

# **Assignment #1 – Find Real Roots of a Quadratic Equation**



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**COURSE NO: PROG8240**

**COURSE NAME: STRUCTURED PROGRAMMING**

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1 'AKSHAY PHILIP THOMAS,PROG8240,Structured Programming, STUDENT NO: 8795161
2 Public Class Form1
3
4     Private Sub btnCalculate_Click(sender As Object, e As EventArgs) Handles btnCalculate.Click
5         'declare variables for the coefficient
6         Dim a, b, c, discriminant, root1, root2 As Double
7
8         'Assign Variables to coefficients of the quadratic equation
9         a = txtCoeffA.Text
10        b = txtCoeffB.Text
11        c = txtCoeffC.Text
12
13        'finding the discriminant
14        discriminant = b * b - (4 * a * c)
15
16        'using the three if conditions
17
18        'if discriminant is greater than zero condition
19        If (discriminant > 0) Then
20            root1 = (-b + Math.Sqrt(discriminant)) / (2 * a)
21            root2 = (-b - Math.Sqrt(discriminant)) / (2 * a)
22            LBLRootX1.Text = Math.Round(root1, 2)
23            LBLRootX2.Text = Math.Round(root2, 2)
24            RootBox.Text = ("QUADRATIC EQUATION HAS TWO DISTINCT REAL ROOTS")
25        End If
26
27        'if discriminant is equal to zero condition
28        If (discriminant = 0) Then
29            root1 = -b / (2 * a)
30            root2 = root1
31            LBLRootX1.Text = Math.Round(root1, 2)
32            LBLRootX2.Text = Math.Round(root2, 2)
33            RootBox.Text = ("QUADRATIC EQUATION HAS TWO EQUAL ROOTS")
34        End If
35
36        'if discriminant is less than zero condition
37        If (discriminant < 0) Then
38            RootBox.Text = ("QUADRATIC EQUATION HAS NO REAL ROOTS")
39        End If
40    End Sub
41
42    Private Sub btnQuit_Click(sender As Object, e As EventArgs) Handles btnQuit.Click
43        'close the window when is quit button is pressed
44        Me.Close()
45    End Sub
46
47    Private Sub txtCoeffA_TextChanged(sender As Object, e As EventArgs) Handles
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txtCoeffA.TextChanged
48     'clear the Display ouputs when new input is entered
49     LBLRootX1.Text = ""
50     LBLRootX2.Text = ""
51     RootBox.Text = ""
52 End Sub
53
54 Private Sub txtCoeffB_TextChanged(sender As Object, e As EventArgs) Handles 
    txtCoeffB.TextChanged
55     'clear the Display ouputs when new input is entered
56     LBLRootX1.Text = ""
57     LBLRootX2.Text = ""
58     RootBox.Text = ""
59 End Sub
60
61 Private Sub txtCoeffC_TextChanged(sender As Object, e As EventArgs) Handles 
    txtCoeffC.TextChanged
62     'clear the Display ouputs when new input is entered
63     LBLRootX1.Text = ""
64     LBLRootX2.Text = ""
65     RootBox.Text = ""
66 End Sub
67
68 End Class
69
```