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/*Week 3 program*/
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```
import java.util.*;
```

```
import java.lang.Math;
```

```
import java.text.DecimalFormat;
```

```
class quadraticweek3{
```

```
public static void main( String args[]){
```

```
Scanner sc= new Scanner (System.in);
```

```
DecimalFormat df = new DecimalFormat("##.##");
```

```
System.out.println("The general quadratic equation is :  $ax^2 + bx + c$  \n  
where a , b and c are constants \n ");
```

```
System.out.println("*****START HERE*****");
```

```
System.out.println("Enter the value of general constants a,b and c :");
```

```
float a=sc.nextFloat();
```

```
float b=sc.nextFloat();
```

```
float c=sc.nextFloat();
```

```
System.out.print("The equation entered by you is : \t " + a + " $x^2$ " + b  
+ " $x$ " + c + "\n");
```

```
float d=(float)(b*b - ( 4.0*a*c));
```

```

        if(d<0)
        {
            System.out.println("discriminate is negative \n NO real roots
exist");

        }
        else if(d==0)
        {
            System.out.println("two equal roots exist");
            float x= (float)(- b/(2*a));
            System.out.println(x + "\t and \t" + df.format(x)+ "are two
equal roots .");

        }
        else if(d>0)
        {
            System.out.println("two unequal roots exist");
            float x= (float)((- b/(2*a))+(Math.sqrt(d)/(2*a)));

```

```
float y= (float) ((- b/(2*a))-(Math.sqrt(d)/(2*a)));
```

```
System.out.println(df.format(x) + "\t and \t" +df.format(y)+ "  
are two unequal roots .");
```

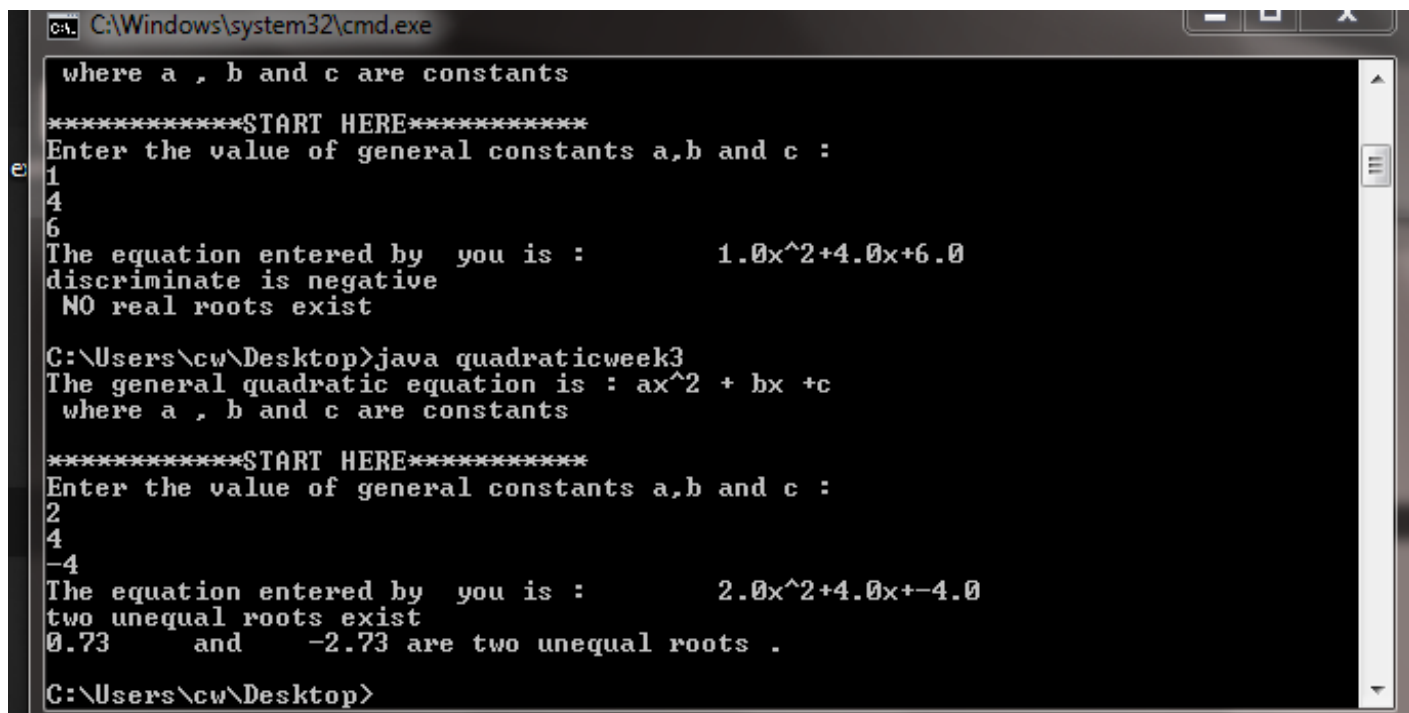
```
}
```

```
else
```

```
System.out.println("invalid enteries");
```

```
}
```

```
}
```



```
C:\Windows\system32\cmd.exe  
where a , b and c are constants  
*****START HERE*****  
Enter the value of general constants a,b and c :  
1  
4  
6  
The equation entered by you is : 1.0x^2+4.0x+6.0  
discriminate is negative  
NO real roots exist  
C:\Users\cw\Desktop>java quadraticweek3  
The general quadratic equation is : ax^2 + bx +c  
where a , b and c are constants  
*****START HERE*****  
Enter the value of general constants a,b and c :  
2  
4  
-4  
The equation entered by you is : 2.0x^2+4.0x+-4.0  
two unequal roots exist  
0.73 and -2.73 are two unequal roots .  
C:\Users\cw\Desktop>
```