9/10/20

OOJ Lab - 2

1BM19CS

Q1 Quadratic equation, find real solutions

Algorithm

1. Print "Value of a"
2. Read a
3. Print "value of b"
4. Read b
5. Print value of c"
6. Read c
7. Find value of ~~discriminant~~ determinant with (b*b)-(4*a*c)
8. Check if determinant > 0
9. ~~For~~ If so, print the roots of equation ((-b ± sqrt)/(2a))
10. Else check if determinant = 0
11. Print the equal roots of equation
12. Else check if ~~disc~~ determinant < 0
13. If so, print There are no real solutions

Code:

```
import java.util.Scanner;
public class Roots {
    public static void main (String args[]) {
        double x=0, y=0;
        Scanner x=0, y=0;
        Scanner sc = new Scanner (System.in);
        System.out.println("Enter value of a");
        double a = sc.nextDouble();
```

```
System.out.println("enter value of b");
double b = sc.nextDouble();
System.out.println("Enter value of c");
double c = sc.nextDouble();
double d = (b*b)-(4*a*c);
double sqrt = Math.sqrt(d);
if(d>0){
    x = (-b +(sqrt))/(2*a);
    y = (-b -(sqrt))/(2*a);
    System.out.println("Roots are"+x
                       "and" + y);
}
else if(d==0){
    System.out.println("Root is" +x);
}
else{
    System.out.println("There are no
    real solutions");
}
}
}
```

Output :

```
Enter value of a
1
Enter value of b
10
Enter value of c
5
Roots are -0.5278 and -9.4712
```

Enter value of a
2
Enter value of b
2 4
Enter value of c
2
The Root is 0.0

Enter value of a
5
Enter value of b
4
Enter value of c
3

The solution is not real.

2) Lab Program 2:

```
import java.util.Scanner;

class Student
{
 String USN;
 String name;
 int n;
 double SGPA=0;
 int totalcredits=0;
 Scanner s = new Scanner(System.in);

 void details()
 {
```

```
System.out.println ("Enter USN");
USN = S.nextLine();
system.out.println ("Enter number of subjects");
n = S.nextInt();
System.out.println ("Enter the name");
name = s.nextLine()
int credits [] = new int [n];
double marks [] = new double [n];
System.out.println ("Enter details");
for (int i=0; i<n; i++)
{
  System.outprintln ("Enter the credits of Subject"
                     +(i+1));
  credits [i] = s.nextInt()
  System.out.println ("Enter marks" +(i+));
  marks [i] = s.nextInt()

  Calculate (credits [i], marks [i], i);
}
}

  void Calculate (int credit, double mark, int j
  {
   totalcredits = totat credits + credit;
   if (mark >=90 && mark <= 100)
       SGPA = SGPA + (10* credit);
   else if (marks >=80 && mark <=89)
       SGPA = SGPA + (9* credit);
   else if (mark >=70 && mark <=79)
       SGPA = SGPA + (8* credit);
   else if (mark >= 60 && mark <= 69)
       SGPA = SGPA + (7* credit);
   else if (marks >= 50 && mark <=59)
       SGPA = SGPA + (6* credit);
```

```
        else if (marks >= 40 && mark <= 49)
            SGPA = SGPA + (5 * Credit);
        else
            System.out.println("Failed in the Subject"
                                + (j+1));
    }
    void Display()
    {
        System.out.println("Details of the Stud");
        System.out.println("Name-" + name);
        System.out.println("USN-" + USN);
        System.out.println("SGPA of student is-"
                            + (SGPA / Total credits));
    }
}

public class Stud
{
    public static void main(String args[])
    {
        Student s1 = new Student();
        s1.Details();
        s1.Display();
    }
```

Output:

```
Enter USN of student
1BM19CS115
Enter name of student
Pranav
Enter number of subjects
3
```

store
67 ____/____

Enter details of Subjects :
Enter credits of subject 1
3
Enter marks of Subject 1
85
Enter credits of Subject 2
4
Enter marks of Subject 2
70
Enter credits of subject 3
3
Enter marks of subject 3
80

Details of Student

None - PranavR
USN - 1BM19CS115
SGPA of Student - 8.6

Alogorithm :

1. Input name
2. Input USN
3. Input the number of Subjects
4. Print details of subject (n)
5. Input credit, and mark of subject 1
6. Input credit, and mark ~~of~~ for (n) subjects
7. Calculate the grade for each subject
   (90> - A, 80>-B, 70>-C, 60>-D, 50>-E, <50<-F
8. ~~Display~~ Calculate the SGPA of student
   (average of ~~grade~~ marks)
9. Display the ~~for~~ name, usn, SGPA of student