SHREE VARNA. M
1BM22CS263

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Develop a Java program that prints all the real Solutions to the quadratic equation $ax^2 - bx + c$ read in a, b, c and use quadratic formula if the discriminant is negative Display a message stating that there are no real Sol^n.

```
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("Root1 = Root2"
                          + 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("Root1 = " + r1 +
                          "Root2 = " + r2);
    }

    else if (d<0)
    {
        System.out.println("Roots are imagin
                -ary");
        r1 = (-b)/(2*a)
        r2 = Math.sqrt(-d)/(2*a)
        System.out.println("Root1 = " + r1 + "i"
                          + r2);
```

```
        System.out.println("Root 1 : " + r1 + " -i"
                                    + r2);
    }
  }
}

Class Quadratic Main
{
    public Static void main (String args[])
    {
      Quadratic q = new Quadratic();
        q.getd();
        q.Compute();
    }
}
```

Output :-

```
Enter the Coefficient of a, b, C
2
3
4
Roots are imaginary.
Root 1 = 0.0 + i 1.1989578808
Root 2 = 0.0 - i 1.1989578
```

Enter the coefficient of a, b, c
2
4
2
Roots are real & equal
Root 1 = Root 2 = 1

Enter the coefficient of a, b, c
2
8
2
Roots are real and distinct
Root 1 = +0.2679
Root 2 = 3.732

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