Lab Program 1:

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.

```java
import java.util.Scanner;
class Quadratic_eq
{
        public static void main(String args[])
{
                double a,b,c,d,r1,r2;
                System.out.println("Enter the value of coefficient");
                Scanner s = new Scanner(System.in);
                a=s.nextDouble();
                b=s.nextDouble();
                c=s.nextDouble();

                d=(b*b)-4*a*c;
                if(a==0)
                System.out.println("invalid input");

                else if(d>0)
                {
```

```
r1=(-b + Math.sqrt(d))/(2*a);

r2=(-b - Math.sqrt(d))/(2*a);

System.out.println("roots are real and distint , values are:" + r1 + "and" + r2);

}

else if (d==0)

{

r1 = -b/(2*a);

System.out.println("roots are equal and value is " + r1);

}

else

System.out.println("roots are not real");

}
}
```

OUTPUT:

```
C:\Users\BMSCE\Desktop\1BM21CS060>java Quadratic_eq
Enter the value of coefficient
1
2
1
roots are equal and value is -1.0

C:\Users\BMSCE\Desktop\1BM21CS060>java Quadratic_eq
Enter the value of coefficient
2
1
2
roots are not real

C:\Users\BMSCE\Desktop\1BM21CS060>java Quadratic_eq
Enter the value of coefficient
3
5
2
roots are real and distint , values are:-0.6666666666666666and-1.0
```

WHEN A=0

```
C:\Users\BMSCE\Desktop\1BM21CS060>java Quadratic_ec
Enter the value of coefficient
0
0
0
invalid input
```