ComponentOne

Toolbar for WPF and Silverlight

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Toolbar for WPF and Silverlight Overview

Create custom toolbars to provide additional navigation in your application with **Toolbar for WPF and Silverlight**. **Toolbar for WPF and Silverlight** provides items (such as links, custom content, and separators) and groups, giving you the flexibility to place almost any control in the toolbar.

Help with WPF and Silverlight Edition

Getting Started

- For information on installing **ComponentOne Studio WPF Edition**, licensing, technical support, namespaces and creating a project with the control, please visit Getting Started with WPF Edition.
- For information on installing **ComponentOne Studio Silverlight Edition**, licensing, technical support, namespaces and creating a project with the control, please visit Getting Started with Silverlight Edition.

Key Features

Toolbar for WPF and Silverlight allows you to create customized, rich applications. Make the most of **Toolbar for WPF and Silverlight** by taking advantage of the following key features:

- **Tabs and Groups**
  Organize related commands together using tabs and groups. For example, group similar toolbar buttons such as those relating to the Font or the Clipboard. You can label each tab and group to best describe the commands within and the actions they perform.
  For more information see Toolbar Elements.
- **Ribbon-like Features**
  C1Toolbar has built-in Microsoft Ribbon-like features including collapse, help and dialog launcher buttons.
- **Lightweight ToolbarStrip**
  Create a lightweight C1ToolbarStrip that can be used separately, for simple scenarios.
- **Styled Buttons and Drop-downs**
  The **C1Toolbar** control is a container that supports any UIElements. To make toolbar creation easy, **C1Toolbar** includes several types of controls to place inside **C1ToolbarStrip**, including buttons, toggle buttons, separators and drop-down controls. Attach event handlers or take advantage of the commanding framework to add behavior to each control. For more information see Toolbar Elements.
- **WPF Command Framework Support**
  Toolbar supports the WPF command framework. Create single commands each including a title, small and large image source and share them throughout your toolbars.
  For more information see Commanding Tutorial with C1Toolbar.
- **OverFlow Support**
  Depending on the available space in the Strip panel, the items will jump between the Strip panel and drop-down Overflow panel. This occurs automatically by default, but can be set to occur never, always, or as needed.
- **Change the Orientation**
  Select from horizontal (default) or vertical orientations for your toolbar. For more information see Toolbar Layout.
- **Supports ClearStyle Technology**
  C1Toolbar supports ComponentOne's ClearStyle technology, which allows you to easily change control colors without having to change control templates. By setting a few color properties, you can quickly style the **C1Toolbar** elements. See Toolbar ClearStyle Properties for more information on the ClearStyle technology.
- **Themes**
  Add style to your UI with built-in support of more than 20 themes, including Cosmopolitan and Office 2016.
- **SimplifiedRibbon**
  Toolbar for WPF offers SimplifiedRibbon with a collapsible view which is similar to the MS Office 365 Ribbon tool. It provides you an option to work with a single line collapsed view or an expanded view containing three line appearances.

C1Toolbar Quick Start

The following quick start guide is intended to get you up and running with **Toolbar for WPF and Silverlight**. In this quick start you'll start in Visual Studio and create a new project, add **Toolbar for WPF and Silverlight** to your application, and add C1Toolbar items such as C1ToolbarGroup, C1ToolbarStrip, C1ToolbarButton, and C1ToolbarToggleButton to your **C1Toolbar**. For more information see Toolbar Elements.

Step 1 of 3: Adding Toolbar for WPF to your Project

To set up your project and add a C1Toolbar control to your application, complete the following steps

1. Create a new WPF or Silverlight project in Visual Studio.
2. Add a reference to the **C1.WPF** and **C1.WPF.C1Toolbar** or **C1.Silverlight** and **C1.Silverlight.C1Toolbar** assemblies. In the Solution Explorer right-click on **References** and select **Add Reference**. In the **Add Reference** dialog box select the Browse tab. Browse for the **C1.WPF.C1Toolbar.dll** and **C1.WPF.dll** or **C1.Silverlight.C1Toolbar.dll** and **C1.Silverlight.dll** and select **OK**.
3. Define the System and the **C1.WPF.C1Toolbar** or **C1.Silverlight.C1Toolbar** prefixes.

WPF

```
xmlns:System="clr-namespace:System;assembly=mscorlib"
xmlns:c1toolbar="clr-namespace:C1.WPF.Toolbar;assembly=C1.WPF.Toolbar"
```

Silverlight

```
xmlns:System="clr-namespace:System;assembly=mscorlib"
xmlns:c1toolbar="clr-
namespace:C1.Silverlight.C1Toolbar;assembly=C1.Silverlight.C1Toolbar"
```

4. Add two rows to the LayoutRoot Grid and set the **Height** of the first row to **Auto**.

XAML

```
<Grid x:Name="LayoutRoot" Background="White">
    <Grid.RowDefinitions>
        <RowDefinition Height="Auto"/>
        <RowDefinition Height="*"/>
    </Grid.RowDefinitions>
</Grid>
```

5. Drop a **C1Toolbar** onto the page within the first row and remove the default properties: **Height="100" HorizontalAlignment="Left" Margin="174,34,0,0"**. Your XAML should now look like the following:

XAML

```
<Grid.RowDefinitions>
   <RowDefinition Height="Auto"/>
   <RowDefinition Height="*"/>
</Grid.RowDefinitions>
   <c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
   </c1:C1Toolbar>
```

Step 2 of 3: Adding C1ToolbarGroups to C1Toolbar

In this step you'll continue in Visual Studio by adding C1ToolbarGroups to your C1Toolbar. You'll then add C1ToolbarButtons to the **C1ToolbarGroups**.

1. Right-click on the **C1Toolbar** control and select **Properties** to open its Properties window. Navigate to the **ToolbarItems** property and click on the ellipsis button to open up the **Collection Editor: ToolbarItems**.
2. Click on the **Add** button twice to add two **C1ToolbarGroups** and click **OK**. Your XAML should now look like the following:

XAML

```
<c1:C1Toolbar Name="c1Toolbar1">
    <c1:C1ToolbarGroup />
    <c1:C1ToolbarGroup />
</c1:C1Toolbar>
```

3. In XAML, set the Header property of each **C1ToolbarGroup** to the following: **Clipboard** and **Font**. Your XAML should now look like the following:

XAML

```
<c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
   <c1:C1ToolbarGroup Header="Clipboard"/>
   <c1:C1ToolbarGroup Header="Font"/>
</c1:C1Toolbar>
```

4. Select the **Clipboard C1ToolbarGroup** and click on the ellipsis button next to the **Items** collection editor.
5. From the **Select item** drop-down, click **Add** three times to add three **C1ToolbarButtons** to the collection.
6. Select the first **C1ToolbarButton** and expand the **Other** node in its properties window to set the **LabelTitle** property to **Paste** and set the other two to **Cut** and **Copy**, respectively.
7. As an optional step you can set the LargeImageSource and/or SmallImageSource properties to resources found within your project or add new images.
8. Click **OK** to close the **Items Collection** editor. Your XAML should now look like this:

XAML

```
<c1:C1Toolbar Name="c1Toolbar1">
    <c1:C1ToolbarGroup Header="Clipboard">
            <c1:C1ToolbarButton LabelTitle="Paste"
LargeImageSource="/ToolbarQuickstart;component/Images/Paste.png" />
            <c1:C1ToolbarButton LabelTitle="Cut"
SmallImageSource="/ToolbarQuickstart;component/Images/Cut.png" />
            <c1:C1ToolbarButton LabelTitle="Copy"
SmallImageSource="/ToolbarQuickstart;component/Images/Copy.png" />
        </c1:C1ToolbarGroup>
        <c1:C1ToolbarGroup Header="Font"/>
</c1:C1Toolbar>
```

Step 3 of 3: Adding a C1ToolbarStrip and C1ToolbarToggleButtons

In this step you'll continue in Visual Studio by adding a C1ToolbarStrip to your 'Font' C1ToolbarGroup and then you will add C1ToolbarToggleButtons to the **C1ToolbarGroup**.

1. Select the **Font C1ToolbarGroup** and and add a **C1ToolbarStrip** in XAML.

```
XAML
<c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip />
</c1:C1ToolbarGroup>
```

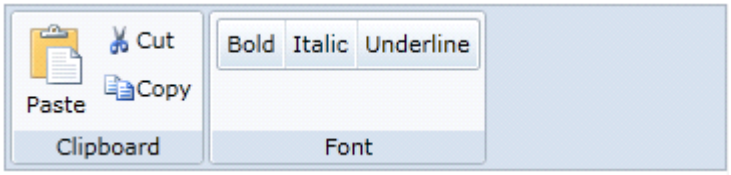
The rest of your XAML should appear like the following:

```
XAML
<c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
    <c1:C1ToolbarGroup Header="Clipboard">
        <c1:C1ToolbarButton LabelTitle="Paste" />
        <c1:C1ToolbarButton LabelTitle="Cut" />
        <c1:C1ToolbarButton LabelTitle="Copy" />
    </c1:C1ToolbarGroup>
    <c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip />
    </c1:C1ToolbarGroup>
</c1:C1Toolbar>
```

2. Select the **C1ToolbarStrip** and open its **Items** collection editor.
3. Select the **C1ToolbarToggleButton** from the **Select item** dropdown and click **Add** three three times to add three **C1ToolbarToggleButtons**; set each **LabelTitle** property to: *Bold*, *Italic*, and *Underline*. Click **OK** to close the **Items** collection editor.

```
XAML
<c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip>
        <c1:C1ToolbarToggleButton LabelTitle="Bold" />
        <c1:C1ToolbarToggleButton LabelTitle="Italic" />
        <c1:C1ToolbarToggleButton LabelTitle="Underline" />
    </c1:C1ToolbarStrip>
</c1:C1ToolbarGroup>
```

Congratulations! You've now completed creating a toolbar UI using **C1Toolbar**.



Further topics:

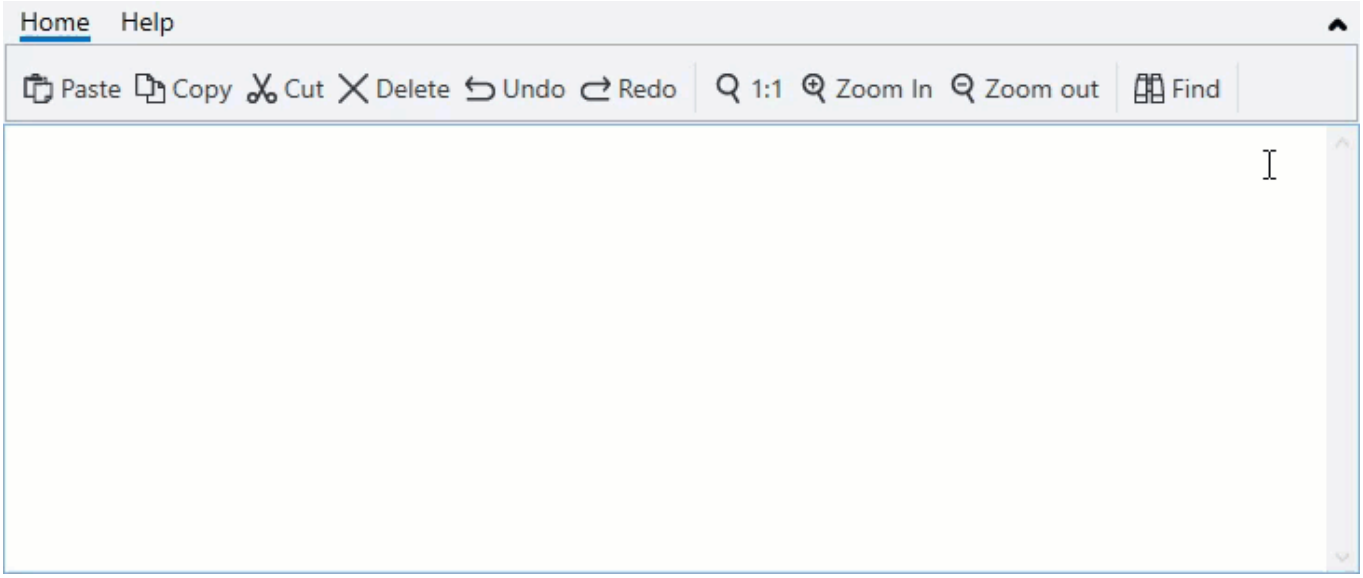
- Adding Logic Behind the ToolbarButton Click Event – This topic shows you how to use button click events to add logic behind buttons
- Commanding Tutorial with C1Toolbar – This tutorial demonstrates how to use **C1Toolbar** with commands in a WPF application
- Commanding with C1Toolbar (Silverlight Tutorial) - This tutorial demonstrates how to use **C1Toolbar** with commands in a Silverlight application
- Button Size and Text Position in C1ToolbarGroup – This topic shows you how to use GroupSizeDefinitions of the **C1ToolbarGroup**.
- Toolbar Tab Item – This topic shows you how to add the C1ToolbarTabItem control.

Simplified Ribbon

In general, a ribbon has a standard three line appearance of items. Toolbar for WPF offers SimplifiedRibbon, similar to the Ribbon tool in MS Office 365, which provides you an option to work with a single line collapsed view or an expanded view containing three line appearances. This allows you to allocate more screen space to the working area of your application. In addition, SimplifiedRibbon automatically combines items in a group into a dropdown when it doesn't have enough space to display all group items across the window width.

The SimplifiedRibbon control is represented by the C1SimplifiedRibbon class that implements C1ToolbarBase class. The **C1SimplifiedRibbon** class lets you map the items of SimplifiedRibbon using the RibbonItems property. In addition, IsCollapsed property of the **C1SimplifiedRibbon** class lets you check whether the tab panel displaying the ribbon items is collapsed or expanded. It also allows you to choose marquee brush for the toolbar using the MarqueeBrush property of the C1SimplifiedRibbon class.

Toolbar for WPF offers another control, C1SimplifiedTabControl, which is a part of C1SimplifiedRibbon control. This control is represented by the C1SimplifiedTabControl class which inherits the **C1TabContol** class. It is similar to the ToolbarTabControl used in C1Toolbar control template. The control handles marquee logic and toggle collapse state of tab control. You can use this control inside the C1SimplifiedRibbon control to create a custom control template for C1SimplifiedRibbon.



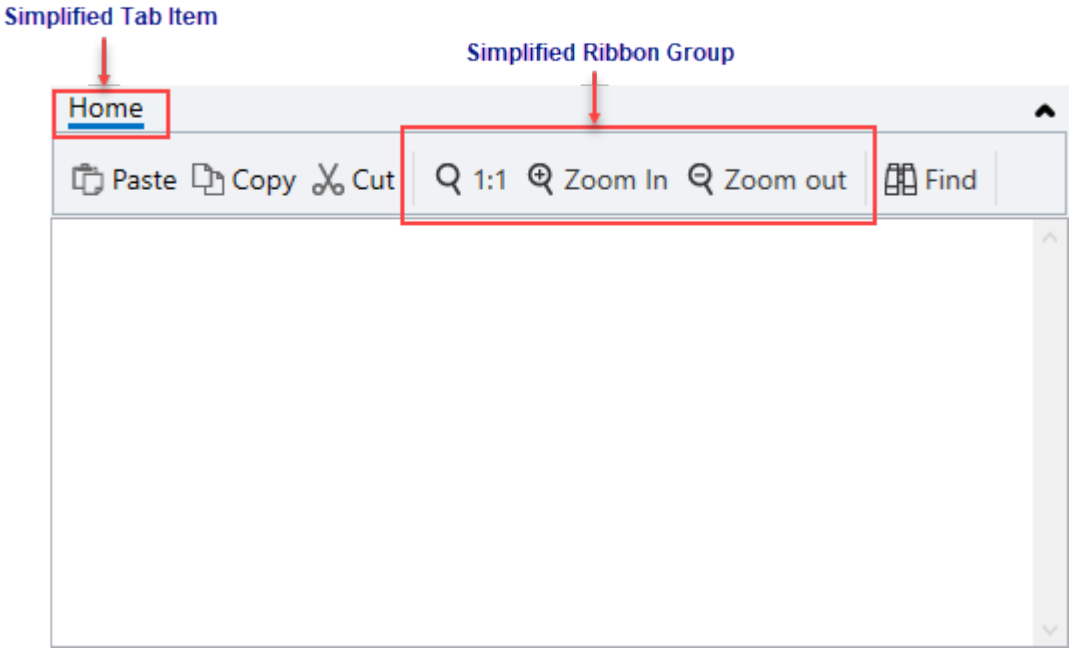
Simplified Ribbon Toolbar Elements

The Simplified Ribbon control acts as a container to hold other controls, such as buttons, check boxes, text boxes, drop-down lists, etc. It lets you organize related commands and buttons together using the following elements which can contain all the mentioned controls to be used in a simplified ribbon.

- **Simplified Tab Item**– It wraps the tab header and simplified ribbon group and holds the collection of SimplifiedRibbon group. The simplified tab item is represented by the **C1SimplifiedTabItem** class which is inherited from the **C1TabItem** class.

  The **C1SimplifiedTabItem** class provides **Groups** property which lets the user get or set different group of options in the toolbar.

- **Simplified Ribbon Group** - It contains collection of toolbar elements and handles the simplified ribbon control layout which represent toolbar options of a specific type. The simplified ribbon group is represented by the **C1SimplifiedRibbonGroup** class which inherits the **C1ToolbarGroup** class.

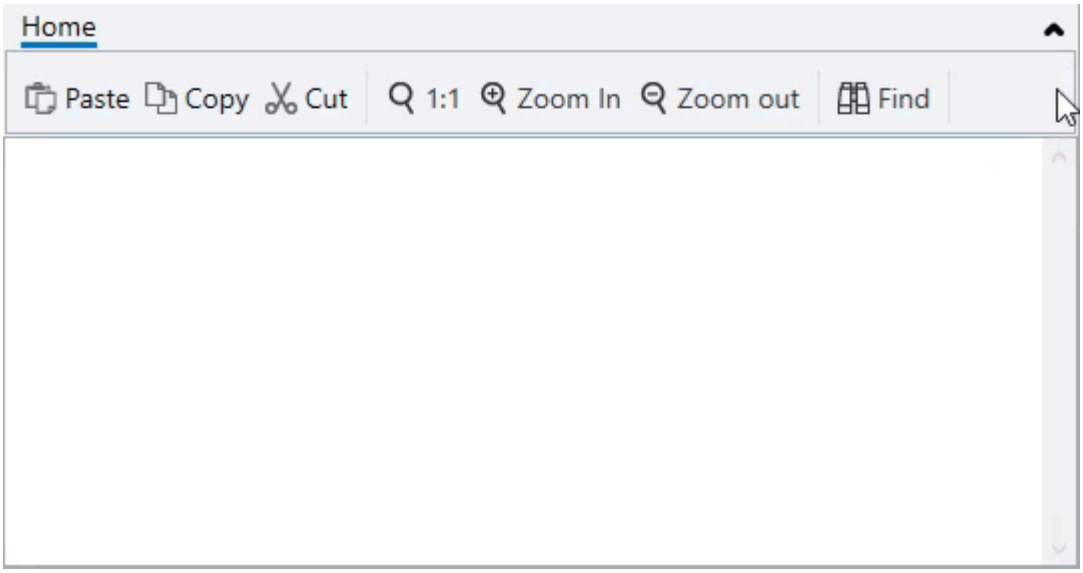


In addition to the elements listed above, you can also add the toolbar elements to the SimplifiedRibbon. For information on Toolbar elements, see Toolbar Elements.

Quick Start

This quick start will guide you through the steps of adding C1SimplifiedRibbon control to a project, adding different elements and toolbar commands.

The following GIF shows how the simplified ribbon toolbar appears on collapsing and expanding the ribbon.



To create a simple toolbar with simplified ribbon style, follow these steps:

1. Create a WPF App.
2. Add a Resources folder to the application and add images of the toolbar commands you want to add to it. For example, we have added small and big images for all the edit, scale and search options in the Resources folder.
3. Add the SimplifiedRibbon control to the XAML designer using the following code.

```
C#
```

```
<c1:C1SimplifiedRibbon FontSize="14" />
```

4. Define the following instances of C1ToolbarCommand inside the <Window.Resources></ Window.Resources> tag to define commands to be used in the toolbar.

C# copyCode

```
<c1:C1ToolbarCommand x:Key="cmdPaste" LabelTitle=" Paste"

LargeImageSource="/SimplifiedRibbon;component/Resources/paste32.png"

SmallImageSource="/SimplifiedRibbon;component/Resources/paste16.png" />
<c1:C1ToolbarCommand x:Key="cmdCut" LabelTitle=" Cut"

LargeImageSource="/SimplifiedRibbon;component/Resources/cut32.png"

SmallImageSource="/SimplifiedRibbon;component/Resources/cut16.png"/>
<c1:C1ToolbarCommand x:Key="cmdCopy" LabelTitle=" Copy"

LargeImageSource="/SimplifiedRibbon;component/Resources/copy32.png"

SmallImageSource="/SimplifiedRibbon;component/Resources/copy16.png"/>
<c1:C1ToolbarCommand x:Key="cmdZoomOriginal" LabelTitle=" 1:1" />
<c1:C1ToolbarCommand x:Key="cmdZoomIn" LabelTitle=" Zoom In" />
<c1:C1ToolbarCommand x:Key="cmdZoomOut" LabelTitle=" Zoom Out" />
<c1:C1ToolbarCommand x:Key="cmdFind" LabelTitle=" Find" />
```

5. Add SimplifiedTabItem and SimplifiedRibbonGroup elements to the simplified ribbon to define the toolbar tabs and the groups inside a tab.
Observe: A tab named Home is added with three groups named Edit, Scale and Search containing different commands, such as Cut, Copy, Paste, Zoom Original, Zoom In, Zoom out, and Find.

C# copyCode

```
    <c1:C1SimplifiedTabItem Header="Home">
    <c1:C1SimplifiedRibbonGroup Header="Edit">
        <c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
            <c1:C1ToolbarGroupSizeDefinition>
                <c1:C1ToolbarControlSize>Large</c1:C1ToolbarControlSize>
            </c1:C1ToolbarGroupSizeDefinition>
        </c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
            <c1:C1ToolbarButton Command="{StaticResource cmdPaste}" />
            <c1:C1ToolbarButton Command="{StaticResource cmdCopy}" />
            <c1:C1ToolbarButton Command="{StaticResource cmdCut}" />
        </c1:C1SimplifiedRibbonGroup>

    <c1:C1SimplifiedRibbonGroup VerticalContentAlignment="Center"
Header="Scale">
            <c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
                <c1:C1ToolbarGroupSizeDefinition>
                    <c1:C1ToolbarControlSize>Medium</c1:C1ToolbarControlSize>
                </c1:C1ToolbarGroupSizeDefinition>
            </c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
            <c1:C1ToolbarItem Command="{StaticResource cmdZoomOriginal}"
```

```
Content=" 1:1">
                <c1:C1ToolbarItem.LargeIcon>
                    <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_original32.png"
                                     Width="32" Height="32" />
                </c1:C1ToolbarItem.LargeIcon>
                <c1:C1ToolbarItem.MediumIcon>
                    <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_original16.png"
                                     Width="16" Height="16" />
                </c1:C1ToolbarItem.MediumIcon>
            </c1:C1ToolbarItem>
            <c1:C1ToolbarItem Command="{StaticResource cmdZoomIn}" Content="
Zoom In">
                <c1:C1ToolbarItem.LargeIcon>
                    <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_in32.png"
                                     Width="32" Height="32" />
                </c1:C1ToolbarItem.LargeIcon>
                <c1:C1ToolbarItem.MediumIcon>
                    <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_in16.png"
                                     Width="16" Height="16" />
                </c1:C1ToolbarItem.MediumIcon>
            </c1:C1ToolbarItem>
            <c1:C1ToolbarItem Command="{StaticResource cmdZoomOut}" Content="
Zoom out">
            <c1:C1ToolbarItem.LargeIcon>
                <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_out32.png"
                                 Width="32" Height="32" />
            </c1:C1ToolbarItem.LargeIcon>
            <c1:C1ToolbarItem.MediumIcon>
                <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_out16.png"
                                 Width="16" Height="16" />
            </c1:C1ToolbarItem.MediumIcon>
        </c1:C1ToolbarItem>
    </c1:C1SimplifiedRibbonGroup>

    <c1:C1SimplifiedRibbonGroup Header="Search">
        <c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
            <c1:C1ToolbarGroupSizeDefinition>
                <c1:C1ToolbarControlSize>Large</c1:C1ToolbarControlSize>
                <c1:C1ToolbarControlSize>Medium</c1:C1ToolbarControlSize>
            </c1:C1ToolbarGroupSizeDefinition>
        </c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
        <c1:C1ToolbarItem Command="{StaticResource cmdFind}" Content=" Find">
            <c1:C1ToolbarItem.LargeIcon>
                <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/find32.png"
```

```
                                Width="32" Height="32" />
            </c1:C1ToolbarItem.LargeIcon>
            <c1:C1ToolbarItem.MediumIcon>
                <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/find16.png"
                                Width="16" Height="16" />
            </c1:C1ToolbarItem.MediumIcon>
        </c1:C1ToolbarItem>
    </c1:C1SimplifiedRibbonGroup>
</c1:C1SimplifiedTabItem>
```

Similarly, you can add more tabs, groups, and commands using C1SimplifiedTabItem and C1SimplifiedRibbonGroup.

6. Run the application and observe the ribbon toolbar which can be collapsed using the expand/collapse icon appearing on the top right of the ribbon.

XAML Quick Reference

This section provides an example that show how to use the C1Toolbar control with only XAML code.

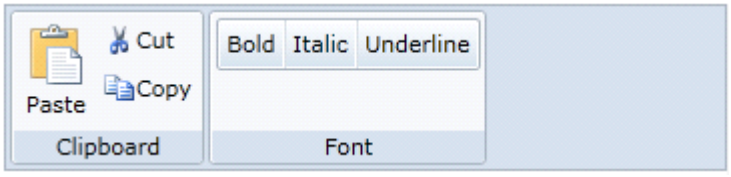
EX: Add Items to the C1Toolbar

The following XAML code shows you how to add a C1ToolbarGroup, C1ToolbarStrip, and C1ToolbarButton to the C1Toolbar control:

XAML

```
<c1:C1Toolbar Name="c1Toolbar1">
 <c1:C1ToolbarTabControl>
  <c1:C1ToolbarTabItem Header="Home">
   <c1:C1ToolbarGroup Header="Clipboard">
     <c1:C1ToolbarButton LabelTitle="Paste" LargeImageSource="/Images/Paste.png" />
     <c1:C1ToolbarButton LabelTitle="Cut" SmallImageSource="/Images/Cut.png" />
     <c1:C1ToolbarButton LabelTitle="Copy" SmallImageSource="/Images/Copy.png" />
   </c1:C1ToolbarGroup>
   <c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip>
       <c1:C1ToolbarToggleButton LabelTitle="Bold" />
       <c1:C1ToolbarToggleButton LabelTitle="Italic" />
       <c1:C1ToolbarToggleButton LabelTitle="Underline" />
    </c1:C1ToolbarStrip>
   </c1:C1ToolbarGroup>
  </c1:C1ToolbarTabItem>
 </c1:C1ToolbarTabControl>
</c1:C1Toolbar>
```

The following image shows how the **C1Toolbar** control will appear after adding the above XAML code:



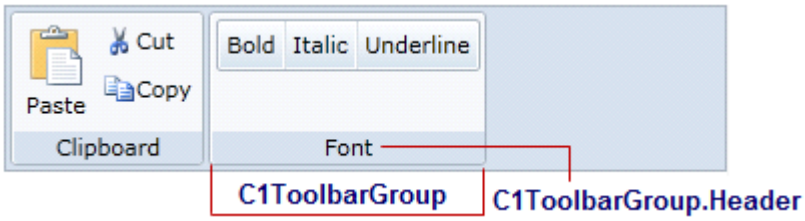
Toolbar Elements

C1Toolbar is a control that is used as a container to hold other controls such as buttons, check buttons, text boxes, drop-down lists, split-buttons, and separators. **C1ToolBar** provides seven different objects to support the various types of controls used in the **C1ToolBar**: C1ToolbarButton, C1ToolbarDropDown, C1ToolbarGroup, C1ToolbarSplitButton, C1ToolbarStrip, C1ToolbarTabItem, C1ToolbarToggleButton.

Toolbar Group

The C1ToolBarGroup object defines a group of toolbar elements. The **C1ToolbarGroup** can hold the following toolbar controls: C1ToolbarButton, C1ToolbarToggleButton, C1ToolbarDropDown, and C1ToolbarSplitButton.

When you add toolbar items to the **C1ToolbarGroup** the child toolbar items appear grouped in a rectangular box like the following:



C1ToolbarGroups are typically used when a group of functions are mutually exclusive. That is, only one of the functions represented by the group of buttons can be on at a time.

The images of the controls (**C1ToolbarButtons** and **C1ToolbarToggleButtons**) inside the **C1ToolbarGroup** can be all be sized to large, medium, or small using the GroupSizeDefinitions class.

The **GroupSizeDefinition** defines the control sizes as small, medium, or large and the position of the button text in a **C1ToolbarGroup**. If "large" is used then all the controls (**C1ToolbarButtons** and **C1ToolbarToggleButtons**) in the group gets the image size from the LargeImageSource property and positions the text value of the LabelTitle property below the image. If "medium" is used then all the controls (**C1ToolbarButtons** and **C1ToolbarToggleButtons**) in the group gets the image size from the SmallImageSource property and positions the text value of the **LabelTitle** property to the right of the image. If "small" is used then all the controls (**C1ToolbarButtons** and **C1ToolbarToggleButtons**) in the group gets the image size from the SmallImageResource property and does not show the text.

EX: C1ToolbarGroup with a C1ToolbarStrip containing C1ToolbarButtons

XAML

```
</c1:C1ToolbarGroup>
   <c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip>
       <c1:C1ToolbarToggleButton LabelTitle="Bold" />
       <c1:C1ToolbarToggleButton LabelTitle="Italic" />
       <c1:C1ToolbarToggleButton LabelTitle="Underline" />
    </c1:C1ToolbarStrip>
   </c1:C1ToolbarGroup>
```

The **C1ToolBarGroup** includes the following properties:

Property	Definition
FocusBrush	Gets or sets the item that is located at a specified index of the collection.
GroupSizeDefinitions	Gets or sets the mode of selection for the items in the control.
Header	Gets or sets the header of the toolbar group.
MouseOverBrush	Gets or sets the Brush used to highlight the control when it has the mouse over.
PressedBrush	Gets or sets the Brush used to paint a button when it is pressed.
ShowDialogLauncher	Gets or sets the dialog launcher visibility.

Toolbar Button

The C1ToolBarButton object defines a toolbar button. A button can include text, image, or text and an image. Set text with the C1ToolBarButton.LabelTitle property, and an image with the **LargeImageSource** or **SmallImageSource** property for each **C1ToolBarButton** object.

The buttons can be added at design time using the **C1ToolbarItems** collection editor, programmatically using **C1ToolBarItemCollection.Add** or **C1ToolBarItemCollection.Remove** methods from the **C1ToolBarItemCollection** collection, or through XAML code.

The **C1ToolBarButton** includes the following unique properties:

Property	Definition
LabelTitle	Gets or sets the label title of control.
LargeImageSource	Gets or sets the large image source of the control.
MouseOverBrush	Gets or sets the Brush used to highlight the control when it has the mouse over
PressedBrush	Gets or sets the Brush used to paint a button when it is pressed.
SmallImageSource	Gets or sets the large image source of the control.

Toolbar DropDown

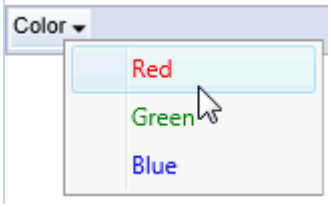
The C1ToolbarDropDown control represents a drop-down button on the C1ToolbarStrip. When clicking it displays popup panel with **Content** property or context menu set by **Menu** property. A drop-down button provides users with a list of options. When you click on a **C1ToolBarDropDown** button the **Click** event always fires and the drop down list appears.

Example 1: Drop-down with popup stack panel with buttons

XAML

```
<c1:C1ToolbarDropDown Padding="2" Header="Color">
   <c1:C1ToolbarDropDown.Content>
     <StackPanel Margin="2" Orientation="Horizontal">
       <Button Margin="2" Content="Red" Foreground="Red" />
       <Button Margin="2" Content="Green" Foreground="Green" />
       <Button Margin="2" Content="Blue" Foreground="Blue" />
     </StackPanel>
   </c1:C1ToolbarDropDown.Content>
</c1:C1ToolbarDropDown>
```

Example 2: Dropdown with popup menu



XAML

```
<c1:C1Toolbar Name="c1Toolbar1" Margin="0,127,0,160">
   <c1:C1ToolbarDropDown Padding="2" Header="Color">
     <c1:C1ToolbarDropDown.ContextMenu>
        <ContextMenu>
          <MenuItem Foreground="Red" Header="Red" IsCheckable="True" />
          <MenuItem Foreground="Green" Header="Green" IsCheckable="True" />
          <MenuItem Foreground="Blue" Header="Blue" IsCheckable="True" />
         </ContextMenu>
     </c1:C1ToolbarDropDown.ContextMenu>
   </c1:C1ToolbarDropDown>
</c1:C1Toolbar></c1:C1ToolbarDropDown>
```

The **C1ToolBarDropDown** includes the following unique properties:

Property	Definition
ContentBackground	Gets or sets the content background.
Menu	Gets or sets the context menu which is displayed when the control is clicked.
MouseOverBrush	Gets or sets the Brush used to highlight the control when it has the mouse over.
PressedBrush	Gets or sets the Brush used to paint a button when it is pressed.

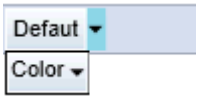
Toolbar SplitButton

C1ToolbarSplitButton control represents a drop-down split button on the **C1ToobarStrip**.

It's similar to **C1ToolbarDropDown** but contains two clickable areas: the button area and the downward-pointing arrow.

When clicking on the rightmost part of the downward-pointing rectangle it displays a popup panel with the **Content** property or context menu set by the **ContextMenu** property. Clicking on the left part of button fires the **Click** event as in the standard button. Usually the **Click** event is used to perform the default or last action while the popup allows to select alternative options.

A solid vertical line dividing the image from the drop down arrow appears when you hover the cursor over the button like in the following image:



EX: Split button with popup menu

XAML

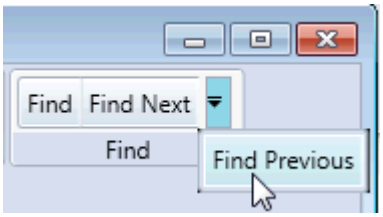
```
<c1:C1ToolbarSplitButton Padding="2" Header="Defaut"
   Click="SetDefaultStyle">
   <c1:C1ToolbarDropDown.Menu>
     <c1:C1ContextMenu>
       <c1:C1MenuItem Header="Heading 1" FontSize="14" />
       <c1:C1MenuItem Header="Heading 2" FontSize="12" />
       <c1:C1MenuItem Header="Title" FontWeight="Bold" />
       <c1:C1MenuItem Header="Subtitle" FontWeight="SemiBold"
         FontStyle="Italic"  />
       <c1:C1MenuItem Header="Quote" FontStyle="Italic" />
     </c1:C1ContextMenu>
   </c1:C1ToolbarDropDown.Menu>
</c1:C1ToolbarSplitButton>
```

Toolbar Strip

Represents a container for the toolbar controls and other C1 WPF controls. The C1ToolbarStrip is capable of hosting C1ToolbarButton, C1ToolbarToggleButton, C1ToolbarDropDown, C1ToolbarSplitButton, **C1Separator**, **C1ComboBox**, and **C1TextBox** controls.

The **C1ToolbarStrip** supports overflow depending on the available space in the Strip panel. The items will jump between the Strip panel and drop-down Overflow panel. This occurs automatically by default, but can be set to occur never, always, or as needed

The following image illustrates the overflow support the **C1ToolbarStrip** provides:



The **C1ToolbarStrip** can be added using XAML or programatically.

Ex: Toolbar strip with toggle buttons

XAML

```
<c1:C1ToolbarGroup Header="Font">
    <c1:C1ToolbarStrip>
        <c1:C1ToolbarToggleButton LabelTitle="Bold" />
        <c1:C1ToolbarToggleButton LabelTitle="Italic" />
        <c1:C1ToolbarToggleButton LabelTitle="Underline" />
    </c1:C1ToolbarStrip>
</c1:C1ToolbarGroup>
```

The **C1ToolBarStrip** includes the following unique properties:

Property	Definition
ButtonBackground	Gets or sets the Brush that will be assigned to the Background of the buttons inside the control.
ButtonForeground	Gets or sets the Brush that will be assigned to the Foreground of the buttons inside the control.
FocusBrush	Gets or sets the Brush used to highlight the focused control.
MouseOverBrush	Gets or sets the Brush used to highlight the control when it has the mouse over.
Orientation	Gets or sets the orientation of the toolbar strip.
Overflow	Gets or set the value that indicates how to handle the items which do not fit to the available space.
OverflowMenuItems	Gets the collection that contains elements of overflow menu.
OverflowPanel	Gets or sets the template for overflow panel.
PressedBrush	Gets or sets the Brush used to paint a button when it is pressed.

Toolbar Tab Item

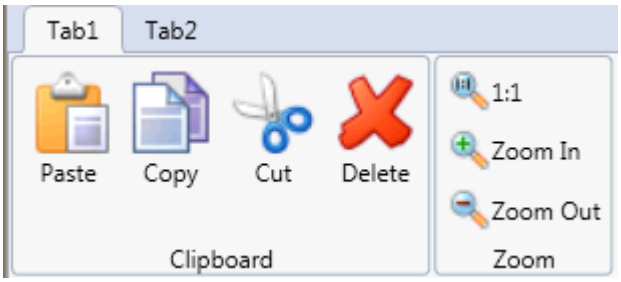
The C1ToolbarTabItem represents a tab item on the C1Toolbar. The **C1ToolbarTabItems** are beneficial to use when

you have substantial amounts of information to display on minimum window space.

The **C1ToolbarTabItem** divides the controls onto a separate page and shows one tab at a time.

A **C1ToolbarTabItem** can hold a collection of C1ToolbarGroups which can contain C1ToolbarButtons, C1ToolbarToggleButtons, C1ToolbarDropDowns, and C1ToolbarSplitButtons.

The following image displays two **C1ToolbarTabItem**s:



A **C1ToolbarTabItem** can be added to **C1Toolbar** via the **ToolbarItems** collection editor, through XAML, or programatically.

To add a **C1ToolbarTabItem** using the designer, complete the following:

1. Add a **C1Toolbar** control to your page.
2. Select the **C1Toolbar** control and click on the ellipsis button next to the **ToolbarItems** property in the **C1Toolbar** properties window. The **ToolbarItems** collection editor appears.
3. Select the **C1ToolbarTabItem** from the select item dropdown list and click **Add**. The **C1ToolbarTabItem** is added to the **C1Toolbar** control.
4. Set the **Header** property to **Tab 1**.

To add a **C1ToolbarTabItem** using XAML code, add the following:

XAML

```
<c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
            <c1:C1ToolbarTabItem Header="Tab 1">
                <c1:C1ToolbarTabItem.Content>
                    <c1:C1ToolbarPanel />
                </c1:C1ToolbarTabItem.Content>
            </c1:C1ToolbarTabItem>
</c1:C1Toolbar>
```

C1ToolBarGroups can be added to the **C1ToolbarTabItem** via the **Groups** collection editor, through XAML, or programatically using the C1ToolbarTabItem.Groups property.

To add a **C1ToolbarGroup** to the **C1ToolbarTabItem** using the designer, complete the following:

1. Add a **C1Toolbar** control to your page.
2. Right-click on the **C1ToolbarTabItem** and select **Properties**. Click on the **ellipsis** button next to the **Groups** property in the **C1ToolbarTabItem** properties window. The **Groups** collection editor appears.
3. Click **Add** to add a **C1ToolbarGroup** to the **C1ToolbarTabItem**. The **C1ToolbarGroup** is added to the C1ToolbarTabItem.
4. Set the **Header** property to **Tab 1**.

To add a **C1ToolbarGroup** to a **C1ToolbarTabItem** using XAML code, add the following:

XAML

```
<c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
            <c1:C1ToolbarTabItem Header="Tab 1">
                <c1:C1ToolbarTabItem.Content>
                    <c1:C1ToolbarPanel />
                </c1:C1ToolbarTabItem.Content>
                <c1:C1ToolbarGroup/>
            </c1:C1ToolbarTabItem>
</c1:C1Toolbar>
```

The **C1ToolBarTabItem** includes the following unique property:

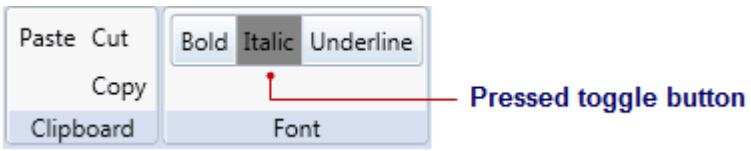
Property	Definition
Groups	Gets the collection of toolbar groups.

Toolbar ToggleButton

The C1ToolbarToggleButton represents a toggle button on the **C1ToolbarToolStrip**. It is a stateful button that enables users to toggle between on and off states. When clicking on the toggle button it remains activated, or pressed, until it is clicked again.

Toggle buttons display graphic or text like command buttons, but when it is pressed or activated the state appears in an on state. To indicate an on state you can set a color for the C1ToolbarToggleButton.PressedBrush property.

The following image illustrates three **C1ToolbarToggleButtons** with the **Italic** toggle button pressed. The second toggle button, **Italic**, has the **PressedBrush** set to **Gray**.



C1ToolbarToggleButtons can be added to the **C1ToolbarStrip** via the **Items** collection editor, programmatically, or through XAML.

EX: Three C1TolbarToggleButtons with one of them having an on state

XAML

```
<c1:C1Toolbar Grid.Row="1" Name="c1Toolbar1">
```

```
  <c1:C1ToolbarGroup Header="Clipboard">
    <c1:C1ToolbarButton LabelTitle="Paste" />
    <c1:C1ToolbarButton LabelTitle="Cut" />
    <c1:C1ToolbarButton LabelTitle="Copy" />
  </c1:C1ToolbarGroup>
  <c1:C1ToolbarGroup Header="Font">
  <c1:C1ToolbarStrip>
     <c1:C1ToolbarToggleButton LabelTitle="Bold" />
     <c1:C1ToolbarToggleButton PressedBrush ="Gray" LabelTitle="Italic" />
     <c1:C1ToolbarToggleButton LabelTitle="Underline" />
     </c1:C1ToolbarStrip>
  </c1:C1ToolbarGroup>
</c1:C1Toolbar>
```

The **C1ToolBarToggleButton** includes the following properties:

Property	Definition
GroupName	Gets or sets the name that specifies which C1ToolbarToggleButton controls are mutually exclusive.
LabelTitle	Gets or sets the label title of control.
LargeImageSource	Gets or sets the large image source of the control.
MouseOverBrush	Gets or sets the Brush used to highlight the control when it has the mouse over.
PressedBrush	Gets or sets the Brush used to paint a button when it is pressed.
SmallImageSource	Gets or sets the small image source of the control.

Toolbar Item

Usually toolbar options are displayed along with the visual icons. Such options comprising text and icons can be displayed in the toolbar using the Toolbar Item element which is represented by the **C1ToolbarItem** class. This element lets you render icons using the C1Icon class. The icons can be rendered in three sizes, large, medium and small using the **LargeIcon**, **MediumIcon** and **SmallIcon** properties. The ribbon automatically determines size of the icon to be displayed depending on the collapsed state of the Toolbar or the space available to display the ToolBar.

The following code implements C1ToolbarItem to display large and medium icons for an item in Toolbar.

XAML

```
<c1:C1SimplifiedRibbon FontSize="14">
      <c1:C1SimplifiedTabItem Header="Home">
                <c1:C1SimplifiedRibbonGroup VerticalContentAlignment="Center"
Header="Scale">
```

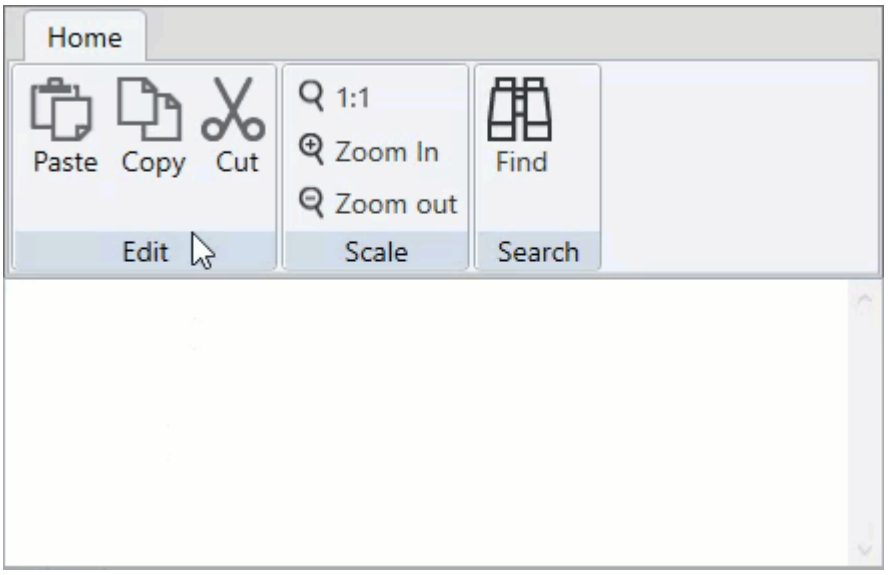
```
                    <c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
                        <c1:C1ToolbarGroupSizeDefinition>
                            <c1:C1ToolbarControlSize>Medium</c1:C1ToolbarControlSize>
                        </c1:C1ToolbarGroupSizeDefinition>
                    </c1:C1SimplifiedRibbonGroup.GroupSizeDefinitions>
                    <c1:C1ToolbarItem Command="{StaticResource cmdZoomOriginal}"
Content=" 1:1">
                        <c1:C1ToolbarItem.LargeIcon>
                            <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_original32.png" Width="32"
Height="32" />
                        </c1:C1ToolbarItem.LargeIcon>
                        <c1:C1ToolbarItem.MediumIcon>
                            <c1:C1BitmapIcon
Source="/SimplifiedRibbon;component/Resources/zoom_original16.png" Width="16"
Height="16" />
                        </c1:C1ToolbarItem.MediumIcon>
                    </c1:C1ToolbarItem>
                </c1:C1SimplifiedRibbonGroup>
        </c1:C1SimplifiedTabItem>
</c1:C1SimplifiedRibbon>
```

Toolbar Elements Styling

Toolbar for WPF allows you to style Toolbar elements to customize their appearance. You can use the following properties to change the foreground and background color of the elements:

- **MouseOverForegroundBrush** - It defines the foreground color to be applied to the toolbar element on mouse hover.
- **PressedForegroundBrush** - It defines the foreground color to be applied to the toolbar element on mouse left click.
- **MouseOverBrush** - It defines the background color to be applied to the toolbar element on mouse hover.
- **PressedBrush** - It defines the background color to be applied to the toolbar element on mouse left click.

The following GIF displays the styling applied on the toolbar elements to change their appearance.



The following code shows the implementation of the properties that can be used to change the appearance of the toolbar elements:

XAML

```
<Style TargetType="c1:C1ToolbarItem">
            <Setter Property="Foreground" Value="#333333"/>
            <Setter Property="MouseOverForegroundBrush" Value="DarkGreen"/>
            <Setter Property="PressedForegroundBrush" Value="Yellow"/>
            <Setter Property="MouseOverBrush" Value="LightGreen"/>
            <Setter Property="PressedBrush" Value="Green"/>
</Style>
```

C1Toolbar Layout and Appearance

The following topics detail how to customize the C1Toolbar control's layout and appearance. You can use built-in layout options to lay your controls out in panels such as Grids or Canvases.

You can customize the appearance of your toolbar items by using the stack panel. Inside the stack panel you can determine the orientation of your toolbar item. Additionally you can add an image and some text. The text's alignment, font style, and color can be modified.

XAML

```
<c1tb:C1Toolbar>
 <c1tb:C1ToolbarGroup Header="Clipboard">
   <c1tb:C1ToolbarStrip Padding="0">
     <c1tb:C1ToolbarButton Width="60" HorizontalContentAlignment="Left">
        <StackPanel Orientation="Horizontal" >
         <Image Grid.Column="1" Source="Resources/cut.png" Margin="7 0 7 0"/>
         <TextBlock Text="Cut" Foreground= "DarkOrange" VerticalAlignment="Center"
TextAlignment="Center" />
           </StackPanel>
    </c1tb:C1ToolbarButton>
   </c1tb:C1ToolbarStrip>
   <c1tb:C1ToolbarStrip Padding="0">
      <c1tb:C1ToolbarButton Width="60" HorizontalContentAlignment="Left" >
        <StackPanel Orientation="Horizontal">
      <Image Source="Resources/copy.png"  Margin="4 0 4 0"/>
   <TextBlock Text="Copy" VerticalAlignment="Center" TextAlignment="Center"/>
        </StackPanel>
      </c1tb:C1ToolbarButton>
    </c1tb:C1ToolbarStrip>
  <c1tb:C1ToolbarStrip Padding="0">
     <c1tb:C1ToolbarButton Width="60" HorizontalContentAlignment="Left">
          <StackPanel Orientation="Horizontal">
            <Image Source="Resources/paste.png"  Margin="4 0 4 0"/>
           <TextBlock Text="Paste" VerticalAlignment="Center"
TextAlignment="Center"/>
        </StackPanel>
      </c1tb:C1ToolbarButton>
    </c1tb:C1ToolbarStrip>
  </c1tb:C1ToolbarGroup>
</c1tb:C1Toolbar>
```

Toolbar Layout

Select from horizontal (default) or vertical orientations for your toolbar when you use the C1ToolbarStrip.

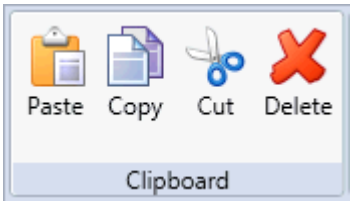
The strip panel in the C1Toolbar control can be rendered horizontally or vertically by setting its C1ToolbarStrip.Orientation property. The layout for the individual child elements in the C1Toolbar can also be controlled using the **StackPanel.Orientation** property.

Button Size and Text Position in C1ToolbarGroup

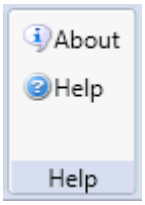
You can define the same size (small, medium, or large) for all C1ToolbarButtons and C1ToolbarToggleButtons in a C1ToolbarGroup using the **GroupSizeDefinition**.

The **GroupSizeDefinition** defines the button sizes as small, medium, or large and the position of the button text in a **C1ToolbarGroup**. If "large" is used then all the buttons in the group gets the image size from the LargeImageResource property and positions the text value of the LabelTitle property below the image. If "medium" is used then all buttons in the group gets the image size from the SmallImageResource property and positions the text value of the LabelTitle property to the right of the image. If "small" is used then all the buttons in the group gets the image size from the **SmallImageResource** property and does not show the text.

The following image displays the buttons as *Large* with the **LargeImageResource** property used and the text for the **LabelTitle** property shown below the image:



The following image displays the buttons as *Medium* with the **SmallImageResource** property used and the text for the **LabelTitle** property shown to the right of the image:



The following image displays the buttons as *Small* with the **SmallImageResource** property used:

C1Toolbar Templates

One of the main advantages to using a WPF or Silverlight control is that controls are "lookless" with a fully customizable user interface. Just as you design your own user interface (UI), or look and feel, for Silverlight applications, you can provide your own UI for data managed by **Toolbar for WPF and Silverlight**. Extensible Application Markup Language (XAML; pronounced "Zammel"), an XML-based declarative language, offers a simple approach to designing your UI without having to write code.

Accessing Templates

You can access templates in Microsoft Expression Blend by selecting the C1Toolbar control and, in the menu, selecting **Edit Template**. Select **Edit a Copy** to create an editable copy of the current template or **Create Empty**, to create a

new blank template.

Once you've created a new template, the template will appear in the **Objects and Timeline** window. Note that you can use the Template property to customize the template.

> **Note:** If you create a new template through the menu, the template will automatically be linked to that template's property. If you manually create a template in XAML you will have to link the appropriate template property to the template you've created.

Additional Templates

In addition to the default template, the **C1Toolbar** control includes a few additional templates. These additional templates can also be accessed in Microsoft Expression Blend – in Blend select the **C1Toolbar** control and, in the menu, select **Edit Additional Templates**. Choose a template, and select **Create Empty**:

ComponentOne ClearStyle Technology

ComponentOne ClearStyle technology is a new, quick and easy approach to providing Silverlight and WPF control styling. ClearStyle allows you to create a custom style for a control without having to deal with the hassle of XAML templates and style resources.

Currently, to add a theme to all standard Silverlight controls, you must create a style resource template. In Microsoft Visual Studio this process can be difficult; this is why Microsoft introduced Expression Blend to make the task a bit easier. Having to jump between two environments can be a bit challenging to developers who are not familiar with Blend or do not have the time to learn it. You could hire a designer, but that can complicate things when your designer and your developers are sharing XAML files.

That's where ClearStyle comes in. With ClearStyle the styling capabilities are brought to you in Visual Studio in the most intuitive manner possible. In most situations you just want to make simple styling changes to the controls in your application so this process should be simple. For example, if you just want to change the row color of your data grid this should be as simple as setting one property. You shouldn't have to create a full and complicated-looking template just to simply change a few colors.

How ClearStyle Works

Each key piece of the control's style is surfaced as a simple color property. This leads to a unique set of style properties for each control. For example, a **Gauge** has **PointerFill** and **PointerStroke** properties, whereas a **DataGrid** has **SelectedBrush** and **MouseOverBrush** for rows.

Let's say you have a control on your form that does not support ClearStyle. You can take the XAML resource created by ClearStyle and use it to help mold other controls on your form to match (such as grabbing exact colors). Or let's say you'd like to override part of a style set with ClearStyle (such as your own custom scrollbar). This is also possible because ClearStyle can be extended and you can override the style where desired.

ClearStyle is intended to be a solution to quick and easy style modification but you're still free to do it the old fashioned way with ComponentOne's controls to get the exact style needed. ClearStyle does not interfere with those less common situations where a full custom design is required.

Toolbar ClearStyle Properties

C1Toolbar supports ComponentOne's ClearStyle technology, which allows you to easily change control colors without having to change control templates. By setting a few color properties, you can quickly style the **C1Toolbar** elements. The supported properties for **C1Toolbar** are listed in the following table:

Property	Description
Background	Gets or sets the background used to fill the **C1Toolbar**.
MouseOverBrush	Gets or sets the brush used to highlight the control when the mouse is hovering over it.
PressedBrush	Gets or sets the System.Windows.Media.Brush used to highlight the buttons when they are clicked.
FocusBrush	Gets or sets the brush of the control when the control is focused.
Header (C1ToolbarGroup only)	Gets or sets the brush used to paint the header.

C1Toolbar Samples

Please be advised that this ComponentOne software tool is accompanied by various sample projects and/or demos, which may make use of other ComponentOne development tools included with ComponentOne Studio.

Please refer to pre-installed product samples through the following path:

Documents\ComponentOne Samples\WPF\C1.WPF.Toolbar

or

Documents\ComponentOne Samples\Silverlight\C1.WPF.Toolbar

The following pages within the ControlExplorer detail the **C1Toolbar** control:

C# Samples

Sample	Description
SimplifiedRibbonSample	Shows the Toolbar with Simplified Ribbon style where you can collapse or expand the toolbar.
ToolbarCommands	Shows the use of C1ToolbarCommand to display icons in C1ToolBar, and also to define some commands to handle when you click the icons.
ToolbarSamples	Shows the main features of toolbars included in the C1.WPF.Toolbar library.

C1Toolbar Task-Based Help

The task-based help assumes that you are familiar with programming in Visual Studio and know how to use the C1Toolbar control in general. If you are unfamiliar with the **Toolbar for WPF** product, please see the Toolbar for WPF QuickStart first.

Each topic in this section provides a solution for specific tasks using the **Toolbar for WPF** product.

Each task-based help topic also assumes that you have created a new WPF or Silverlight project.

Aligning Toolbar Buttons

The following XAML shows how to align the toolbar buttons in the center of the group panel:

XAML

```
<c1:C1ToolbarGroup Header="Group" >

  <c1:C1ToolbarGroup.ItemsPanel>

   <ItemsPanelTemplate>

      <c1:C1ToolbarGroupPanel HorizontalAlignment="Center" />

    </ItemsPanelTemplate>

  </c1:C1ToolbarGroup.ItemsPanel>
```

Adding an Image to the Toolbar Button

You can use the LargeImageSource or SmallImageSource properties to add large or small images to your C1ToolbarButtons.

Using the Designer

1. Right-click the **C1ToolbarButton** control on your page and select **Properties**.
2. Locate the **LargeImageSource** property and click the **ellipsis** button next to it. The **Choose Image** dialog box appears.
3. Click the **Add** button and select the image you wish to add to it and click **OK**.

Adding Logic Behind the ToolbarButton Click Event

This topic shows how to add logic behind the C1ToolbarButton **Click** event for **C1ToolbarButtons** through XAML representation and then adding the code for the method in the Code Editor.

1. Add a **C1ToolbarButton** to the C1Toolbar element in the XAML editor and set the LabelTitle property to **Search**.

XAML

```
<c1:C1Toolbar Grid.Row="1" Height="100" Name="c1Toolbar1">
   <c1:C1ToolbarButton LabelTitle="Search"
</c1:C1Toolbar>
```

2. Add an attribute named **Click** to the **C1ToolbarButton** element in the XAML editor, and set its value to **New Click**. This is the name that you will give the event handler in code. Also give the **C1ToolbarButton** element a unique name and set its value to Search.

XAML

```
<c1:C1Toolbar Grid.Row="1" Height="100" Name="c1Toolbar1">
    <c1:C1ToolbarButton LabelTitle="Search" Click="New_Click" Name="Search"/>
</c1:C1Toolbar>
```

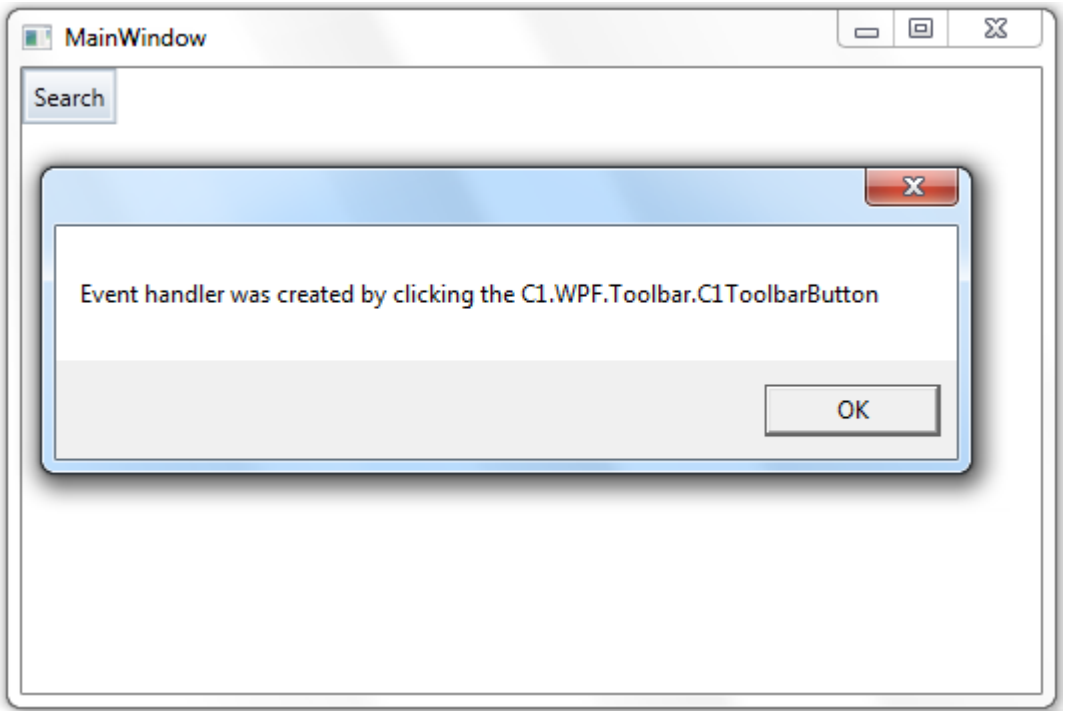
3. Right-click the designer and then click **View Code**.
4. Add the following event handler to the Window1 class. This code displays a message whenever you click the button.

C#

```
private void New_Click(object sender, RoutedEventArgs e)
{
  MessageBox.Show("Event handler was created by clicking the " + Search);
}
```

Run the application and observe:

The name of the toolbar button appears in the message box:



Commanding with C1Toolbar (WPF Tutorial)

Toolbar for WPF supports the command framework. Commands have several purposes in WPF. The primary purpose is to separate the object that invokes the command from the logic that executes the command. Commands allow loose coupling between the origin and the handling of an action.

The following tutorial demonstrates how to use C1Toolbar with commands in a WPF application.

Part 1: Using the Command Library

WPF provides a library of predefined commands such as the following:

- Application Commands (Cut, Copy, and Paste)
- Navigation Commands (BrowseBack, BrowseForward)
- Media Commands (Play, Stop, Pause)
- Editing Commands
- Component Commands

Many WPF controls have built-in support for these commands so you can implement them without having to write code.

The following steps show how to implement some common clipboard commands using C1Toolbar.

1. Open or create a new WPF application.
2. Add two **RowDefinitions** to the default **Grid** element, giving the first row an automatic height, such as this:

XAML

```
<Grid.RowDefinitions>
    <RowDefinition Height="Auto" />
    <RowDefinition />
</Grid.RowDefinitions>
```

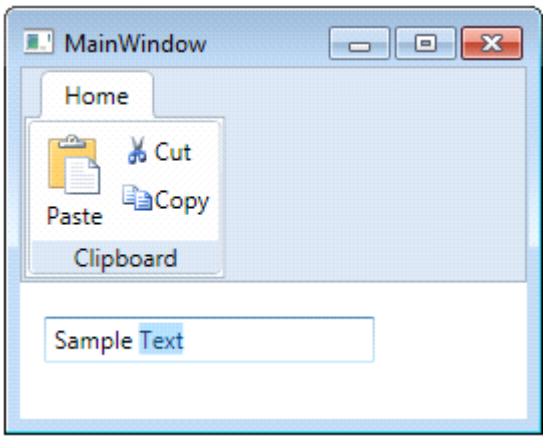
3. Add a **C1Toolbar** to the fill the first row.
4. Paste the following XAML to fill **C1Toolbar** with some tabs, groups and buttons:

XAML

```
<c1:C1Toolbar Name="c1Toolbar1" FocusManager.IsFocusScope="True">
    <c1:C1ToolbarTabControl>
        <c1:C1ToolbarTabItem Header="Home">
            <c1:C1ToolbarGroup Header="Clipboard">
                <c1:C1ToolbarButton LabelTitle="Paste"
Command="ApplicationCommands.Paste" LargeImageSource="/Resources/paste.png" />
                <c1:C1ToolbarButton LabelTitle="Cut"
Command="ApplicationCommands.Cut" SmallImageSource="/Resources/cut.png" />
                <c1:C1ToolbarButton LabelTitle="Copy"
Command="ApplicationCommands.Copy" SmallImageSource="/Resources/copy.png" />
            </c1:C1ToolbarGroup>
        </c1:C1ToolbarTabItem>
    </c1:C1ToolbarTabControl>
</c1:C1Toolbar>
```

This markup creates a single tab containing a single group inside **C1Toolbar**. The **Clipboard** group contains three C1ToolbarButtons each assigned a common clipboard command from the WPF application command library. Notice the attached **IsFocusScope** property is set to **True** for **C1Toolbar**. This enables **C1Toolbar** to keep track of the focused element within its scope. Small and large images are also specified for the **C1ToolbarButtons**, although these are not required.

5. Add a **TextBox** control below **C1Toolbar**.
6. Run the application and notice that the common clipboard commands (Paste, Copy and Cut) work in the **TextBox** by clicking the **C1ToolbarButtons**.



Part 2: Creating Custom Commands

If the commands in the command library classes do not meet your needs, then you can create your own commands. You create a custom command by implementing the ICommand Interface. WPF provides a specific implementation named **RoutedCommand** (and RoutedUICommand), which defines a command routed through the element tree.

The following steps show how to add a custom command to C1Toolbar using a **RoutedCommand**.

1. Using the same sample from Part 1, open the code-behind file.
2. Define a RoutedCommand named **ClearCommand**. This command will be used to clear the text from the **TextBox** on the page.

```
public static RoutedCommand ClearCommand = new RoutedCommand();
```

3. Create an event handler which defines the command logic.

C#

```
// performs logic for ClearCommand
private void ExecutedClearCommand(object sender, ExecutedRoutedEventArgs e)
{
    textBox1.Clear();
}
```

4. Create another event handler which determines whether or not the command can be executed. When a command cannot be executed, the Toolbar buttons associated with the command will become grayed out and disabled.

C#

```
// only returns true if the textbox has text.
private void CanExecuteClearCommand(object sender, CanExecuteRoutedEventArgs e)
{
    if (textBox1.Text.Length > 0)
    {
        e.CanExecute = true;
    }
    else
    {
        e.CanExecute = false;
    }
}
```

5. Next, create a CommandBinding which associates the command with the event handlers. When the command is invoked, the element tree will be traversed looking for an object with a CommandBinding. Put this code after the InitializeComponent call for your page:

C#

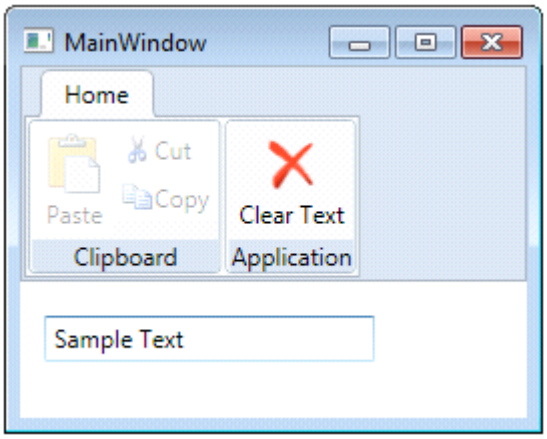
```
CommandBinding customCommandBinding = new CommandBinding(ClearCommand,
ExecutedClearCommand, CanExecuteClearCommand);

// attach CommandBinding to root element
this.CommandBindings.Add(customCommandBinding);
```

6. In your XAML containing **C1Toolbar**, add a new C1ToolbarButton inside a group named **Application**.
7. Set the **Command** property to the static command in the code behind for your page.

XAML

```
<c1:C1ToolbarGroup Header="Application">
    <c1:C1ToolbarButton LabelTitle="Clear Text" Command="{x:Static
local:MainWindow.ClearCommand}" LargeImageSource="/Resources/clear.png"/>
</c1:C1ToolbarGroup>
```

8. Run the application, and observe when the toolbar button is clicked, the **ClearCommand** is routed through the element tree looking for an associated **CommandBinding**. When found, the associated event handlers are called and your command logic performs.



Part 3: Using Commands in MVVM

Commanding is an essential part of the MVVM (Model-View-ViewModel) design pattern where the separation of UI from business logic is key. **Toolbar for WPF** supports the command framework and can be used with the popular MVVM pattern. In MVVM-designed applications, command targets are often implemented in the ViewModel, which are not part of the UI element tree. Therefore, the RoutedCommand is not a good implementation of ICommand to use in MVVM. You should use a special implementation such as **DelegateCommand** or **RelayCommand**, which enables your View to bind to objects that are not part of the UI element tree.

The following steps show how to create the same custom command implemented in Part 2 using the **RelayCommand** class and C1Toolbar.

1. Create a new class named **MainViewModel**, which implements the **INotifyPropertyChanged** interface. This class will act as the ViewModel for our View containing **C1Toolbar**.

C#

```
class MainViewModel : System.ComponentModel.INotifyPropertyChanged
{
    private string textValue = "";
    public string TextValue
    {
        get
        {
            return textValue;
        }
        set
        {
            textValue = value;
            OnPropertyChanged("TextValue");
        }
    }

    private RelayCommand clearCommand;
    public ICommand ClearCommand
    {
        get
        {
            if (clearCommand == null)
            {
                clearCommand = new RelayCommand(param => this.Clear(), param =>
this.CanClear());
            }
            return clearCommand;
        }
    }

    private bool CanClear()
    {
        return textValue.Length > 0;
    }
```

```
    private void Clear()
    {
        TextValue = "";
    }

    public event PropertyChangedEventHandler PropertyChanged;

    protected void OnPropertyChanged(string propertyName)
    {
        PropertyChangedEventHandler handler = PropertyChanged;

        if (handler != null)
        {
            handler(this, new PropertyChangedEventArgs(propertyName));
        }
    }

}
```

This class uses the **RelayCommand**, which is a lightweight variation of the **DelegateCommand**. Both ICommand implementations allow you to delegate commanding logic to methods passed as parameters with command targets that are not part of the UI element tree. The **RelayCommand** and **DelegateCommand** classes are not part of the WPF framework and can be found online and with various MVVM toolkits.

2. Add the **RelayCommand** class to your project.

C#

```
/// <summary>
///     This class allows delegating the commanding logic to methods passed as
parameters,
///     and enables a View to bind commands to objects that are not part of the
element tree.
/// </summary>
public class RelayCommand : ICommand
{
    #region Fields

    readonly Action<object> _execute;
    readonly Predicate<object> _canExecute;

    #endregion // Fields

    #region Constructors

    public RelayCommand(Action<object> execute)
        : this(execute, null)
    {
    }
```

```
    public RelayCommand(Action<object> execute, Predicate<object> canExecute)
    {
        if (execute == null)
            throw new ArgumentNullException("execute");

        _execute = execute;
        _canExecute = canExecute;
    }
    #endregion // Constructors

    #region ICommand Members

    [DebuggerStepThrough]
    public bool CanExecute(object parameter)
    {
        return _canExecute == null ? true : _canExecute(parameter);
    }

    public event EventHandler CanExecuteChanged
    {
        add { CommandManager.RequerySuggested += value; }
        remove { CommandManager.RequerySuggested -= value; }
    }

    public void Execute(object parameter)
    {
        _execute(parameter);
    }

    #endregion // ICommand Members
}
```

3. To bind to the ViewModel, add the following XAML at the top of your View containing **C1Toolbar**:

XAML

```
<Window.Resources>
    <local:MainViewModel x:Key="viewModel" />
</Window.Resources>
<Window.DataContext>
    <Binding Source="{StaticResource viewModel}"/>
</Window.DataContext>
```

This adds your ViewModel as a resource which is then bound to the **DataContext** of the Window or UserControl.

4. Then add the following toolbar group to the **C1Toolbar** you created in Part 1.

XAML

```
<c1:C1ToolbarGroup Header="Application">
    <c1:C1ToolbarButton LabelTitle="Clear Text" Command="{Binding ClearCommand}"
LargeImageSource="/Resources/delete.png"/>
</c1:C1ToolbarGroup>
```

This toolbar group contains one **C1ToolbarButton** with its **Command** property bound to the **ClearCommand** defined in the ViewModel.

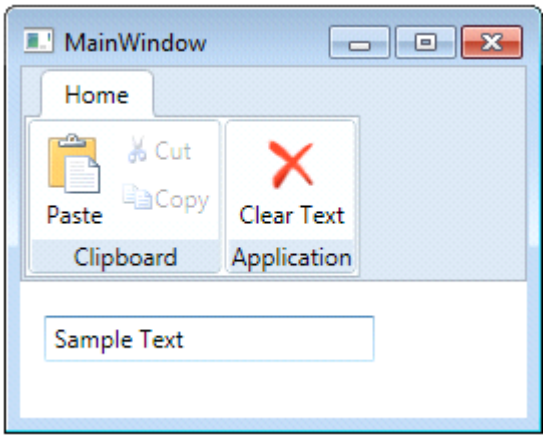
5. Since this command should follow MVVM best practices, the TextBox **Text** property should also be bound to a value from the ViewModel if we wish to apply business logic to it. Bind the **Text** property to the **TextValue** property which is also defined in the ViewModel.

XAML

```
<TextBox Grid.Row="1" Text="{Binding TextValue,
UpdateSourceTrigger=PropertyChanged}" Height="23" HorizontalAlignment="Left"
Margin="12,17,0,0" Name="textBox1" VerticalAlignment="Top" Width="165" />
```

By setting the **UpdateSourceTrigger** to **PropertyChanged**, the TextValue property on the ViewModel will be updated any time there is a change in **Text** value, as opposed to only when the **TextBox** loses focus.

6. Run the application and observe the custom **RelayCommand** in action.



There are many benefits that you get by following the MVVM design pattern due to the loose coupling of UI from business logic.

Commanding with C1Toolbar (Silverlight Tutorial)

Silverlight 4 supports the ICommand interface on any object that derives from the **ButtonBase** class. Any button, including C1ToolbarButton, can be associated with an object that implements ICommand through the control's **Command** property. Although the **ICommand** interface is supported, Silverlight does not provide any built-in implementation. **Silverlight Edition** includes a couple implementations, **C1Command** and C1ToolbarCommand, so you do not have to write one yourself.

The **C1Command** class is included in the **C1.Silverlight** assembly. **C1ToolbarCommand**, included in the **C1.Silverlight.Toolbar** assembly, extends **C1Command** by adding a few extra toolbar related properties for labels and images.
The following steps demonstrate how to use commanding with C1Toolbar.

Using C1ToolbarCommand

1. Open or create a new Silverlight application.
2. Add two **RowDefinitions** to the default **Grid** element, giving the first row an automatic height, such as this:

XAML

```
<Grid.RowDefinitions>
    <RowDefinition Height="Auto" />
    <RowDefinition />
</Grid.RowDefinitions>
```

3. Add a C1Toolbar to the fill the first row.
4. Add a **TextBox** in the second row.
5. Paste the following C1ToolbarCommand to the UserControl Resources such as this:

XAML

```
<UserControl.Resources>
    <c1:C1ToolbarCommand x:Key="cmdClear" LabelTitle="Clear Text"
LargeImageSource="/Resources/delete.png" />
</UserControl.Resources>
```

6. This command will be used to clear the contents from the **TextBox**. You can specify a LargeImageSource and a SmallImageSource for C1ToolbarCommand, although this is not required.
7. Paste the following XAML to fill C1Toolbar with a tab, group and button:

XAML

```
<c1:C1Toolbar Name="c1Toolbar1">
    <c1:C1ToolbarTabControl>
        <c1:C1ToolbarTabItem Header="Home">
            <c1:C1ToolbarGroup Header="Application">
                <c1:C1ToolbarButton
c1:CommandExtensions.Command="{StaticResource cmdClear}" />
            </c1:C1ToolbarGroup>
        </c1:C1ToolbarTabItem>
    </c1:C1ToolbarTabControl>
</c1:C1Toolbar>
```

8. Here we are setting the attached **c1:CommandExtensions.Command** property to our command. Note that C1ToolbarButton also has an inherited **Command** property. It is better to use the attached property

CommandExtensions.Command to set the command when using **C1Commands**.

9. Add a **TextBox** to the page below the toolbar named "textBox1".
10. Next, you need to register the command after the page initializes with this code:

C#

```
// register command methods
CommandManager.RegisterClassCommandBinding(GetType(), new
CommandBinding((C1ToolbarCommand)Resources["cmdClear"], Clear, CanClear));
// check the ability of registered commands to execute
CommandManager.InvalidateRequerySuggested();
```

11. The **C1.Silverlight.CommandManager** provides command related utility methods for registering commands.
12. Paste the following **Clear** and **CanClear** event handlers which perform the logic for the command:

C#

```
private void Clear(object sender, ExecutedRoutedEventArgs e)
{
    textBox1.Text = "";
}

private void CanClear(object sender, CanExecuteRoutedEventArgs e)
{
    if (textBox1.Text.Length > 0)
    {
        e.CanExecute = true;
    }
    else
        e.CanExecute = false;

}
```

13. In Silverlight you need to explicitly check the ability of registered commands in code. In the **TextBox TextChanged** event, add the following code:

C#

```
private void textBox1_TextChanged(object sender, TextChangedEventArgs e)
{
    CommandManager.InvalidateRequerySuggested();
}
```

14. Run the sample and you can now clear the contents of the textbox using a command in **C1Toolbar** using **C1Command**.