model:3st Color:2 3st Model:4st Color:2

4st Model:1st Color:2 4st Model:2st Color:2 4st Model:3st Color:2 4st Model:4st Color:2

5st Model:1st Color:2 5st Model:2st Color:2 5st Model:3st Color:2 5st Model:4st Color:2

Meeting Table:

1st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

2st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

3st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

4st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

5st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

6st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

7st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

8st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

9st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

10st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

Book Cases:

Office Cabinet:

## Inquire Stock:

```
try {  
    if (Company.getEmployee()[Company.getBranchEmployee()]._inquireStock(Company.getBranches()[0], newProduct)) {  
        System.out.println("Products are available");  
    }else{  
        System.out.println("Products are not available in this branch");  
    }  
}catch(ArrayIndexOutOfBoundsException e){  
    System.out.println("There is no kind of model and color");  
}  
}
```

```
1.employee  
Customer Name:Mustafa  
Customer Name:Mohammed  
Customer ID :1221
```

```
2.employee  
Customer Name:Omer Ali  
Customer Name:Sahiner  
Customer ID :1244
```

Which Employee?

```
1
```

Products are available

## Make Sales:

```
System.out.println(Company.getCustomers()[0].getProducts().toString());  
Company.getEmployee()[0]._makeSales(Company.getBranches()[0],Company.getCustomers()[0], newProduct );  
System.out.println(Company.getCustomers()[0].getProducts().toString());
```

```
}
```

Meeting Table:

1st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
2st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
3st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
4st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
5st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
6st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
7st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
8st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
9st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2  
10st Model:1st Color:2 2st Color:2 3st Color:2 4st Color:2

Book Cases:

Office Cabinet:

Making sales to customer

Office Chair:

1st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
2st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
3st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
4st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
5st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
6st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3  
7st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3 5st Color:3

Office Desk:

1st Model:1st Color:3 1st Model:2st Color:3 1st Model:3st Color:3 1st Model:4st Color:3  
2st Model:1st Color:3 2st Model:2st Color:3 2st Model:3st Color:3 2st Model:4st Color:3  
3st Model:1st Color:3 3st Model:2st Color:3 3st Model:3st Color:3 3st Model:4st Color:3  
4st Model:1st Color:3 4st Model:2st Color:3 4st Model:3st Color:3 4st Model:4st Color:3  
5st Model:1st Color:3 5st Model:2st Color:3 5st Model:3st Color:3 5st Model:4st Color:3

Meeting Table:

1st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3  
2st Model:1st Color:3 2st Color:3 3st Color:3 4st Color:3