## WEEK 1:

Develop a Java program that prints all real solu ons to the quadra c equa on ax2+bx+c=0. Read in a, b, c and use the quadra c formula. If the discriminate b2-4ac is nega ve, display a message sta ng that there are no real solu ons.

Peigm 1 25/09/24
Develop a Java Program that prints all the real solutions to the quadratic equation and + bx + C = 0  Read in a, b, C and use the quadratic formula  To the discreminant b²-4ac is regative, diplay a message stating that there are no real solutions
insport java · util·Scanner;  public class fluodratic Equation &  public static void main (String[] args) \$  Scanner sc = new Scanner (System·in);  System-out println ("Enter coefficient a:");  abouble a = sc. nent Double ();  System out println ("Enter coefficient b:");  abouble & = sc. nent Double ();  System-out - println ("Enter coefficient c:");  double e - sc. nent Double ();  double discriminant = b*b - 4*a*c;
il (discriminant > 0) {  double root1 (-b + Math-sqrt(discriminant))/(2ta)  double root2 - (-bt-Math-sqrt(discriminant))/(2ta)  double root2 - (-bt-Math-sqrt(discriminant))/(2ta)  System-out: println("Roots are real and distinct");  System-out: println("Root1 - "+ root1);  System-out: println("Root2 = "+ root2);  Uneif (observiminant = = 0) {

double root = -b/(2\*a); System-out-printh ("Roots age real and equal"); System-out-printh ("Root = "+ root); Use &
System out print In ("There are no real solution") Enter vogjicient a: Enter roefficient b: Enter wefficient c: Root = -1.0 > Enter noefficient a: Enter noefficient 6: Enter noupicient c: There are no real solution 1, 2, 3. no real solutions

```
import java.util.Scanner;
public class QuadraticEquation{
  public static void main(String[] args){
     Scanner sc=new Scanner(System.in);
     System.out.println("Enter coefficient a:");
     double a=sc.nextDouble();
     System.out.println("Enter coefficient b:");
     double b=sc.nextDouble();
     System.out.println("Enter coefficient c:");
     double c=sc.nextDouble();
     double discriminant=b*b-4*a*c;
    if(discriminant>0){
       double root1=(-b+Math.sqrt(discriminant))/(2*a);
       double root2=(-b-Math.sqrt(discriminant))/(2*a);
       System.out.println("Roots are real and distinct");
       System.out.println("Root 1="+root1);
       System.out.println("Root 2="+root2);
    }
     else if(discriminant==0){
       double root=-b/(2*a);
       System.out.println("Roots are real and equal");
       System.out.println("Root="+root);
    }
    else {
       System.out.println("There are no real solutions");
     }
```

```
}
prgm 1 quadratic eq - Notepad
File Edit Format View Help
import java.util.Scanner;
public class QuadraticEquation{
  public static void main(String[] args){
     Scanner sc=new Scanner(System.in);
    System.out.println("Enter coefficient a:");
    double a=sc.nextDouble();
    System.out.println("Enter coefficient b:");
    double b=sc.nextDouble();
    System.out.println("Enter coefficient c:");
    double c=sc.nextDouble();
     double discriminant=b*b-4*a*c;
    if(discriminant>0){
       double root1=(-b+Math.sqrt(discriminant))/(2*a);
       double root2=(-b-Math.sqrt(discriminant))/(2*a);
       System.out.println("Roots are real and distinct");
       System.out.println("Root 1="+root1);
       System.out.println("Root 2="+root2);
    }
    else if(discriminant==0){
       double root=-b/(2*a);
       System.out.println("Roots are real and equal");
       System.out.println("Root="+root);
    }
    else{
       System.out.println("There are no real solutions");
    }
  }
}
```

```
C:\Windows\System32\cmd.exe
C:\Users\Srinivas\OneDrive\Desktop\BMS\
Enter coefficient a:
Enter coefficient b:
Enter coefficient c:
Roots are real and equal
Root=-1.0
C:\Users\Srinivas\OneDrive\Desktop\BMS\!
C:\Users\Srinivas\OneDrive\Desktop\BMS\
Enter coefficient a:
1
Enter coefficient b:
1
Enter coefficient c:
1
There are no real solutions
C:\Users\Srinivas\OneDrive\Desktop\BMS\!

→ Search
```