

29|09|2020(WEEK 3)

```
import java.io.*;

import java.util.*;

public class QuadEq

{

    public static void roots(double a,double b,double c)

    {

        double d,root1,root2;

        if(a==0)

            System.out.println("a shouldnt be zero!");

        else

        {

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

            if(d>0)

            {

                root1=(-b+Math.sqrt(d))/(2*a);

                root2=(-b-Math.sqrt(d))/(2*a);

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

                System.out.println("Root1:");

                System.out.printf("%.4f",root1);
```

```
System.out.println("");  
  
System.out.println("Root2:");  
  
System.out.printf("%.4f",root2);  
  
}  
  
if(d==0)  
{  
System.out.println("Roots are real and equal");  
}  
  
else if(d<0)  
{  
System.out.println("roots are complex and imaginary there are no real  
solutions.");  
}  
  
}  
  
}  
  
public static void main(String[] args)  
{
```

```

Scanner scanner=new Scanner(System.in);

System.out.printf("Input the value of a");

double a=scanner.nextDouble();

System.out.printf("Input the value of b");

double b=scanner.nextDouble();

System.out.printf("Input the value of c");

double c=scanner.nextDouble();

roots(a,b,c);

}

}

```

```

C:\Users\admin\Documents>javac QuadEq.java

C:\Users\admin\Documents>java QuadEq
Input the value of a 4
Input the value of b 4
Input the value of c -4
Roots are unequal
Root1:
0.6180
Root2:
-1.6180
roots are complex and imaginary

C:\Users\admin\Documents>javac QuadEq.java

C:\Users\admin\Documents>java QuadEq
Input the value of a 4
Input the value of b 4
Input the value of c -4
Roots are unequal
Root1:
0.6180
Root2:
-1.6180

C:\Users\admin\Documents>java QuadEq
Input the value of a 4
Input the value of b 4
Input the value of c -4
Roots are unequal
Root1:
0.6180
Root2:
-1.6180

C:\Users\admin\Documents>java QuadEq
Input the value of a 3
Input the value of b 12
Input the value of c 12
Roots are equal

C:\Users\admin\Documents>java QuadEq
Input the value of a 1
Input the value of b 1
Input the value of c 1
roots are complex and imaginary

```