

# CO453 Application Programming

Week 10 – animation

.NET part 5

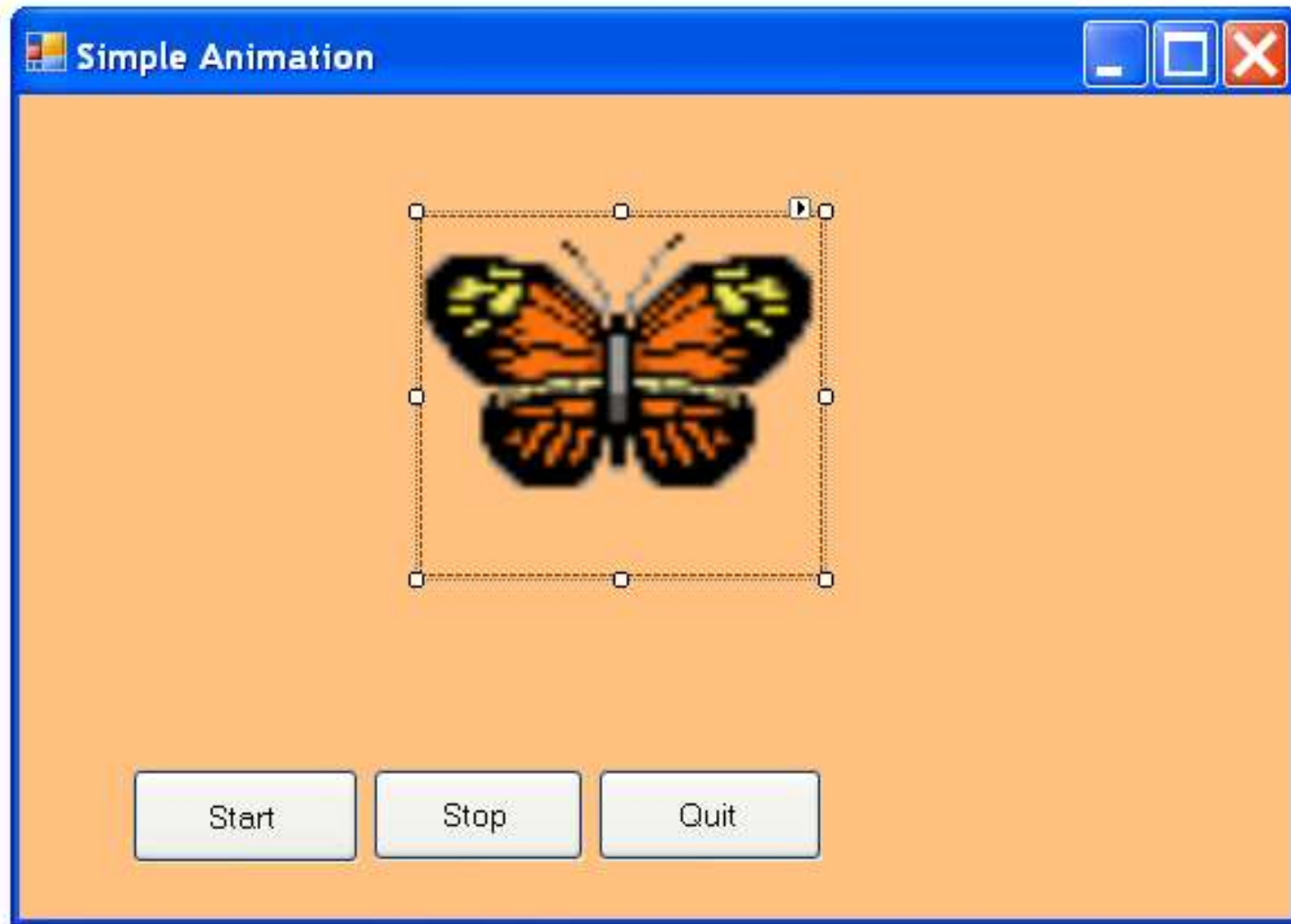



How does an animation  
work?

# **Simple Animation**

**(using a  
Timer control)**

# Butterfly Animation



 timer1

There are 8 Butterfly Images



**File Names: bfly0.gif, bfly1.gif up to bfly7.gif**

# Using an Array to store the images

```
const int MAX = 8; // there are 8 images
Image[ ] images = new Image[MAX]; // set up an image array
```

```
for(int i = 0; i < MAX; i++)
{
    images[i] =
        Image.FromFile("bfly" + i + ".gif");
}
```

Put this code  
in the form's  
Load() method

images[ ] array









0	bfly0.gif	
1	bfly1.gif	
2	bfly2.gif	
3	bfly3.gif	
4	bfly4.gif	
5	bfly5.gif	
6	bfly6.gif	
7	bfly7.gif	

# Display images in the PictureBox

```
pbxBFly.Image = images[count];  
count ++;
```

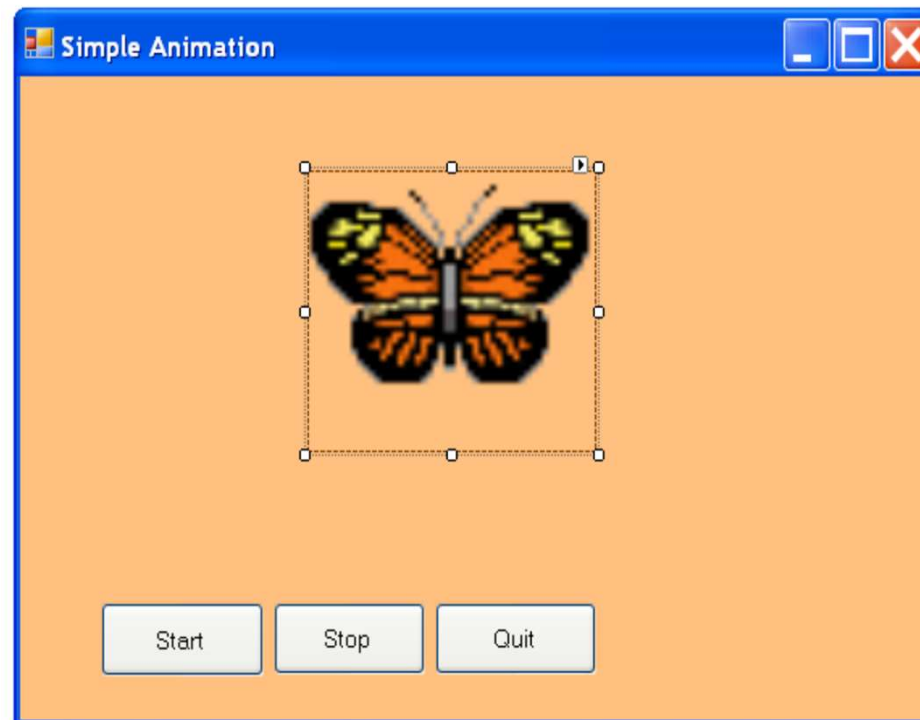
Put this code in the  
timer's Tick() method

images[ ] array

0	bfly0.gif	
1	bfly1.gif	
2	bfly2.gif	
3	bfly3.gif	
4	bfly4.gif	
5	bfly5.gif	
6	bfly6.gif	
7	bfly7.gif	

# Activity

Code exercise 5.1 to make the butterfly animate when the timer is started

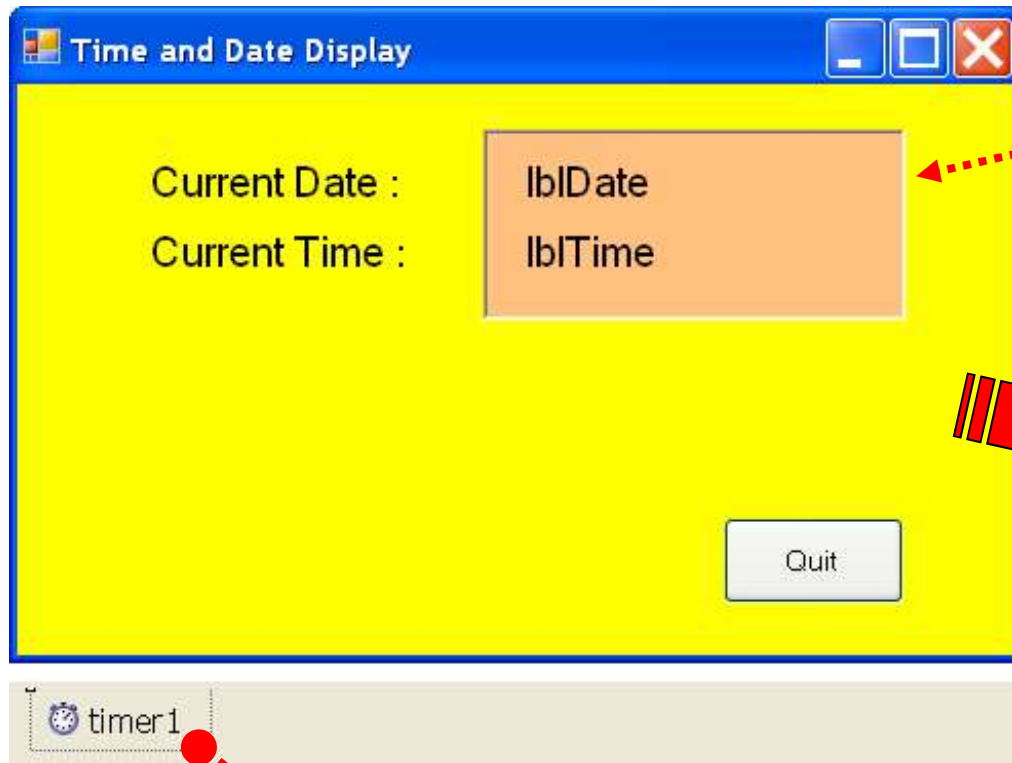




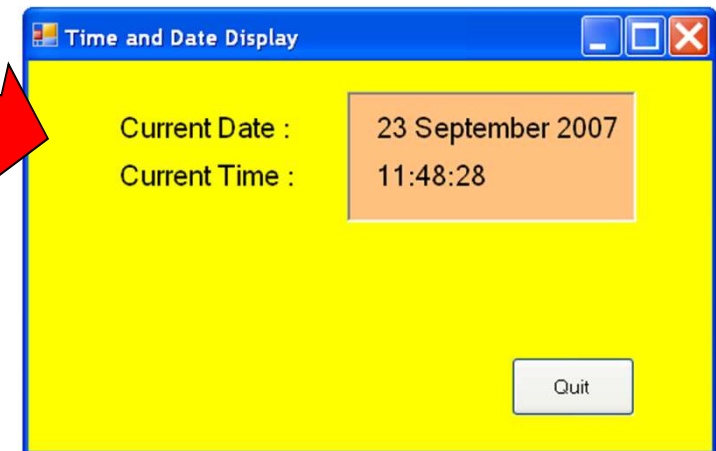
# **Date and Time**

**(using a Timer control)**

# Using a Timer Control with a Time and Date Display



2 Labels in a Panel Container



```
private void timer1_Tick(object sender, EventArgs e)
{
    lblDate.Text = DateTime.Now.ToLongDateString();
    lblTime.Text = DateTime.Now.ToLongTimeString();
}
```

# Activity

Code exercise 5.2 to update the time display

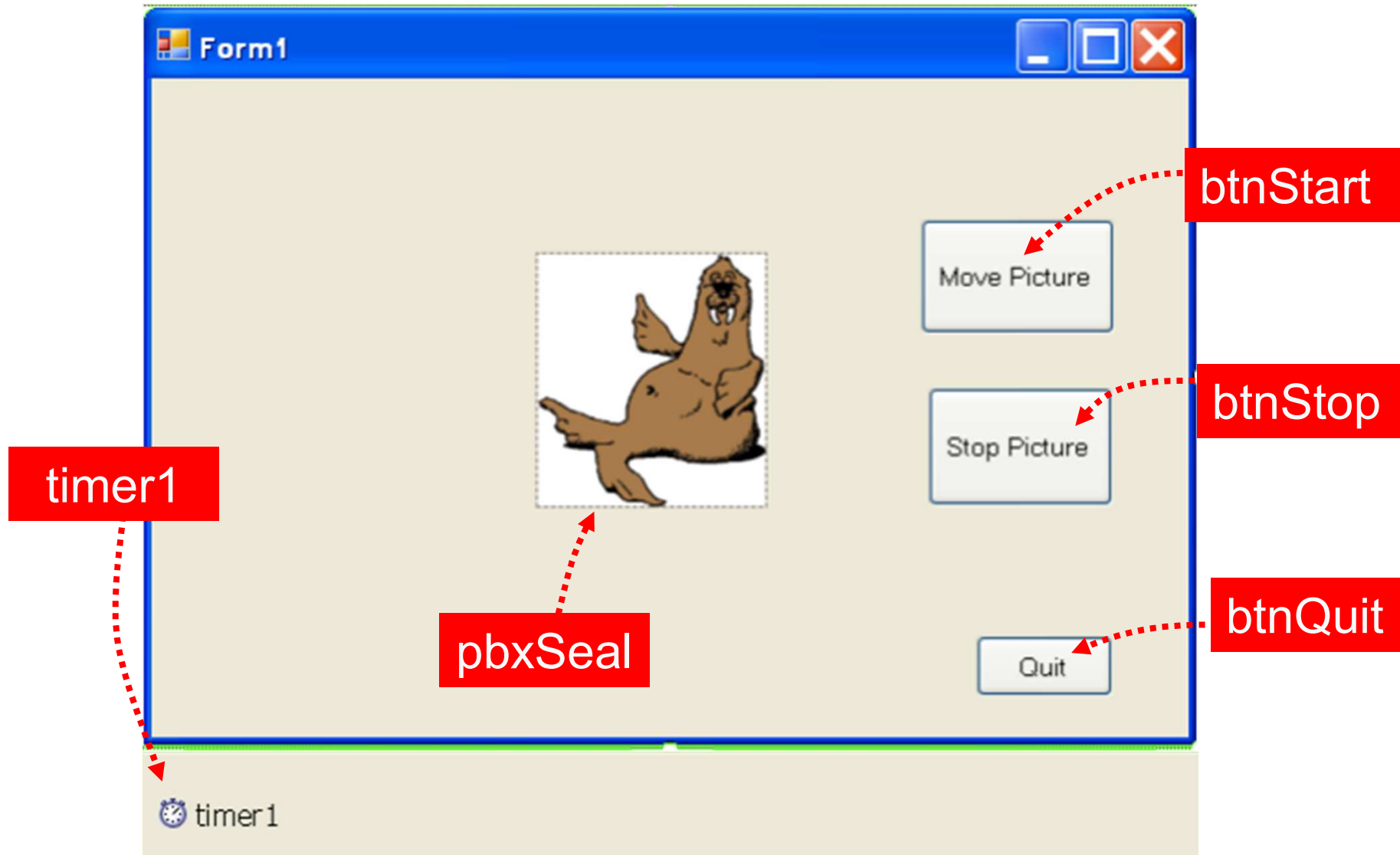
An orange rectangular box with a thin black border, containing two lines of text.

lblDate

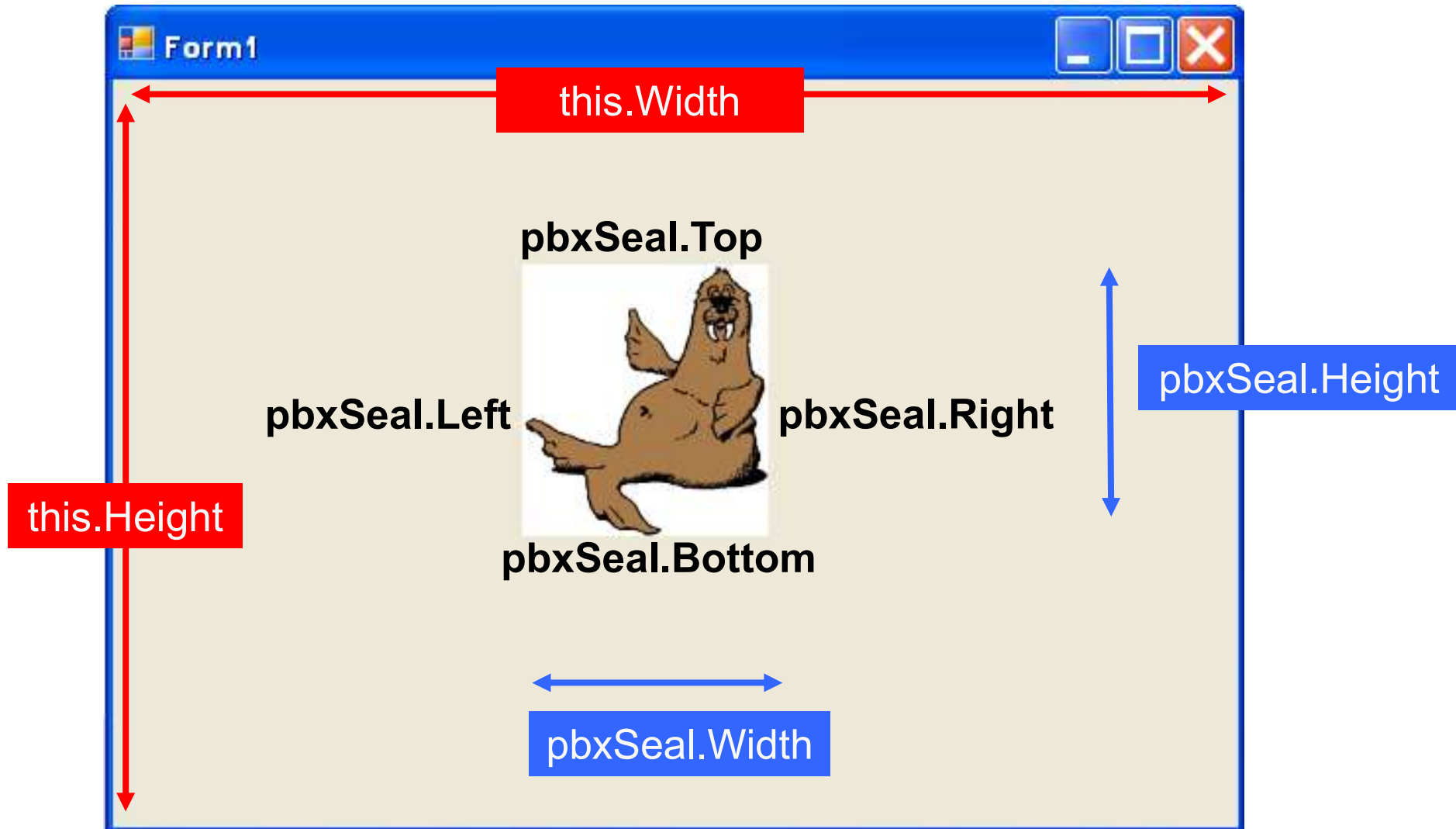
lblTime

# **Moving an Image (using a Timer again)**

# Move a PictureBox down screen



# A note on Graphics Coordinates



**Note:** Objects have a Top, Bottom, Left, Right, Width, Height  
Coordinates start from 0,0 at the top left corner

# Code for the Timer Project

```
Start Page / Form1.cs* / Form1.cs [Design]*
SealAnimation.frmAnimation timer1_Tick(object sender, EventArgs e)

private void btnStart_Click(object sender, EventArgs e)
{
    timer1.Enabled = true;        // start the timer
}

private void btnStop_Click(object sender, EventArgs e)
{
    timer1.Enabled = false;      // stop the timer
}

private void timer1_Tick(object sender, EventArgs e)
{
    pbxSeal.Top = pbxSeal.Top + 10; // move down
    if (pbxSeal.Top >= this.Bottom) // if seal reached form bot
    {
        pbxSeal.Top = 0;          // reset back to top
    }
}
```

# Activity

Code exercise 5.3 to make the helicopter animate





# The Last Slide

