

12/12/23

LAB - 2

Quadratic eqn:-

Develop a Java Program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula. If the discriminant b^2-4ac is negative, display a message that there are no real solution.

```
import java.util.Scanner;
```

```
class quadratic
```

```
{
```

```
    int a,b,c;
```

```
    double x1,x2,d;
```

```
    void getd()
```

```
{
```

```
    Scanner s = new Scanner (System.in);
```

```
    System.out.println ("Enter the coefficients of a,b,c");
```

```
    a = s.nextInt();
```

```
    b = s.nextInt();
```

```
    c = s.nextInt();
```

```
}
```

```
    void compute()
```

```
{
```

```
    while(a==0)
```

```
{
```

```
    System.out.println ("Not a quadratic eqn");
```

System.out.println("Enter a non zero value for a");

Scanner s = new Scanner(System.in);

a = s.nextInt();

}

$$d = b * b - 4 * a * c$$

if (d == 0)

{

$$\gamma_1 = (-b) / (2 * a)$$

(Case one point 2) Roots are real and equal;

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

System.out.println("Root1 = Root2 = " + r1);

System.out.println("Root1 = Root2 = " + r2);

}

else if (d > 0)

{

$$\gamma_1 = ((-b) + (\text{math.sqrt}(d))) / (d * a);$$

$$\gamma_2 = ((-b) - (\text{math.sqrt}(d))) / (d * a);$$

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");

$$\gamma_1 = (-b) / (2 * a);$$

$$\gamma_2 = \text{math.sqrt}(-d) / (2 * a);$$

System.out.println("Root1 = " + r1 + " + " + r2);

System.out.println("Root2 = " + r1 + " - " + r2);

}

}

}

class QuadraticMain

{
public static void main (String args[])

{

Quadratic q = new Quadratic()

q.getd();

q.compute();

}

}

Output

Enter the coefficients of a,b,c

1

2
1

roots are real and equal.

Roots 1 = Roots 2 = -1.0

Enter the coefficients of a,b,c

1

4

1

roots are real & distinct

~~Roots - 1 = 0.267949~~

Roots 2 2 - 3.73205080

Sb
12/12/2023

Sp. AND, WICL LIA at mgm
new tuber 12 weeks. Due to mgm level + general
poisonous food. 27 days (no no, mgm, no 2nd chance
at room
comes 2. 14 days. no 1 + regmi
(disease break)

1st new tuber 12 weeks old
1st day old
1st week old

new tuber 12 weeks old

• E7 toward dogmati
new growth
in new period