

JAVA PROGRAMMING QUESTION

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1. Write a java programming that includes the following features
 - a. Class named BankTransaction with members customerId, transactionId and transactionAmount. Add a parameterized constructor to initialize the members.
 - b. Create three objects named obj1, obj2 and obj3.
 - c. Compare the objects using equals method. Display its hashcodes.
 - d. Try to override the equal() method by considering the equality in state along with object references. Display its hashcodes and classname.
 - e. Assign obj3 to obj2. Compare and display hashcodes.

Program

```
import java.util.Scanner;
import java.io.*;
class BankTransaction{
    public int customerId;
    public int transactionId;
    public int transactionAmount;
    BankTransaction(int a, int b, int c){
        this.customerId = a;
        this.transactionId = b;
        this.transactionAmount = c;
    }
    @Override
    public boolean equals(Object obj){
        System.out.println("Inside the overridden equals() method,
Class name is " + obj.getClass() + " and hashCode is " + obj.hashCode() +
"\n");
        if(this == obj){
            return true;
        }
        if (obj == null || obj.getClass() != this.getClass()){
            return false;
        }
        BankTransaction bank_obj = (BankTransaction) obj;
        return (bank_obj.customerId == this.customerId &&
bank_obj.transactionId == this.transactionId && bank_obj.transactionAmount
== this.transactionAmount);
    }
}

public class Main{
    public static void main(String... args){
        Scanner sc = new Scanner(System.in);
```

```

        BankTransaction obj1 = new BankTransaction(1,32,1000);
        BankTransaction obj2 = new BankTransaction(3,34,2000);
        BankTransaction obj3 = obj2;
        System.out.println("\nComparing object 1 and 2\n");
        if(obj1.equals(obj2)) {
            System.out.println("All the objects are
equal");//Both objects pointing same address
        }
        else{
            System.out.println("All the objects are not equal");
        }
        System.out.println("\nComparing object 2 and 3\n");
        if(obj2.equals(obj3)) {
            System.out.println("All the objects are
equal");//Both objects pointing different address
        }
        else{
            System.out.println("All the objects are not equal");
        }
        System.out.println("\nThe HashCodes for Obj1 is " +
obj1.hashCode() + ", Obj2 is " + obj2.hashCode() + " and Obj3: " +
obj3.hashCode());
    }
}

```

Output

cmd C:\Windows\System32\cmd.exe

D:\>javac Main.java

D:\>java Main

Comparing object 1 and 2

Inside the overridden equals() method, Class name is class BankTransaction and hashCode is 1442407170

All the objects are not equal

Comparing object 2 and 3

Inside the overridden equals() method, Class name is class BankTransaction and hashCode is 1442407170

All the objects are equal

The HashCodes for Obj1 is 1028566121, Obj2 is 1442407170 and Obj3: 1442407170

D:\> x_