# Gebze Technical University
# Computer Engineering

**CSE 222 - 2020**

**HOMEWORK 01 REPORT**

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# 1    INTRODUCTION

## 1.1    Problem Definition

The automation system for a cargo company has users such as administrators, branch employees, transportation personnel and customers. Administrators manage the system by adding and removing branches, branch employees and transportation personnel. Branch employees can enter and remove information about the shipments sent from that branch, add and remove users (customers) to the system. The information of the sender and receiver are recorded for each shipment. When the package arrives at a branch or leaves the branch, its current status is entered into the system by the branch employee. When it is delivered, the transportation personnel makes the update. The customer entering the system with the tracking number is only authorized to see the name and surname information of the sender and receiver and the current status of the cargo.

## 1.2    System Requirements

First of all, a company must be created. When creating the company, the name of the company and the name, surname, id number of the administrator should be determined.

```
public CargoCompany(String companyName, String adminName, String adminSurname, int adminId)
```

**Administrator** can add and delete branch, branch employee and transportation personnel.

When adding a new branch or removing a existing branch, branch codes is necessary.

```
public boolean addBranch(int branchCode)
```
```
public boolean removeBranch(int branchCode)
```

To add a new branch employee,  a branch must be determined.  To delete, branch code and user information is necessary.

```
public boolean addBranchEmployee(int branchCode, String name, String surname, int id)
```
```
public boolean removeBranchEmployee(int branchCode, String name, String surname, int id)
```

When adding new transportation personnel or removing existing transportation personnel, the person's informations are necessary.

```
public boolean addTransportationPersonnel(String name, String surname, int id)
```

```
public boolean removeTransportationPersonnel(String name, String surname, int id)
```

**Branch employee** can add and delete user. Also can enter, remove and update shipment information.

When add or remove personnel, person's informations are necessary.

```
public boolean removeUser(String name, String surname, int id)
```

```
public boolean addUser(String name, String surname, int id)
```

When enter a shipment, tracking number, sender, receiver informations are necessary. When remove a shipment, tracking number is necessary.

```
public boolean enterShipmentInformation(int trackingNumber, Person sender, Person receiver)
```

```
public boolean removeShipmentInformation(int trackingNumber)
```

When update a shipment, tracking number and status are necessary.

```
public boolean updateShipmentInformation(int trackingNumber,Status status)
```

**Transportation personnel** can update shipment's status with tracking number.
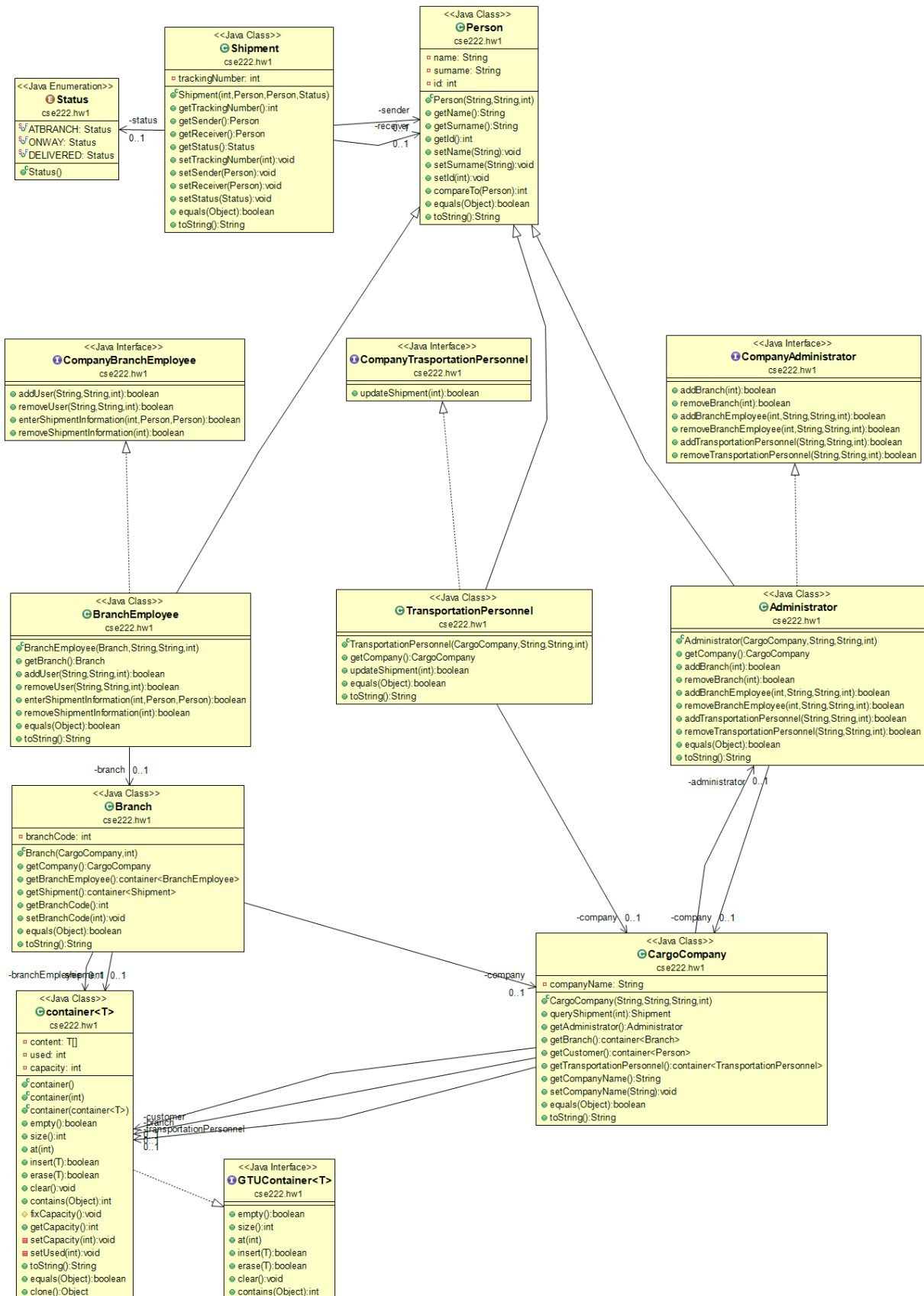
```
public boolean updateShipment(int trackingNumber)
```

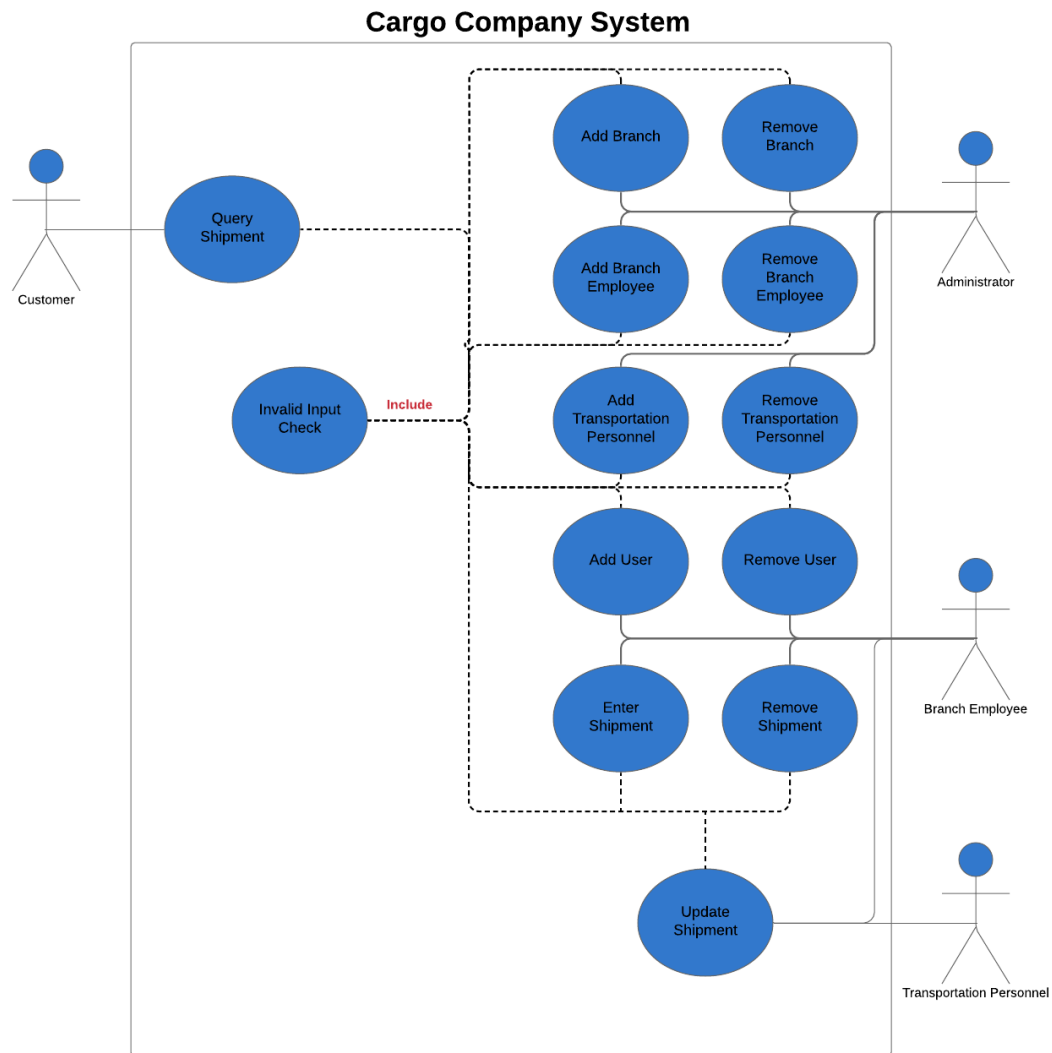**Customer** can query shipment information with tracking number.

```
public Shipment queryShipment(int trackingNumber)
```

## 2    METHOD

## 2.1    Class Diagrams

## 2.2    Use Case Diagrams

**Cargo Company System**



## 2.3    Problem Solution Approach

Regarding my system's requirements and problems, i created a container class to keep and modift the data easily. Then I was able to set up a hierarchy and find a solution, by correctly determining the class relationships and the ease provided by my container class.

# 3    RESULT

## 3.1    Test Cases

- Create a company with administrator

```
Cargo company's name : KDGL
Cargo company's administrator's name : Abdullah
Cargo company's administrator's surname : Celik
Cargo company's administrator's ID : 123
The company was founded.
```

## Administrator

- Adding a branch

```
Branch code : 1
Adding branch is successful.
```

```
Choice : 3
Branch code : 1
The company already has this branch!
```

- Removing a branch

```
Branch code : 1
Removing branch is successful.
```

```
Branch code : 111
The company does not have this branch!
```

- Adding a branch employee

```
Branch code : 1
Name : Ismail
Surname : Celik
ID : 2
0
Adding branch employee is successful.
```

```
Branch code : 1
Name : Ismail
Surname : Celik
ID : 2
0
The branch already has this employee!
```

- Removing a branch employee

```
Branch code : 1
Name : Ismail
Surname : Celik
ID : 2
Removing branch employee is successful.
```

```
Branch code : 1
Name : ahmet
Surname : celik
ID : 3
The branch does not have this employee!
```

- Adding a transportation personnel

```
Name : behzat
Surname : celik
ID : 3
Adding transportation personnel is successful.
```

```
Name : behzat
Surname : celik
ID : 3
The company already has this transportation personnel!
```

- Removing a transportation personnel

```
Name : Behzat
Surname : Celik
ID : 3
Removing transportation personnel is successful.
```

```
Name : ahmet
Surname : celik
ID : 3
The company does not have this transportation personnel!
```

## Branch Employee

- Adding a user

```
Name : Halit
Surname : Celik
ID : 4
Adding customer operation is successful.
```

```
Name : Halit
Surname : Celik
ID : 4
The company already has this user!
```

- Removing a user

```
Name : Ahmet
Surname : Celik
ID : 4
The company does not have this user!
```

```
Name : Halit
Surname : Celik
ID : 4
Removing customer operation is successful.
```

- Entering a shipment

```
Tracking number : 222
Name : Sender
Surname : Sender
ID : 5
Name : Receiver
Surname : Receiver
ID : 5
Entering a shipment information operation is successful.
```

```
Tracking number : 222
Name : a
Surname : a
ID : 1
Name : b
Surname : b
ID : 2
Company already has this shipment!
```

- Removing a shipment

```
Tracking number : 222
Removing a shipment information operation is successful.
```

```
Tracking number : 333
Company does not have this shipment!
```

- Updating a shipment

```
Tracking number : 223
Wrong tracking number! Try again!
```

```
Tracking number : 222
Tracking ID: 222
Sender Information
Name: Sender
Surname: Sender
ID: 1
Receiver Information
Name: Receiver
Surname: Receiver
ID: 2
Status : ATBRANCH
```

```
Tracking number : 222
(1) AT BRANCH
(2) ON WAY
Status : 2
Updating is successful.
```

```
Tracking number : 222
Tracking ID: 222
Sender Information
Name: Sender
Surname: Sender
ID: 1
Receiver Information
Name: Receiver
Surname: Receiver
ID: 2
Status : ONWAY
```

## TRANSPORTATION PERSONNEL

- Update a shipment

```
Tracking number : 222
Update operation is successful.
```

```
Tracking number : 223
Wrong tracking number! Try again!
```

## CUSTOMER

- Query a shipment

```
Tracking number : 222
Tracking ID: 222
Sender Information
Name: Sender
Surname: Sender
ID: 1
Receiver Information
Name: Receiver
Surname: Receiver
ID: 2
Status : DELIVERED
```