Java Object Lab

```
import java.lang.reflect.*;
public class MethodFinder {
    public static void main(String[] args) throws Exception {
        int count = 0;
        Class c = Class.forName("java.lang.Object");
        Method[] m = c.getDeclaredMethods();
        for (Method m1 : m){
            count++;
            System.out.println(m1.getName());
        }
        System.out.println("Total Number of Methods: " + count);
    }
}
```

```
package lab_12_04_18;

public class Lab1 {
   public String name;
   public int id;

   Lab1(String name, int id)
   {

      this.name = name;
      this.id = id;
   }
   @Override
   public boolean equals(Object obj)
   {

      if(this == obj)
         return true;
      if(obj == null || obj.getClass()!= this.getClass())
         return false;
   Lab1 geek = (Lab1) obj;
      return (geek.name == this.name && geek.id == this.id);
   }
   @Override
   public int hashCode()
   {
      return this.id;
   }
   public static void main (String[] args){

   Lab1 g1 = new Lab1("kk", 1);
   Lab1 g2 = new Lab1("aa", 1);

      if(g1.hashCode() == g2.hashCode())
   {

      if(g1.equals(g2))
         System.out.println("Both Objects are equal. ");
```

```
        else
            System.out.println("Both Objects are not equal. ");

    }
        else
                System.out.println("Both Objects are not equal. ");
}

}
```

```
package lab_12_04_18;

public class Lab2 implements Cloneable{
    int rollno;
    String name;
    String study;

    Lab2(int rollno,String name, String study){
        this.rollno=rollno;
        this.name=name;
        this.study= study;
    }
    public Object clone()throws CloneNotSupportedException{
        return super.clone();
    }
    public static void main(String args[]){
        try{
            Lab2 s1=new Lab2(101,"thongya", "BSC");

            Lab2 s2=(Lab2) s1.clone();

            System.out.println(s1.rollno+" "+s1.name);

        }catch(CloneNotSupportedException c){}

    }

}
```

```
package lab_12_04_18;

public class Test {

    String name;
    String speed;
    int weight = 500;
    String color;
    int model_no = 130;
    public Test(String name, String speed, int weight, String color, int model_no)
    {
```

```
        this.name = name;
        this.speed = speed;
        this.weight = weight;
        this.color = color;
        this.model_no = model_no;
    }
    public String getName()
    {
        return name;
    }
    public boolean  getSpeed()
    {
        return true;
    }
    public boolean getWeight()
    {
        return false;
    }
    public String getColor()
    {
        return color;
    }
    public int hashCode()
    {
        return model_no;
    }
    @Override
    public String toString()
    {
        return("Name "+ this.getName()+
                ".\n" +
                this.getSpeed()+"," + this.getWeight()+
                ","+ this.getColor()+","+model_no);
    }
    public static void main(String[] args)
    {
        Test Car = new Test("Tesla","1000cc", 1800, "Red",12);

        System.out.println(Car.toString());
    }
}
```

```
/*
        2064753580
        end
        finalize method called*/
public class Lab1
{
    public static void main(String[] args)
    {
        Lab1 t = new Lab1();
        System.out.println(t.hashCode());
        t = null;
```

```
        System.gc();
        System.out.println("end");
    }
    @Override
    protected void finalize()
    {
        System.out.println("finalize method called");
    }
}
```

output?

```
public class Lab2 extends Lab1{
    public static void main(String[] args) {
        Lab2 lab = new Lab2();
        System.out.println("The object's" + " class is " +
                lab.getClass().getSuperclass().getSimpleName());
    }
}
```

output
