# Experiment 1.3

**Student Name: Alasso**        **Branch:**
**UID:**        **Section/Group:**
**Date of performance:**        **Subject name: OOPs Using JAVA**

**AIM:** Write a program to implement Java instanceof operator

# OBJECTIVE:

The Java instanceof operator is used to test if the object or instance is an instanceof the specified type.

In this problem we have given you three classes:
Student class
Rockstar class
Hacker class

In the main method, we populated an ArrayList with several instances of these classes. count method calculates how many instances of each type is present in the ArrayList. The code prints three integers, the number of instance of Student class, the number of instance of Rockstar class, the number of instance of Hacker class.

## PROGRAM CODE:

```java
import java.util.*;


class Student{}
class Rockstar{    }
class Hacker{}


public class InstanceOFTutorial{

    static String count(ArrayList mylist){
        int a = 0,b = 0,c = 0;
        for(int i = 0; i < mylist.size(); i++){
            Object element=mylist.get(i);
            if(element instanceof Student)
                a++;
            if(element instanceof Rockstar)
```

```java
            b++;
        if(element instanceof Hacker)
            c++;
    }
    String ret = Integer.toString(a)+" "+ Integer.toString(b)+" "+
Integer.toString(c);
    return ret;
    }

    public static void main(String []args){
        ArrayList mylist = new ArrayList();
        Scanner sc = new Scanner(System.in);
        int t = sc.nextInt();
        for(int i=0; i<t; i++){
            String s=sc.next();
            if(s.equals("Student"))mylist.add(new Student());
            if(s.equals("Rockstar"))mylist.add(new Rockstar());
            if(s.equals("Hacker"))mylist.add(new Hacker());
        }
        System.out.println(count(mylist));
    }
}
```

**OUTPUT:**

Compiler Message

Success

Input (stdin)

```
1    5
2    Student
3    Student
4    Rockstar
5    Student
6    Hacker
```

Expected Output

```
1    3 1 1
```

## Learning outcomes (What I have learnt):

1. We have learned about instanceof in Java.
2. We have learned how to use instanceof in different programs in Java.
3. We have learned about how to apply mathematical logic in instanceof in Java.

## Evaluation Grid:

| Sr. No. | Parameters | Marks Obtained | Maximum Marks |
|---------|-----------|----------------|---------------|
| 1. | Student Performance (Conduct of experiment) objectives/Outcomes. | | 12 |
| 2. | Viva Voce | | 10 |
| 3. | Submission of Work Sheet (Record) | | 8 |
| | Total | | 30 |