```
import java.util.Scanner;
class Quadratic{
public static void main(String srgs[]){
Scanner in=new Scanner(System.in);
double a,b,c,d,x1,x2;
System.out. println("enter the value of variable a");
a=in.nextDouble();
System.out. println("enter the value of variable b");
b=in.nextDouble();
System.out. println("enter the value of variable c");
c=in.nextDouble();
d=(b*b)-4*a*c;
if(d>0)
{
x1=(-b+Math.sqrt(d))/(2*a);
x2=(-b-Math.sqrt(d))/(2*a);
System.out.println("the roots are real and distinct");
System.out.println("the roots are"+x1+"and"+x2);
}
else if(d==0)
{
x1=x2=(-b/(2*a));
System.out.println("the roots are real and equal");
System.out.println("the roots are"+x1+"and"+x2);
}
else if(d<0)
{
System.out.println("there are no real roots ");
}
}
}
```

```
C:\Users\PUNEETH K>cd C:\Users\PUNEETH K\Desktop\JAVA

C:\Users\PUNEETH K\Desktop\JAVA>javac Quadratic.java

C:\Users\PUNEETH K\Desktop\JAVA>java Quadratic
enter the value of variable a
2
enter the value of variable b
1
enter the value of variable c
-1
the roots are real and distinct
the roots are0.5and-1.0
```

Algorithm

int a, b, c, x_1, x_2

input a, b, c, x_1, x_2

d = (b*b) - 4*a*c

if (d > 0)

int x_1 = (-b + $\sqrt{d}$) / (2a)

x_2 = (-b - $\sqrt{d}$ / (2a)

System.out.print(+x_1+x_2);

if (d == 0)

x_1 = x_2 = (-b - $\sqrt{d}$) / (2a)

system.out.print("+x_1+x_2);

if (d < 0)

System.out.print("There is no real solution")

Output

enter the value of variable a

2

enter the value of variable b

1

enter the value of variable c

-1

the roots are real and distinct

the roots are 0.5 and -1.0

LAB 1

=> Java program to print real solutions of quadratic eqn $ax^2+bx+c=$

$D = b^2 - 4ac$

```
import java.util.Scanner;
class Quadratic {
public static void main(System.in);
Scanner in = new Scanner (System.in);
double a, b, c, d, x1, x2;
System.out.println("enter the value of variable a");
  a = in.nextDouble();
System.out.println("enter the value of variable b");
  b = in.nextDouble();
System.out.println("enter the value of variable c");
  c = in.nextDouble();
  d = (b*b) - 4*a*c;
  if (d > 0){
  x1 = (-b + Math.Sqrt(d))/(2*a);
  x2 = (-b - Math.Sqrt(d))/(2*a);
  System.out.println("the roots are real and distinct");
  System.out.println("the roots are "+x1+"and"+x2);
  }
  else if (d == 0){
  x1 = x2 = -b/(2*a);
  System.out.println("the roots are real and equal");
  System.out.println("the roots are "+x1+"and"+x2);
  }
  else if (d < 0)
  {
  System.out.println("there are no real roots");
  }
  }
  }
```