Lab Program-1

```java
import java.util.Scanner;

class Quadratic {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter coefficient a:");

        double a = sc.nextDouble();

        if (a == 0) {

            System.out.println("Not a quadratic equation");

            return;

        }

        System.out.println("Enter coefficient b:");

        double b = sc.nextDouble();

        System.out.println("Enter coefficient c:");

        double c = sc.nextDouble();

        double discriminant = b * b - 4 * a * c;

        if (discriminant > 0) {

            double root1 = (-b + Math.sqrt(discriminant)) / (2 * a);

            double root2 = (-b - Math.sqrt(discriminant)) / (2 * a);


            System.out.println("Roots are real and distinct");

            System.out.println("Root 1 = " + root1);

            System.out.println("Root 2 = " + root2);


        } else if (discriminant == 0) {

            double root = -b / (2 * a);

            System.out.println("Roots are real and equal");

            System.out.println("Root = " + root);
```

```java
    } else {

        double realPart = -b / (2 * a);

        double imaginaryPart = Math.sqrt(-discriminant) / (2 * a);

        System.out.println("Roots are imaginary");

        System.out.println("Root 1 = " + realPart + " + " + imaginaryPart + "i");

        System.out.println("Root 2 = " + realPart + " - " + imaginaryPart + "i");

    }

  }

}
```