GIT Department of Computer Engineering CSE 222/505 - Spring 2020 Homework 01 part02 Report

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1. SYSTEM REQUIREMENTS:

a: functional requirements of the system:

- >> **C**eo should start the system
- >> ceo must be able to add and remove administators
- >> ceo shall be able to access administaros list
- >> administrators shall be able to access the branch list, branch employee list and transportation personnel list in the system.
- >> administrator shall be able to create branches in the system.
- >> The administrator must be able to remove branches from the system.
- >> every registered user must be able to login to their pages.
- >> The administrator shall be able to hire and fire branch employees and transportation personnel to/from the system.
- >>every user has should have his/her own related pages after login to the system.
- >>branch employees shall be able to register and delete a customer from the system.
- >> branch employee shall be able to access all the customers who are registered to the cargo company whether to send some package or only registered and didn't send any package yet.
- >>branch employee shall be able to change the status of a package until the delivery process.
- >>transportaion personnel shall be able to update the system and shall be able to delete a delivered package.

- >> Customers can log in to the system by their name surname tacking number and shall be able to see their package info.
- >>a customer can send only one package a time.
- >>branch employee can access all the packages in the cargo company and changes their status which is in the same branch.

b: Non functional requirements of the system:

a) Portability:

this system can be applied to any cargo company, of course, it has a lot to be added to the system.

b) Errore handaling:

- >> security is concerned in this system since every class has its own access scope.
- >> class User is abstract which's the reference variable can refer to the objects of the class Administrator, Branch, BranchEmployee, TransportationPersonnel and Customer classes.

Customer class can refer to one object of type Package class.

- >> classes of Administrator, BranchEmployee TransportationPersonnel and Customer each should hold a reference to an object of type Branch class.
- >> name, surname, id, tracking numbers should be accessed via class methods and should be private variables.
- >> CEO can access all the administrators in the system and via administrators, he/she can access all the branches, branch employees transportation personnel and registered customers.
- >> administrators can access all the branch employees, branches, transportation personnel, and registered customers.

Branch employees can access all the registered customers and related packages to be sent.

- >> transportation personnel can only access related packages in the system.
- >> customers can only display their cargo info.
- >> error handling is considered in this system. error handling like INDEX OUT OF BOUND EXCEPTIONS AND NUMBER FORMAT EXCEPTIONS are handled using try and catch mechanism.

c) Maintainability:

- >> the system should be maintainable meaning we must be able to look up the code after a long time and understand it easily and could be able to expand the functionality of the system and make changes to the old program.
- >> arrays used in this system must be flexible (dynamic). and any programmer who works on it should be able to make changes on it.

d) **Reliability**:

- >> the system should be free of bugs and reliable to anyone.
- >> avoid null pointer access in the system.

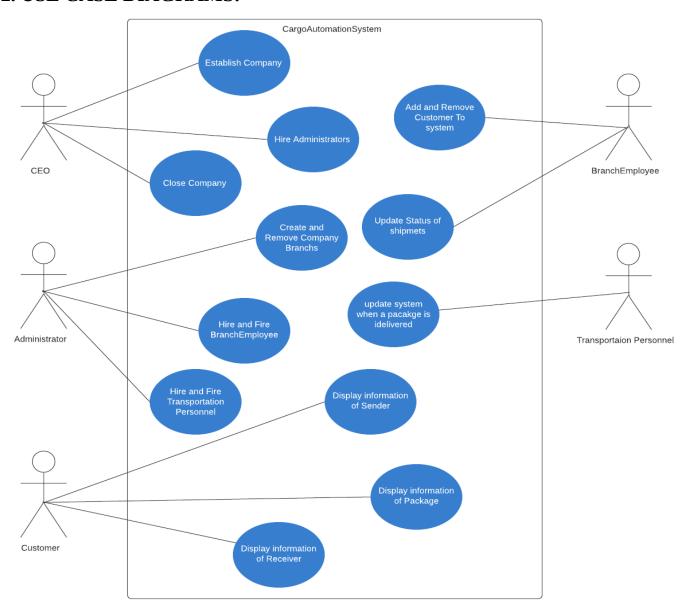
e) Performance:

>> The system should respond in a satisfactory manner so that users of the system be pleased with the performance of the system.

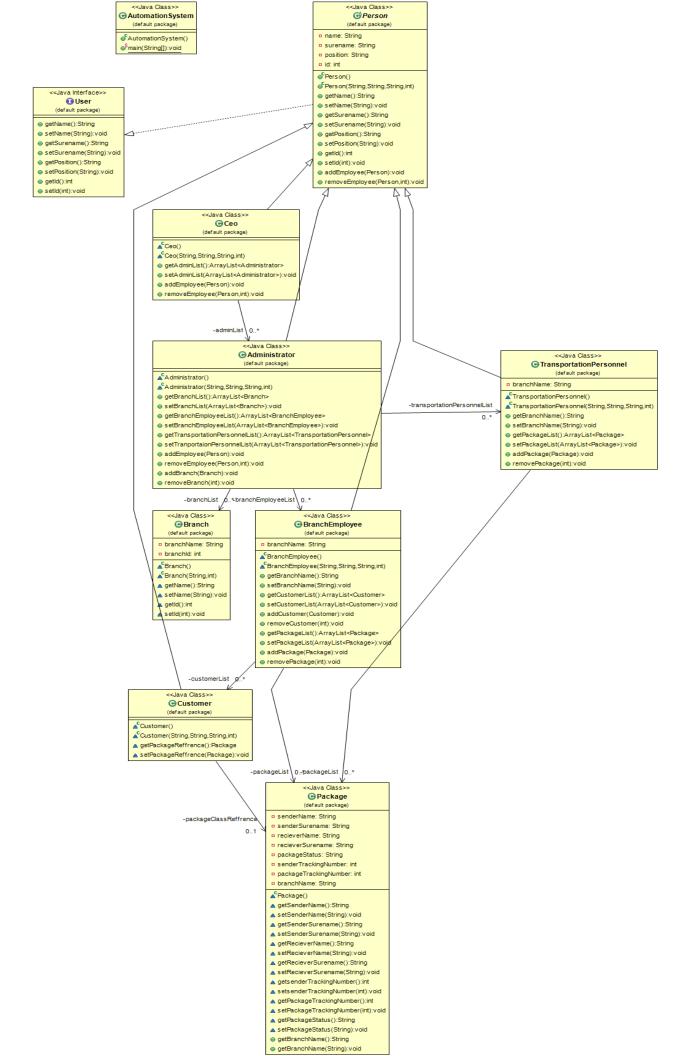
f) Reusability:

- >> create functions of the portions of the code which have the same or different inputs but same or different outputs.
- >> make use of inheritance, make an abstract class of parent class make variables and methods used differently in different child classes.

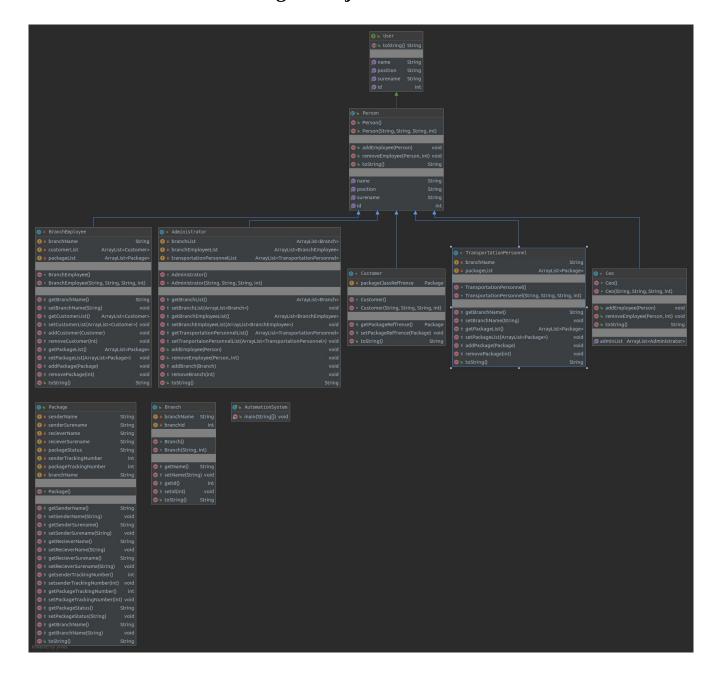
2. USE CASE DIAGRAMS:



3. CLASS DIAGRAMS: using eclips:



3. CLASS DIAGRAMS: using intelli j:



4. OTHER DIAGRAMS:

5. PROBLEM SOLUTION APPROACH:

- >> list of the users of the system is recorded in collection framework called array list
- >> we make use of object oriented programming language in this cargo automation system ,every entity is treated as object users shipments and branches each are individual objects by their own.
- >> in case to make more secure the system we have classes with a certain area of access to the elements.

- >> to maintain the system it must be easy to do so, we have a interface names user which is parent of all the user classes in the system and hold some common abstract methods in it.
- >> there is a login page from which any type of user can enter to the system of course he or she must be registered before .

6. RUNNING AND RESULTS:

screen shoots:

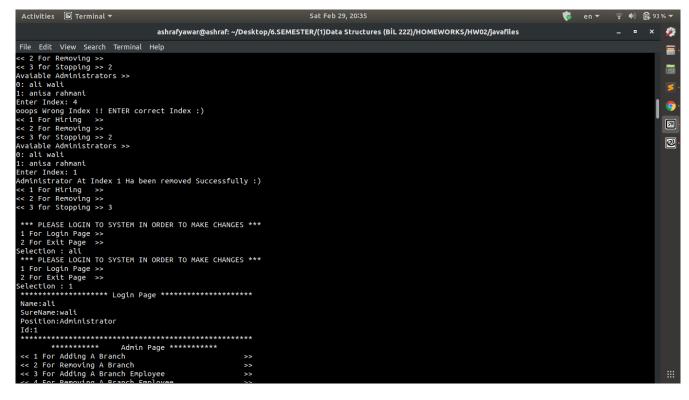
screenshots from beginning of the program till the end with all tested scenarios:

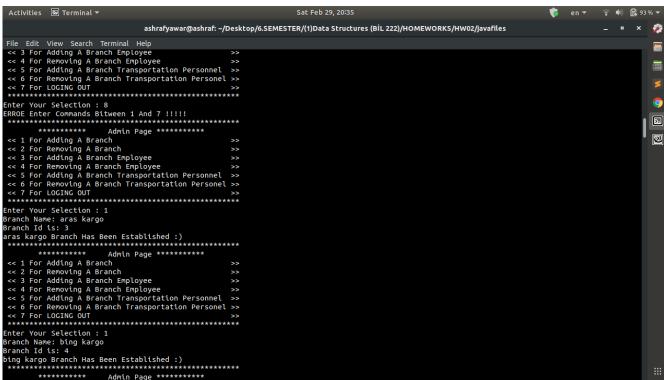
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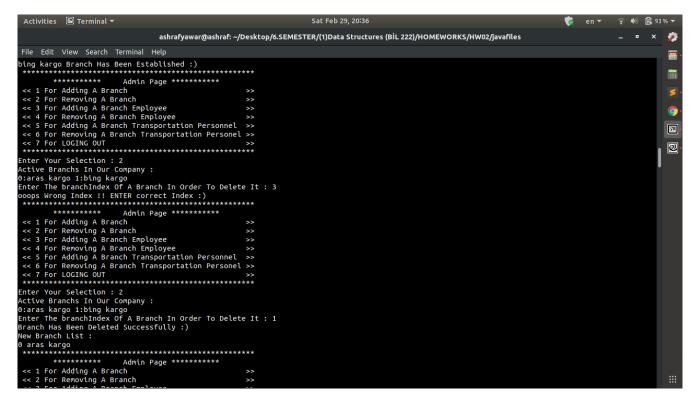
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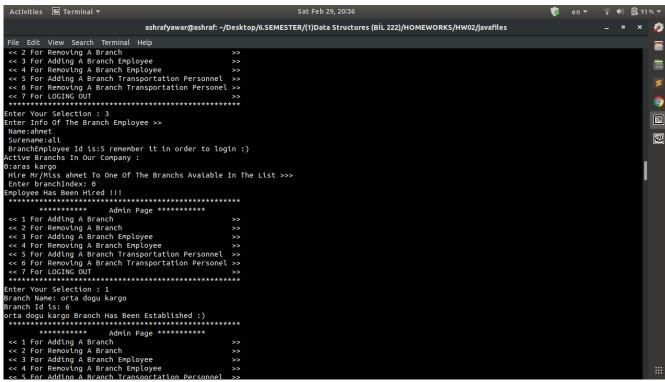
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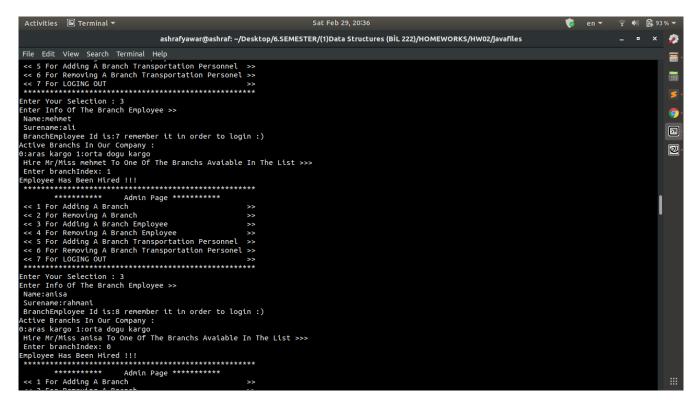
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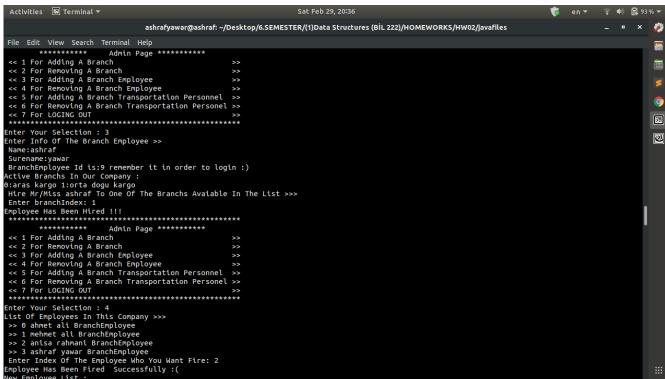


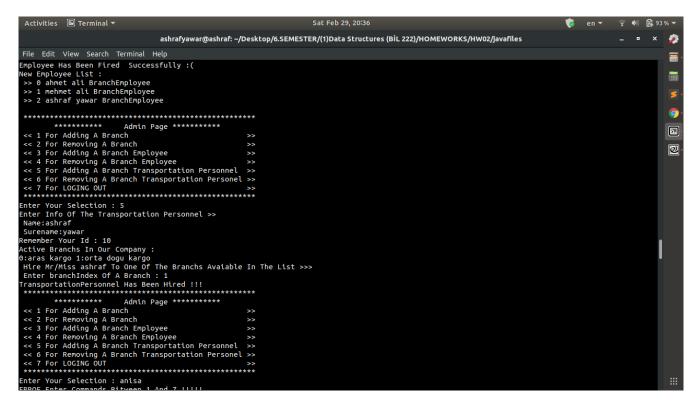


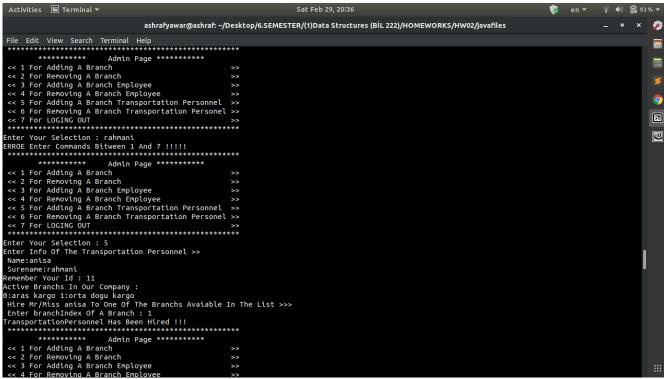


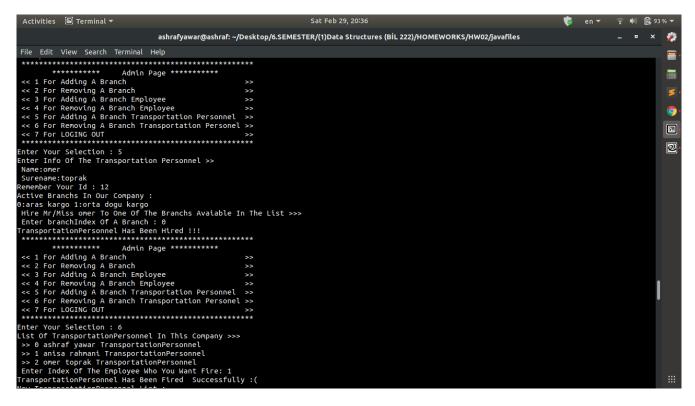


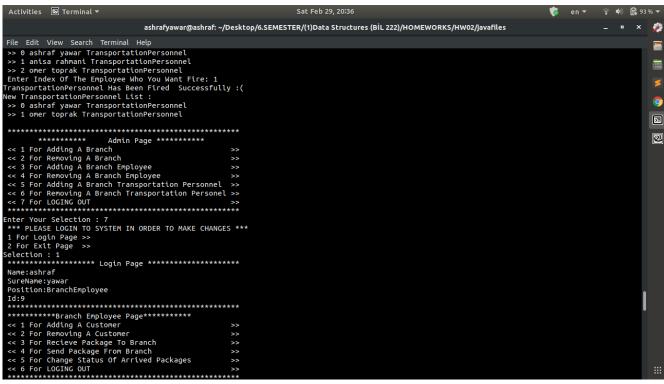












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>> 0 ashraf yawar TransportationPersonnel

>> 1 anisa rahmani TransportationPersonnel

>> 2 omer toprak TransportationPersonnel

Enter Index Of The Employee Who You Want Fire: 1

TransportationPersonnel Has Been Fired Successfully :(

New TransportationPersonnel List :

>> 0 ashraf yawar TransportationPersonnel

>> 1 omer toprak TransportationPersonnel
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                             Admin Page ********
Enter Your Selection : 7
*** PLEASE LOGIN TO SYSTEM IN ORDER TO MAKE CHANGES ***
 1 For Login Page >>
Name:ashraf
 SureName:yawar
Position:BranchEmployee
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>>
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