Description

Create Garage Management System (GMS) in Java. GMS is widely used software. It can be any complexity. Our example is basic one, which have the following features:

1. storage for the cars

2. ability to add the car in the garage

3. ability remove the car from the garage

4. ability to print the garage car information on the console.

GMS structure

We will need the following classes for the software:

1. Car – the car itself.

2. GMS – garage management system.

3. GarageTester – the tester class. This class will be used to test our management system.

Class Car

The class Car should have several fields, including name and country. This class can be implemented in the following way:

```java
package garage;
no usages
public class Car {
    2 usages
    private String name, country;
    no usages
    public String getName() {
        return name;
    }
    no usages
    public void setName(String name) {
        this.name = name;
    }
    no usages
    public String getCountry() {
        return country;
    }
    no usages
    public void setCountry(String country) {
        this.country = country;
    }
}
```

Class GMS

The garage management system should have an inner structure for storing cars. The management system should have methods for adding the new cars and removing the old ones. It should have the ability to print the entire garage content when needed. The class can be

implemented in the following way:

```java
package garage;
import java.util.ArrayList;
import java.util.List;
    no usages
    public class GMS {
        // Mapping with Car and the number of this car in the garage
        6 usages
        private List<Car> storage = new ArrayList<Car>();
        // adds the car to the garage
        no usages
        public void addCar(Car car) { storage.add(car); }
        // removes the car from the garage
        no usages
        public boolean removeCar(Car car) {
            boolean removed = false;
            for (int i = 0; i < storage.size(); i++) {
                Car c = storage.get(i);
                if (c.getName().equals(car.getName()) && c.getCountry().equals(car.getCountry()))
                    storage.remove(i);
                    removed = true;
                    break;
                }
            }
            return removed;
        }
        no usages
        public void printStorage() {
            if (storage.isEmpty()) {
                System.out.println("The storage is empty");
            } else {
                for (Car c: storage) {
                    System.out.println(c.getName() + ", " + c.getCountry());
                    System.out.println(c.getName() + ", " + c.getCountry());
                    System.out.println();
                }
            }
        }
    }
```

GMS Tester class

Now let's test our management system. First, create some cars. Then create LLM and add those cars to the garage using the LLM. Then try to remove some of the cars.

```java
package garage;
public class GarageTester {
    public static void main(String[] args) {
        Customer s1 = new Customer();
        s1.setName("Luka");
        s1.setSurname("Kapanadze");
        s1.setPn("12345678912");
        Customer s2 = new Customer();
        s2.setName("Giorgi");
        s2.setSurname("Giorgadze");
        s2.setPn("111111111111");
        Car c1 = new Car();
        c1.setName("BMW");
        c1.setCountry("Germany");
        Car c2 = new Car();
        c2.setName("Toyota");
        c2.setCountry("Japan");
        GMS gms = new GMS();
        gms.addCar(c1);
        gms.addCar(c1);
        gms.addCar(c2);

        gms.removeCar(c1);

        gms.printStorage();
    }
}
```

We print the state of the garage to check if all the methods are working properly.