

Training: WPF Interface Development with C# and Visual Studio

Module 1 – Introduction and WPF Fundamentals

- Overview of WPF and comparison with Windows Forms
- WPF architecture: XAML, Code-Behind, Data Binding
- Creating your first WPF project in Visual Studio
- Understanding XAML and its relationship with C#
- Using core controls (Button, TextBox, Label, ListBox, etc.)
- Organizing the interface with layout containers (Grid, StackPanel, DockPanel, WrapPanel)

Module 2 – Styling and Layout

- Managing resources (Resources, ResourceDictionaries)
- Introduction to styles (Styles, Control Templates)
- Applying themes and customizing controls
- Using layouts to build flexible user interfaces
- Introduction to event handling in WPF
- Hands-on exercise: building a cohesive mini user interface

Module 3 – Data Binding and MVVM

- In-depth understanding of DataContext and Binding
- Binding modes (One-Way, Two-Way, etc.)
- Working with lists and collections (ItemsControl, ListView, DataGrid)
- Data validation and conversion (ValueConverters)
- Introduction to the MVVM pattern (Model-View-ViewModel)
- Practical case study: implementing a basic MVVM architecture

Module 4 – Practical Project and Advanced Features

- Navigation between views (UserControl, Pages, Navigation)
- Command handling (Commands, RelayCommand)
- Interacting with a database or service (simple example using Entity Framework or a mock API)
- Managing multimedia resources (images, icons)
- Best practices for structuring a WPF project
- Final workshop: developing a complete interface aligned with your C# project