



Essentials Windows Presentation Foundation - WPF

Duration: 5 Days Course Code: GK2345

Overview:

In this course, you will gain hands-on experience with the latest in Microsoft Windows desktop UI technologies. Get familiar with the dynamic and creative application development that WPF enables and learn how to best utilize WPF for both new projects as well as porting existing Windows Forms, MFC, or traditional Win32 application over to this new platform.

You'll get answers to these questions:

What are the main building blocks of a WPF application and how do I use them?

What is MVVM and how do I use it?

How can I cleanly separate my behavior, UI design and resources using XAML and data binding?

How do I create and use vector-based 2D graphic resources?

What are the new features in WPF 4.5?

How can I use subtle effects and animations to liven up my applications?

When do I use a UserControl vs. a Custom Control?

Target Audience:

Developers interested in utilizing WPF for GUI development who have at least six months experience with C# and Visual Studio (2003, 2005, 2008, or 2010)

Objectives:

- Use Visual Studio and Expression Blend together to build your user interface
- Integrate your visual designers with your developers to maximize their skills
- Properly design your architecture to take advantage of data binding
- Integrate other .NET technologies such as LINQ and XLINQ with WPF
- Customize the appearance of controls with styles and themes
- Learn current UI design patterns and how to apply them in your development
- Leverage existing components and code you already have with WPF
- Day 1
- Introduction
- Windows Presentation Foundation is the new API for building user experiences on .NET. This module looks at the motivation behind WPF and its main features. We'll look at the primary tools and classes used to generate WPF applications and how a basic application fits together.
- WPF enables much tighter integration between developers and designers and in this module we will discuss a variety of techniques to make this process run more smoothly. We will also look at ways to structure our project by separating out designer assets using Expression Blend and creating a logical project structure making it easier to have different roles working on the application together without interference.
- In this module we will continue the discussion of integrating designers into the development workflow by examining the support for common property setters through WPF Styles. You will learn how to segregate common properties and store them into resources so they can be managed in a single location. We will also discuss how visual interactivity can be achieved using Triggers - a fundamental support feature we will use later in the course.
- Day 3
- Data Binding: Basics
- One of the most interesting features of WPF is its ability to present data quickly and effectively. This module explains how to connect basic data to the UI and the motivation and technology behind it. You will learn how to connect controls together, how to make your business objects "binding-aware" and how to provide type conversions for your binding expressions.
- Data Binding: Collections
- In this module, you will continue the data binding exploration by

Using XAML

In this module, we'll discuss how XAML allows for creation of UI independent of the procedural code and how WPF provides for a clean separation of code and UI.

Managing Layout

WPF provides a powerful layout engine. In this module, you'll learn how to choose between the different built-in panels and how to create your own panel if the need arises. You'll also discover how to fine-tune the layout using margin, padding and alignments, and to provide special effects through transforms such as rotations and scaling.

Day 2

Framework Architecture

In this module we will cover internal details of the framework classes - how WPF integrates with the Windows operating system, manages property values and how it ultimately renders visual elements onto the screen.

Input Management

WPF includes a new input management architecture that allows elements to receive input from child controls more easily than previous technologies. In this module, we will examine the new input architecture and see the most effective ways to take advantage of it. You'll also learn about commands and how to consolidate event handlers for different types of controls.

Organizing your Applications

examining how to provide visual information for your business objects through data templates and then how to manage collections of objects on the UI. Finally, you will learn how to customize the display of collections through sorting, filtering and grouping, and how to data bind to hierarchies of collections (parent/child).

Model-View-ViewModel

In this module we will discuss the Model-View-ViewModel UI pattern which is useful in separating the UI and visualization from the procedural logic that drives it. We will look at how you can use this to structure your application to provide better testability as well as which roles will provide which features (model vs. view vs. viewmodel).

Day 4

2D Graphics

In this module, you'll learn how to utilize the graphics support in WPF. First, you'll get an overview of the graphics capabilities of WPF: shapes and geometries. Then, you'll learn how to use Expression Blend to create custom shapes, fills and special effects such as opacity and reflections.

Control Templates: Basics

A unique capability of WPF is the ability to override the drawing behavior of all of the built-in controls. In this module, you'll learn how to redefine the visual appearance of existing controls through Control Templates. Here we will look at doing a simple replacement - the Button and how to provide a new visualization as well as visual behavior using Triggers and the Visual State Manager (VSM).

Control Templates: Moving Beyond the Button

In this module we will continue our examination of control templates by looking at more advanced and complicated controls such as ListBox, Sliders, Treeviews and Tab controls. You will learn the best practices to replacing the various supported templates to provide a completely new visualization while still maintaining the complete procedural behavior.

Day 5

Building Custom Controls

This module covers building reusable controls through composition and inheritance and then looks at building a new control from scratch. You'll learn about providing default styles for your controls and integrating with the WPF theme system so your control changes its visual appearance when the operating system theme changes.

Prerequisites:

- Familiarity with traditional object-oriented development concepts
- Some exposure to a "curly-brace" language like C++ or Java
- Background in Windows UI development is recommended

Content:

Building Custom Controls

Additional Information:

What's New in WPF 4.5

.NET 4.5 offers some excellent new performance changes for WPF for typical LOB type applications. This module dives into those changes and shows you some of the new features you can take advantage of to increase your application performance, particularly for large data sets.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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