



The Sector Specialists

# Windows Presentation Foundation - basics

Confidential

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# Agenda

WPF - introduction

Questions & Answers

WPF vs. Windows Forms

Overview of Controls

Layout panels

Styles, Triggers

Templates

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WPF vs. Windows Forms

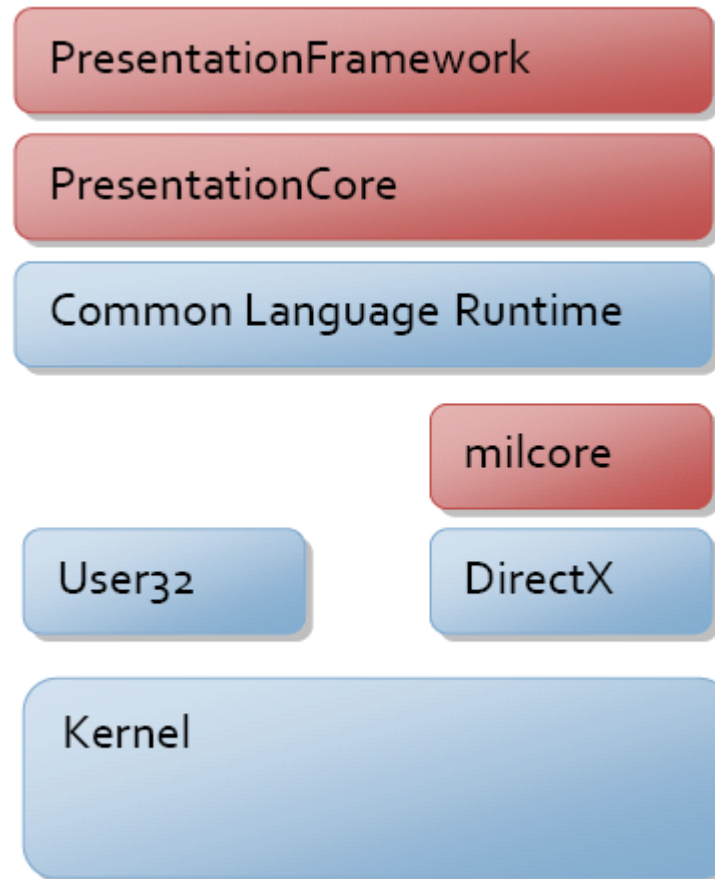
Overview of Controls

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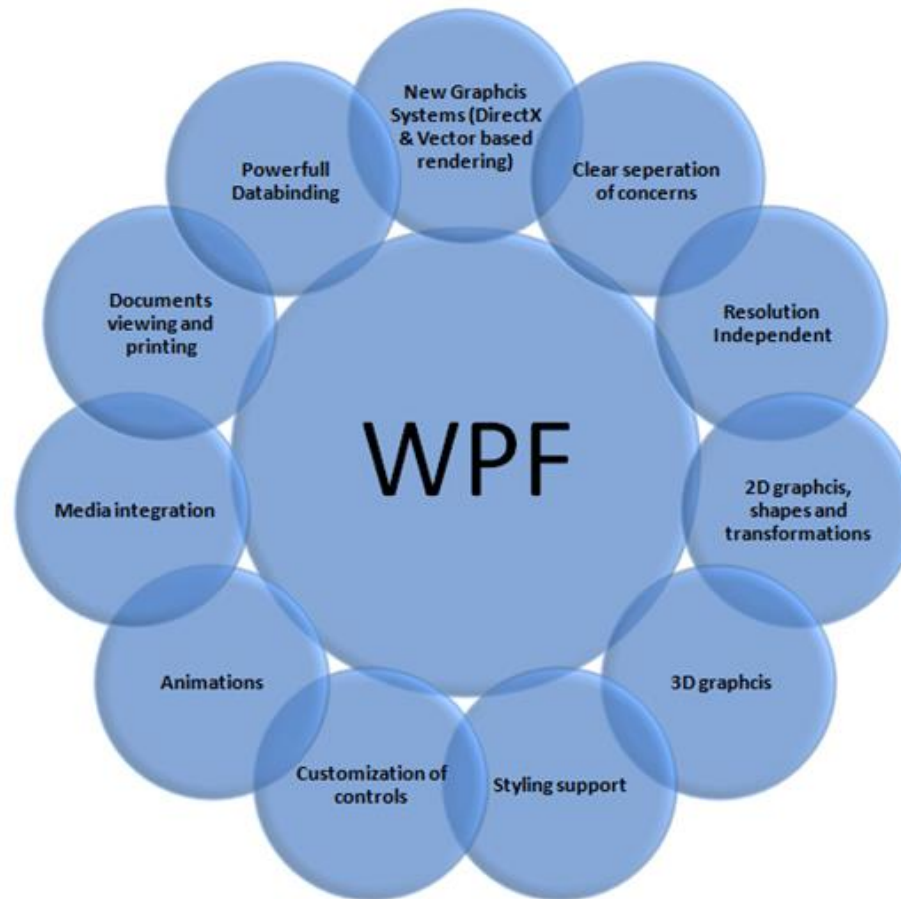
Styles, Triggers

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# WPF - introduction



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# WPF vs. Windows Forms

WPF	Windows Forms
<ul style="list-style-type: none"><li>• XAML – eXtensible Application Markup Language</li><li>• Separation between Appearance and Behavior</li><li>• The way of creating appearance of controls, rich UI</li><li>• DataBinding support</li><li>• Drawing, StoryBoards and Animations</li><li>• Possibility of displaying application in website</li><li>• Required .Net 3.0 or later</li><li>• Supports Windows Forms</li></ul>	<ul style="list-style-type: none"><li>• Low environment requirements</li><li>• Legacy technology (no longer supported by Microsoft)</li><li>• supports databinding, but in a limited way</li></ul>

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# Overview of Controls

Content Controls	Item Controls
<ul style="list-style-type: none"><li>• Contain a single object of any type.</li><li>• Derive directly or indirectly from ContentControl.</li><li>• Have a Content property that contains their single object.</li><li>• Example controls : Button, UserControl, GroupBox, TabItem, Expander, HeaderedContentControl.</li></ul>	<ul style="list-style-type: none"><li>• Used to present a collection of objects.</li><li>• Derive directly or indirectly from ItemsControl.</li><li>• Have two ways of being populated :<ul style="list-style-type: none"><li>• - Objects can be added to the Items property in code behind or in XAML.</li><li>• - A list of objects can be bound to the ItemsSource property.</li></ul></li><li>• When objects are added using either of the two above methods, UI objects will be automatically generated. The generated UI objects can be customized through the use of DataTemplates.</li><li>• Example controls : ListBox, ListView, DataGrid, TabControl, ComboBox, Menu.</li></ul>

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# Layout panels

## Stack Panel

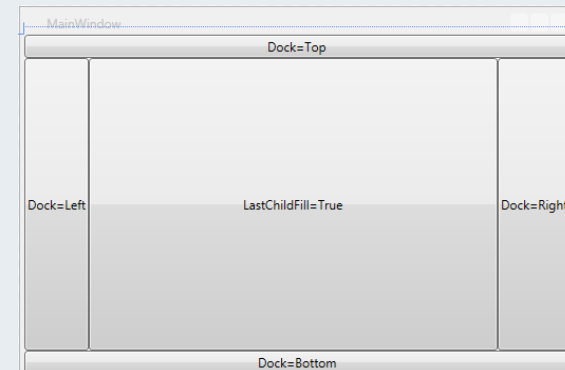
Supports flow like positioning of child elements in a horizontal or vertical direction.

Good for lists of items.

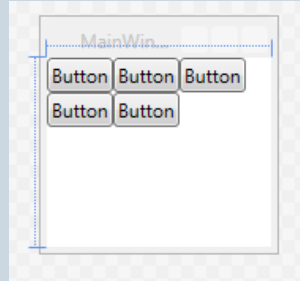
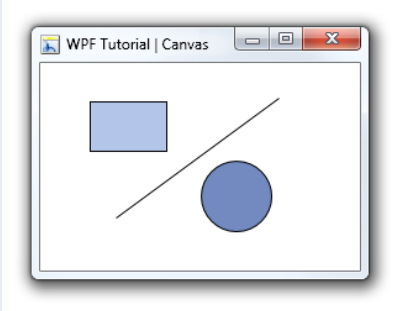
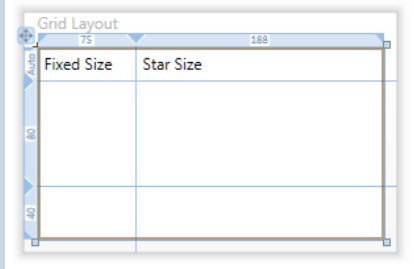


## Dock Panel

Aligns content to edges of its container. Content can also be set to fill the remaining space.



# Layout panels

<h3>Wrap Panel</h3> <p>Similar to StackPanel, but wraps the content when it reaches a boundary. Good for lists of items, though it does not support virtualization.</p>	 A diagram showing a window titled 'MainWin' containing five 'Button' elements. The buttons are arranged in two rows: the first row contains three buttons and the second row contains two buttons, demonstrating how content wraps to the next line.
<h3>Canvas</h3> <p>Supports absolute positioning of child elements. Good for drawings, not great for dialogs as there is no support for reliability, and limited support for Auto sizing.</p>	 A screenshot of a window titled 'WPF Tutorial   Canvas'. The canvas contains a blue rectangle, a blue circle, and a black diagonal line, illustrating the use of absolute positioning for drawing elements.
<h3>Grid</h3> <p>Provides flexible grid area that consists of rows and columns. Good for overall application layout, data entry forms.</p>	 A diagram of a 'Grid Layout' window. It shows a grid with two columns labeled 'Fixed Size' and 'Star Size', and three rows. The first row has a height of 40, the second 60, and the third is set to 'Auto'. The columns have widths of 75 and 188 respectively. This illustrates how a grid can manage complex layouts with varying sizes and proportions.

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# Styles, Triggers

- **Styles**

```
<Button Height=„25“ Name=„Button1“ Width=„100“>
  <Button.Style>
    <Style>
      <Setter Property=„Button.Content“ Value=„Style set directly“/>
      <Setter Property=„Button.Background“ Value=„Red“/>
    </Style>
  </Button.Style>
</Button>
```

- **Triggers**

```
<Style.Triggers>
  <Trigger Property=„Button.IsMouseOver“ Value=„True“>
    <Setter Property=„Button.FontWeight“ Value=„Bold“/>
  </Trigger>
</Style.Triggers>
```

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# Templates

A template is similar to a style.

Two different kinds are available:

**Data templates:** allow using XAML's DataTemplate element to specify a group of characteristics for how data should be displayed.

Colors, alignment, and more can be defined once in a data template, then used elsewhere in an application's user interface.

**Control templates:** allow using XAML's ControlTemplate element to define the appearance of a control.

ControlTemplate	DataTemplate
<pre>&lt;Style x:Key="NewButton"       TargetType="{x:Type Button}"&gt;   &lt;Setter Property="Template"&gt;     &lt;Setter.Value&gt;       &lt;ControlTemplate TargetType="{x:Type Button}"&gt;         &lt;Grid&gt;           // Custom Drawing, background color, etc goes here         &lt;/Grid&gt;       &lt;/ControlTemplate&gt;     &lt;/Setter.Value&gt;   &lt;/Setter&gt; &lt;/Style&gt;</pre>	<pre>&lt;ListBox.ItemTemplate&gt;   &lt;DataTemplate&gt;     &lt;Grid&gt;       &lt;Grid.ColumnDefinitions&gt;         &lt;ColumnDefinition Width="150"&gt;&lt;/ColumnDefinition&gt;         &lt;ColumnDefinition Width="*"&gt;&lt;/ColumnDefinition&gt;       &lt;/Grid.ColumnDefinitions&gt;        &lt;TextBlock Grid.Column="0" Text="{Binding Name}" FontSize="12" Height="18" /&gt;       &lt;TextBlock Grid.Column="1" Text="{Binding City}" FontSize="12" Height="18" /&gt;      &lt;/Grid&gt;   &lt;/DataTemplate&gt; &lt;/ListBox.ItemTemplate&gt;</pre>



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# Literature

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1. <http://blogs.msdn.com/b/wpfsldesigner/archive/2010/01/14/wpf-silverlight-layout-controls.aspx>
2. <http://msdn.microsoft.com/en-US/>
3. <http://www.dotnetanalyst.com/faqs/WPF.aspx>
4. [http://www.softwareandfinance.com/VSNET\\_40/](http://www.softwareandfinance.com/VSNET_40/)