

# Rajalakshmi Engineering College

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Batch: 2028

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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***

```
// You are using Java
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 equals and hashCode to ensure uniqueness by regNumber  
@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> vehicleSet = new HashSet<>();  
  
        for (int i = 0; i < n; i++) {  
            String[] details = sc.nextLine().split(" ");  
            String regNumber = details[0];  
            String ownerName = details[1];  
            String vehicleType = details[2];  
  
            Vehicle vehicle = new Vehicle(regNumber, ownerName, vehicleType);  
            vehicleSet.add(vehicle);  
        }  
    }  
}
```

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

**Status :** Correct

**Marks :** 10/10