

Mastering Windows Presentation Foundation – WPF 4/4.5

Course Number 41970 – 40 Hours

Overview

Windows Presentation Foundation (WPF) is the new client programming interface in the Microsoft .NET Framework 3.0 and up. The course teaches how to combine C# code and the Extensible Application Markup Language (XAML) to develop applications for WPF. You'll get expert guidance, practical, hands-on examples -giving you the skills you need to exploit the new interface and graphics capabilities of this new platform.

WPF has a very different model of programming (as opposed to Windows Forms). The course explores the major WPF fundamentals, such as XAML, Controls and layout, data binding, resources, templates, graphics and animation.

On Completion, Delegates will be able to

- Create and use controls including menus, toolbars, tree views, and lists
- Use dynamic layout to automate the positioning of controls and graphics
Work with dependency properties and routed input events
- Use XAML resources, styles, and templates to alter the appearance of your UI
- Use data binding techniques in XAML to help simplify and streamline your applications
- Develop visually-stunning UIs with interactive graphics, media, and animation
- Work with WPF resources effectively
- Use control templates to change appearance of controls
- Create custom controls

Who Should Attend

This course is intended for experienced .NET software developers who build GUI applications and want to use the WPF to build a reach and powerful user interface.

Prerequisites

This guidance is intended for software architects and software developers. To get the most benefit from this course, you should have an understanding of the following technologies:

- Microsoft Visual C# or Microsoft Visual Basic .NET
- Microsoft .NET Framework 2.0

Course Contents

Module 1: Introduction to WPF

- User interface (UI) and user experience (UX)
- What is WPF?
- Why WPF?
- Tools
- Silverlight
- WPF vs. Windows Forms
- Summary

Module 2: XAML

- What is XAML?
- XAML Rules
- Type Converters
- Markup Extensions
- Reading and Writing XAML
- Summary

Module 3: Basic Concepts

- Logical and Visual Trees
- Dependency Properties
- Attached Properties
- Routed Events
- Attached Events
- Coordinate Systems
- WPF Class Hierarchy
- Summary

Module 4: Layout and Panels

- Layout Basics
- Size and Position
- Margin and Padding
- Alignment and Content Alignment
- LayoutTransform and RenderTransform
- Layout Panels
- Canvas
- StackPanel, DockPanel, WrapPanel
- Grid and GridSplitter
- Summary

Module 5: Controls (Part I)

- What is a Control?
- Content Controls
- Items Controls
- Range Controls
- Text Controls
- Other Controls
- Summary

Module 6: Application and Windows

- The Application Object
- Application Startup and Shutdown
- Application Events
- Windows
- Dialog Boxes
- Summary

Module 7: Resources

- Binary Resources
- Logical Resources
- Static and Dynamic Resources
- Accessing Resources
- Localization
- Summary

Module 8: Data Binding

- Introduction to Data Binding
- The Binding Type
- The Binding Markup Extension
- Simple Data Binding
- Data Templates
- Data Views
- Live Shaping (.NET 4.5)

- Accessing collections on a non-UI thread (.NET 4.5)
- Binding to static properties (.NET 4.5)
- Value Converters
- Data Validation
- Summary

Module 9: Commanding

- The WPF Command Model
- The ICommand Interface
- Routed Implemented Commands
- Invoking a Command
- Standard Commands
- Custom Commands
- Summary

Module 10: Styles, Triggers and Control Templates

- What is a Style?
- Defining and using a style
- Automatically applying a style
- What is a trigger?
- Property Triggers
- Data Triggers
- Event Triggers
- Basic Control Template
- Enhanced Control Template
- Summary

Module 11: Graphics

- Shapes
- Geometries
- Transforms
- Brushes
- Opacity
- Summary

Module 12: Animation

- Understanding Animation
- Linear Animations
- Storyboards
- Path Animation
- Animation Easing
- Summary

Module 13: Custom Elements

- Custom Element Types
- User Controls
- Custom Controls
- Custom Drawn Elements
- Custom Panels
- Summary

Module 14: Threading and Asynchronous Programming (Optional)

- Multithreading
- Threads and WPF
- The Dispatcher and DispatcherObject
- Updating the UI
- The BackgroundWorker Component
- Asynchronous programming with C# 5.0
- Summary

Module 15: Interoperability (Optional)

- Interoperability Scenarios
- Mixing Windows and Forms
- Windows with Mixed Content
- Summary

Module 16: Controls (Part II) (Optional)

- The ListView
- The TreeView
- Menus
- Toolbars
- Status bars
- Ribbon (.NET 4.5)
- Summary