QUESTION:- 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.

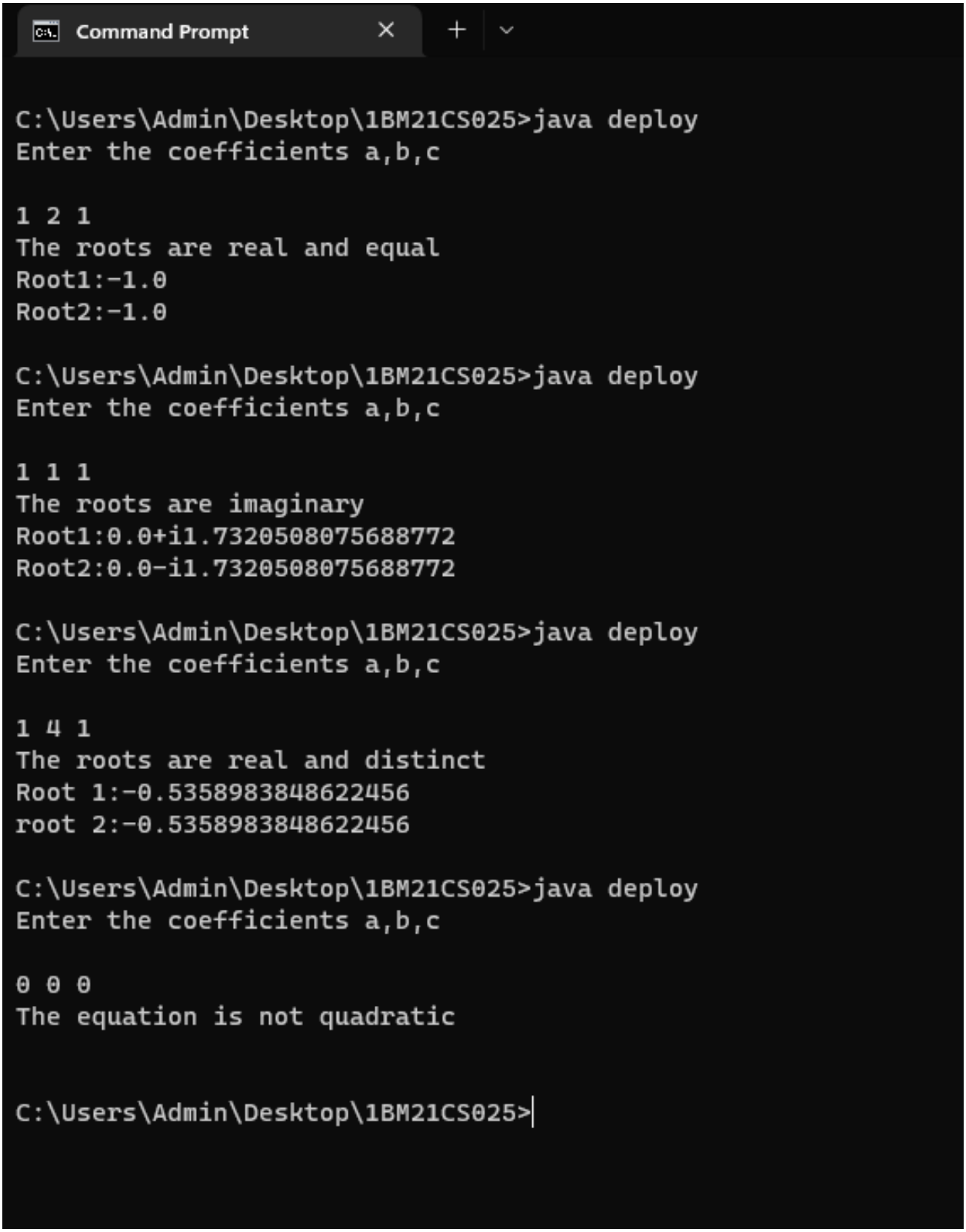
CODE:-

Quad - Notepad

File Edit View

```
import java.util.Scanner;

class deploy{

public static void main(String xx[]){


      int  a,b,c;
      Scanner s=new Scanner(System.in);
      System.out.println("Enter the coefficients a,b,c\n");
a=s.nextInt();
b=s.nextInt();
c=s.nextInt();
double des=(b*b)-(4*a*c);
double root1,root2;
if(a==0){System.out.println("The equation is not quadratic\n");}
else if(des>0){

root1=-b+Math.sqrt(des);
root2=-b+Math.sqrt(des);

     System.out.println("The roots are real and distinct\nRoot 1:"+root1+"\nroot 2:"+root2);
}
else if(des==0){
root1=root2=-b/(2*a);
System.out.println("The roots are real and equal\nRoot1:"+root1+"\nRoot2:"+root2);
}
else{
root1=-b/(2*a);
root2=Math.sqrt(Math.abs(des));

System.out.println("The roots are imaginary\nRoot1:"+root1+"+i"+root2+"\nRoot2:"+root1+"-i"+root2);
}
}
}
```

OUTPUT:-


Command Prompt
C:\Users\Admin\Desktop\1BM21CS025>java deploy
Enter the coefficients a,b,c
1 2 1
The roots are real and equal
Root1:-1.0
Root2:-1.0
C:\Users\Admin\Desktop\1BM21CS025>java deploy
Enter the coefficients a,b,c
1 1 1
The roots are imaginary
Root1:0.0+i1.7320508075688772
Root2:0.0-i1.7320508075688772
C:\Users\Admin\Desktop\1BM21CS025>java deploy
Enter the coefficients a,b,c
1 4 1
The roots are real and distinct
Root 1:-0.5358983848622456
root 2:-0.5358983848622456
C:\Users\Admin\Desktop\1BM21CS025>java deploy
Enter the coefficients a,b,c
0 0 0
The equation is not quadratic
C:\Users\Admin\Desktop\1BM21CS025>