GTU Department of Computer Engineering CSE 222/505 - Spring 2020 Homework 01-Part2 Report

ESRA ERYILMAZ
171044046

1. SYSTEM REQUIREMENTS

Functional requirements;

In automation system; in order to be a user , we need requirements such as name ,password ,usertype, branch. For the cargo , we also need requirements such as receiver name ,sender name, tracking number, delivering branch.
If a branch is removed by the administrator, all users in that branch are automatically deleted.
Transportation personnel deliver the cargo and enter the system.
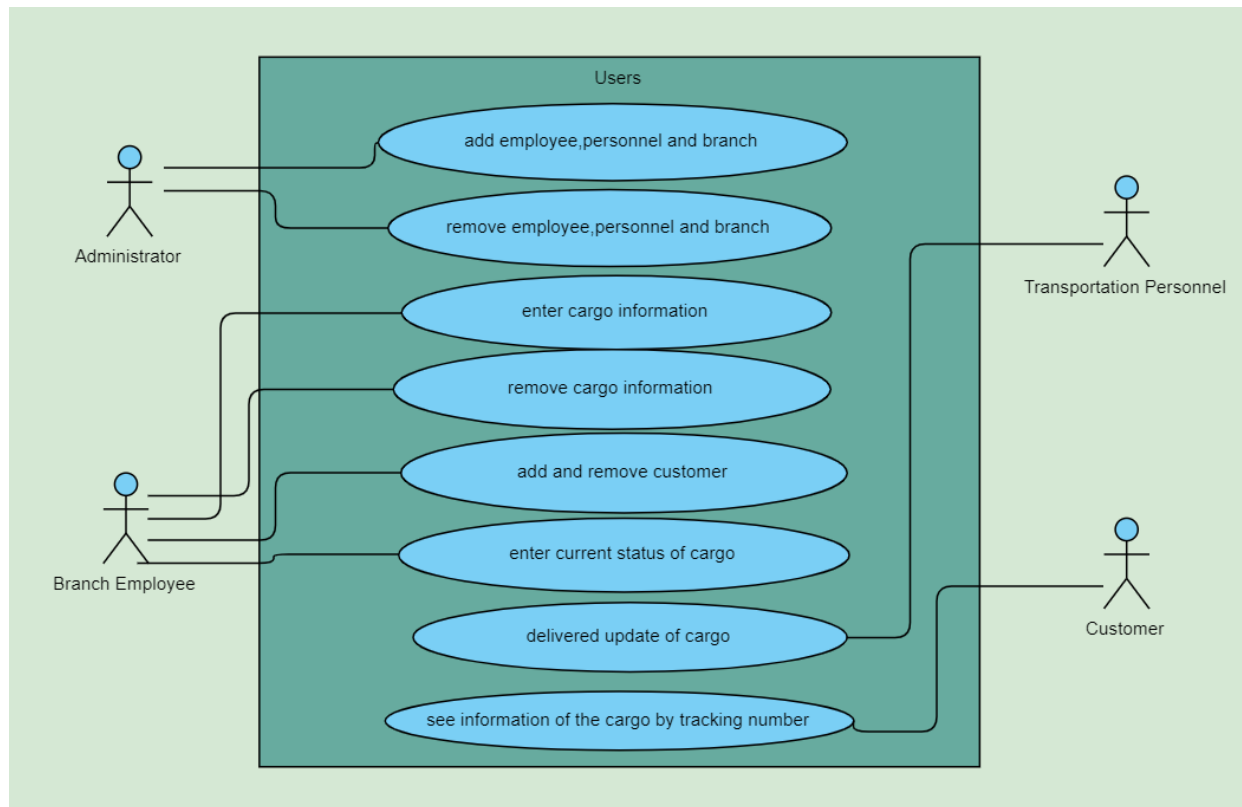
Non-functional requirements;

There are things that every user can and cannot do.
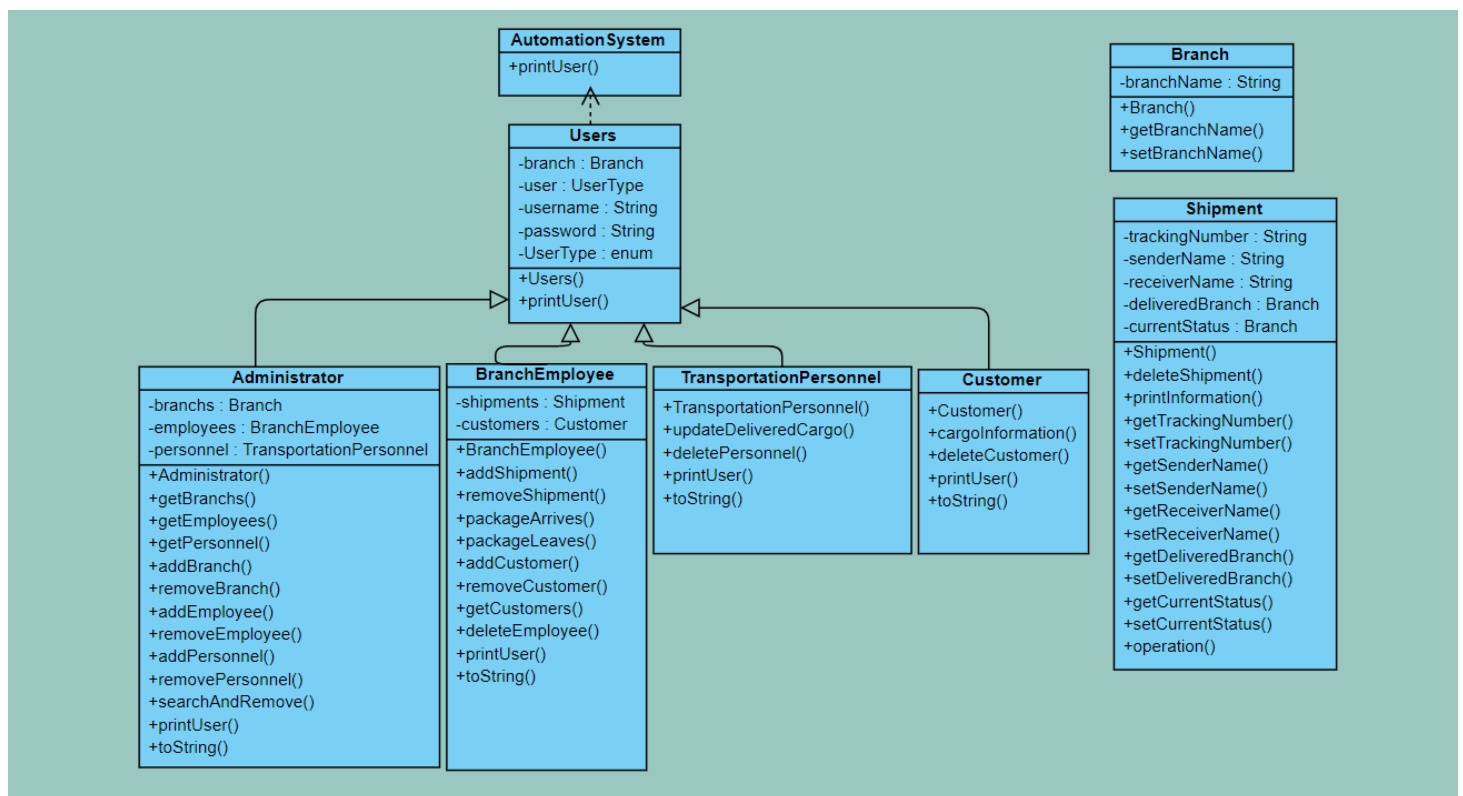If the customer enters the tracking number correctly, he / she can access the cargo information.
For adding and removing customers we need employees.
In the same way ,for adding and removing employees and personnel we need administrators.

2. USE CASE DIAGRAMS

3. CLASS DIAGRAMS

4. OTHER DIAGRAMS

5. PROBLEM SOLUTION APPROACH

- *Firstly, I need the class that holds the users of the cargo company. To keep all users information. We need to keep names ,surnames, types of the user and types of branch.*
- *Then I can create other classes to keep different user types.*
- *I have a Branch class to know which user is in which branch.*
- *I need an administrator to be able to operate on the system. Administrators can manage the system by adding and removing branches, branch employees and transportation personnel. In Administrators class , there are functions for doing these tasks.*
- *I have another user type which is branch employee. They can enter and remove information about the shipments sent from that branch, add and remove customers to the system.When the package arrives or leaves in that branch, its current status is updating branch employee.*
- *I have third user type transportation personnel. They make update about the shipment.*
- *Last type of users are customers. They can see information about the shipment if they enter the tracking number correctly.*
- *For the cargos , I create another class to keep all cargo informations which name is Shipment.*

6. TEST CASES

Firstly, I create ArrayList of Users.(For testing polymorphic call)

```
ArrayList<Users> usersTest = new ArrayList<Users>();
```

CASE 1 : Administrators test

Creating administrator object

```
Administrator adminTest = new Administrator(firstBranch,Users.UserType.ADMINISTRATOR,"Esra Eryilmaz","123456");
```

Administrator adds branchs at the end of the ArrayList

```
adminTest.addBranch(firstBranch);
adminTest.addBranch(new Branch("ISTANBUL"));
adminTest.addBranch(new Branch("KOCAELI"));
adminTest.addBranch(new Branch("IZMIR"));
adminTest.addBranch(new Branch("AMASYA"));
```

Administrator adds three new branch employees

```
BranchEmployee emp1 = adminTest.addEmployee(new BranchEmployee(adminTest.getBranchs().get(1),Users.UserType.BRANCH_EMPLOYEE,"Ahmet Demir","111111"));
BranchEmployee emp2 = adminTest.addEmployee(new BranchEmployee(adminTest.getBranchs().get(2),Users.UserType.BRANCH_EMPLOYEE,"Mehmet Sahin","000000"));
BranchEmployee emp3 = adminTest.addEmployee(new BranchEmployee(adminTest.getBranchs().get(4),Users.UserType.BRANCH_EMPLOYEE,"Fatma Kaya","abc123"));
```

Administrator adds two new transportation personnel

```
TransportationPersonnel per1 =adminTest.addPersonnel(new TransportationPersonnel(adminTest.getBranchs().get(3),Users.UserType.TRANSPORTATION_PERSONNEL,"Ayse Yildirim","135790"));
TransportationPersonnel per2 =adminTest.addPersonnel(new TransportationPersonnel(adminTest.getBranchs().get(4),Users.UserType.TRANSPORTATION_PERSONNEL,"Mustafa Kara","010101"));
```

Removing branch ,employee and personnel

```
//removing branch
adminTest.removeBranch(adminTest.getBranchs().get(4));

//administrator removes one of the branch employee
adminTest.removeEmployee(emp2);

//administrator removes one of the transportation personnel
adminTest.removePersonnel(per2);
```

CASE 2: BranchEmployees test

Branch Employee adds two new customers in his branch

```
Customer cus1 = emp1.addCustomer(new Customer(emp1.branch,Users.UserType.CUSTOMER,"Ali Yilmaz","000111"));
cus1.printUser();
Customer cus2 = emp1.addCustomer(new Customer(emp1.branch,Users.UserType.CUSTOMER,"Emine Aslan","abcdef"));
cus2.printUser();
```

Branch Employee adds two new cargo sent from his branch

```
Shipment cargo1 = emp1.addShipment(new Shipment("45322567","Ali Yilmaz","Meryem Yildiz",firstBranch,emp1.branch));
cargo1.printInformation(cargo1.getTrackingNumber());
Shipment cargo2 = emp1.addShipment(new Shipment("54327924","Emine Aslan", "Ismail Kilic",firstBranch,emp1.branch));
cargo2.printInformation(cargo2.getTrackingNumber());
```

Branch employee removes one of the customer

```
emp1.removeCustomer(cus2);
```

Branch employee removes one of the cargo

```
emp1.removeShipment(cargo2);
```

Branch employee updates when package arrives and leaves at that branch

```
//branch employee updates when package arrives at that branch
emp1.packageArrives(cargo1);
cargo1.printInformation(cargo1.getTrackingNumber());

//branch employee updates when package leaves at that branch
emp1.packageLeaves(cargo1,firstBranch);
cargo1.printInformation(cargo1.getTrackingNumber());
```

CASE 3: TransportationPersonnel test

Transportation personnel makes the update when cargo is delivered

```
per1.updateDeliveredCargo(cargo1);
```

CASE 4: Customers test

Customers can see the cargo information if they enter the tracking number

```
cus1.cargoInformation(cargo1.getTrackingNumber(),cargo1);
```

7. RUNNING AND RESULTS

RUN CASE 1:

```
          TEST STARTING...

----------------------------------------------------------------------------------------------
        ADMINISTRATOR CLASS TEST STARTING...

****Created administrator & administrator adds five branchs ,three employees and two personnel****

Administrator [branch=ANKARA, user=ADMINISTRATOR, username=Esra Eryilmaz, password=123456]
BranchEmployee [branch=ISTANBUL, user=BRANCH_EMPLOYEE, username=Ahmet Demir, password=111111]
BranchEmployee [branch=KOCAELI, user=BRANCH_EMPLOYEE, username=Mehmet Sahin, password=000000]
BranchEmployee [branch=AMASYA, user=BRANCH_EMPLOYEE, username=Fatma Kaya, password=abc123]
TransportationPersonnel [branch=IZMIR, user=TRANSPORTATION_PERSONNEL, username=Ayse Yildirim, password=135790]
TransportationPersonnel [branch=AMASYA, user=TRANSPORTATION_PERSONNEL, username=Mustafa Kara, password=010101]


****Administrator removes fifth branch ,second employee and second personnel****

Administrator [branch=ANKARA, user=ADMINISTRATOR, username=Esra Eryilmaz, password=123456]
BranchEmployee [branch=ISTANBUL, user=BRANCH_EMPLOYEE, username=Ahmet Demir, password=111111]
The BranchEmployee you tried to print has been removed!!!!
The BranchEmployee you tried to print has been removed!!!!
TransportationPersonnel [branch=IZMIR, user=TRANSPORTATION_PERSONNEL, username=Ayse Yildirim, password=135790]
The TransportationPersonnel you tried to print has been removed!!!!


----------------------------------------------------------------------------------------------
```

RUN CASE 2:

```
---------------------------------------------------------------------------------------------
        BRANCHEMPLOYEE CLASS TEST STARTING...

****First branch employee adds two customers and two shipments****

Customer [branch=ISTANBUL, user=CUSTOMER, username=Ali Yilmaz, password=000111]
Customer [branch=ISTANBUL, user=CUSTOMER, username=Emine Aslan, password=abcdef]
Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ISTANBUL]
Shipment [trackingNumber=54327924, senderName=Emine Aslan, receiverName=Ismail Kilic, deliveredBranch=ANKARA, currentStatus=ISTANBUL]


****First branch employee removes second customer and second cargo****

Customer [branch=ISTANBUL, user=CUSTOMER, username=Ali Yilmaz, password=000111]
The Customer you tried to print has been removed!!!!
Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ISTANBUL]
The Shipment you tried to print has been removed!!!!


****First branch employee updates first cargo's current status****

Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ISTANBUL]
Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ANKARA]


---------------------------------------------------------------------------------------------
```

RUN CASE 3:

```
-----------------------------------------------------------------------------------------------
        TRANSPORTATIONPERSONNEL CLASS TEST STARTING...

****First transportation personnel delivered first cargo****

Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ANKARA]


-----------------------------------------------------------------------------------------------
```

RUN CASE 4:

```
-----------------------------------------------------------------------------------------------
        CUSTOMER CLASS TEST STARTING...

****First customer entered TrackingNumber and see the first cargo information****

Shipment [trackingNumber=45322567, senderName=Ali Yilmaz, receiverName=Meryem Yildiz, deliveredBranch=ANKARA, currentStatus=ANKARA]
-----------------------------------------------------------------------------------------------
```