



Vehicle:

```

public abstract class Vehicle {

    private String name;
    private int maxPassengers;
    private int maxSpeed;

    public Vehicle(String name, int maxPassengers, int maxSpeed) {
        this.name = name;
        this.maxPassengers = maxPassengers;
        this.maxSpeed = maxSpeed;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }
}
  
```

```
    public int getMaxPassengers() {  
        return maxPassengers;  
    }  
  
    public void setMaxPassengers(int maxPassengers) {  
        this.maxPassengers = maxPassengers;  
    }  
  
    public int getMaxSpeed() {  
        return maxSpeed;  
    }  
  
    public void setMaxSpeed(int maxSpeed) {  
        this.maxSpeed = maxSpeed;  
    }  
}
```

IsLandVehicle

```
public interface IsLandVehicle {  
  
    public void drive();  
    public int getNumWheels();  
    public void setNumWheels(int numOfWeeks);  
}
```

IsSeaVehicle

```
public interface IsSeaVehicle {  
  
    public void launch();  
    public int getDisplacement();  
    public void setDisplacement(int displacement);  
}
```

IsEmergency

```
public interface IsEmergency {  
  
    public void soundSiren();  
  
}
```

LandVehicle

```
public abstract class LandVehicle extends Vehicle implements IsLandVehicle {  
  
    int numWheels;  
  
    public LandVehicle(String name, int maxPassengers, int maxSpeed, int numWheels) {  
        super(name, maxPassengers, maxSpeed);  
        this.numWheels = numWheels;  
    }  
  
    @Override  
    public void drive() {  
        System.out.println("Vroom vroom ! Car has started !");  
    }  
  
    @Override  
    public int getNumWheels() {  
        return numWheels;  
    }  
  
    @Override  
    public void setNumWheels(int numOfWeeks) {  
        this.numWheels = numOfWeeks;  
    }  
  
}
```

## SeaVehicle

```
public abstract class SeaVehicle extends Vehicle implements IsSeaVehicle {

    int displacement;

    public SeaVehicle(String name, int maxPassengers, int maxSpeed, int displacement) {
        super(name, maxPassengers, maxSpeed);
        this.displacement = displacement;
    }

    @Override
    public int getDisplacement() {
        return displacement;
    }

    @Override
    public void launch() {
        System.out.println("Now launching your fancy boat !");
    }

    @Override
    public void setDisplacement(int displacement) {
        this.displacement = displacement;
    }

}
```

## Frigate

```
public class Frigate extends SeaVehicle {

    public Frigate(String name, int maxPassengers, int maxSpeed, int displacement) {
        super(name, maxPassengers, maxSpeed, displacement);
    }

    public void fireGate() {
        System.out.println("Going full ahead and firing cannons !");
    }

}
```

## Jeep

```
public class Jeep extends LandVehicle {  
  
    public Jeep(String name, int maxPassengers, int maxSpeed, int numWheels) {  
        super(name, maxPassengers, maxSpeed, numWheels);  
    }  
  
    public void soundHorn() {  
        System.out.println("Honk Honk !");  
    }  
  
}
```

## Hovercraft

```
public class Hovercraft extends LandVehicle implements IsSeaVehicle {  
  
    private int displacement;  
  
    public Hovercraft(String name, int maxPassengers, int maxSpeed, int numWheels  
, int displacement) {  
        super(name, maxPassengers, maxSpeed, numWheels);  
        this.displacement = displacement;  
    }  
  
    @Override  
    public int getDisplacement() {  
        return displacement;  
    }  
  
    @Override  
    public void launch() {  
        System.out.println("Initiating TurboFan ! Now launching your fancy boat !  
");  
    }  
  
    @Override  
    public void setDisplacement(int displacement) {  
        this.displacement = displacement;  
    }  
  
    public void enterLand() {  
        System.out.println("Leaving sea and entering land...");  
    }  
  
}
```

```

    public void enterSea() {
        System.out.println("Leaving land and entering sea...");
    }
}

```

PoliceCar

```

public class PoliceCar extends LandVehicle implements IsEmergency {

    private int turboSpeed;

    public PoliceCar(String name, int maxPassengers, int maxSpeed, int numWheels,
int turboSpeed) {
        super(name, maxPassengers, maxSpeed, numWheels);
        this.turboSpeed = turboSpeed;
    }

    public void useTurbo() {
        System.out.println("Initiating turbo ! Now speed is " + (turboSpeed + thi
s.getMaxSpeed()));
    }

    public int getTurboSpeed() {
        return turboSpeed;
    }

    public void setTurboSpeed(int turboSpeed) {
        this.turboSpeed = turboSpeed;
    }

    @Override
    public void soundSiren() {
        System.out.println("weeeeeee yuuuuuuuuu weeeeeee yuuuuuuuuuu");
    }

}

```

## Driver

```
import java.util.ArrayList;
import java.util.List;

class Driver {

    public static void main(String[] args) {

        List<PoliceCar> pcs = new ArrayList<PoliceCar>();

        System.out.println("Policecar:");

        for (int i = 0; i < 3; i++) {
            pcs.add(new PoliceCar(("RX-500-" + (i + 1)), 4, 240, 4, 60));
            pcs.get(i).useTurbo();
            System.out.println(pcs.get(i).getName() + " | with " + pcs.get(i).get
NumWheels() + " wheels !");
        }

        System.out.println("\nJeep:");
        Jeep jp = new Jeep("Montorolla", 6, 200, 5);
        jp.soundHorn();

        System.out.println("\nFrigate:");
        Frigate fg = new Frigate("Assassin's Ship", 65, 100, 3400);
        fg.fireGate();
        System.out.println("Ship has travelled for " + fg.getDisplacement() + " k
ms");

        System.out.println("\nHovercraft:");
        Hovercraft hc = new Hovercraft("CJ's HV", 2, 120, 6, 30);
        hc.enterSea();
        System.out.println("Current displacement: " + hc.getDisplacement());
        hc.setDisplacement(hc.getDisplacement() + 10);
        System.out.println("Current displacement: " + hc.getDisplacement());
        hc.enterLand();

    }

}
```

Policecar:

Initiating turbo ! Now speed is 300

RX-500-1 | with 4 wheels !

Initiating turbo ! Now speed is 300

RX-500-2 | with 4 wheels !

Initiating turbo ! Now speed is 300

RX-500-3 | with 4 wheels !

Jeep:

Honk Honk !

Frigate:

Going full ahead and firing cannons !

Ship has travelled for 3400 kms

Hovercraft:

Leaving land and entering sea...

Current displacement: 30

Current displacement: 40

Leaving sea and entering land...