

COMPONENTS

DSP Programming – Demonstration Program 1

```
' TestSine - demonstrate BasicDSP library with sinewave generation,
' display and replay
'
' You may need to add the ZedGraph component to the toolbox:
' - Tools | Choose Toolbox Items
' - .NET Framework Components, browse to ZedGraph.dll and select
'
' Create a form with a menu strip for the Play command, then add a
' ZedGraph control, and dock it to fill the form.
'
' Use the "My Project" dialog to configure the program:
' - under the Compile tab, press "Advanced Compilation Options"
'   and change the Target CPU to "x86"
' - under the References tab, click the "Add" button then browse for
'   and select the BasicDSP.dll and ZedGraph.dll libraries.
'
' Import BasicDSP - you also need to add reference to BasicDSP.dll
Imports BasicDSP
'
Public Class TestSine
    '
    Const NUMSAMPLE As Integer = 44100          ' number of samples
    Const SAMPRATE As Double = 44100.0        ' sampling rate
    Const SINEFREQ As Double = 500.0          ' sine at 500Hz
    Const SINEAMP As Double = 10000.0         ' sine amplitude
    '
    Dim wv As Signal
    '
    ' generate and display sine signal
    Private Sub TestSine_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        ' create empty signal
        wv = New Signal(NUMSAMPLE, SAMPRATE)
        ' construct sine
        For i As Integer = 1 To NUMSAMPLE
            wv(i) = BasicDSP.Sample.Sine(SINEFREQ, SINEAMP, 0, i /
SAMPRATE)
        Next
        ' display first 10ms (zgc=name of ZedGraph control)
        Dim gp As New Graph(Me.CreateGraphics, ZedGraphControl1)
        gp.PlotSignal(1, wv.Cut(1, SAMPRATE / 100), "TestSine")
    End Sub
    '
    ' replay sine signal
    Private Sub PlayToolStripMenuItem_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles PlayToolStripMenuItem.Click
        wv.Replay()
    End Sub
End Class
```

