

Chapter 22

Using Timer

❖ Learning how to Use Timer in VB2010

In this chapter, we shall show you how to use timer in VB2010. You use Timer is to control and manage events that are time related. For example, you need timer to create a clock, a stopwatch, a dice, animation and more.

22.1 Creating a Clock

In order to create a clock, you need to use the Timer control that comes with Visual Basic 2010 Express. The Timer control is a control object that is only used by the developer, it is invisible during runtime and it does not allow the user to interact with it.

To create the clock, first start a new project in Visual Basic 2010 Express and select a new Windows Application. You can give the project any name you wish, but we will name it MyClock. Change the caption of the Form1 to MyClock in the properties window. Now add the Timer control to the form by dragging it from the ToolBox. Next, insert a label control into the form. Change the Font size of the label to 14 or any size you wish, and set the Font alignment to be middle center. Before we forget, you shall also set the Interval property of the Timer control to 1000, which reflects a one second interval (1 unit is 1 millisecond).

Now, you are ready for the coding. It is only a simple one-line code, that is:

```
Label1.Text = TimeOfDay
```

To create the clock, click on the Timer control and insert the following code

```
Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As  
System.EventArgs) Handles Timer1.Tick
```

```
Label1.Text = TimeOfDay
```

```
End Sub
```

The image of the digital clock is shown in Figure 22.1



Figure 22.1

You can also use the code **Now.ToString()** to show the time as well as date, that is:

The full code is

```
Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
```

```
    Label1.Text = Now.ToString
```

```
End Sub
```

The Clock is shown in Figure 22.2

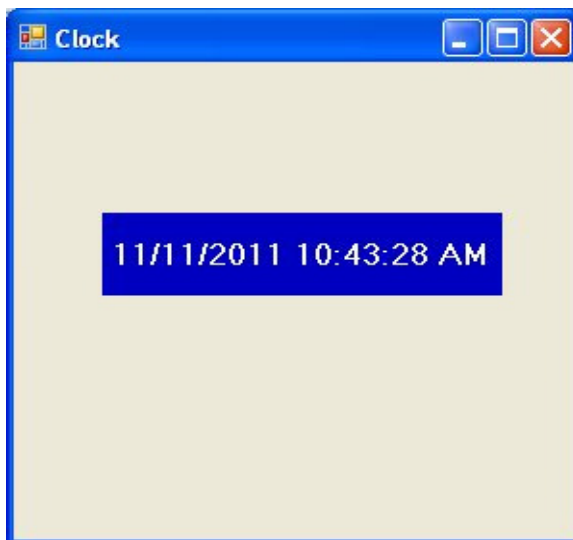


Figure 22.2

22.2 Creating a Stopwatch

We can create a simple stopwatch using the Timer control. Start a new project and name it stopwatch. Change the Form1 caption to Stopwatch. Insert the Timer control into the form and set its interval to 1000, which is equal to one second. Also, set the timer Enabled property to False so that it will not start ticking when the program starts. Insert three command buttons and change their names to StartBtn, StopBtn and ResetBtn respectively. Change their text to "Start", "Stop" and "Reset" accordingly. Now enter the code as follows:

```
Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Timer1.Tick
```

```
    'To increase one unit per second
```

```
    Label1.Text = Val(Label1.Text) + 1
```

```
End Sub
```

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

```
    'To stop the Timer
```

```
    Timer1.Enabled = False
```

```
End Sub
```

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

```
    'To start the Timer
```

```
    Timer1.Enabled = True
```

```
End Sub
```

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

```
'To reset the Timer to 0
```

```
Label1.Text = 0
```

```
End Sub
```

The Interface of the Stopwatch

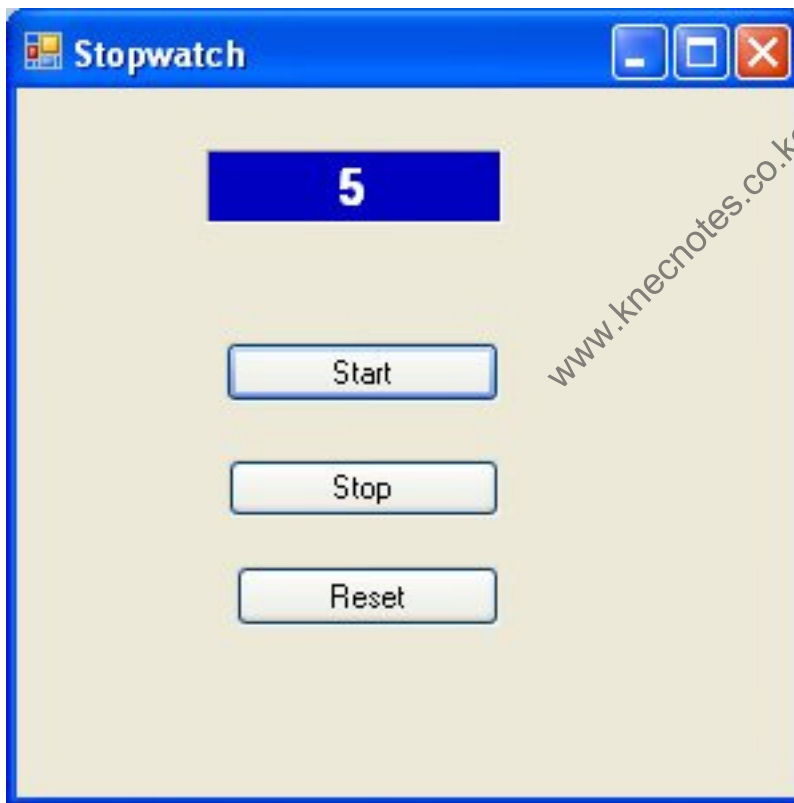


Figure 22.3

22.3 Creating a Digital Dice

We can create a digital dice easily using the Timer Control. To create a dice, you need to generate random numbers using the Rnd function. Rnd generates numbers between 0 and 1. The statement

$$n = \text{Int}(1 + \text{Rnd}() * 6)$$

generates integers from 1 to 6 randomly.

In the code, we introduce the variable m to control the length of time of the rolling process. If m is more than 1000, then the rolling process will stop by setting the timer enabled property to False.

The code is shown below:

```
Public Class Form1
```

```
Dim n, m As Integer
```

```
Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As  
System.EventArgs) Handles Timer1.Tick
```

```
    m = m + 10
```

```
    If m < 1000 Then
```

```
        n = Int(1 + Rnd() * 6)
```

```
        LblDice.Text = n
```

```
    Else
```

```
        Timer1.Enabled = False
```

```
        m = 0
```

```
    End If
```

```
End Sub
```

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

```
    Timer1.Enabled = True
```

```
End Sub
```

```
End Class
```

Running the program produces a dice with fast changing numbers which stop at a certain number. The interface is shown below:



Figure 22.3: Animated Dice

Summary

In this chapter, you learned how to use Timer to create various applications.

- In section 22.1, you learned how to create a clock.
- In section 22.2, you learned how to create a stopwatch.
- In section 22.3, you learned how to create a digital dice.