# 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;

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

    public Vehicle(String regNumber, String ownerName, String vehicleType) {
```

```
        this.regNumber = regNumber;
        this.ownerName = ownerName;
        this.vehicleType = vehicleType;
    }

    public String getRegNumber() {
        return regNumber;
    }

    @Override
    public boolean equals(Object obj) {
        if (this == obj) return true;
        if (obj == null || getClass() != obj.getClass()) return false;
        Vehicle other = (Vehicle) obj;
        return regNumber.equals(other.regNumber);
    }

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

    @Override
    public String toString() {
        return regNumber + " " + ownerName + " " + vehicleType;
    }
}
class TollBoothTracker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = Integer.parseInt(scanner.nextLine());


        HashSet<Vehicle> vehicleRecords = new HashSet<>();

        for (int i = 0; i < n; i++) {
            String[] input = scanner.nextLine().trim().split(" ");
            String regNumber = input[0];
            String ownerName = input[1];
            String vehicleType = input[2];

            Vehicle vehicle = new Vehicle(regNumber, ownerName, vehicleType);
```

```
            vehicleRecords.add(vehicle);
        }

        for (Vehicle v : vehicleRecords) {
            System.out.println(v);
        }
    }
}
```

***Status :*** Correct ***Marks : 10/10***