Car Rental Management

In this homework, implement a ***Car Rental Management*** program.

This software would be able us to handle the records of cars, customers, employees, contracts etc.
The program will be used by DECar (**D**okuz **E**ylul **C**ar) which is a car rental agency.

The company has four shops in the cities Izmir, Istanbul, Ankara, Antalya in Turkey. Only one employee works on each shop, who has several properties such as name, birthdate, phone, etc. The salary of each employee is the minimum wage (currently 2,029.50 TL). An employee gains 5% commission from each rental. So, the salaries of the employees are calculated according to how many cars they rented in the month.

The system should store the information for each car in the gallery, such as plate, model, etc.
With five car types including Jeep, Minivan, Coupe (2 doors), Hatchback and Sedan and with their affordable prices, DECar offers the drivers a wide range of possibilities for comfortable driving.

When a customer arrives to the agency, if the customer is new, he/she has to fill a form about him/her (such as name, contact address, phone number, birthday etc.) and then an employee should enter the customer information in this form to the system.

When a customer rents a car, an employee enters the renting details into the system, such as car plate, pick-up and drop off dates, daily-price etc.

When a customer returns a car, the software should automatically calculate the payment (dailyprice * numberofdays) and update the customer's type if necessary. There are three types of customers: gold, silver and bronze. If the customer rents a car less than 3 times, between 3 and 5 times, more than 5 times; he/she is categorized as bronze, silver and gold respectively.

If a company has sponsored to a customer, the information about the company should be added into the system such as company name, address, phone etc.

The system should allow users to manage data, such as
- add a car,
- list customer-car mappings,
- calculate total income,
- list silver customers,
- list available cars in the gallery
- increase the salaries of all employees by %10 by using set method

The system should show the following statistic:
- find the most rented car.

Explanations

1- Create **classes** with their
- attributes (int, string etc.) (private)
- constructor(s)
- get and set methods
- other methods if necessary (add, list, search, etc.)

2- In your program, especially you must define **arrays** such as customers array, cars array, contracts array etc.
You may define add, search, list methods for these arrays.

3- Your program should include at least one **inner class**.

4- In one class, there must be **more than one constructor**.

MAIN PROCEDURE

Write the followings in the **main procedure**.

Don't take any input from the user.

STEP 1
Create objects (as the instances of classes)
Add some default values and fill the arrays.

For example:
- create an object for our company (DECar)

```
Company cm = new Company("DECar", …);
```

- add four employees (store them in an array)

```
Date birthday = new Date(27,03,1982);
Phone pnumber = new Phone(+90, 555, 1234567);
Address adr = new Address("Ata cad.", 27, ….);
Employee e = new Employee("Ali Tas", birthday, pnumber, adr, ...);
....addEmployee(e);
```

- add at least three cars (store them in an array)

```
Car c = new Car("35RE001","Toyota", "yaris",..);

...addCar(c);
```

- add at least three customers (store them in an array)

```
Date birthd = new Date(12,06,1984);
Phone phonenumber = new Phone(+90, 232, 7654321);
Address address = new Address("Sanayi cad.", 45, ….);
Customer cust = new Customer("C001", "Can Ak", birthd, phonenumber, address, ...);
....addCustomer(cust)
```

- add at least five contracts

```
Contract cntr = new Contract("C001","35RE001", pick-up and drop off dates, daily-price,
...);
```

CustomerID LicencePlate

STEP 2
List the contents of the arrays
For example:
- Print all available cars on the screen
- List customer-car mappings
- List silver customers (i.e. `C001`)
- etc.

STEP 3
Update Salaries
- Increase the salaries of all employees by %10 by using set method
- Print all employees with their new salaries

STEP 4
Calculate total income
Print all contracts and find the gain of the company from contracts.

For example:

CustomerID	CarID	Salesman	Pick-up date	Drop off Date	….	Daily-Price
C001	35RE001	S1	12.02.2018	14.02.2018	….	100
C001	35DS004	S2	15.02.2018	16.02.2018	….	300
C003	35RE001	S1	20.02.2018	26.02.2018	….	200
C001	35SA007	S3	20.02.2018	21.02.2018	….	400
C004	35RE001	S1	28.02.2018	02.03.2018	….	250

Output: 2600 TL

(2*100 + 1*300 + 6*200 + 1*400 + 2*250 = 2600 TL)

STEP 5

Statistic

- find the most rented car. (i.e. 35RE001)