quadratic.java - Notepad

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```
	void compute()
	{
		while(a==0)
		{
			System.out.println("Not a quadratic equation");
			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)
		{
			r1 = (-b)/(2*a);
			System.out.println("Roots are real and equal");
			System.out.println("Roo1 = Root2 = " + r1);
		}
		else if(d>0)
		{
			r1 = ((-b)+(Math.sqrt(d)))/(double)(2*a);
			r2 = ((-b)-(Math.sqrt(d)))/(double)(2*a);
			System.out.println("Roots are real and distinct");
			System.out.println("Roo1 = " + r1 + " Root2 = " + r2);
		}
		else if(d<0)
		{
			System.out.println("Roots are imaginary");
			r1 = (-b)/(2*a);
			r2 = Math.sqrt(-d)/(2*a);
			System.out.println("Root1 = " + r1 + " + i"+r2);
			System.out.println("Root1 = " + r1 + " - i"+r2);
		}

	}
}

class QuadraticEq
{
	public static void main(String args[])
	{
		Quadratic q = new Quadratic();
		q.getd();
		q.compute();
	}
}
```

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```
//Lab Program 1:

/*Q) Develop a Java program that prints all real solutions to the quadratic equation
ax2+bx+c = 0. Read in a, b, c and use the quadratic formula. If the
discriminate b2
-4ac is negative, display a message stating that there are no
real solutions.*/


import java.util.Scanner;

class Quadratic
{
      int a, b, c;
      double r1, r2, 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 equation");
                  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)
            {
                  r1 = (-b)/(2*a);
                  System.out.println("Roots are real and equal");
                  System.out.println("Roo1 = Root2 = " + r1);
            }
            else if(d>0)
            {
                  r1 = ((-b)+(Math.sqrt(d)))/(double)(2*a);
                  r2 = ((-b)-(Math.sqrt(d)))/(double)(2*a);
```

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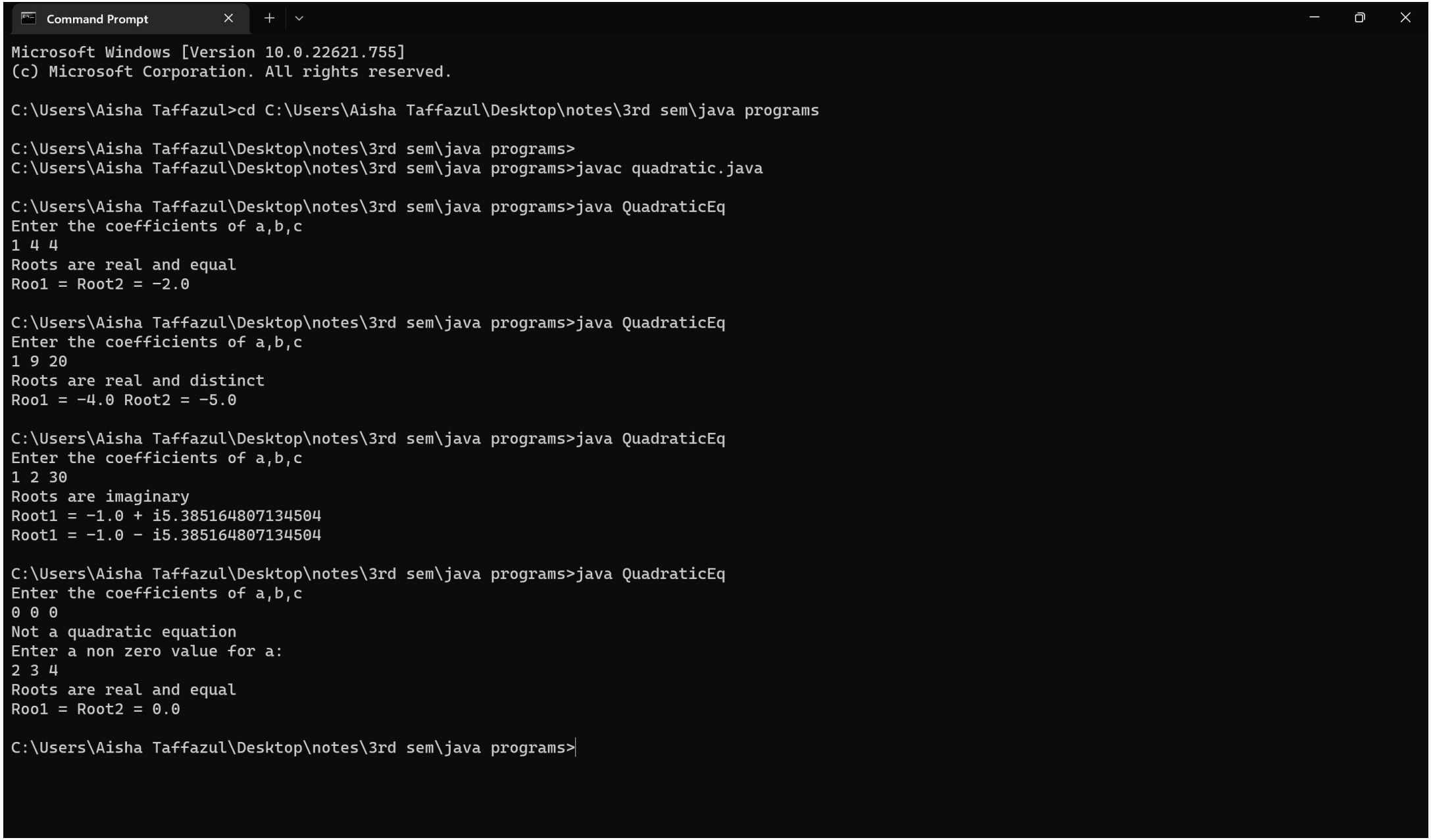
Command Prompt
Microsoft Windows [Version 10.0.22621.755]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Aisha Taffazul>cd C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>javac quadratic.java
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>java QuadraticEq
Enter the coefficients of a,b,c
1 4 4
Roots are real and equal
Roo1 = Root2 = -2.0
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>java QuadraticEq
Enter the coefficients of a,b,c
1 9 20
Roots are real and distinct
Roo1 = -4.0 Root2 = -5.0
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>java QuadraticEq
Enter the coefficients of a,b,c
1 2 30
Roots are imaginary
Root1 = -1.0 + i5.385164807134504
Root1 = -1.0 - i5.385164807134504
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>java QuadraticEq
Enter the coefficients of a,b,c
0 0 0
Not a quadratic equation
Enter a non zero value for a:
2 3 4
Roots are real and equal
Roo1 = Root2 = 0.0
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs>