

# Working with IronPython and WPF

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With thanks to:  
<http://www.ironpython.info/>  
<http://devhawk.net/>

# IronPython Demo with WPF

```
>>> import clr
>>> clr.AddReference("PresentationFramework")
>>> from System.Windows import *
>>> window = Window()
>>> window.Title = "Hello"
>>> window.Show()
>>> button = Controls.Button()
>>> button.Content = "Push Me"
>>> panel = Controls.StackPanel()
>>> window.Content = panel
>>> panel.Children.Add(button)
0
>>> app = System.Windows.Application()
>>> app.Run(window)
```

# XAML Example: Main.xaml

```
<Window xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  Title="TestApp" Width="640" Height="480">
  <StackPanel>
    <Label>Iron Python and WPF</Label>
    <ListBox Grid.Column="0" x:Name="listbox1" >
      <ListBox.ItemTemplate>
        <DataTemplate>
          <TextBlock Text="{Binding Path=title}" />
        </DataTemplate>
      </ListBox.ItemTemplate>
    </ListBox>
  </StackPanel>
</Window>
```

# IronPython + XAML

```
import sys
if 'win' in sys.platform:
    import pythoncom
    pythoncom.CoInitialize()

import clr
clr.AddReference("System.Xml")
clr.AddReference("PresentationFramework")
clr.AddReference("PresentationCore")
from System.IO import StringReader
from System.Xml import XmlReader
from System.Windows.Markup import XamlReader, XamlWriter
from System.Windows import Window, Application

xaml = """<Window xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
    Title="XamlReader Example" Width="300" Height="200"> <StackPanel Margin="5">
    <Button Margin="5">One</Button> <Button Margin="5">Two</Button> <Button
Margin="5">Three</Button> </StackPanel> </Window>"""
xr = XmlReader.Create(StringReader(xaml))
win = XamlReader.Load(xr)

Application().Run(win)
```

# IronPython with XAML Files

```
import clr
from Entry import Entry
clr.AddReferenceToFileAndPath("lib/WpfExtension.dll")
clr.AddReferenceByPartialName("PresentationCore")
clr.AddReferenceByPartialName("PresentationFramework")
clr.AddReferenceByPartialName("WindowsBase")
clr.AddReferenceByPartialName("IronPython")
clr.AddReferenceByPartialName("Microsoft.Scripting")
from System.IO import File
from System.Windows.Markup import XamlReader
from System.Windows import Application
def listbox1_OnSelectionChanged(self, event):
    for item in event.AddedItems:
        print item.title
titles = [Entry("Book", "Great For reading"),
Entry("Shelf", "Ideal for storing stuff"),
Entry("Cupboard", "Store and hide stuff")]
file = File.OpenRead('Main.xaml')
window = XamlReader.Load(file)
window.listbox1.SelectionChanged += listbox1_OnSelectionChanged
window.listbox1.ItemsSource = titles
Application().Run(window)
```

# C# Code Entry Object

```
using System;
using System.Windows;
using Microsoft.Scripting.Runtime;
[assembly: ExtensionType(
    typeof(FrameworkElement),
    typeof(Sample.Scripting.FrameworkElementExtension))]
namespace Sample.Scripting {
    public static class FrameworkElementExtension {
        [System.Runtime.CompilerServices.SpecialName]
        public static object GetBoundMember(FrameworkElement e, string n) {
            object result = e.FindName(n);
            if (result == null) {
                return OperationFailed.Value;
            }
            return result;
        }
    }
}
```

```

import clr
clr.AddReference("System.Speech")
from System.Speech.Recognition import *
count = 0
def main():
    sre = SpeechRecognitionEngine()
    sre.SetInputToDefaultAudioDevice()
    sre.UnloadAllGrammars()
    gb = GrammarBuilder()
    gb.Append(Choices('cut', 'copy', 'paste', 'delete'))
    sre.LoadGrammar(Grammar(gb))

    def OnSpeechRecognized(sender, e):
        global count
        count += 1
        print '%d. %s' % (count, e.Result.Text)
    sre.SpeechRecognized += OnSpeechRecognized
    sre.RecognizeAsync(RecognizeMode.Multiple)
    raw_input('Press ENTER to quit\n\n')

if __name__ == '__main__':
    import sys
    if sys.platform == 'cli':
        from System.Threading import Thread, ThreadStart
        thread = Thread(ThreadStart(main))
        thread.Start()
    else:
        main()

```

## Using other parts of Windows

# XAML Shapes

```
xaml_str=""
```

```
<Window xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  Title="A Crazy Window" Height="300" Width="300"
  WindowStyle="None" AllowsTransparency="True"
  Background="{x:Null}"
  >
  <Grid Name="gid">
    <Viewbox Stretch="Uniform">
      <Path Fill="#80D0E0FF" Stroke="Red" StrokeThickness="3"
HorizontalAlignment="Center" VerticalAlignment="Center"
      Data="M79,3L65,82 17,91 50,138 96,157 104,192 175,154 190,167 218,78
156,76 157,9 111,39z"/>
    </Viewbox>
    <TextBlock Text="{Binding RelativeSource={RelativeSource Mode=FindAncestor,
AncestorType={x:Type Window}}, Path=Title}"
      FontSize="18" Background="Transparent" HorizontalAlignment="Left"
VerticalAlignment="Top" Margin="20"
      FontFamily="Impact" Foreground="#C030A060"/>
    <TextBlock Text="Right Click Anywhere to Close" Background="Black" Width="200"
Foreground="White"
      VerticalAlignment="Center" HorizontalAlignment="Center" FontSize="14"
TextWrapping="Wrap" />
  </Grid>
</Window>
```

```
""
```