Timer

A timer is a control that allows us to add animation to our project. Add a Timer control to the form. You will notice that the control is not added to the form but to a tray at the bottom. Open the properties window for the timer control and set it as follows.

<table>
<thead>
<tr>
<th>Properties</th>
<th>System.Windows.Forms.Timer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled</td>
<td>True</td>
</tr>
<tr>
<td>GenerateMember</td>
<td>True</td>
</tr>
<tr>
<td>Interval</td>
<td>1000</td>
</tr>
<tr>
<td>Tag</td>
<td>Friend</td>
</tr>
</tbody>
</table>

The Enabled property turns the timer on. The Interval property runs the code behind the timer at the specified intervals. The unit of measure is milliseconds (1000 milliseconds = 1 second). Let’s add time display to the text property of the form.

Next we will create a stop clock application. Create a new application and place two labels with texts “MINUTES” and “SECONDS” side-by-side. Now add two more labels right underneath the labels that read “MINUTES” and “SECONDS”. Name them lblmin and lblsec, respectively. Set their texts to 0. Add two buttons “Start Clock” and “Stop Clock” and name them btnstart and btnstop. Also add an exit command button and code it.

The interface for the application should be as follows.
We will use the timer control for this application. Add the timer control and set the interval property to 1000 (which is 1 second). The timer can be turned on or off with the enabled property. To turn the timer on we use the statement `timer1.enabled = True`. Use the logic below to complete the coding.

**When form loads**
1. turn the timer off
2. disable btnstop button (because you can’t stop until you start)

**When user clicks on start clock**
1. turn the timer on
2. set the text in lblmin and lblsec to 0
3. disable btnstart button (because after you start you can only stop)
4. enable btnstop button

**When user clicks on stop clock**
1. turn the timer off
2. disable btnstop button (because after you stop you can only start)
3. enable btnstart button

**In the timer event (which activates every second after the user clicks on start clock)**
1. Increase the value in lblsec by 1
2. If the value in lblsec is 60 then set lblsec to 0 and increase the value in lblmin by 1

Now add the option to keep track of hours in addition to minutes and seconds. Save the application and ensure that it is working correctly.

**Practice:** adding a form to an existing project and using timer to control its opacity property.