GTU Department of Computer Engineering

CSE 222/505 – Spring 2021

Homework 3 Report

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1.SYSTEM REQUIREMENTS

Description of the Project: The project provides us to manage a company that sells office furnitures by using software. In this project there are three different type users and they have different roles to handle this software.By using this system each user can make their own tasks. For example Administrator can add branch ,Branch employee can add office product ,Customer can purchase office product etc. Our aim is to ensure that both company manager ,company employees and customers can do their jobs quickly, safely and easily.

There are 3 types user for this project;

- Administrators
- Branch Employees
- Customers

The company has 4 different branches and sells both in-store and online. The store sells office chairs (7 models and for each, 5 colors), office desks (5 models and for each, 4 colors), meeting tables (10 models and for each, 4 colors), bookcases (12 models) and office cabinets (12 models).

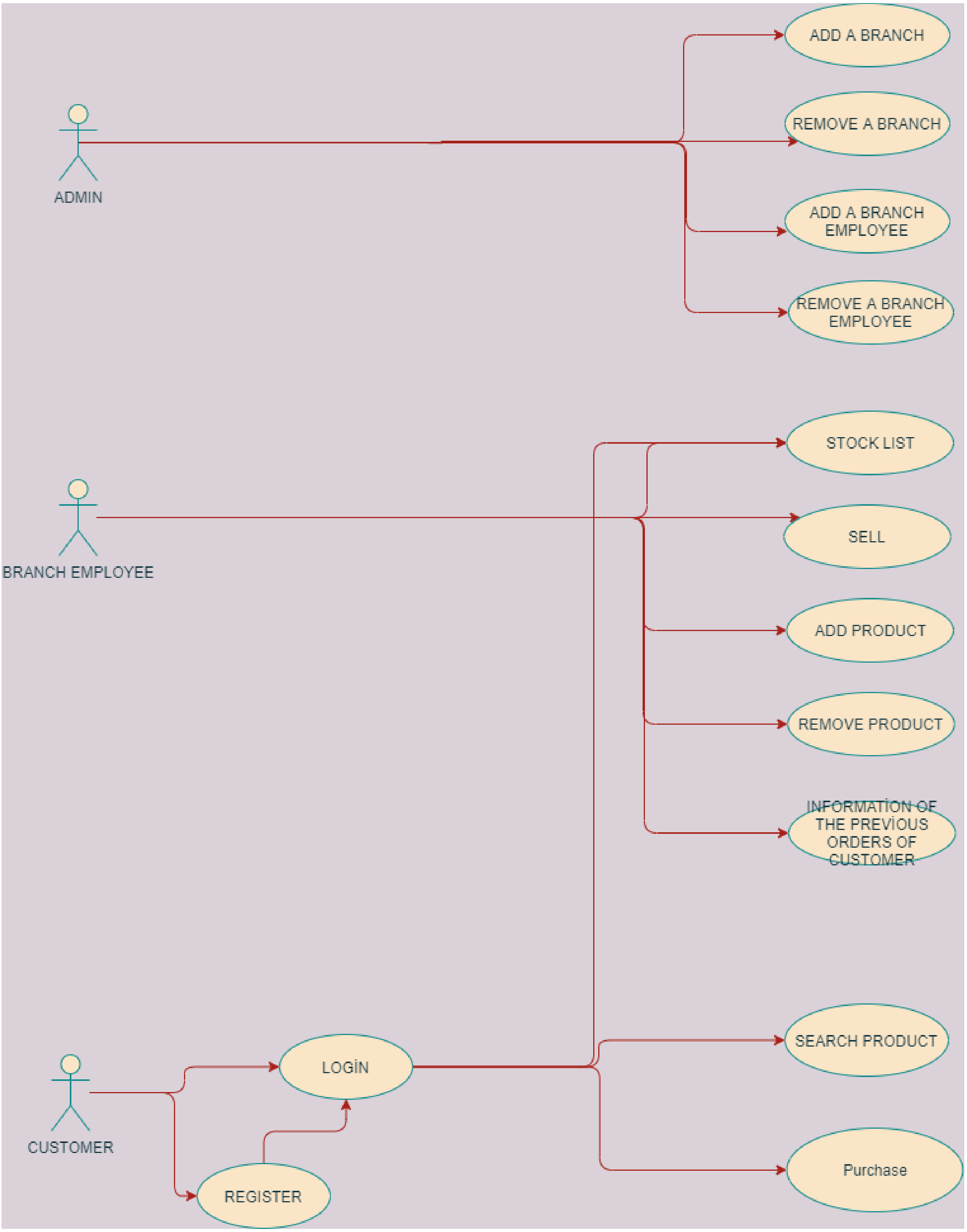
Administrators manage the system by adding and removing branches and branch employees. They can also query whether there are any products that need to be supplied.

Branch Employee can inquire about the products in stock, inform the manager that the product should be purchased when any product is less than the requested amount, add / remove products, make sales, access the information of the previous orders of a customer by using the customer number and add new order to this section. Branch employees should update the customers' previous orders section during their sales from the store. If the customer is shopping for the first time, then they should create a new subscription.

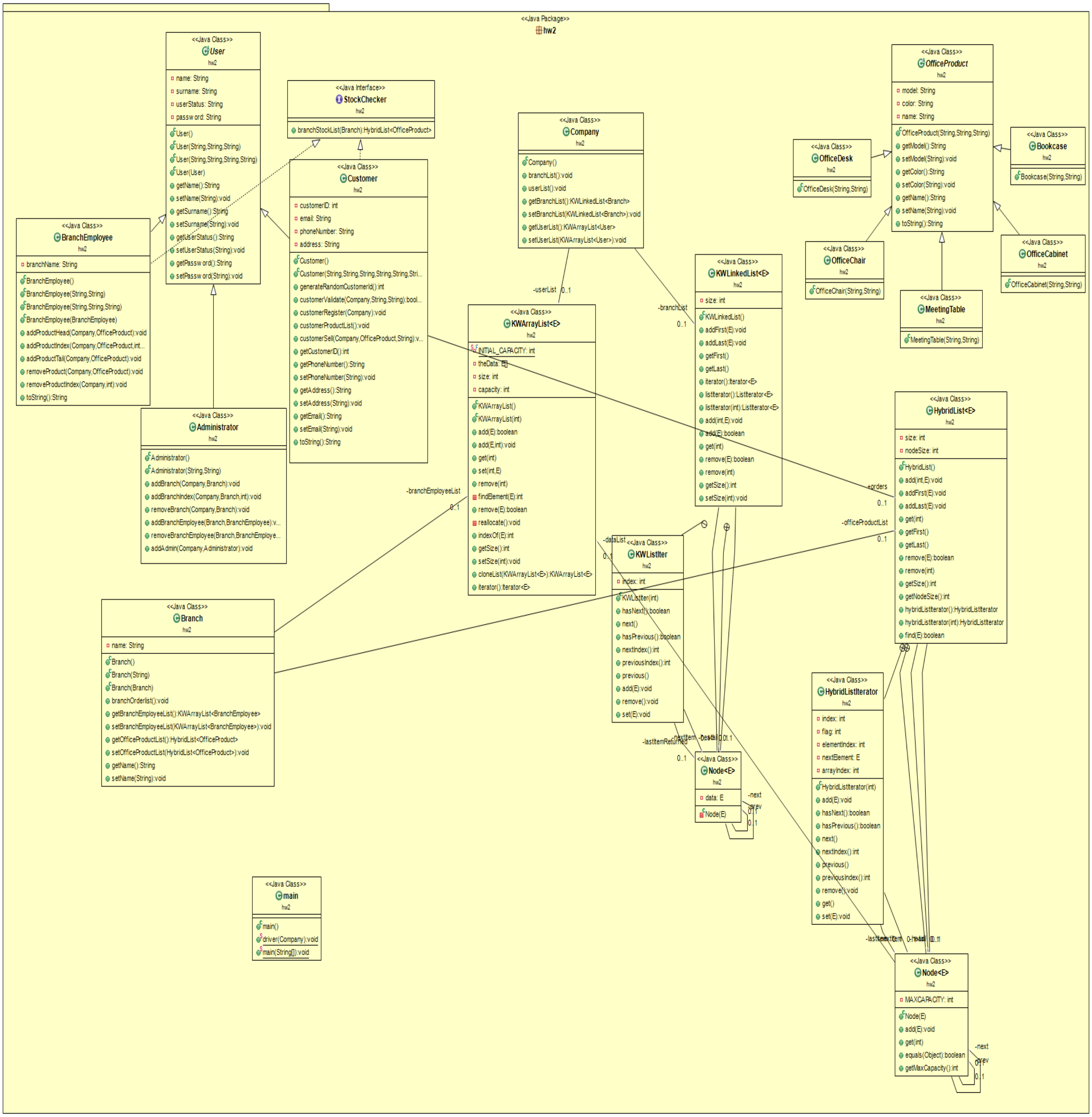
Customer requirements , A special customer number is defined for each customer in the system. When a person subscribes to the system, he/she uses his/her name, surname and e-mail address, and defines a password. When the registration is completed, the customer number is automatically defined in the system and the user is informed about it. When the customer logs into the system, they can search for products, see the list of products, see which store a product is in, shop online by entering address and phone information, and view their previous orders.

2.USE CASE AND CLASS DIAGRAMS

USE CASE DIAGRAM



CLASS DIAGRAM



3.PROBLEM SOLUTION APPROACH

My Problem solution steps are;

-Specify the problem requirements

-Analyze the problem

-Design an algorithm and Program

-Implement the algorithm

-Test and verify the program

3.1) **Specify the problem requirements**: I understand the problem.

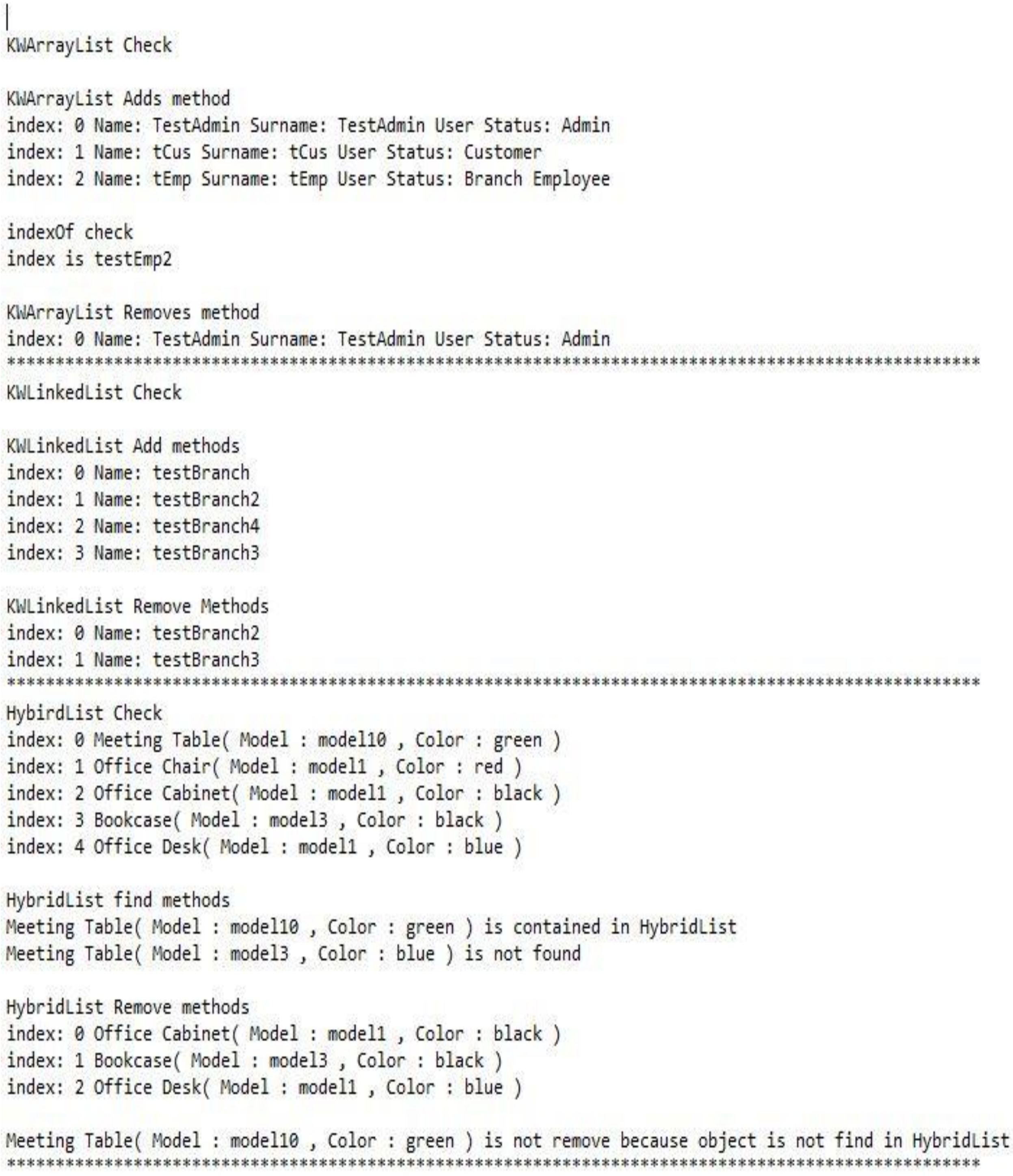
3.2) **Analyze the problem**: I identify; input data, output data, Additional requirements and constraints.

3.3) **Design an algorithm and Program**: I divide the problem into sub-problems. I listed major steps (sub-problems). I break down each step into a more detailed list. To do these We have to divide this big project into small pieces. First of all I started with user type we need divide them with seperate classes. And then to handle all data we need to write a class that manipulate the data. And lastly if we combine all these we can complete the project.

3.4**) Implement the algorithm**: I wrote the algorithm in Java by converting each step into statements of Java (classes, methods etc.) I wrote user interface at first. Then I wrote my classes for my user types such as Administrator, Branch Employee, Customer. I implemented it in every class according to its own features. Secondly I wrote the Office Products. I put the common operation and data field among the products. Then I wrote I wrote classes for Office types such as OfficeChair, OfficeDesk, Bookcase, MeetingTable, OfficeCabinets. Since it has company branches, I wrote a branch class that holds these branching properties and includes their methods. I wrote Company class, this class is the core class of the system. The whole operation revolves through this class. I wrote the Driver class with the menu structure so that the system can be tested and interactive.
I wrote KWArrayList, KWLinkedList, HybridList classes to save my data. These allow me to keep and use my data effectively. KWArrayList I keep information about users in the system.I keep the information about the branches in the KWLinkedList system.On the Hybridlist, I keep information about the furniture in the system.

3.5) **Test and verify the program**: I run the program for several input case.

5.Running and Test cases:



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KWArrayList Check

KWArrayList Adds method
index: 0 Name: TestAdmin Surname: TestAdmin User Status: Admin
index: 1 Name: tCus Surname: tCus User Status: Customer
index: 2 Name: tEmp Surname: tEmp User Status: Branch Employee

indexOf check
index is testEmp2

KWArrayList Removes method
index: 0 Name: TestAdmin Surname: TestAdmin User Status: Admin
****************************************************************************************************
KWLinkedList Check

KWLinkedList Add methods
index: 0 Name: testBranch
index: 1 Name: testBranch2
index: 2 Name: testBranch4
index: 3 Name: testBranch3

KWLinkedList Remove Methods
index: 0 Name: testBranch2
index: 1 Name: testBranch3
****************************************************************************************************
HybirdList Check
index: 0 Meeting Table( Model : model10 , Color : green )
index: 1 Office Chair( Model : model1 , Color : red )
index: 2 Office Cabinet( Model : model1 , Color : black )
index: 3 Bookcase( Model : model3 , Color : black )
index: 4 Office Desk( Model : model1 , Color : blue )

HybridList find methods
Meeting Table( Model : model10 , Color : green ) is contained in HybridList
Meeting Table( Model : model3 , Color : blue ) is not found

HybridList Remove methods
index: 0 Office Cabinet( Model : model1 , Color : black )
index: 1 Bookcase( Model : model3 , Color : black )
index: 2 Office Desk( Model : model1 , Color : blue )

Meeting Table( Model : model10 , Color : green ) is not remove because object is not find in HybridList
****************************************************************************************************
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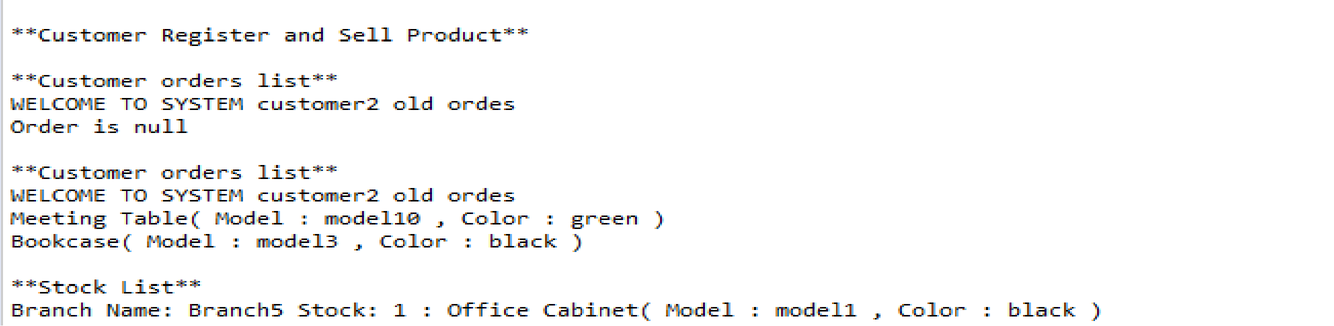

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**Customer Register and Sell Product**

**Customer orders list**
WELCOME TO SYSTEM customer2 old ordes
Order is null

**Customer orders list**
WELCOME TO SYSTEM customer2 old ordes
Meeting Table( Model : model10 , Color : green )
Bookcase( Model : model3 , Color : black )

**Stock List**
Branch Name: Branch5 Stock: 1 : Office Cabinet( Model : model1 , Color : black )
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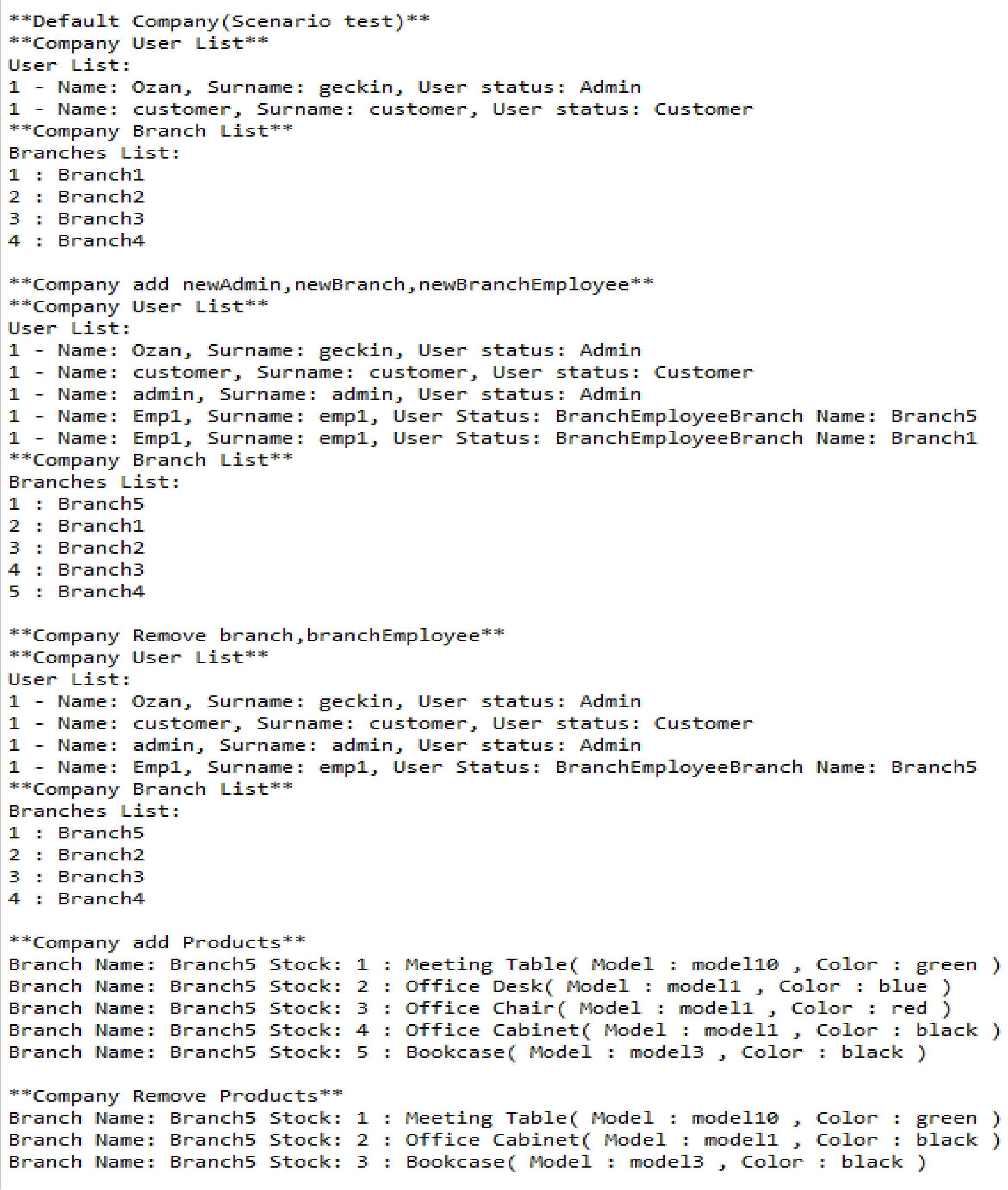

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**Default Company(Scenario test)**
**Company User List**
User List:
1 - Name: Ozan, Surname: geckin, User status: Admin
1 - Name: customer, Surname: customer, User status: Customer
**Company Branch List**
Branches List:
1 : Branch1
2 : Branch2
3 : Branch3
4 : Branch4

**Company add newAdmin,newBranch,newBranchEmployee**
**Company User List**
User List:
1 - Name: Ozan, Surname: geckin, User status: Admin
1 - Name: customer, Surname: customer, User status: Customer
1 - Name: admin, Surname: admin, User status: Admin
1 - Name: Emp1, Surname: emp1, User Status: BranchEmployeeBranch Name: Branch5
1 - Name: Emp1, Surname: emp1, User Status: BranchEmployeeBranch Name: Branch1
**Company Branch List**
Branches List:
1 : Branch5
2 : Branch1
3 : Branch2
4 : Branch3
5 : Branch4

**Company Remove branch,branchEmployee**
**Company User List**
User List:
1 - Name: Ozan, Surname: geckin, User status: Admin
1 - Name: customer, Surname: customer, User status: Customer
1 - Name: admin, Surname: admin, User status: Admin
1 - Name: Emp1, Surname: emp1, User Status: BranchEmployeeBranch Name: Branch5
**Company Branch List**
Branches List:
1 : Branch5
2 : Branch2
3 : Branch3
4 : Branch4

**Company add Products**
Branch Name: Branch5 Stock: 1 : Meeting Table( Model : model10 , Color : green )
Branch Name: Branch5 Stock: 2 : Office Desk( Model : model1 , Color : blue )
Branch Name: Branch5 Stock: 3 : Office Chair( Model : model1 , Color : red )
Branch Name: Branch5 Stock: 4 : Office Cabinet( Model : model1 , Color : black )
Branch Name: Branch5 Stock: 5 : Bookcase( Model : model3 , Color : black )

**Company Remove Products**
Branch Name: Branch5 Stock: 1 : Meeting Table( Model : model10 , Color : green )
Branch Name: Branch5 Stock: 2 : Office Cabinet( Model : model1 , Color : black )
Branch Name: Branch5 Stock: 3 : Bookcase( Model : model3 , Color : black )
```