

## Cargo Management System

In this homework, implement a **Cargo Management** program that will be used by "Dokuz Eylul Cargo - DECargo".

The software has to include some entities to handle the records of offices, employees, customers, packets, etc.

Currently, the company has three offices, each one in different city (Izmir, Istanbul and Ankara) in Turkey. However, new offices can join the system over time. Each office deals with the cargo packets in its region and has some attributes, including name, address, and phone.

Several employees work on each office. Each employee has several properties, including name, birthdate, gender, address and phone number. There are two types of employees; the first one (*office boy*) always seats in the office and receives the packages from the customers, and the second one (*service staff*) delivers the packages to the receivers by driving a car. The intercity transport of the packages is provided by a third party company, ignore it in this system. The salary of each employee is the minimum wage (currently net 2020.58 TL). If an employee losses three packages, he / she is automatically fired from the DECargo.

When a customer arrives to the office to send a packet, the office boy enters both the sender and receiver customer information to the system, including his/her name, birthdate, gender, e-mail, address, and phone.

Cargo fees are calculated according to the volume and weight of each package, independently from the starting and destination cities.

	Volume		
Weight	small	medium	large
1-5 kg	10 TL	15 TL	20 TL
6-10 kg	25 TL	30 TL	40 TL
>=11 kg	45 TL	50 TL	55 TL

When a new package is added to the system, its status must be "0". This property must be updated to "1" when it is delivered to the receiver's address or it must be updated to "2" if it is lost. A user can track the status of the packet by its ID.

Office, Employee, Customer and Package entities have ID properties to identify each record. These properties must be auto increment numbers and the user should not have to (and cannot) enter ID information during adding new records.

The system should allow users to manage data by add, delete, update and list operations. The records should be flagged as "false" when they are deleted.

The software should also enable users to *search* packages according to the specified options.

The system should allow users the following operations:

- Finding top 3 customers (in terms of the number of packets they send)
- Increasing the salaries of all employees by %10 by using set method
- Finding the total income of a given office (only sum the fees of packages which are sent by the given office)

The program should correct all possible errors such as:

- Invalid date such as 29/02/2017
- Deleting a non-existing ID
- Updating a non-existing ID
- ...

Don't forget to create Date, Address and Phone classes.

Your program should include at least one inner class.

In one class, there must be more than one constructor.

At the beginning of the program, an input file (*input.txt*) must be read and evaluated line by line. Semicolon character (;) is used as delimiter in this file. Each line corresponds an individual command. Each command must be parsed and executed in order.

**Don't take any input from the user !!!**

## Commands

```
addOffice;name;address;town;city;phone
addEmployee;officeID;type;name;birthdate;gender;address;town;city;phone
addCustomer;name;birthdate;gender;email;address;town;city;phone
addPacket;senderCustomer;receiverCustomer;weight;volume;date

updateOffice;officeID;name;address;town;city;phone
updateEmployee;employeeID;officeID;type;name;birthdate;gender;address;town;city;phone
updateCustomer;customerID;name;birthdate;gender;email;address;town;city;phone
updatePacket;packetID;senderCustomer;receiverCustomer;weight;volume;date

deleteEmployee;employeeID
deleteCustomer;customerID

deliverPacket;packetID;employeeID
lossPacket;packetID;employeeID
trackPacket;packetID

listOffices
listEmployees
listCustomers
listPackets

search;fromCity;toCity;status;min_weight-max_weight;volume

top3Customers
increaseSalaries
totalIncome;officeID
```

A sample input file content is given below:

```
addOffice;Center Office;Kordon Caddesi No:50;Alsancak;Izmir;+902324449988
addOffice;Istanbul Office;Kordon Caddesi No:50;Besiktas;Istanbul;+902324449988
listOffices
addEmployee;1;officeboy;Cem Durak;12/09/1990;erkek;40 sokak No:34;Buca;Izmir;+905551234567
addEmployee;1;servicestaff;Can Ak;10/12/1988;erkek;24 sokak No:12;Urla;Izmir;+905359843921
addEmployee;1;servicestaff;Yeliz Yilmaz;16/11/1980;kadin;5 sokak No:11;Goztepe;Izmir;+905356677889
addEmployee;2;servicestaff;Tarik Az;19/05/1980;erkek;4 sokak No:2;Levent;Istanbul;+905355586743
listEmployees
addCustomer;Sibel Tek;21/07/1977;kadin;sibel@deu.edu.tr;21 sokak;Konak;Izmir;+905356677331
addCustomer;Pelin Er;04/04/1970;kadin;pelin@gmail.com;Ak Caddesi;Ulus;Ankara;+905334545453
addCustomer;Ali Tas;15/01/1986;erkek;ali@yahoo.com;Er Caddesi No:2;Kadıkoy;Istanbul;+905354465263
addCustomer;Cenk Yer;08/08/1980;erkek;cenk@yahoo.com;Tank Bulvarı No:5;Bebek;Istanbul;+905551276764
addCustomer;Ahmet Engel;07/10/1965;erkek;ahmet@gmail.com;45 Sokak No:15;Karsiyaka;Izmir;+905551276764
addCustomer;Mehmet Al;66/77/1965;erkek;ahmet@gmail.com;45 Sokak No:15;Karsiyaka;Izmir;+905551276764
listCustomers
addPacket;1;3;8;medium;20/02/2019
addPacket;2;4;8;small;23/02/2019
addPacket;100;2;8;small;23/02/2019
listPackets
search;Izmir;;0;1-9;medium
search;;Istanbul;0;;
search;;;
updateOffice;1;Center Office;Hatay Caddesi No:45;Ucyol;Izmir;+902324449988
updateEmployee;1;1;officeboy;Cem Durak;14/09/1990;erkek;40 sokak No:34;Buca;Izmir;+905551234567
updateCustomer;4;Cenk Yer;08/08/1980;erkek;cenk@gmail.com;Tank Bulvarı No:5;Bebek;Istanbul;+905556667788
updatePacket;1;2;4;8;large;23/02/2019
updateOffice;100;Center Office;Hatay Caddesi No:45;Ucyol;Izmir;+902324449988
deleteEmployee;3
deleteCustomer;5
deleteCustomer;100
deliverPacket;1;4
trackPacket;2
lossPacket;2;3
top3Customers
increaseSalaries
totalIncome;1
```