

02/10/20

LAB-3

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① Write a java program to find roots of quadratic equation.

```
import java.util.Scanner;  
import static java.lang.Math.*;  
class quadratic  
{  
    public static void main (String args[])  
    {  
        quadratic obj = new quadratic ();  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("Enter the value of a ::");  
        float a = sc.nextFloat ();  
        System.out.println ("Enter the value of b ::");  
        float b = sc.nextFloat ();  
        System.out.println ("Enter the value of c ::");  
        float c = sc.nextFloat ();  
        if (a == 0)  
        {
```

```
System.out.println ("Invalid");
```

```
return;
```

```
}
```

```
float d = b*b - 4*a*c;
```

```
float sqrt_val = (float) Math.sqrt (abs(d));
```

```
float root1 = (-b + sqrt_val) / (2*a);
```

```
float root2 = (-b - sqrt_val) / (2*a);
```

```
if (d == 0)
```

```
{
```

```
System.out.println ("Roots are real and equal :: " + root1);
```

```
}
```

```
else if (d > 0)
```

```
{
```

```
System.out.println ("Roots are real and different \n");
```

```
System.out.println (root1 + "\n" + root2);
```

```
}
```

```
else
```

```
{
```

```
System.out.println ("Roots are complex \n");
```

```
System.out.print (-b / (2*a) + " + i " + sqrt_val / (2*a) +
```

```
" \n" + -b / (2*a) + " - i " + sqrt_val / (2*a));
```

```
}
```

```
}
```

```
}
```