1BM22CS219

Date : 11/12/23
Page No :

7. Develop a java program that prints all real solutions of equation $ax^2+bx+c=0$.

```
import java.util.Scanner;
class Quadratic
{
    int a,b,c;
    double r1,r2,d;
    void getd()
    {
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the coefficients
                of a,b,c:");
        a=s.nextInt();
        b=s.nextInt();
        c=s.nextInt();
    }
    void compute()
    {
        while(a==0)
        {
            System.out.println("Not a quadratic
                    equation");
            System.out.println("Enter a non zero
                    value for a:");
            Scanner s=new Scanner(System.in);
            a=s.nextInt();
        }
        d=b*b-4*a*c;
        if(d==0)
        {
```

```
            r1 = (-b) / (2*a);
            System.out.println("Roots are real
                    and equal");
            System.out.println("Root 1 = Root 2 = "
                    + r1);
        }

        else if(d>0)
        {
            r1 = ((-b) + (Math.sqrt(d))) / (double)(2*a);
            r2 = ((-b) - (Math.sqrt(d))) / (double)(2*a);
            System.out.println("Roots are real and
            distinct");
            System.out.println("Root 1 = " + r1 +
                "Root 2 = " + r2);
        }

        else if(d<0)
        {
            System.out.println("Roots are imaginary");
            r1 = (-b) / (2*a);
            r2 = Math.sqrt(-d) / (2*a);
            System.out.println("Root 1 = " + r1 + "+i" + r2);
            System.out.println("Root 2 = " + r1 + "-i" + r2);
        }
    }
}

class QuadraticMain
{
    public static void main(String args[])
    {
```

1BM22CS219
Ranjan Devi

Date :
Page No :

```
        Quadratic q=new Quadratic();
        q.getd();
        q.compute();
    }
}
```

OUTPUT :

Enter the coefficients of a, b, c: 1 2 1
Roots are real and equal.
Root 1 = Root 2 = -1