☆=> Quadratic equation $ax^2 + bx + c = 0$

```java
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.nextln();
        b = s.nextInt();
        c = s.nextInt();
    }
    void compute()
    {
        while(a==0)
        {
            System.out.println("Not a
                            quadratic equti");
            System.out.println("Enter a non zero value
                                            of a");
            Scanner s = new Scanner(System.in);
            a = s.nextInt();
        }
        d = b*b - 4*a*c;
        if(d==0)
        {
```
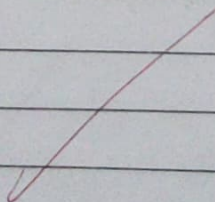
```java
        r1=(-b)/(2*a);
        System.out.println("Roots are real & equal");
        System.out.println("Root1=Root2="+r1);
    }

    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 & 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 Quadratic_main
{
    public static void main(String args[])
    {
        Quadratic q=new Quadratic();
        q.getd();
        q.compute();
    }
}
```

- Output :-

① ~~Enter the coefficients of a,b,c:~~
~~of 603~~
~~Roots are real, and distinct~~
~~Root1 =~~ ~~Root(2-t)~~

② Enter the coefficients of a,b,c:
0 2 3
Not a quadratic equation
Enter a non zero value of a

(ii) Enter the coefficients of a,b,c:
1 2 1
Roots are real and Equal
Root 1 = Root 2 = -1

(iii) Enter the coefficient of a,b,c:
1 -3 2
Roots are real & distinct
Root1 = 2   Root2 = 1

(iv) Enter the coefficient of a,b,c:
1 1 2
Roots are imaginary
Root1 = 0.0 + i 0.322875
Root2 = 0.0 - i 0.322875