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

```
    }
    @Override
    public boolean equals(Object obj) {
        if (this == obj)
            return true;
        if (obj == null || getClass() != obj.getClass())
            return false;
        Vehicle v = (Vehicle) obj;
        return regNumber.equals(v.regNumber);
    }
    @Override
    public int hashCode() {
        return regNumber.hashCode();
    }
    @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 = sc.nextInt();
        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];

            Vehicle v = new Vehicle(regNumber, ownerName, vehicleType);
            vehicles.add(v);
        }


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

```
        }

        sc.close();
    }
}
```

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