

```
Public Class CktForm
```

```
    Dim FormLoaded As Boolean
```

```
    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
```

```
        FormLoaded = False
```

```
        ListBoxLED.SelectedIndex = 0
```

```
        ComboBoxResistor.SelectedIndex = 0
```

```
        FormLoaded = True
```

```
        CalcCircuit()
```

```
    End Sub
```

```
    Private Sub AboutToolStripMenuItem_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles AboutToolStripMenuItem.Click
```

```
        Dim LastRevised As Date
```

```
        LastRevised = "2007/11/06"
```

```
        MsgBox("LED Circuit Simulator dot Net 1.0" & Chr(13) & Chr(10) & "by Mike Boldin" & Chr(13) & Chr(10) & "Last revised on " & LastRevised, MsgBoxStyle.OkOnly + MsgBoxStyle.Information, "About LEDCircuitSim")
```

```
    End Sub
```

```
    Private Sub NumericUpDownVoltage_ValueChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles NumericUpDownVoltage.ValueChanged
```

```
        CalcCircuit()
```

```
    End Sub
```

```
    Private Sub CalcCircuit()
```

```
        Dim Voltage As Double
```

```
        Dim LEDForwardVoltage As Double
```

```
        Dim LEDMaxCurrent As Double
```

```
        Dim Current As Double
```

```
        Dim Power As Double
```

```
        Dim Diode As String
```

```
        Dim Resistance As Double
```

```
        Dim LEDColour As Color
```

```
        Dim OperatingColour As Color
```

```
        If Not FormLoaded Then
```

```
            Return
```

```
        End If
```

```
        Voltage = Cdbl(NumericUpDownVoltage.Value)
```

```
        Resistance = Cdbl(ComboBoxResistor.SelectedItem)
```

```
        Diode = ListBoxLED.SelectedItem
```

```
        REM MsgBox("Voltage: " & Voltage & " Resistance: " & Resistance & " LED: " & Diode)
```

```
        If Resistance <= 0.0 Then
```

```
            MsgBox("Invalid resistance", MsgBoxStyle.Exclamation + MsgBoxStyle.OkOnly, "Resistor Error")  
            Return
```

```
        End If
```

```
        If Diode = "PR5534S" Then
```

```
        LEDForwardVoltage = 2.5
        LEDMaxCurrent = 0.1
        LEDColour = Color.Red

    ElseIf Diode = "SEL-1320G" Then

        LEDForwardVoltage = 3.0
        LEDMaxCurrent = 0.03
        LEDColour = Color.Green

    ElseIf Diode = "LNG992CFBW" Then

        LEDForwardVoltage = 3.5
        LEDMaxCurrent = 0.02
        LEDColour = Color.Blue

    Else

        MsgBox("You need to select an LED", MsgBoxStyle.Exclamation + MsgBoxStyle.OkOnly, "No LED Selected")
        Return

    End If

    If Voltage > LEDForwardVoltage Then

        Current = (Voltage - LEDForwardVoltage) / Resistance

        Power = Resistance * Current ^ 2.0

        If (Current <= LEDMaxCurrent) Then

            OperatingColour = Color.Green

        Else

            OperatingColour = Color.Red

        End If

    Else

        Current = 0.0
        Power = 0.0

        OperatingColour = Color.Black

    End If

    LabelLED.ForeColor = LEDColour
    LabelCurrent.Text = Format(Current, "0.000")
    LabelCurrent.ForeColor = OperatingColour
    LabelPowerR1.Text = Format(Power, "0.000")

End Sub

Private Sub ComboBoxResistor_SelectedIndexChanged(ByVal sender As System.Object, ByVal e As System.
EventArgs) Handles ComboBoxResistor.SelectedIndexChanged
    CalcCircuit()
End Sub

Private Sub ListBoxLED_SelectedIndexChanged(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles ListBoxLED.SelectedIndexChanged
    CalcCircuit()
End Sub
```

```
End Sub

Private Sub ResetFormToolStripMenuItem_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles ResetFormToolStripMenuItem.Click
    NumericUpDownVoltage.Value = 0
    ListBoxLED.SelectedIndex = 0
    ComboBoxResistor.SelectedIndex = 0

    CalcCircuit()
End Sub

Private Sub ExitToolStripMenuItem_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles ExitToolStripMenuItem.Click
    Dim res As MsgBoxResult

    res = MsgBox("Are you sure you want to close?", MsgBoxStyle.YesNo + MsgBoxStyle.Question, "Close")

    If res = MsgBoxResult.Yes Then
        End
    End If
End Sub

Private Sub CktForm_FormClosing(ByVal sender As System.Object, ByVal e As System.Windows.Forms.FormClosingEventArgs) Handles MyBase.FormClosing

End Sub
End Class
```