4/12/23

→ Lab programme 1

```
import java.util.scanner;
class Quadratic
{
    System.out.println ("Prirana, 1BM22CS209");
    scanner s = new Scanner (System.in);
    System.out.println ("Enter the coefficient 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
        ~~Scanner s = nr~~ 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
        ~~System.out.println~~ equal");
        System.out.println ("Root1 = Root2=" + r1);
    }
    else if (d>0)
    {
```

```
{
    System.out.println("roots are imaginary");
    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 imaginary");
    r1 = (-b)/(2*a);
    r2 = Math.sqrt(-d)/(2*a);
    System.out.println("root1=" + r1 + "+i"
                        +r2);
    System.out.println("root1 = " + r1 + "-i"
                        + r2);
}
}
}
class QuadraticMain
{
    public static void main(String args[])
    {
        Quadratic q = new Quadratic();
        q.getd();
        q.compute;
    }
}
```

=> Output 1

Prerana
1BM22CS209
Enter the coefficients of a, b, c
1
-5
2
Roots are real and distinct
root1 = 4.561552812 8 root2 = 4.561552812 8

=> Output 2

Prerana 1BM22CS209
Enter the coefficients of a, b, c
1
2
1
roots are real and equal
root 1 = root 2 = 1.0

=) Output 3

Prerana 1BM22CS209
Enter the coefficients of a, b, c
0
4
5
not a quadratic equation
enter a non zero value for a:
1
roots are imaginary
root 1 = -2.0 + iNaN
root2 = -2.0 - iNaN