



Artificial Intelligence and Data Science Department.

OOPM / Odd Sem 2021-22 / Experiment 4.

YASH SARANG.

47 / D6AD.

EXPERIMENT - 4.

AIM: Write a program for a class Student,
accept the name, roll no, marks of three subjects, calculate total from the user
and display the complete information.

THEORY: Detail theory about Classes and objects

Hint: Write a program for class Students, accept name, Roll no, marks of 3 students subjects, Calculate total and display the complete information.

Theory:

- Class - Collection of objects is called class. It is a logical entity.
- Object - Any entity that has state and behaviour is known as an object. It can be physical and logical.

An object has 3 characteristics -

1. State - represents data of an object.
2. Behaviour - represents behaviour of an object.
3. Identity - Object identity is implemented via a unique ID. The value of ID isn't visible to external user but used internally by JVM to identify each object uniquely.

A class in Java can contain: data member, method, constructor, Block.

There are many ways to create an object in JAVA.

- By new keyword
- By new Instance method.
- By clone() method.
- By factory method, etc.

Conclusion: We have learnt about class, object
Also, different methods to create an object
We have also studied about constructors
method to initialize object and implemented
parametrized constructor.

Program: Program for a class Student, which accepts name, roll no, marks of three subjects, calculate total from the user and displays the complete information.

```
import java.lang.*;
import java.util.*;

class Student
{
    String name;
    int rollno;
    int subject1_marks;
    int subject2_marks;
    int subject3_marks;
    int total;

    void basicinfo(String n,int r)
    {
        name = n;
        rollno = r;
    }

    void marks(int m1,int m2,int m3)
    {
        subject1_marks = m1;
        subject2_marks = m2;
        subject3_marks = m3;
    }

    void total()
    {
        total = subject1_marks + subject2_marks + subject3_marks;
    }

    void display()
    {
        System.out.println("The information of student is as follows:");
        System.out.println("Name : " + name);
        System.out.println("Roll No.: " + rollno);
        System.out.println("Marks in Subject 1: " + subject1_marks);
        System.out.println("Marks in Subject 2: " + subject2_marks);
        System.out.println("Marks in Subject 3: " + subject3_marks);
    }
}
```



```

        System.out.println("Total Marks : " + total + "/300");
    }

    public static void main(String[] args)
    {
        Student s1 = new Student();
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter your name : ");
        String a = sc.nextLine();
        System.out.print("Enter your Roll No. : ");
        int b = sc.nextInt();
        System.out.print("Enter marks obtained in three subjects : ");
        int a1 = sc.nextInt();
        int a2 = sc.nextInt();
        int a3 = sc.nextInt();
        s1.basicinfo(a,b);
        s1.marks(a1,a2,a3);
        s1.total();
        s1.display();
    }
}

```

The output of program:

```

C:\Users\admin\Desktop\Java>javac Student.java

C:\Users\admin\Desktop\Java>java Student
Enter your name : Some Name
Enter your Roll No. : 99
Enter marks obtained in three subjects : 98
97
91
The information of student is as follows:
Name : Some Name
Roll No.: 99
Marks in Subject 1: 98
Marks in Subject 2: 97
Marks in Subject 3: 91
Total Marks : 286/300

```
