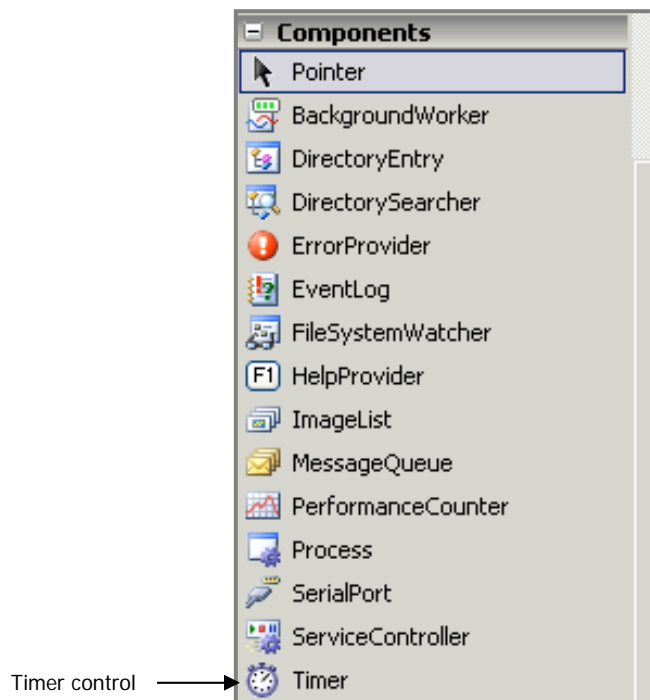


# USING THE TIMER CONTROL IN VISUAL BASIC

Applications often perform actions at regular intervals. For example, a game application might display a "Time's up!" message if the user hasn't answered a question in 10 seconds.

A timer object is used to execute code at specified intervals. To add a timer to an application, simply double-click the **Timer** control from the **Toolbox**.



You'll notice that when you add a **Timer** to your program, it appears at the bottom of the screen. A timer, however, is an invisible component that will not appear on your form once you run the application.

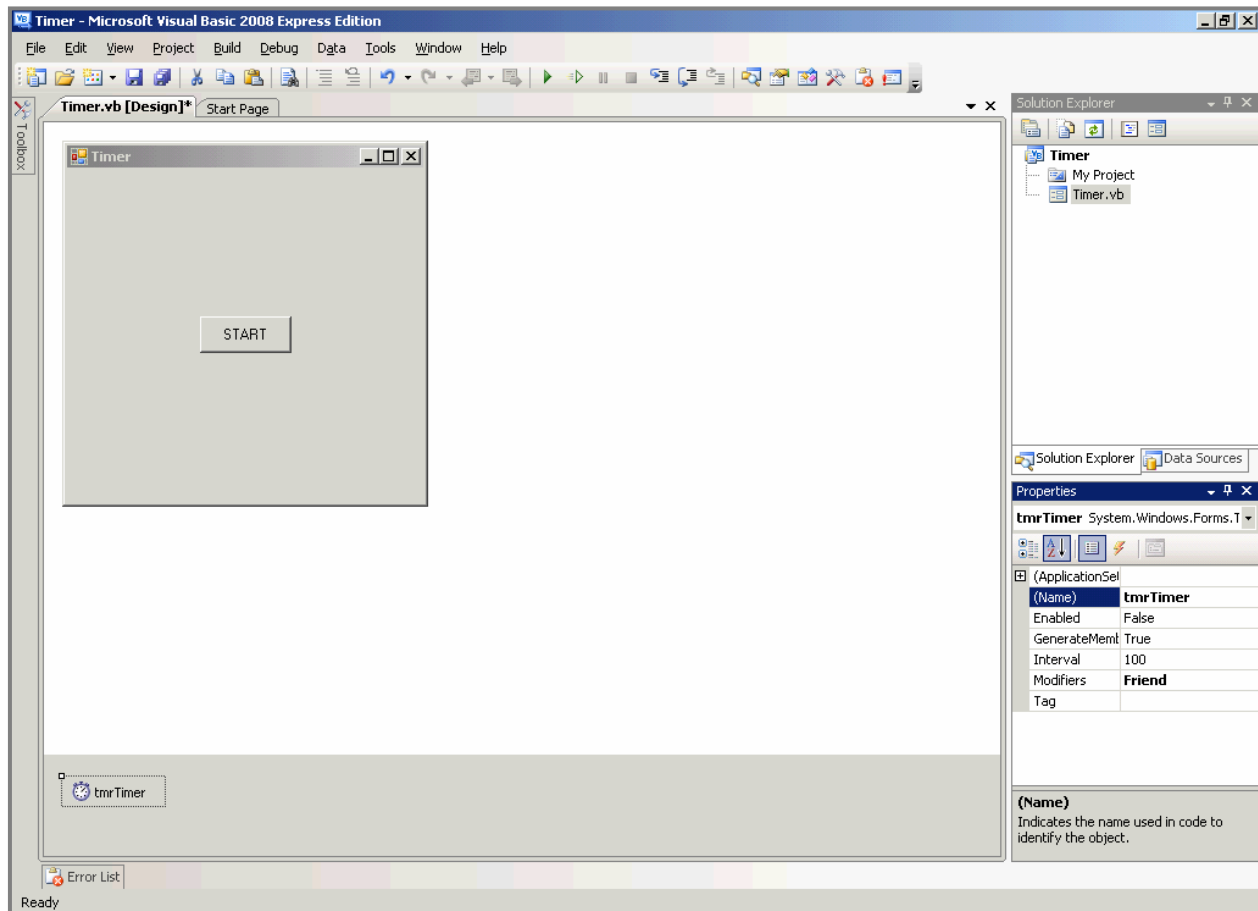
The **Timer** control has only six properties and generates **Tick** events at set intervals. Of the control's properties, only **NAME**, **ENABLED**, and **INTERVAL** are useful to you at this time.

|                  |  |
|------------------|--|
| <b>NAME:</b>     | <ul style="list-style-type: none"><li>- Identifies a control for the programmer</li><li>- It is good programming style to begin <b>Timer</b> object names with <b>tmr</b></li></ul>  |
| <b>INTERVAL:</b> | <ul style="list-style-type: none"><li>- Defines the number of milliseconds between events. So, for example, 1 second equals 1000 milliseconds.</li></ul>   |
| <b>ENABLED:</b>  | <ul style="list-style-type: none"><li>- Determines whether the <b>Timer</b> is on or off</li><li>- When <b>Enabled</b> is set to <b>True</b>, the Timer is on.</li><li>- When <b>Enabled</b> is set to <b>False</b>, the Timer is off.</li></ul> |

## A SINGLE TIMER EVENT

One way to use a **Timer** is to determine when a specified period of time has elapsed. For example, you might want your program to display a prompt if the user doesn't react to some sort of request within a given period of time. The following sample program demonstrates how to use a **Timer** in this way.

1. Start a new Visual Basic project and add one button and one timer to the form as shown here:



2. Set the **Timer** control properties as follows:

|           |                 |
|-----------|-----------------|
| NAME:     | <b>tmrTimer</b> |
| INTERVAL: | <b>5000</b>     |
| ENABLED:  | <b>False</b>    |

3. Double-click the **Timer** control and enter the following code:

```
Private Sub tmrTimer_Tick(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles tmrTimer.Tick

    tmrTimer.Stop()
    MsgBox("Time has expired!", MsgBoxStyle.Information,
        "Time's up!")
```

End Sub

4. Double-click the **Start** button and enter the following code:

```
Private Sub btnStart_Click(ByVal sender As System.Object, ByVal e
    As System.EventArgs) Handles btnStart.Click
    tmrTimer.Start()
```

End Sub

5. Run the program, click on the **Start** button and let the program run until the message, "Time has expired!" appears after the **Timer** has run for 5 seconds.
6. Save the project as **Timer** in your UNIT 5 folder.