

LAB PROGRAM 1

QUESTION:

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 discriminate b^2-4ac is negative, display a message stating that there are no real solutions.

CODE:

```
import java.util.*;

class Quad{

public static void main(String args[])

{

int a,b,c,count=0;

double D;

Scanner sc=new Scanner(System.in);

System.out.println("\n Enter the values of a,b,c: ");

a=sc.nextInt();

b=sc.nextInt();

c=sc.nextInt();

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

if(D==0)

{

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

count=1;

}

else if(D>0)

{

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

count=1;

}

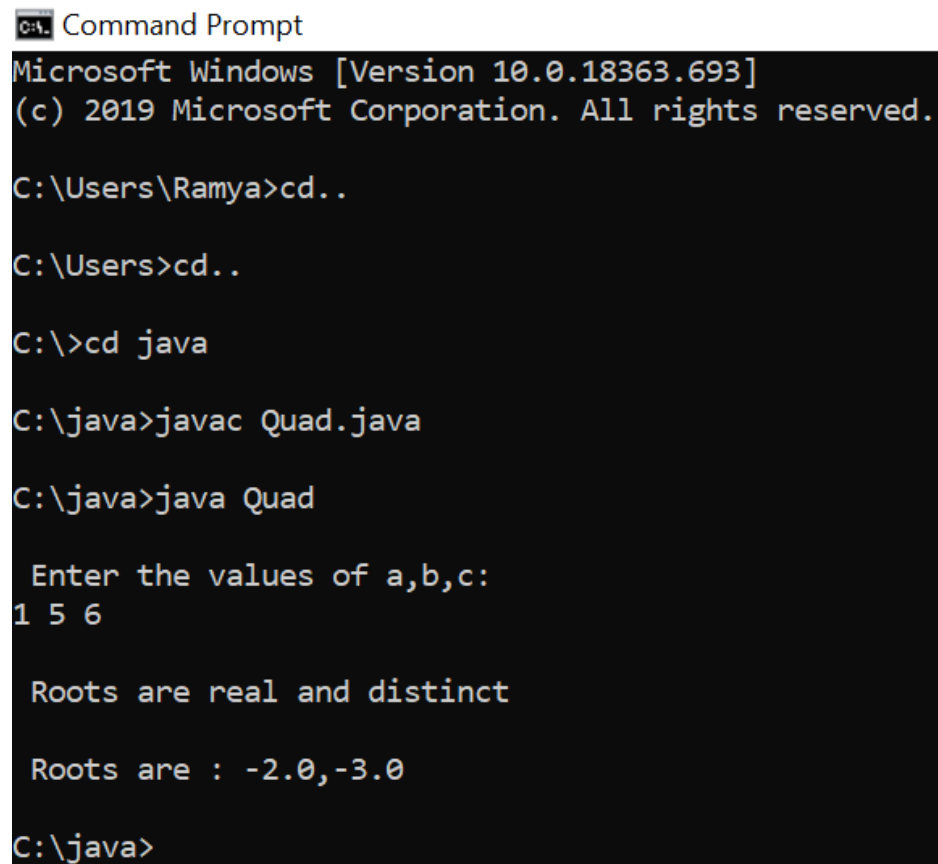
else if(D<0)

{

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

```
}  
if(count==1)  
{  
    double r1 = ((-b + Math.sqrt(D))/(2*a));  
    double r2 = ((-b - Math.sqrt(D))/(2*a));  
    System.out.println("\n Roots are : "+r1+ " , "+r2);  
}  
}  
}
```

OUTPUT:



```
C:\> Command Prompt  
Microsoft Windows [Version 10.0.18363.693]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\Ramya>cd..  
  
C:\Users>cd..  
  
C:\>cd java  
  
C:\java>javac Quad.java  
  
C:\java>java Quad  
  
Enter the values of a,b,c:  
1 5 6  
  
Roots are real and distinct  
  
Roots are : -2.0,-3.0  
  
C:\java>
```