PG DAC–March 2023
C-DAC THIRUVANANTHAPURAM
JAVA- LAB 9

1. Write a java program to create a class and use three methods Private public protect and default. Display the following text like Welcome, Welcome1 , Welcome 2 ,and Welcome 3 Using corresponding Methods.

WelcomeMessage.java | WelcomeMain.java

```
1  package com.javaassignment91.main;
2
3  public class WelcomeMessage {
4      private void welcome() {
5              System.out.println("Welcome Private");
6          }
7
8          public void welcome1() {
9              welcome();
10             System.out.println("Welcome1 Public");
11         }
12
13         protected void welcome2() {
14             System.out.println("Welcome2 Protected");
15         }
16
17         void welcome3() {
18             System.out.println("Welcome3 Default");
19         }
20
21 }
```

WelcomeMessage.java | WelcomeMain.java

```
1  package com.javaassignment91.main;
2
3  public class WelcomeMain {
4      public static void main(String[] args) {
5          WelcomeMessage call = new WelcomeMessage();
6          call.welcome1();
7          call.welcome2();
8          call.welcome3();
9      }
10 }
11
```

Console

<terminated> WelcomeMain [Java Appli

```
Welcome Private
Welcome1 Public
Welcome2 Protected
Welcome3 Default
```

2. Write a java program to use Employee ID and Name, check the two conditions if the IDs are same or different and display the message.[using override equal and string]

Employee.java | EmployeeMain.java

```
1  package com.javaassignment92.main;
2
3  public class EmployeeMain {
4      public static void main(String[] args) {
5          Employee e1 = new Employee(101, "Monika");
6          System.out.println("e1 details are: ");
7          System.out.println("e1");
8
9          Employee e2 = new Employee(102, "Kunal");
10         System.out.println("e2 details are: ");
11         System.out.println("e2");
12
13         if(e1.equals(e2))
14              System.out.println("e1 and e2 are same ");
15         else
16             System.out.println("e1 and e2 are not same ");
17
18         System.out.println("e1's hashcode: " + e1.hashCode());
19         System.out.println("e2's hashcode: " + e2.hashCode());
20 }
21     }
```

Console

```
<terminated> EmployeeMain [Java Application] D:\Eclipse\ecli
e1 details are:
e1
e2 details are:
e2
e1 and e2 are not same
e1's hashcode: 1365202186
e2's hashcode: 1651191114
```

*Employee.java × EmployeeMain.java

```java
package com.javaassignment92.main;

public class Employee {
    private int employeeid;
      private String name;

      public Employee(int id, String name) {
        this.employeeid = id;
        this.name = name;
      }
      public int getEmployeeid() {
        return employeeid; }
    public void setEmployeeid(int employeeid) {
        this.employeeid = employeeid; }
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }

    @Override
    public String toString() {
        return employeeid + " " + name;
    }
    @Override
    public boolean equals(Object obj) {
        Employee e = (Employee) obj;
        return this.employeeid == e.employeeid;
        }
      }
```

Check the condition If two objects are equal as per equal as per equals(),then their hash codes should also the same.

Employee.java | EmployeeMain.java

```
1  package com.javaassignment92.main;
2
3  public class EmployeeMain {
4      public static void main(String[] args) {
5          Employee e1 = new Employee(101, "Monika");
6          System.out.println("e1 details are: ");
7          System.out.println("e1");
8
9          Employee e2 = new Employee(101, "Kunal");
10         System.out.println("e2 details are: ");
11         System.out.println("e2");
12
13         if(e1.equals(e2))
14              System.out.println("e1 and e2 are same ");
15         else
16             System.out.println("e1 and e2 are not same ");
17         if(e1.hashCode()==e2.hashCode())
18             System.out.println("Both the ids are same ");
19         else
20             System.out.println("Both the ids are not same ");
21         System.out.println();
22         System.out.println("e1's hashcode: " + e1.hashCode());
23         System.out.println("e2's hashcode: " + e2.hashCode());
24 }
25     }
```

Console

<terminated> EmployeeMain [Java Application] D:\E

```
e1 details are:
e1
e2 details are:
e2
e1 and e2 are same
Both the ids are same

e1's hashcode: 132
e2's hashcode: 132
```

*Employee.java × EmployeeMain.java

```java
package com.javaassignment92.main;
import java.util.Objects;

public class Employee {
    private int employeeid;
      private String name;

      public Employee(int id, String name) {
        this.employeeid = id;
        this.name = name;
      }
      public int getEmployeeid() {
        return employeeid; }
    public void setEmployeeid(int employeeid) {
        this.employeeid = employeeid; }
    public String getName() {
        return name; }
    public void setName(String name) {
        this.name = name; }
    @Override
    public String toString() {
        return employeeid + " " + name;  }
    @Override
      public int hashCode() {
        return Objects.hash(employeeid);
      }
    @Override
    public boolean equals(Object obj) {
        Employee e = (Employee) obj;
        return this.employeeid == e.employeeid;
        }
      }
```

3. Using string literal pool check the condition if the strings are equal or not.

StringLiteral.java

```
1  package com.javaassignment93.main;
2
3  public class StringLiteral {
4
5      public static void main(String[] args) {
6              String s1 = new String("Monika");
7              String s2 = "Hello";
8              String s3 = new String("Monika");
9              String s4 = "Hello";
10
11             if(s1==s3)
12                 System.out.println("Strings are same");
13             else
14                 System.out.println("Strings are not same");
15             if(s2==s4)
16                 System.out.println("Strings are same");
17             else
18                 System.out.println("Strings are not same");
19     }
20 }
21
```

Console

```
<terminated> StringLiteral [Java Application] D:\E
Strings are not same
Strings are same
```

4. Create two string S1 and S2 , First string to store India is my county and second string to store All Indians are my brothers and sisters ,

I. Display the first string in Upper case
II. Display the Second string in Lower case.
iii Display the total number of characters in S1
iv Check the word India is present in s2 , if it exists return true and its index number.
v Display all individual strings of S2.

CheckString.java

```
1  package com.javaassignment94.main;
2
3  public class CheckString {
4      public static void main(String[] args) {
5      String s1 = "India is my country";
6      String s2 = "All Indians are my brothers and sisters ";
7
8      System.out.println("String1 in uppercase: " +s1.toUpperCase());
9      System.out.println();
10     System.out.println("String1 in lowercase: " +s1.toLowerCase());
11     System.out.println();
12     System.out.println("Total Number of characters in S1: " +s1.length());
13     System.out.println();
14
15     if(s2.contains("India"))
16         System.out.println("True");
17     else
18         System.out.println("False");
19         System.out.println("Index no of India: " +s2.indexOf("India"));
20
21     String[] arr =s2.split(" ");
22     System.out.println("Displaying all individual strings of S2: ");
23     for(String s : arr)
24         System.out.println(s);
25 }
26 }
```

Console

```
<terminated> CheckString [Java Application] D:\Eclipse\eclipse\plugins\org.eclipse.justj.
String1 in uppercase: INDIA IS MY COUNTRY

String1 in lowercase: india is my country

Total Number of characters in S1: 19

True
Index no of India: 4
Displaying all individual strings of S2:
All
Indians
are
my
brothers
and
sisters
```