PROGRAMMING IN JAVA

EXPERIMENT:- 1.1

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Branch: CSE-IOT **Section/Group:** A
Semester: 3RD **Date of Performance:** 20/08/2021
Subject Name: Programming in Java lab
Subject Code: 21O-20CSP-235_20BIT-1_A

1. Aim/Overview of the practical:

Write 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.

2. Task to be done:- In the above program, the coefficients a, b, c, Then, The 'D' calculate as = b^2 – 4ac. Based on the 'D' the roots are calculate as given in the formula above.

3. Algorithm/Flowchart (For programming based labs)**:**

Step 1. Start
Step 2. Take input from user as the value of a, b, c.
Step 3. Calculate D = b*b-4*a*c
Step 4. Check condition if(div>0)
Step 5. Then calculate and display root1= "root1+"\nroot2=" +root2
Step 6. If div = 0 then calculate root1=root2= -b/(2*a) and display root1=root2" + root1
Step 7. If no one condition is true then display roots are imaginary.
Step 8. End the program.

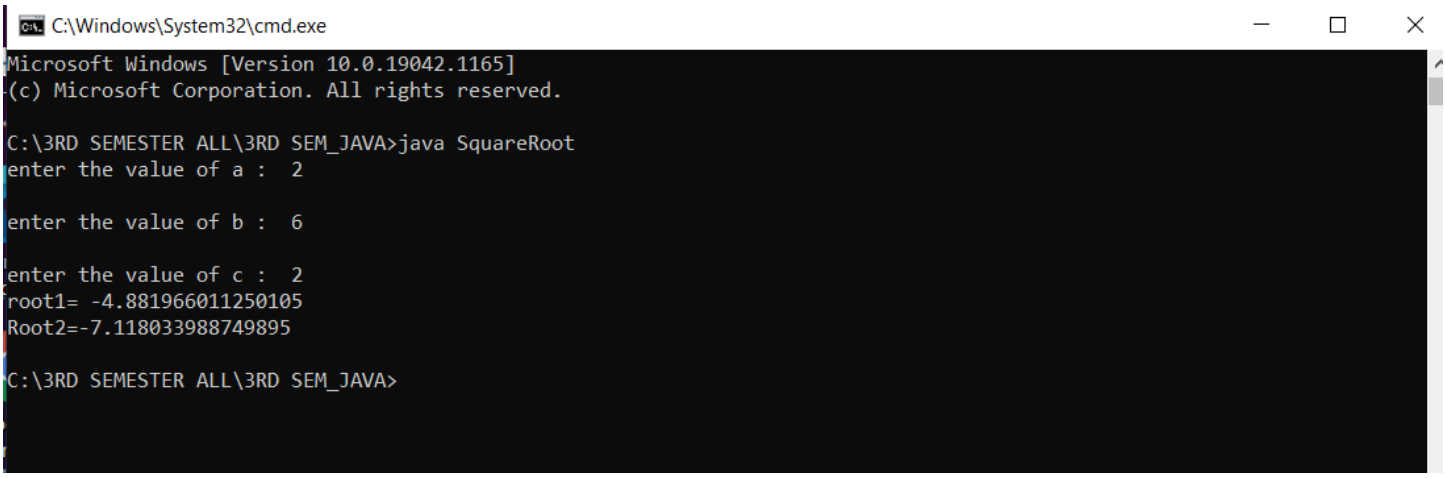
4. Theme/Interests definition (For creative domains)**:** No

5. Code:-

```
import java.util.Scanner;

public class SquareRoot {

        public static void main(String args[]) {

                int a, b, c, div;

           double root1, root2;

           System.out.print("enter the value of a :  ");
           Scanner input = new Scanner(System.in);
           a=input.nextInt();

           System.out.println();
           System.out.print("enter the value of b :  ");
           input = new Scanner(System.in);
           b=input.nextInt();

           System.out.println();
           System.out.print("enter the value of c :  ");
           input = new Scanner(System.in);
           c=input.nextInt();


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

           if(div>0){
              root1 = -b + Math.sqrt(div)/ (2 * a);
              root2 = -b - Math.sqrt(div)/ (2 * a);
              System.out.println("root1= "+root1 +"\nRoot2=" +root2);
```

```
        }
        else if(div==0){
           root1=root2= -b/(2*a);
           System.out.println("root1=root2" +root1);
        }
        else{
              System.out.println("roots are imaginary");
        }



    }
}
```

6. Result/Output/Writing Summary:



Learning outcomes (What I have learnt):

1. To learn how to implement object-oriented design with java.
2. Understand programming basics.
3. To learn how to read and write files in java.
4. To learn how to calculate the square root with java language.
5. Display output on CMD.

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

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			