JAPF | Jeremy Alles Blog

Jeremy Alles Presentation Foundation: XAML and Web Technologies

A WPF behavior to improve grouping in your ListBox

November 12, 2010 WPF attached behavior, WPF

Post updated Jan. 2nd 2014 to fix a bug when items have a background.

A couple of weeks ago I started prototyping with a friend a behavior in order to improve the grouping in the ListBox control. Today, I'm finally taking time to write a post about this adventure

My overall goal was to have the group headers always visible and smoothly moving while the content of the control was scrolled. Here is a video showing the demo application running:

Get the Flash Player to see this content.

Download the code (VS2010 required)

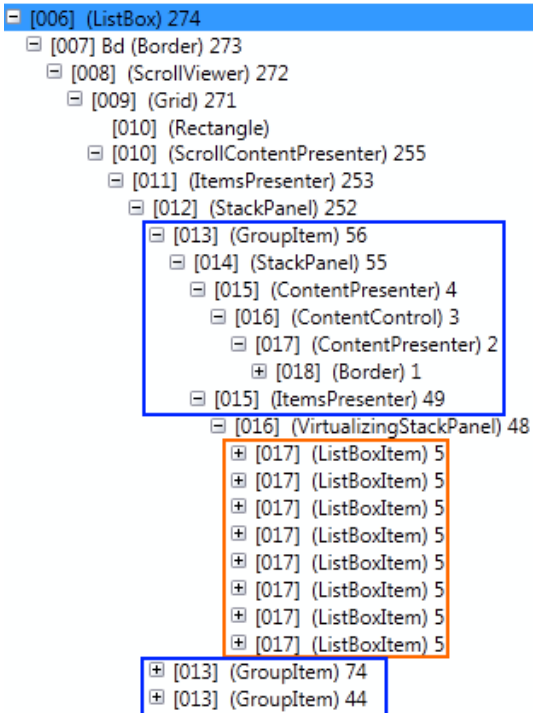
Of course I wanted to have the cleanest implementation possible, and as I think you already know, this where the WPF behavior comes to the rescue ! Let's see how this is possible.

Note:

- You must be aware that enabling group in your ListBox will disable UI virtualization. This might not be a problem if the databound collections is small (<100/200) but if the collection is very large, you might get into performance problem. However this limitation might be fixed in the next release of WPF (see my post about it here).
- This solution is not 100% compatible with keyboard selection and should be improved to work properly.

Anatomy of a ListBox when grouping is enabled

In order to create this behavior, I had to carefully look the Visual Tree of a ListBox when grouping is enabled. I used Snoop to do so, and I was able to get the following picture:



As you can see, for each group, we have a GroupItem control. However, we cannot direcly apply a transform to this element because it both contains the header (in a ContentPresenter) and the items in the group (in an ItemsPresenter).

Introducing the OverlayGroupingBehavior

The behavior actually walks in the visual tree to find out the interesting part. In our case, we want to attach a TranslateTransform to the headers of each GroupItem. Then, using simple mathematics, we can figure out the needed Y-translation to move the header at the top position of the ListBox.

Here are some details about the behavior:

- the class inherits Behavior<ListBox>
- we override the OnAttached method, and in this method we register an event handler for the LayoutUpdated of the associated ListBox
- in the LayoutUpdated handler, we update the transforms

?View Code CSHARP

Using the behavior

It's more than easy to enable this functionality in any existing app. In the XAML, all you have to do is to attach the behavior to the targeted ListBox:

View Code XML

```xml
<ListBox ItemsSource="{Binding Cities}">
    <i:Interaction.Behaviors>
        <Behaviors:OverlayGroupingBehavior/>
    </i:Interaction.Behaviors>
    <ListBox.ItemTemplate>
        <DataTemplate>
            <!-- data template... -->
        </DataTemplate>
    </ListBox.ItemTemplate>
    <ListBox.GroupStyle>
        <GroupStyle>
        <!-- group style -->
        </GroupStyle>
    </ListBox.GroupStyle>
</ListBox>
```

If you're not already grouping items in your ListBox, here is how to do it:

View Code CSHARP

```csharp
var cv = CollectionViewSource.GetDefaultView(viewmodel.Cities);
cv.GroupDescriptions.Add(new PropertyGroupDescription("Country"));
```

Useful resources

- An introduction to the possibilities of the ICollectionView interface by Marlon Grech
- An introduction to the concept of behaviors in WPF here and here by Christian Schormann

Download the code (VS2010 required)

Share this:

Email Print Twitter Facebook

6 thoughts on "A WPF behavior to improve grouping in your ListBox"

December 11, 2013 at 11:11 am

Frank

Hi,

nice grouping. How can I get it to work work with Items that have a White Background ? Or how can I set the TopGroupingItem in the Front?

Best regards

frank

December 13, 2013 at 2:21 pm

★ Jeremy

Hi Frank,

I'm sorry I don't understand your question. Does the code I shared has problems when you want to use a background ?

Cheers,
Jeremy

December 13, 2013 at 2:58 pm

Frank

Hi Jeremy,

yes when my listbox item have a background, then the item is displayed over the TopGroupingItem. I test it with Panel.ZIndex=”-1″, but this dosn’t work.

you can test it with this change(Background=”white”):
…

…

ErrorImage

regards

frank

December 13, 2013 at 3:02 pm

Frank

Hi,

ups i forgot the `tags, here is the code:`

frank

January 2, 2014 at 4:20 pm

★ Jeremy

Hi Frank,

Sorry for the very late reply. I finally had time to take a look and was able to improve this scenario. I updated the source code in the blog post with the latest version.

Basically, the idea is:
– define a style with a template for the GroupItem so that we can set a specific ZIndex for the group header
– give a name to the group header to that we can grad it in the behavior and apply the appropriate transform to it

Hope it helps,
Cheers,

Jeremy

Jumpy

June 30, 2014 at 3:20 pm

I am seeking a lightweight groupedlist with sticky headers alternative for the Windows Phone 8.1 WinRT platform. Could you give me some pointers on how to implement this on Windows Phone 8.1 WinRT. I might even be more satisfied with a non-MVVM i.e. non-itemssource-databound solution.