LAB – 1 PRAGRAM

INPUT :

C:\Users\91944\OneDrive\Desktop\week2\quadratic.java - Sublime Text (UNREGISTERED)

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quadratic.java

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

class quadratic
{
    public static void main(String[] args)
    {
        float a, b, c;
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter the value of 'a' (co-efficient of x^2) :");
        a = ss.nextFloat();
        if (a != 0)
        {
            System.out.println("Enter the value of 'b' (co-efficient of x) :");
            b = ss.nextFloat();
            System.out.println("Enter the value of 'c' (constant) :");
            c = ss.nextFloat();
            calculate(a, b, c);
        }
        else
            System.out.println("The value of 'a' SHOULD NOT be zero!!");
    }

    public static void calculate(float a, float b, float c)
    {
        float d, r1, r2;
        r1 = r2 = 0;
        d = (b * b) - (4 * a * c);
        if (d == 0)
        {
            System.out.println("Roots are REAL and EQUAL");
            r1 = (-b) / (2 * a);
            r2 = r1;
            System.out.printf("Root 1 : %.4f \n", r1);
            System.out.printf("Root 2 : %.4f \n", r2);
        }
        else if (d > 0)
        {
            System.out.println("Roots are REAL and UNEQUAL");
            r1 = (float)((-b) + Math.sqrt(d)) / (2 * a);
            r2 = (float)((-b) - Math.sqrt(d)) / (2 * a);
            System.out.printf("Root 1 : %.4f \n", r1);
            System.out.printf("Root 2 : %.4f \n", r2);
        }
        else
        {
            System.out.println("Roots are IMAGINARY");
        }
    }
}
```

OUTPUT :

```
C:\Users\91944\OneDrive\Desktop\week2>java quadratic
Enter the value of 'a' (co-efficient of x^2) :
0
The value of 'a' SHOULD NOT be zero!!

C:\Users\91944\OneDrive\Desktop\week2>java quadratic
Enter the value of 'a' (co-efficient of x^2) :
1
Enter the value of 'b' (co-efficient of x) :
4
Enter the value of 'c' (constant) :
4
Roots are REAL and EQUAL
Root 1 : -2.0000
Root 2 : -2.0000

C:\Users\91944\OneDrive\Desktop\week2>java quadratic
Enter the value of 'a' (co-efficient of x^2) :
1
Enter the value of 'b' (co-efficient of x) :
-1
Enter the value of 'c' (constant) :
-6
Roots are REAL and UNEQUAL
Root 1 : 3.0000
Root 2 : -2.0000

C:\Users\91944\OneDrive\Desktop\week2>java quadratic
Enter the value of 'a' (co-efficient of x^2) :
3
Enter the value of 'b' (co-efficient of x) :
4
Enter the value of 'c' (constant) :
5
Roots are IMAGINARY
```