IBM19CS019

Roots of Quadratic Equations

```
import java.util.Scanner
public class RootsofQuadraticEquations {
    public static void main(String args[]) {
        double secondRoot = 0, firstRoot = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the value of a :: ");
        double a = sc.nextDouble();
        System.out.println("Enter the value of b :: ");
        double b = sc.nextDouble();
        System.out.println("Enter the value of c :: ");
        double c = sc.nextDouble();
        double Determinant = (b*b) - (4*a*c);
        double sqrt = Math.sqrt(determinant);
        if (determinant > 0) {
            firstRoot = (-b + sqrt) / (2*a);
            secondRoot = (-b - sqrt) / (2*a);
            System.out.println("Roots are real and
            distinct %.4f and %.4f", firstRoot, secondRoot);
        } else if (determinant == 0) {
            System.out.println("Roots are Real and Equal:
            %.4f and %.4f", firstRoot, secondRoot);
        } else if (determinant < 0) {
            System.out.println("Roots are complex and
            imaginary");
    }
}
}
}
```