

【AForge.NET】C#上使用AForge.Net擷取視訊畫面(Capture Image)

By Marc Wang 下午6:17 aforge.net, C# No comments

簡單4個步驟讓你在C#上使用視訊擷取畫面

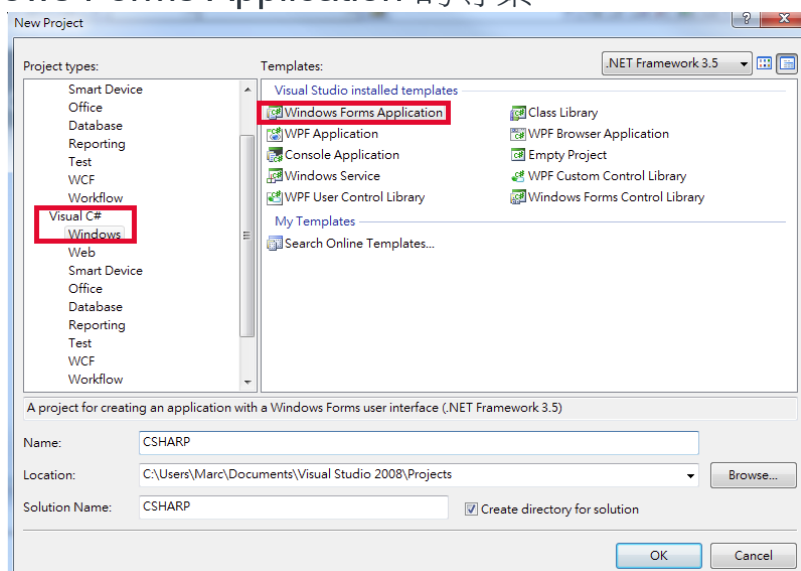
Step1 :

Download [AForge.Net Framework](#)

Step2 :

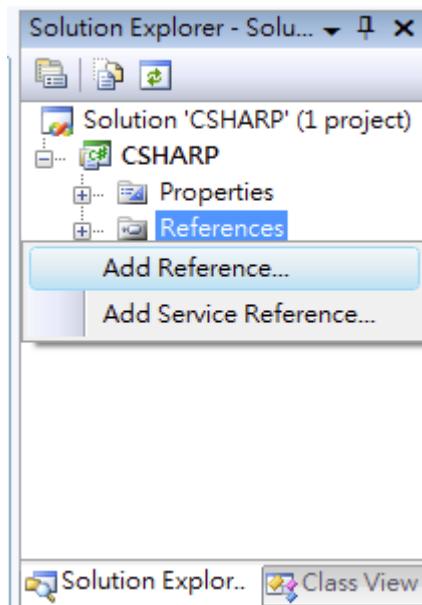
Visual Studio 2008上做環境建置

1.建立一個 Windows Forms Application 的專案

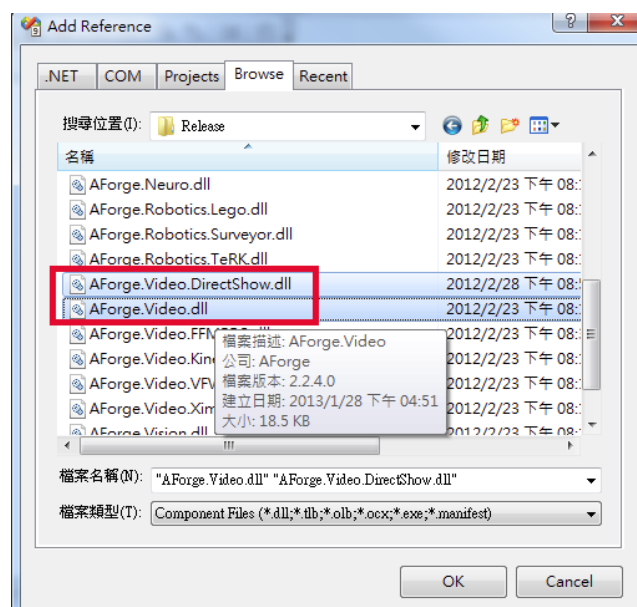
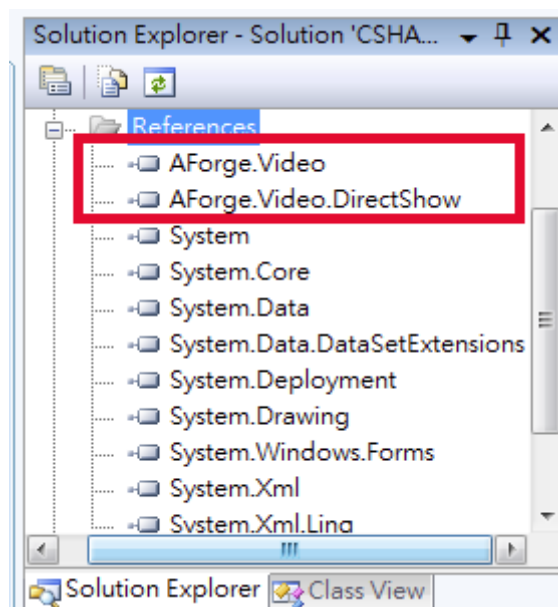


2.Aforge.Net 安裝路徑設定

Solution Explorer => References(右鍵) => Add Reference => AForge.Net的 Release資料夾



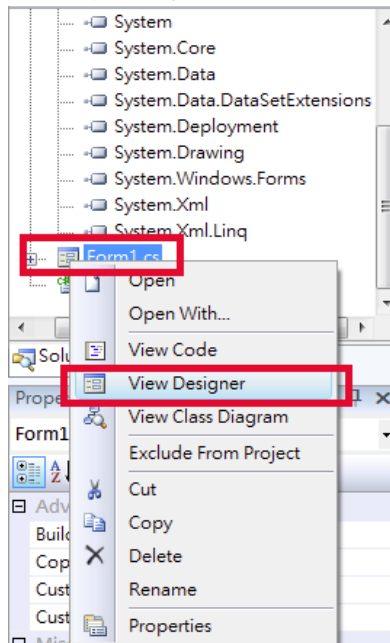
加入AForge.Video.DirectShow.dll、AForge.Video.dll(因為這一個範例只使用到這兩個dll檔)



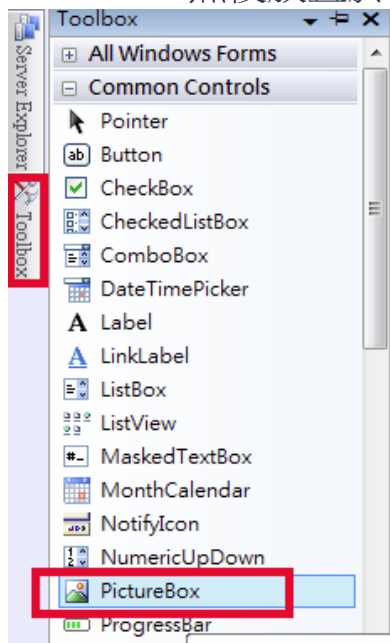
Step3 :

建立一個簡單的user interface視窗

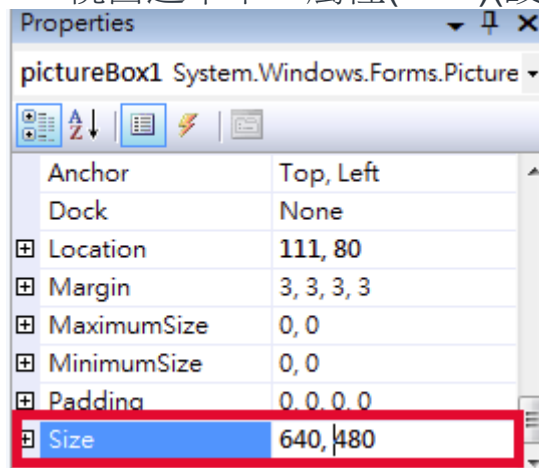
1. Solution Explorer 按 Form1.cs，再去按 View Designer



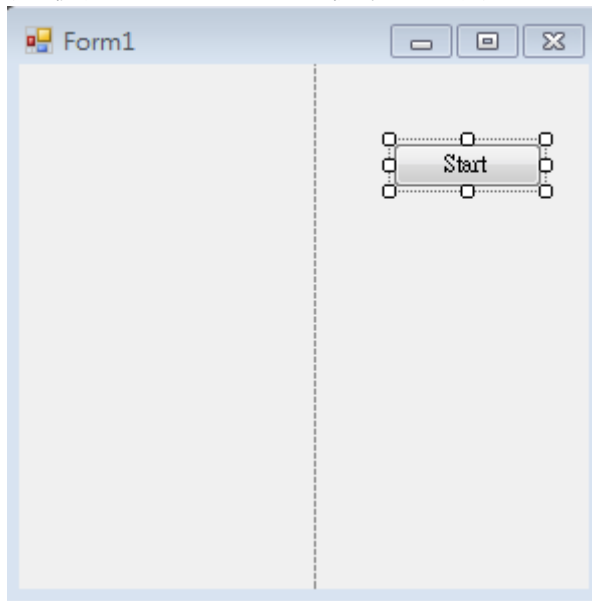
2. 視窗左邊的Toolbox選擇PictureBox，然後放置於Form1視窗區域之上



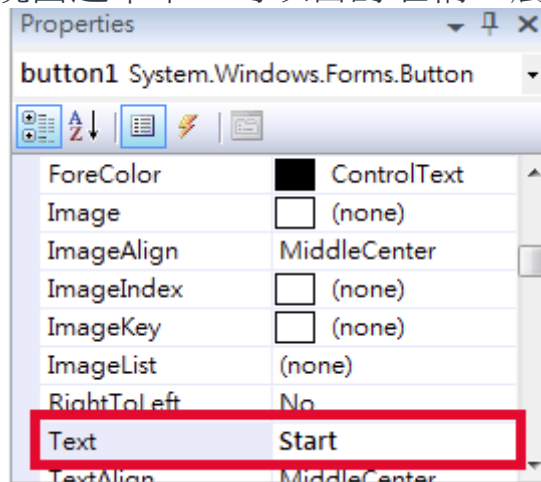
3. 在PictureBox的Properties視窗選單中，屬性(Size)設定640, 480)



4.Toolbox中點Button，然後放置於Form1視窗區域之上



5.在Button的Properties視窗選單中，可以自訂名稱，屬性(Text)(如：Start)



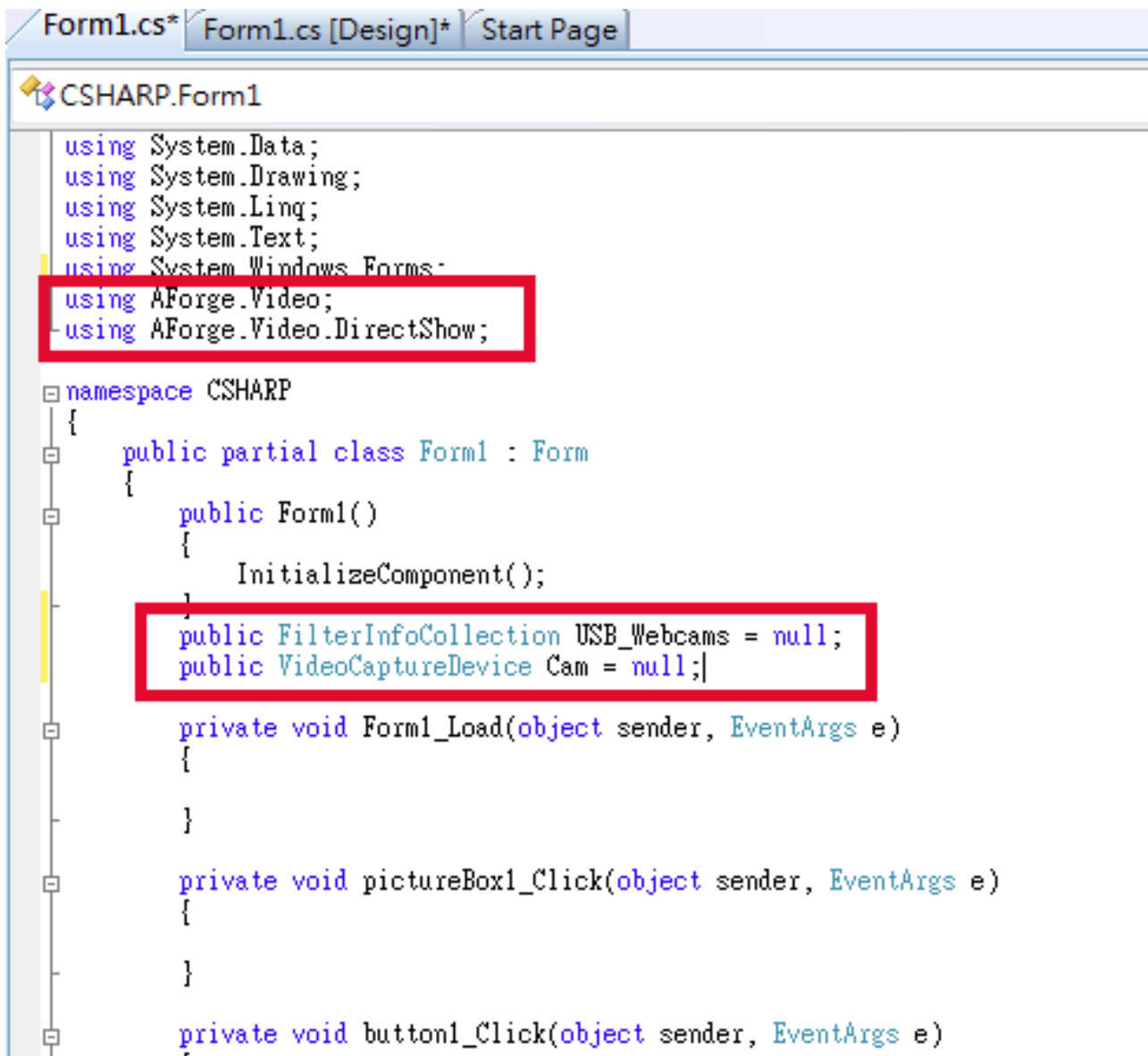
6.調整Form1視窗大小，以及Button、PictureBox的位置

Step4 :

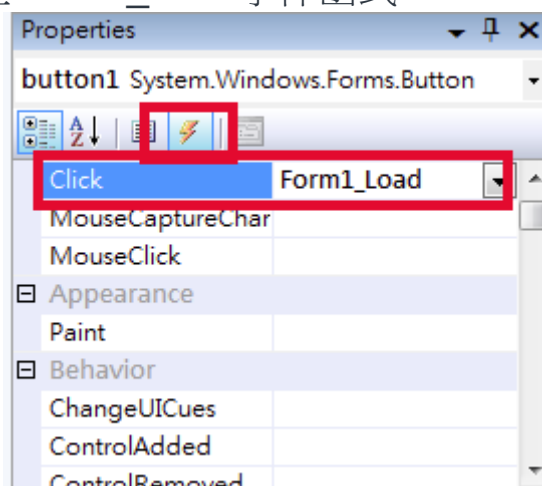
接下來開始寫一些關於視訊畫面擷取的程式碼

1.在Solution Explorer點選Form1.cs，按View Code，分別加入下面的程式碼

- using AForge.Video ;
- using AForge.Video.DirectShow ;
- public FilterInfoCollection USB_Webcams = null ;
- public VideoCaptureDevice Cam = null ;



2.在Form1.cs[Design]視窗中，點Form1 => Properties => Events(閃電圖形) => 屬性(Load)，會自動產生Form1_Load事件函式



3.在Form1_Load的事件函式區域中加入以下程式碼

```
USB_Webcams = new FilterInfoCollection(FilterCategory.VideoInputDevice);
if (USB_Webcams.Count > 0) // The quantity of WebCam must be more than 0.
```

```

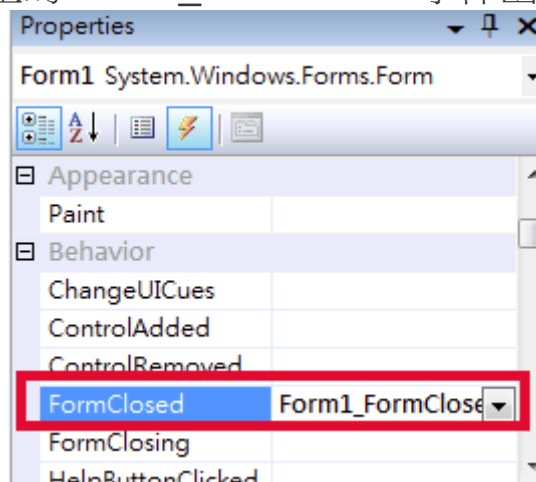
{
    button1.Enabled = true ;
    Cam = new VideoCaptureDevice(USB_Webcams[0].MonikerString) ;
    //Cam.NewFrame += new NewFrameEventHandler(Cam_NewFrame);
}
else
{
    button1.Enabled = false ;
    MessageBox.Show("No video input device is connected.") ;
}
}

public partial class Form1 : Form
{
    public Form1()
    {
        InitializeComponent();
    }
    public FilterInfoCollection USB_Webcams = null;
    public VideoCaptureDevice Cam = null;

    private void Form1_Load(object sender, EventArgs e)
    {
        USB_Webcams = new FilterInfoCollection(FilterCategory.VideoInputDevice);
        if (USB_Webcams.Count > 0) // The quantity of WebCam must be more than 0.
        {
            button1.Enabled = true;
            Cam = new VideoCaptureDevice(USB_Webcams[0].MonikerString);
            //Cam.NewFrame += new NewFrameEventHandler(Cam_NewFrame);
        }
        else
        {
            button1.Enabled = false;
            MessageBox.Show("No video input device is connected.");
        }
    }
}

```

4.在Form1.cs[Design]視窗中，點Form1 => Properties => Events => 屬性 (FormClosed)，自動產生的Form1_FormClosed事件函式



在Form1_FormClosed的事件函式區域中加入以下程式碼

```

if (Cam != null)
{

```

```

if (Cam.IsRunning) // When Form1 closes itself, WebCam must stop, too.
{
    Cam.Stop( ); // WebCam stops capturing images.
}
}

```

5.在Form1.cs[Design]視窗中，點Button => Properties => Events => 屬性(Click)，自動產生的button1_Click事件函式

在button1_Click的事件函式區域中加入以下程式碼

```

if (button1.Text == "Start")
{
    button1.Text = "Stop";
    Cam.Start( ); // WebCam starts capturing images.
}
else
{
    button1.Text = "Start";
    Cam.Stop( ); // WebCam stops capturing images.
}

```

6.在Step3 "//Cam.NewFrame..." 下方，請輸入 "Cam.NewFrame +=", 輸入 "+="時會出現(Press TAB to insert)，請按tab，緊接著出現(Press TAB to generate...)，一樣按tab

```

//Cam.NewFrame += new NewFrameEventHandler(Cam.NewFrame);
    Cam.NewFrame += new NewFrameEventHandler(Cam.NewFrame);
}
else
{
    private void Form1_Load(object sender, EventArgs e)
    {
        USB_Webcams = new FilterInfoCollection(FilterCategory.VideoInputDevice);
        if (USB_Webcams.Count > 0) // The quantity of WebCam must be more than 0.
        {
            button1.Enabled = true;
            Cam = new VideoCaptureDevice(USB_Webcams[0].MonikerString);
            //Cam.NewFrame += new NewFrameEventHandler(Cam.NewFrame);
            Cam.NewFrame +=
            new NewFrameEventHandler(Cam.NewFrame); (Press TAB to insert)
        }
        else
        {
            button1.Enabled = false;
            MessageBox.Show("No video input device is connected.");
        }
    }
}

```

此時Cam_NewFrame的事件函式內，會將整行"throw new..."刪掉

```
private void Form1_Load(object sender, EventArgs e)
{
    USB_Webcams = new FilterInfoCollection(FilterCategory.VideoInputDevice);
    if (USB_Webcams.Count > 0) // The quantity of WebCam must be more than 0.
    {
        button1.Enabled = true;
        Cam = new VideoCaptureDevice(USB_Webcams[0].MonikerString);
        //Cam.NewFrame += new NewFrameEventHandler(Cam_NewFrame);
        Cam.NewFrame += new NewFrameEventHandler(Cam_NewFrame);
    }
    else
    {
        button1.Enabled = false;
        MessageBox.Show("No video input device is connected.");
    }
}

void Cam_NewFrame(object sender, NewFrameEventArgs eventArgs)
{
    throw new NotImplementedException();
}
```

在Cam_NewFrame的事件函式內，輸入以下的程式取代原本那一行：
pictureBox1.Image = (Bitmap)eventArgs.Frame.Clone();

```
void Cam_NewFrame(object sender, NewFrameEventArgs eventArgs)
{
    pictureBox1.Image = (Bitmap)eventArgs.Frame.Clone();
}
```

到這裡就完工了，可以按執行跑看看了

