

Windows Presentation Foundation

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Carey.About

- ▶ Senior Software Developer at American Electric Power
 - Enterprise Application Development
 - ASP.Net, WPF, JEE
- ▶ Microsoft MVP in Client Application Development
- ▶ President – Central Ohio .Net Developer's Group (CONDG)

Phil.About

- ▶ Principal Consultant, Pinnacle Solutions Group, Inc.
 - Senior Level consulting company specializing in Architecture and Development of Business Applications and Business Intelligence Solutions
- ▶ MCSD.Net, MCDBA, CSM
- ▶ Enterprise Application Architect
- ▶ Trainer/Mentor
 - Contact me for custom training options
- ▶ National and Regional Speaker
- ▶ Director, Cincinnati .NET User's Group

Development Environment

- ▶ IDE = VS 2008 (C#)
 - ReSharper 4.5.xx
- ▶ Unit testing framework
 - Test Framework = MbUnit 3.0.6.xx
 - Test Runner = R#/Gallio (Icarus/Echo)
- ▶ Mocking = Rhino Mocks 3.5
- ▶ Code Coverage = NCover 3
- ▶ Database = SQL Server 2008
- ▶ NHibernate 2.0.1
- ▶ Expression Blend

Motivation

- ▶ The business has decided to develop a Smart Client application
 - I'm not here to debate smart client vs. web
- ▶ You have been tasked with deciding between Windows Forms or Windows Presentation Foundation
 - WinForms has shortcomings, but
 - Isn't WPF just animations and gradients?

Agenda

- ▶ What is WPF?
- ▶ What is Missing?
- ▶ XAML
- ▶ Elements / Controls

What's Is WPF?

- ▶ Windows Presentation Foundation
- ▶ Next Generation Rich User Application Platform
 - Declarative UI (XAML)
 - Smart Client
 - Web (RIA/Silverlight)
- ▶ Based on DirectX (not GDI/GDI+)
 - Vector Based
 - Supports true Hardware Acceleration
 - Resolution Independence
 - Apps don't shrink on high-resolution monitors
- ▶ Leaps ahead with binding
 - Data and other Elements
 - Support for IDataErrorInfo

What Else is New?

- ▶ Flexible flow layout model
- ▶ Styles and Templates
- ▶ OOTB document handling features
 - Wrapping, Columns, Justification, etc
- ▶ True animation – not timer based
 - Fades, etc
- ▶ A/V support (through WMP)
- ▶ Commands
- ▶ Routed Events
 - Event Bubbling and Tunneling

What's Missing

- ▶ WPF – What's missing
 - *Visual* Inheritance
 - MDI – complete lack of support
 - DataGrid – (added through CodePlex/WPF)
 - ExtenderProvider support
 - MaskedTextBox – You can roll your own
 - ErrorProvider/HelpProvider
 - AutoComplete – minimal functionality (only from the Items, no environmental support, etc)

Shiny and New, Show me what WPF can do...

- ▶ Experience
- ▶ Create
- ▶ Compose



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Layout

- ▶ “Web”-like layout model with Flexible Flow
 - Gone are explicit sizing, absolute positioning, etc
 - Containers try to allocate element’s requested space
- ▶ Layout Process
 - Measure
 - Loop through all elements asking for preferred size
 - Arrange
 - Container places elements in appropriate position

Elements & Controls

- ▶ **Everything is an Element**
 - Controls are elements that can:
 - Receive Focus
 - Accept User Input
- ▶ **Content Controls**
 - Hold a single element
 - Window (Special)
 - Labels, Buttons, CheckBox, RadioButton, ToolTips
 - ScrollViewer, Border, Expander
- ▶ **Text Controls**
 - TextBox , PasswordBox – Strings Only
 - RichTextBox – Sophisticated Content – FlowDocument

Attached Properties

- ▶ Properties defined in one element used in another
 - `Grid.Row/Column`
- ▶ Translated into method calls
 - `Grid.SetRow(control,x)`

Layout Containers

▶ Standard

- Grid
 - Most commonly used (default Window Panel)
- StackPanel, WrapPanel, DockPanel
 - Used for UI Tweaks
- Canvas
 - Absolute (think WinForms) positioning
 - InkCanvas – Supports Digital Ink

▶ Specialized

- UniformGrid, TabPanel, ToolBarPanel, ToolBarOverflowPanel

Menus

- ▶ Use “_” instead of “&” for Hot-Key
- ▶ Beware for XAML order vs Grid Order
- ▶ Similar to WinForms except
 - MenuItem is a container control
 - Use <Separator> instead of “-”

Show me some controls

- ▶ Content Controls
- ▶ Text Controls
- ▶ List Controls
- ▶ Range Controls
- ▶ Image Controls
- ▶ Visual Controls



Events

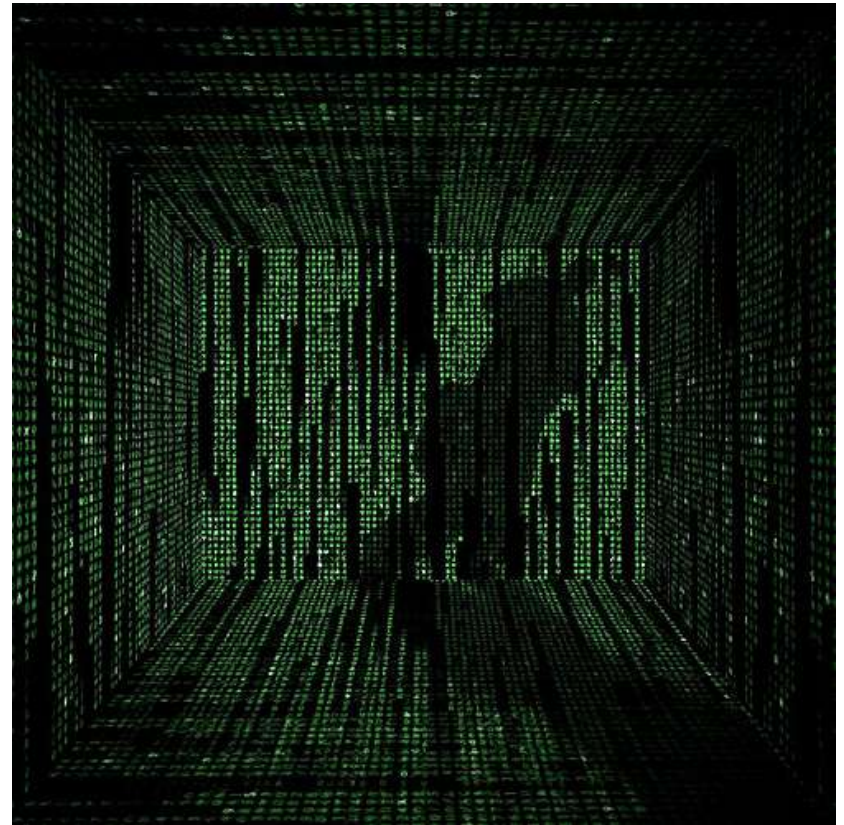
- ▶ Routed Events replace usual .NET events
 - Direct
 - Originate in one element and don't pass on
 - Bubbling
 - Travel up the element tree
 - Tunneling
 - Travel down the element tree
- ▶ Can add event handlers for child elements
 - `<Grid Button.Click="ClickEvent" ...`

Commands

- ▶ WPF Command Model adds:
 - Delegates to the Appropriate Commands
 - Keeps state of control tied into state of Command
 - Can_Execute
- ▶ Consists of:
 - Commands – represents an application task
 - Command Bindings – links command to code
 - Command Sources – trigger the command
 - Command Target – element on which the command is being performed

Databinding

- ▶ Allows for powerful UI constructs all defined in XAML
- ▶ Can bind elements value directly to another element
 - ▶ No more coding
“onChanged” etc events



<http://www.flickr.com/photos/hartkopf/1586832162/>

Additional Resources

▶ WPF

- <http://www.codeplex.com/WPF>
- <http://windowsclient.net/wpf/default.aspx>

▶ Microsoft Partner Resources

- Carl Preston (carlpre@microsoft.com)
- www.mslocalpartners.com



it depends....

<http://nplus1.org>

Contact Us

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