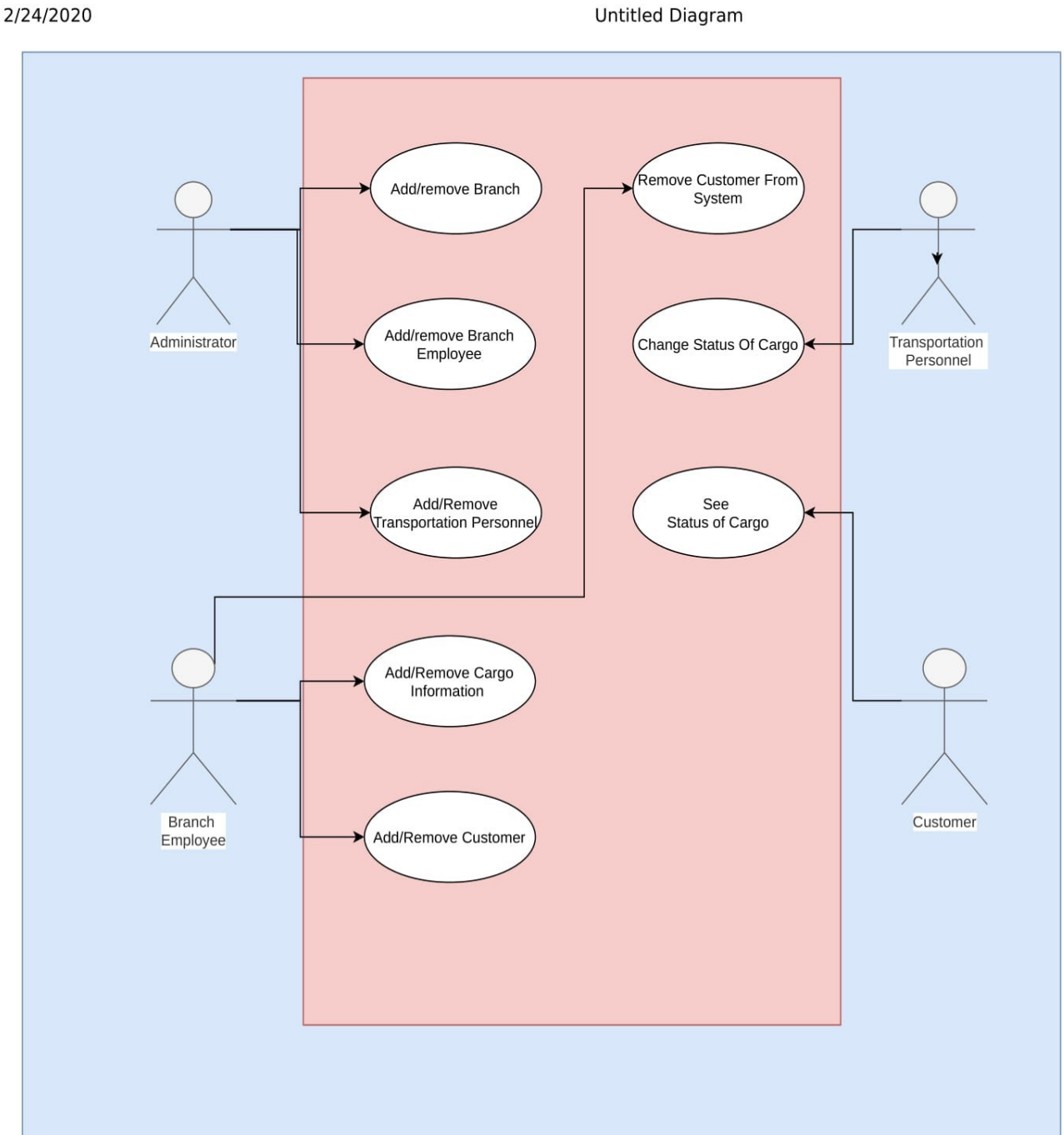
GTU Department of Computer Engineering
CSE 222/505 - Spring 2020
Homework 1 Report

Melihcan Çilek
1801042092

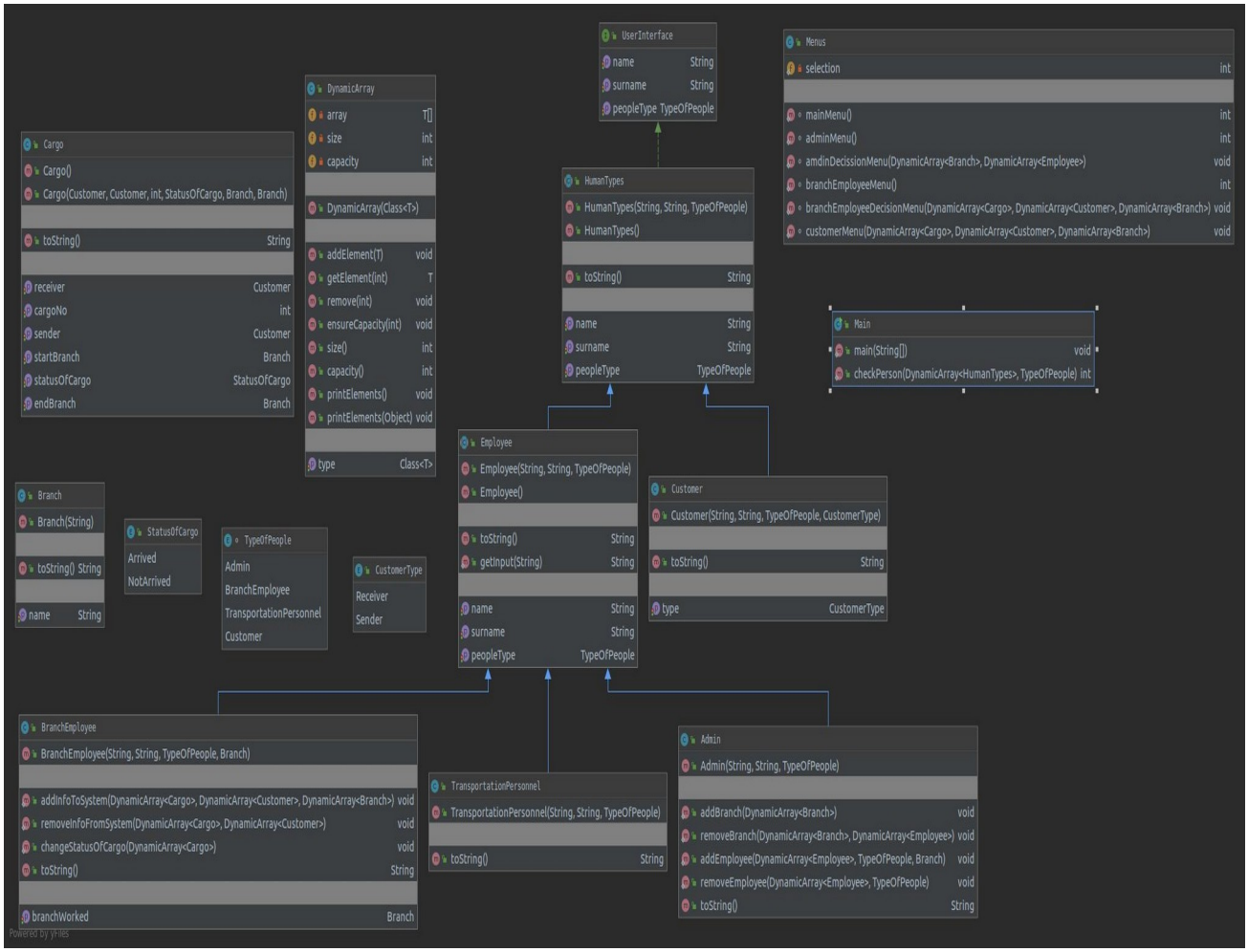
Course Assistant:Başak Karakaş

1. SYSTEM REQUIREMENTS

From the problem definition, it’s obvious to see the solution to this problem requires at least two
branch for branch employees can work, at least one transporter personnel for move shipments
from one branch to another branch. If all these components are satisfied, cargo company’s minimum system requirements are satisfied. According to the problem definition which is managing employee’s, customers and cargo’s at the same time is to hard so its necessary to have a cargo management system to control all of these components easily, combined components touch upon at system requirements article is a must.



3. CLASS DIAGRAMS



4.INTERFACE AND CLASSES

1-)UserInterface Interface

Interface for getting together common functions. It's needed because whenever I tried to call some child of UserInterface interface, I used its methods so that I could call methods at appropriate time.

2-)HumanType Abstract Class

HumanType abstract class is class that implements UserInterface interface and its methods. HumanType abstract class have 3 fields which are name, surname and peopleType which is enumerator class.It has two constructor. One of them is 3 parameter other one is non-parameter constructor.

3-)Employee Abstract Class

Employee is another abstract class is class that extends HumanType abstract class and its methods. Employee Abstract Class have 3 fields which are name, surname and peopleType which is enumerator class .It has two constructor. One of them is 3 parameter that take super class' constructor, other one is non-parameter constructor. This class is used for seperating customers and employees.

4-)Customer Class

Customer is another class is class that extends from Employee abstract class and override its methods. Customer Class have one fields which is customerType which is enumerator class .It has one constructor which is 4 parameter that take super class' constructor and additionally saves customerType.

5-)Admin Class

Admin is another class that extends from Employee abstract class and override its methods. Admin Class have no additional fields .It has one constructor which is 3 parameter that take super class' constructor. Admin has some additional authority that is shown at use case diagram and for that, it has additional methods inside this class.

6-)Branch Class

Branch is another class that represents branches. Branch Class has one field which is name of that branch.It has one constructor which is one parameter constructor.

7-)Branch Employee Class

Branch Employee is another class that extends from Employee abstract class and override its methods. Branch Employee Class have one additional field which is branch that branch employee's work.It has one constructor which is 3 parameter that take super class' constructor and additionally set value of branch that BranchEmployee's work. BranchEmployee has some additional functionalities that is shown at use case diagram and for that, it has additional methods inside this class.

8-)TransportationPersonnel Class

TransportationPersonnel is another class that extends from Employee abstract class and override its methods. Branch Employee Class have one additional field which is branch that branch employee's work.It has one constructor which is 3 parameter that take super class' constructor.

9-)Cargo Class

Cargo is another class that has some additional fields which are sender, receiver, cargoNo, statusOfCargo which is enumeration class, startBrench and endBrench. This class has getters and setters of every field. Cargo Class have two additional constructor which are no parameter constructor and 5 parameter constructor which takes every field respectively.

10-)DynamicArray Class

DynamicArray is generic class that makes holding datas as dynamic. It has fields such as T array[], size, capacity and type of Class<T> type type of array. This class has some additional methods for makes our programming easier which are shown either use case diagram or UML diagram.

5-)ENUMS

1-)TypeOfPeople enumeration

TypeOfPeople is enum class that its components are Admin, BranchEmployee, TransportationPersonnel and Customer

2-)StatusOfCargo enumeration

StatusOfCargo is enum class that its components are Arrived and NotArrived.

3-)CustomerType enumeration

CustomerType is enum class that its components are Receiver and Sender.

6-) PROBLEM SOLUTION APPROACH

In this problem. I tried to think that which type of people have common fields. In this manner, I obtain some solutions and write template of the UML diagram which is so near to Intellij IDEA gave me. Then I tried to imlement some methods. If there is any similarity between two classes and something different than I think at the beginning, I changed it into more better way. Solution was not that easy because there is scenario and we had to think logically and create our system according to that. I tried to think as a Administrator. First implemented it, then I put myself into Administrator's shoes. As I implementing classes and fields, I obtain some issues that can be occurred and fixed them.

7-)TEST CASES

I add Output.pdf file that has test cases into Output file inside this file. Lots of test are there. If you want to try it yourself, you can run Main class with javac Compiler or using makefile.