

Lab programme 1

```
import java.util.Scanner;

class Quadratic{
    int a,b,c;
    Scanner sc=new Scanner(System.in);

    Quadratic()
    {

        inputData();

    }

    public void inputData()
    {
        System.out.println("enter the value of a,b and c respectively");
        a=sc.nextInt();
        b=sc.nextInt();
        c=sc.nextInt();
        calc();

    }
    public void calc()
    {
        double root1=0,root2=0;
        int D=(b*b)-(4*a*c);
        if (D<0)
        {
            System.out.println("there is no real solution");
            return;
        }
        else if(D>0)
        {
            root1=(-b+ Math.pow(D,0.5))/2*a;
            root2=(-b- Math.pow(D,0.5))/2*a;
            System.out.println("roots are real and distinct and values for them");
        }
        else
        {
            root1=(-b/2*a);
            System.out.println("roots are equal and its value is"+root1);
        }
    }
}
```

```

    }

}

}

class Main
{
    public static void main(String[] args) {
        Quadratic qc=new Quadratic();
    }
}

```

OUTPUT

```

"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.2.3\lib\idea_rt.jar=52748:C:\Progra
enter the value of a,b and c respectively
1 2 2
there is no real solution

```

```

"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.2.3\lib\idea_rt.jar=52776:C:\Progra
enter the value of a,b and c respectively
1 5 6
roots are real and distinct and values for them are : -2.0and -3.0

```

LAB PROGRAMME - 1

Q. Develop a java programme that prints all real solution to quadratic equation $ax^2 + bx + c = 0$. Read a, b, c, if discriminant $b^2 - 4ac$ is negative display there are no real solutions.

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

```
class Quadratic {
```

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

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

```
Quadratic()
```

```
{ inputData();
```

```
}
```

```
public void inputData()
```

```
{
```

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

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

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

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

```
calc();
```

```
}
```

```
public void calc()
```

```
{ double root1, root2;
```

```
double D = (b*b) - (4*a*c);
```

```
if (D < 0)
```

```
{ System.out.println("No real solutions exist"); }
```

```
else if (D == 0)
```

```
{ System.out.print("Roots are equal and is : ");
```

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

```
System.out.println(root1);
```

```
}
```

```
else
```

```
{
```

```
root1 = (-b + Math.pow(D, 0.5)) / 2*a;
```

```
root2 = (-b - Math.pow(D, 0.5)) / 2*a;
```

```
System.out.println("roots are : " + root1 + " and " + root2);
```

```
}
```

```
}
```

```
}
```

```
class Main
```

```
{ public static void main (String args[])
```

```
{ Quadratic qc = new Quadratic();
```

```
}
```

```
}
```

Output: Enter value of a, b and c respectively
roots are real and distinct and values of them
are : -1 and -3.0

24/10/20