

# Rajalakshmi Engineering College

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 10\_Q1

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : COD

##### 1. Problem Statement

A city traffic management system needs to track vehicles entering a toll booth. Each vehicle is uniquely identified by its registration number. The system should allow adding vehicles to a record, ensuring that no duplicate registration numbers exist. The vehicles should be stored in a HashSet, which does not guarantee any specific order.

Your task is to implement a program using a HashSet that allows adding vehicle details and displaying the records.

##### ***Input Format***

The first line of input contains an integer N - the number of vehicles.

The next N lines contain details of each vehicle in the format: "RegNumber

OwnerName VehicleType"

1. RegNumber (String) - A unique registration number (Alphanumeric).
2. OwnerName (String) - The name of the vehicle owner.
3. VehicleType (String, Car, Bike, or Truck) - The type of vehicle.

If a vehicle with the same registration number is already present, ignore the duplicate entry.

### **Output Format**

The output prints the unique vehicle records in any order (since HashSet does not maintain order).

Output format: "RegNumber OwnerName VehicleType"

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5

KA01AB1234 John Car

MH02CD5678 Alice Bike

DL03EF9012 Bob Truck

TN04GH3456 Mike Car

KA01AB1234 John Car

Output: TN04GH3456 Mike Car

KA01AB1234 John Car

MH02CD5678 Alice Bike

DL03EF9012 Bob Truck

### **Answer**

```
import java.util.*;
class Vehicle{
    String regNumber;
    String ownerName;
    String vehicleType;
    private static HashSet<Vehicle> vehicleSet=new HashSet<>();
    public Vehicle(String regNumber,String ownerName,String vehicleType){
        this.regNumber=regNumber;
        this.ownerName=ownerName;
```

```

        this.vehicleType=vehicleType;
    }
    public static void addVehicle(String regNumber,String ownerName,String
vehicleType){
        vehicleSet.add(new Vehicle(regNumber,ownerName,vehicleType));
    }
    public static void displayVehicles(){
        for(Vehicle v : vehicleSet){
            System.out.println(v);
        }
    }
    public boolean equals(Object obj){
        if(this == obj) return true;
        if(obj==null || getClass()!=obj.getClass()) return false;
        Vehicle vehicle=(Vehicle) obj;
        return regNumber.equals(vehicle.regNumber);
    }
    public int hashCode(){
        return Objects.hash(regNumber);
    }
    public String toString(){
        return regNumber+" "+ownerName+" "+vehicleType;
    }
}
class TollBoothSystem{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        sc.nextLine();
        for (int i=0;i<n;i++){
            String regNumber=sc.next();
            String ownerName=sc.next();
            String vehicleType=sc.next();
            Vehicle.addVehicle(regNumber, ownerName, vehicleType);
        }
        Vehicle.displayVehicles();
        sc.close();
    }
}

```

**Status :** Correct

**Marks :** 10/10