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Lab Program 1:
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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.
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:-0.666666666666666666611.0
```

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

audiatic eauation import jour util . Scanno Clos Quodadic eas { Public Static void main (String angs[]) double a/p/c/9/21/73.) System. out. Philadel "Enter the value of ree [picient"); Scanni S. Zow Scanner (System.in); d = S. next Double [1', b - S. next Double (); C = S. Newt Double (); d= (bb) - 4°a°c; (0<0) h 1 = (-b + math. squat(d))/(2 al); 4= (-b- Math. Sant (d))/ (2+1)) and distint" System. Out. Phintln (" hoots al "+ 21 + "and"+ 22) els if (0==0) 81 = -b/(2°a); System. Out. println (" hoots are Avual and value is" + 21),

el System. out. Phintln ("hook are not hal"). Out pat: Enter the value of the coefficient 2 had ton ale stood Entes the value of coefficient 5 hours are head and distint, value are: -0.66 6 and -1.0 Enter the volor of coefficient. 9 hoots are early and value is -1.0