

# 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.HashSet;  
import java.util.Scanner;  
import java.util.Objects;
```

```
class Vehicle {  
    String regNumber;  
    String ownerName;  
    String vehicleType;
```

```
public Vehicle(String regNumber, String ownerName, String vehicleType) {  
    this.regNumber = regNumber;  
    this.ownerName = ownerName;  
    this.vehicleType = vehicleType;  
}
```

```
@Override  
public boolean equals(Object o) {  
    if (this == o) return true;  
    if (!(o instanceof Vehicle)) return false;  
    Vehicle vehicle = (Vehicle) o;  
    return regNumber.equals(vehicle.regNumber);  
}
```

```
@Override  
public int hashCode() {  
    return Objects.hash(regNumber);  
}
```

```
@Override  
public String toString() {  
    return regNumber + " " + ownerName + " " + vehicleType;  
}  
}
```

```
public class Main {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        int n = Integer.parseInt(sc.nextLine());  
  
        HashSet<Vehicle> vehicles = new HashSet<>();  
  
        for (int i = 0; i < n; i++) {  
            String line = sc.nextLine();  
            String[] parts = line.split(" ");  
            String regNumber = parts[0];  
            String ownerName = parts[1];  
            String vehicleType = parts[2];  
  
            vehicles.add(new Vehicle(regNumber, ownerName, vehicleType));  
        }  
    }  
}
```

```
        for (Vehicle v : vehicles) {  
            System.out.println(v);  
        }  
        sc.close();  
    }  
}
```

**Status :** Correct

**Marks :** 10/10