Program-1

Develop a java program that prints all solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.

Code:

```
import java.util.Scanner;
class labprog1{
   public static void main(String args[]) {
      Scanner ss=new Scanner(System.in);
      double a,b,c;
      System.out.println("Enter the coefficients a, b and c:");
      a=ss.nextDouble();
      b=ss.nextDouble();
      c=ss.nextDouble();
      double dis=b*b-4*a*c;
            double r1=-b/(2*a);
      double r2=(Math.sqrt(Math.abs(dis)))/(2*a);
      if(dis>0)
      {
         System.out.println("Roots are real and distinct.");
         System.out.println("Solution 1="+String.format("%.2f",(r1+r2)));
         System.out.println("Solution 2="+String.format("%.2f",(r1-r2)));
      }
      else if(dis==0)
      {
         System.out.println("Roots are real and equal.");
         System.out.println("Solution="+r1);
      }
      else
            {
```

```
        System.out.println("No real solutions exist.");
            System.out.println("Imaginary solution 1="+r1+"+i"+String.format("%.2f",r2));
            System.out.println("Imaginary solution 2="+r1+"-i"+String.format("%.2f",r2));
            }
    }
}
```

Output: