

INSERT SORT

Current Position (Pos)

15 9 20 19 12 25
Pos

15 20 19 12 25
9 15 20 19 12 25
9 ← 9

9 15 20 19 12 25
Pos

9 15 20 19 12 25
Pos
19

9 15 20 12 25
9 15 19 20 12 25
Pos

9 12 15 19 20 25
Pos
→ Sorted

It starts from 2nd digit

Compare the digit from first position to the current position - 1.

If digit at current position is less than the digit at compared position then:

digit at current position will be extracted and

all of the digits from compared position to the current position will be shifted right.


Extracted digit then will be placed at compared position.

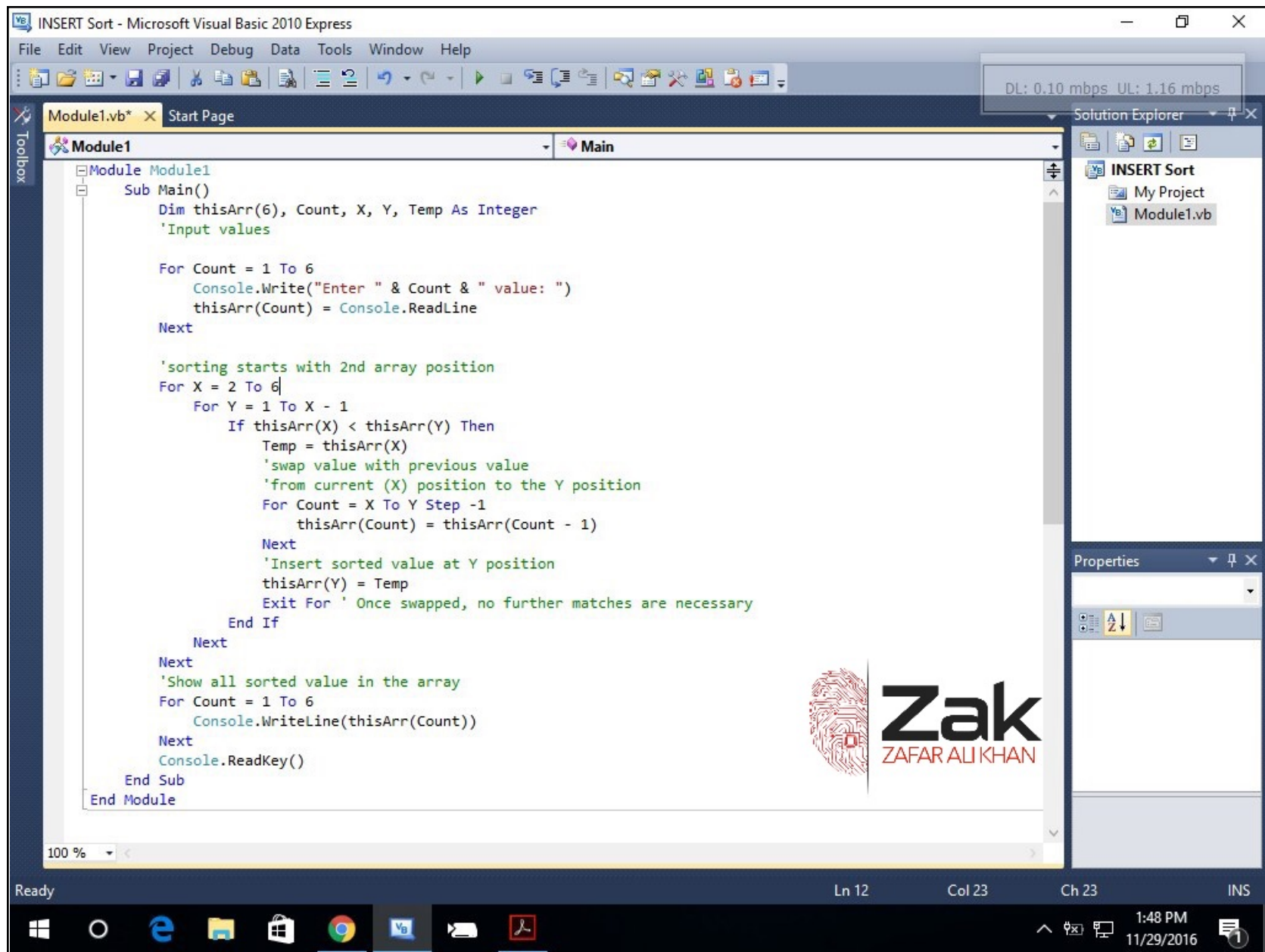
Current loop is discontinued.



Zak
ZAFAR ALI KHAN

<div style="border: 1px solid black; display: inline-block; padding: 2px 5px; margin-bottom: 5px;">INSERT SORT</div> <div style="color: red; font-weight: bold; margin-left: 10px;">Current Position (Pos) Compared Position (CP)</div>	<div style="border: 1px solid black; display: inline-block; padding: 2px 5px; margin-bottom: 5px;">Pseudocode for Insertion Sort</div> <div style="color: red; font-weight: bold; margin-left: 10px;">TBS(6)</div>
15 9 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	<pre> For j ← 2 to 6 For i ← 1 to (j-1) IF TBS(j) < TBS(i) THEN Temp ← TBS(j) For k ← j to (i+1) Step -1 TBS(k) ← TBS(k-1) End For TBS(i) ← Temp Exit For // Breaks Loop i END IF End For End For </pre>
15 20 19 12 25 9 15 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 20 19 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 19 20 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 15 19 20 12 25 <div style="color: red; margin-left: 40px;">Pos</div>	
9 12 15 19 20 25 → Sorted <div style="color: red; margin-left: 40px;">Pos</div>	<pre> Whenever an insert happens inner loop i would not work anymore & breaks. </pre>





INSERT Sort (Running) - Microsoft Visual Basic 2010 Express

File Edit View Project Debug Data Tools Window Help

DL: 0.22 mbps UL: 5.84 mbps

Module1.vb

Module1 Main

```
Module Module1
    Sub Main()
        Dim thisArr(6), Count, X, Y, Temp As Integer
        'Input values

        For Count = 1 To 6
            Console.Write("Enter " & Count & " value: ")
            thisArr(Count) = Console.ReadLine
        Next

        'sorting starts with 2nd array position
        For X = 2 To 6
            For Y = 1 To X - 1
                If thisArr(X) < thisArr(Y) Then
                    Temp = thisArr(X)
                    'swap value with previous value
                    'from current (X) position to the Y position
                    For Count = X To Y Step -1
                        thisArr(Count) = thisArr(Count - 1)
                    Next
                    'Insert sorted value at Y position
                    thisArr(Y) = Temp
                    Exit For ' Once swapped, no further matches are necessary
                End If
            Next
        Next
        'Show all sorted value in the array
        For Count = 1 To 6
            Console.WriteLine(thisArr(Count))
        Next
    End Sub
End Module
```

file:///C:/Users/ZAK/Google Drive/Computer Science Web Resources/VB 2

```
Enter 1 value: 15
Enter 2 value: 9
Enter 3 value: 20
Enter 4 value: 19
Enter 5 value: 12
Enter 6 value: 25
9
12
15
19
20
25
```

100 %

Locals

Name	Value
------	-------

Autos Locals Watch

Ready

Windows taskbar icons: Windows, Internet Explorer, File Explorer, Home, Google Chrome, Visual Basic, Task Manager, PDF Reader, Notepad.

System tray: Network, Volume, 1:49 PM, 11/29/2016, Notification icon.

Watermark: Zak ZAFAR ALI KHAN