Visual Basic Programming – Demonstration Program 9

```
' numtable - demonstrate menus, arrays, file input-output & status bar
'
' You need this reference for the StreamReader/Writer classes
Imports System.IO
Public Class Form1
    ' set status text to show number of items
    Sub UpdateStatus()
        ToolStripStatusLabel1.Text = "Table contains " &
ListBox1.Items.Count & " items"
    End Sub
    ' initialise status text at start up
    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        UpdateStatus()
    End Sub
    ' add numbers to list box
    Private Sub AddToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles AddToolStripMenuItem.Click
        Dim ok As Boolean = True
        While ok
            ' get response from user
            Dim sval As String
            sval = InputBox("Enter number, blank to stop")
            ' try to convert it to a number
            Dim dval As Double
            ok = Double.TryParse(sval, dval)
            ' succeed, add to list box
            If (ok) Then ListBox1.Items.Add(dval)
        End While
        UpdateStatus()
    End Sub
    ' delete selected items from list box
    Private Sub DeleteToolStripMenuItem_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
DeleteToolStripMenuItem.Click
        ' set listbox 'Selection Mode' to 'MultiExtended'
        ' for every selected index
        While ListBox1.SelectedIndices.Count > 0
            ' delete the first one and loop
            ListBox1.Items.RemoveAt(ListBox1.SelectedIndices.Item(0))
        End While
        UpdateStatus()
    End Sub
    ' turn the list box sorting property on and off
    Private Sub SortToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles SortToolStripMenuItem.Click
        ' get the current sorting value
        Dim checked As Boolean = ListBox1.Sorted
        ' negate it
        checked = Not checked
        ' set the list box sorting property
        ListBox1.Sorted = checked
        ' set the menu item checked property
        SortToolStripMenuItem.Checked = checked
```

```
    End Sub
    ' calculate the median value of the numbers
    Private Sub CalculateMedianToolStripMenuItem_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
CalculateMedianToolStripMenuItem.Click
        ' get number of values in list
        Dim n As Integer = ListBox1.Items.Count
        ' check have some numbers!
        If (n = 0) Then
            MsgBox("No numbers")
            Return
        End If
        ' copy the numbers into an array
        Dim tab(n - 1) As Double
        For i As Integer = 0 To n - 1
            tab(i) = ListBox1.Items.Item(i)
        Next
        ' sort the array
        Array.Sort(tab)
        ' pick out the middle one (or average the middle two)
        Dim median As Double
        If (n Mod 2) = 1 Then
            median = tab(n \ 2)
        Else
            median = (tab(n \ 2 - 1) + tab(n \ 2)) / 2
        End If
        ' display result
        MsgBox("Median = " & median)
    End Sub
    ' read numbers from file into table
    Private Sub OpenToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles OpenToolStripMenuItem.Click
        ' get the input file name
        If (OpenFileDialog1.ShowDialog() = Windows.Forms.DialogResult.OK)
Then
            ' clear the list box
            ListBox1.Items.Clear()
            ' open the input file
            Dim sr As StreamReader = New
StreamReader(OpenFileDialog1.FileName)
            ' read in the values
            Dim line As String
            Dim dval As Double
            While Not sr.EndOfStream
                line = sr.ReadLine()
                ' only read in valid numbers
                If (Double.TryParse(line, dval)) Then
                    ListBox1.Items.Add(dval)
                End If
            End While
            sr.Close()
            UpdateStatus()
        End If
    End Sub
    ' write the numbers from table to file
    Private Sub SaveToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles SaveToolStripMenuItem.Click
        ' get the output file name
        If (SaveFileDialog1.ShowDialog() = Windows.Forms.DialogResult.OK)
Then
            ' open the output file
```

```
            Dim sw As StreamWriter = New
StreamWriter(SaveFileDialog1.FileName)
            ' write each of the values
            For i As Integer = 0 To ListBox1.Items.Count - 1
                sw.WriteLine(ListBox1.Items.Item(i))
            Next
            sw.Close()
        End If
    End Sub
    ' exit the program
    Private Sub ExitToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles ExitToolStripMenuItem.Click
        End
    End Sub
End Class
```