WPF Syllabus

Overview

This course introduces Windows Presentation Foundation or WPF ("Avalon"), the new .NET technology from Microsoft for building rich Windows applications. It was originally part of .NET 3.0, previously called "WinFX" by Microsoft. WPF includes an XML-based markup language for defining program elements, Extensible Application Markup Language (XAML). WPF applications can be created using only code or a combination of code and XAML pages. This course covers the essentials of WPF, providing an orientation to this technology and a firm foundation for creating applications.

WPF is a complex technology that can have a steep learning curve. This course approaches the subject in a practical manner, introducing the student to the fundamentals of creating Windows applications using the features of WPF. It includes coverage of both traditional concepts such as controls and new concepts such as XAML, flexible layout, logical resources, dependency properties, routed events, and the loosely-coupled command architecture of WPF. The course also covers styles, templates and data binding.

The course is hands-on with many example programs and lab exercises.

Course Goals

- Gain an understanding of the philosophy and architecture of WPF
- Create Windows applications using the classes provided by WPF
- Understand the principles of XAML and create applications using a combination of code and XAML
- Use the layout features of WPF to create flexible and attractive user interfaces
- Implement event and command-driven applications with windows, menus, dialogs, toolbars, and other common user interface features
- Use more advanced features of WPF such as dependency properties, routed events, logical resources, styles, templates, and data binding

- ✓ Introduction of WPF.
  - Why WPF?
  - What is WPF?
  - WPF Overview.
  - Application and Windows
- ✓ XAML – Extensible Application Markup Language.
  - Role of XAML
  - Elements & Attributes
  - Namespace
  - Property Element
  - Type Converters
  - Content Property
  - Markup Extension

- ✓ Introduction of Expression Blend
- ✓ Layout
  - Border
  - Canvas
  - Grid
  - DockPanel
  - StackPanel
  - WrapPanel
  - UniformGrid
  - ViewBox
- ✓ WPF Controls
  - Button
  - TextBox
  - Lable
  - RadioButton
  - CheckBox
  - ListBox
  - ComboBox
  - Others Important Controls.
- ✓ Resources
  - Binary Resources
  - Logical Resources
  - Static Resource
  - Dynamic Resources
- ✓ Routed Event and Dependency Property
  - Dependency Properties
  - Attached Properties
  - Change Notification
  - Routed Event
  - Commands
- ✓ Style
  - Sharing Style
  - Style Inheritance
  - Property Trigger
  - Event Trigger

- Data Trigger
- Multi Trigger
- Multi Data Trigger
- Style Selector

✓ Templates
- Control Template
  - Control Template with Property Trigger
  - Control Template with Data Trigger
- Data Template
  - Data Template with Property Trigger
  - Data Template with Data Trigger
  - Data Template Selector

✓ Data Binding
- Types of Binding
- Binding Source
- Value Converters
- Data Provider
- Validation Rules
- Observable Collection

✓ User Controls and Custom Controls

✓ Animation

✓ Multithreading

✓ Structure and Deploying an Application
- Standard Window Application
- Navigation based Window Application
- XAML Browser Application
- Deployment: Click Once Versus Windows Installer

✓ MVVM Pattern