APL Assignment 8.1

Name: Aishwarya Bhavsar

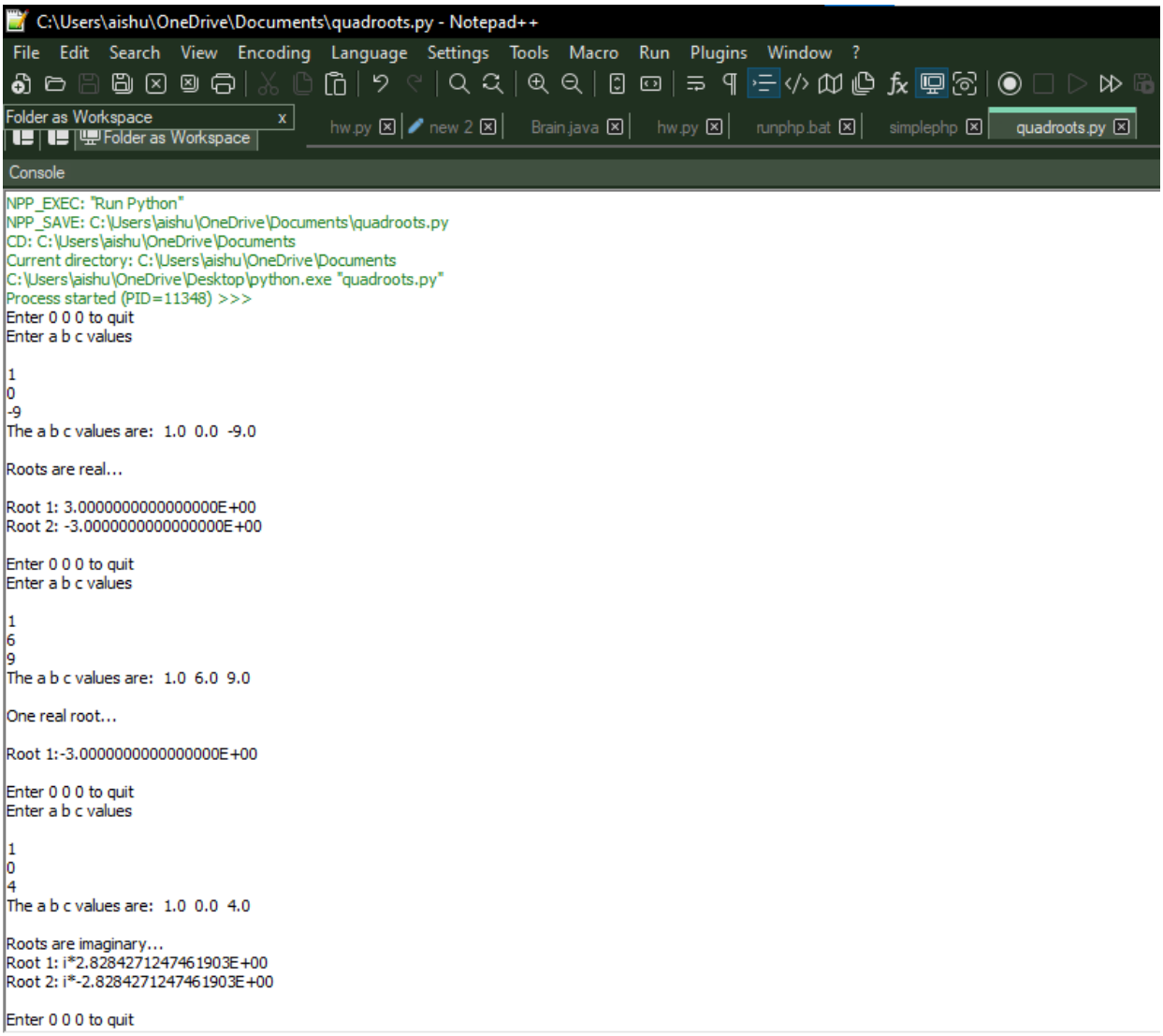
CSULB ID: 029371509

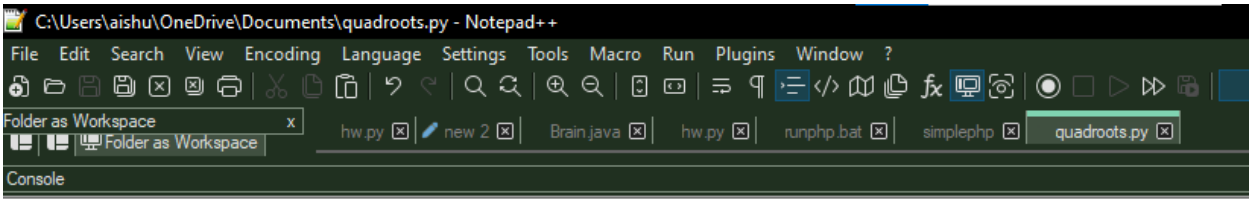
Source Code:

```
import math
flag = 'true';
total = 0;
while flag:
   print("Enter 0 0 0 to quit");
   print("Enter a b c values \n");
   a = float(input());
   b = float(input());
   c = float(input());
   print("The a b c values are:  " + str(a)+ "  " +str(b)+ "  " +str(c)+ "  \n");
   if a == 0 and b == 0 and c == 0:
      #count = total + 1;
      print(total ," equations were solved.");
      break;

   else:
         total += 1;
         determinant = ((b * b) - (4) * (a * c));


         if determinant>0:

            x = (-b+math.sqrt((determinant))/(2.0*a));
```

```
    y = (-b-math.sqrt((determinant))/(2.0*a));
    print("Roots are real... \n");
    print("Root 1: " +format(x, '.16E')+ "");
    print("Root 2: " +format(y, '.16E')+ "\n");


elif determinant==0:

    r1 = (-b)/(2.0*a);
    print("One real root...\n");
    print("Root 1:" +format(r1, '.16E')+ "\n");


else:

        z1 = (-b)/(2*a);
        z2 = math.sqrt((-determinant)/(2*a));
        z3 = z1 + z2;
        z4 = z1 - z2;
        print("Roots are imaginary...");
        print("Root 1: i*" +format(z3, '.16E')+ "");
        print("Root 2: i*" +format(z4, '.16E')+ "\n");
```

Output:


C:\Users\aishu\OneDrive\Documents\quadroots.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
Folder as Workspace
hw.py
new 2
Brain.java
hw.py
runphp.bat
simplephp
quadroots.py
Console
NPP_EXEC: "Run Python"
NPP_SAVE: C:\Users\aishu\OneDrive\Documents\quadroots.py
CD: C:\Users\aishu\OneDrive\Documents
Current directory: C:\Users\aishu\OneDrive\Documents
C:\Users\aishu\OneDrive\Desktop\python.exe "quadroots.py"
Process started (PID=11348) >>>
Enter 0 0 0 to quit
Enter a b c values
1
0
-9
The a b c values are: 1.0 0.0 -9.0
Roots are real...
Root 1: 3.0000000000000000E+00
Root 2: -3.0000000000000000E+00
Enter 0 0 0 to quit
Enter a b c values
1
6
9
The a b c values are: 1.0 6.0 9.0
One real root...
Root 1:-3.0000000000000000E+00
Enter 0 0 0 to quit
Enter a b c values
1
0
4
The a b c values are: 1.0 0.0 4.0
Roots are imaginary...
Root 1: i*2.8284271247461903E+00
Root 2: i*-2.8284271247461903E+00
Enter 0 0 0 to quit




```
-9
The a b c values are:  1.0  0.0  -9.0

Roots are real...

Root 1: 3.0000000000000000E+00
Root 2: -3.0000000000000000E+00

Enter 0 0 0 to quit
Enter a b c values

1
6
9
The a b c values are:  1.0  6.0  9.0

One real root...

Root 1:-3.0000000000000000E+00

Enter 0 0 0 to quit
Enter a b c values

1
0
4
The a b c values are:  1.0  0.0  4.0

Roots are imaginary...
Root 1: i*2.8284271247461903E+00
Root 2: i*-2.8284271247461903E+00

Enter 0 0 0 to quit
Enter a b c values

0
0
0
The a b c values are:  0.0  0.0  0.0

3  equations were solved.
<<< Process finished (PID=11348). (Exit code 0)
================ READY ================
```