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## Experiment Number: 1

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**Branch: CSE - AIML**

**Section/Group: 21AML - 9 -A**

**Semester: 3rd**

**Subject Name: Programming in Java**

**Subject Code: 21CSH-244**

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### **Program 1**

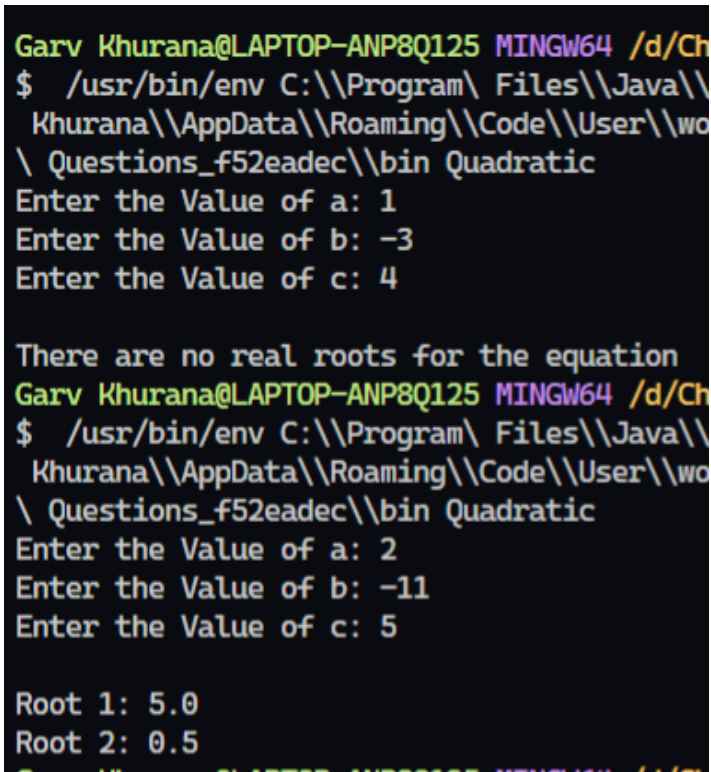
**AIM:** Write a java program which prints all the real solutions of a quadratic equation if Discriminant is negative display a message that there are no real solutions.

**Program:**

```
import java.util.*;
import java.lang.Math;
class Quadratic {
    static void quadSolver(int a, int b, int c) {
        double discriminant = (b * b) - (4 * a * c);
        double D = Math.sqrt(discriminant);
        if (discriminant < 0) {
            System.out.print("\nThere are no real roots for the equation");
        } else {
            double root1 = (D - b) / (2 * a);
            double root2 = (0 - b - D) / (2 * a);
            System.out.print("\nRoot 1: " + root1);
            System.out.print("\nRoot 2: " + root2);
        }
    }
}
```

```
}  
  
}  
  
public static void main(String args[]) {  
  
    Scanner sc = new Scanner(System.in);  
  
    System.out.print("Enter the Value of a: ");  
  
    int a = sc.nextInt();  
  
    System.out.print("Enter the Value of b: ");  
  
    int b = sc.nextInt();  
  
    System.out.print("Enter the Value of c: ");  
  
    int c = sc.nextInt();  
  
    quadSolver(a, b, c);  
  
}
```

### Output:



```
Garv Khurana@LAPTOP-ANP8Q125 MINGW64 /d/Ch  
$ /usr/bin/env C:\\Program\\ Files\\Java\\  
Khurana\\AppData\\Roaming\\Code\\User\\wo  
\\ Questions_f52eadec\\bin Quadratic  
Enter the Value of a: 1  
Enter the Value of b: -3  
Enter the Value of c: 4  
  
There are no real roots for the equation  
Garv Khurana@LAPTOP-ANP8Q125 MINGW64 /d/Ch  
$ /usr/bin/env C:\\Program\\ Files\\Java\\  
Khurana\\AppData\\Roaming\\Code\\User\\wo  
\\ Questions_f52eadec\\bin Quadratic  
Enter the Value of a: 2  
Enter the Value of b: -11  
Enter the Value of c: 5  
  
Root 1: 5.0  
Root 2: 0.5  
Garv Khurana@LAPTOP-ANP8Q125 MINGW64 /d/Ch
```

**Learning outcomes (What I have learnt):**

- 1. JAVA Syntax**
- 2. Java Operators**
- 3. Java Conditionals**
- 4. Java Functions**
- 5. Java Loops**

**Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty) :**

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Viva		10
2.	Performance		12
3.	Worksheet		8