



**Visual Studio 2015: Windows
Presentation Foundation
(using VB.NET Language)
Training Course Outline**

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Program Overview

This Four-day instructor-led course provides students with the knowledge and skills to build and configure a Windows Presentation Foundation (WPF) solution.

Duration

4 – Day Program

Learning Objectives

At the end of the training, participants will be able to:

- Create a WPF application.
- Build a user interface in a WPF application.
- Customize the appearance of a WPF application.
- Bind user interface controls to data sources.
- Bind user interface controls to collections.
- Create new controls in a WPF application.
- Manage documents in a WPF application.
- Add graphics and multimedia support to a WPF application.
- Implement a WPF application using MVVM Pattern
- Configure and deploy WPF applications.

Prerequisites

Before attending this course, students should have intermediate experience developing applications by using earlier versions of Microsoft Visual Studio.

Target Audience

This course is intended for application developers who know how to build Windows Forms applications, custom user controls in .NET Framework 4.5 and how to use the common features of the base class library. They do not have to understand concepts such as advanced UI threading and asynchronous programming, building custom controls from scratch or using graphics device interface (GDI). They also do not need experience building add-ins or custom designers in Microsoft Visual Studio development system.

Project Structure and Outline

- **Module 1: Creating an Application by Using WPF**

This module explains how to build a WPF application.

Lessons

- ✓ Overview of WPF
- ✓ Creating a Simple WPF Application
- ✓ Handling Events and Commands
- ✓ Navigating Between Pages



Lab: Creating a WPF Application

- ✓ Creating a Stand-Alone WPF Application
- ✓ Handling Events and Commands
- ✓ Navigating Between Pages
- ✓ Creating an XBAP Application

After completing this module, students will be able to:

- ✓ Explain WPF concepts and features.
- ✓ Create a simple WPF application.
- ✓ Handle events and commands.
- ✓ Navigate between pages in a WPF application.

● **Module 2: Building User Interfaces**

This module explains how to build a user interface in a WPF application.

Lessons

- ✓ Defining Page Layout
- ✓ Building User Interfaces by Using Content Controls
- ✓ Building User Interfaces by Using Items Controls
- ✓ Hosting Windows Forms Controls

Lab: Building User Interfaces

- ✓ Defining Page Layout and Adding Content
- ✓ Enhancing the User Interface by Using Items Controls
- ✓ Integrating Windows Forms Controls

After completing this module, students will be able to:

- ✓ Define layout.
- ✓ Use content controls.
- ✓ Use items controls.
- ✓ Host Windows Forms controls.

● **Module 3: Customizing Appearance**

This module explains how to customize the appearance of a WPF application.

Lessons

- ✓ Sharing Logical Resources in an Application
- ✓ Creating Consistent User Interfaces by Using Styles
- ✓ Changing the Appearance of Controls by Using Control Templates
- ✓ Enhancing User Interfaces by Using Triggers and Animations

Lab: Customizing the Appearance of a WPF Application

- ✓ Sharing Logical Resources in an Application
- ✓ Creating Consistent User Interfaces by Using Styles
- ✓ Changing the Appearance of Controls by Using Control Templates
- ✓ Enhancing the User Interface by Using Triggers and Animations

After completing this module, students will be able to:

- ✓ Share logical resources throughout an application.
- ✓ Create a consistent user interface appearance by using styles.
- ✓ Change the appearance of controls using templates.
- ✓ Change the appearance of user interface elements by using triggers and animations.

● **Module 4: Data Binding**

This module explains how to bind user interface controls to data sources.

Lessons

- ✓ Overview of Data Binding
- ✓ Creating a Data Binding
- ✓ Implementing Property Change Notification
- ✓ Converting Data
- ✓ Validating Data

Lab: Data Binding

- ✓ Creating Data Bindings
- ✓ Implementing Property Change Notification
- ✓ Converting Data
- ✓ Validating Data

After completing this module, students will be able to:

- ✓ Explain WPF data binding concepts and terminology.
- ✓ Create a binding between a data source and a control.
- ✓ Implement property change notifications.
- ✓ Convert data between the binding source and the binding target.
- ✓ Validate data entered by the user.

● **Module 5: Data Binding to Collections**

This module explains how to bind user interface controls to collections.

Lessons

- ✓ Binding to Collections of Objects



- ✓ Presenting Data by Using Collection Views
- ✓ Presenting Data by Using Data Templates

Lab: Data Binding to Collections

- ✓ Presenting Data by Using Collection Views
- ✓ Presenting Data by Using Data Templates

After completing this module, students will be able to:

- ✓ Bind to a collection of objects.
- ✓ Sort, filter, and group collections by using collection views.
- ✓ Create master-detail user interfaces.
- ✓ Fine-tune data display by using data templates.

● **Module 6: Creating New Controls**

This module explains how to create new controls in a WPF application.

Lessons

- ✓ Overview of Control Authoring
- ✓ Creating Controls

Lab: Creating New Controls

- ✓ Implementing a Custom Control

After completing this module, students will be able to:

- ✓ Explain scenarios and options for creating new controls.
- ✓ Create user controls.
- ✓ Create custom controls.

● **Module 7: Managing Documents**

This module explains how to manage documents in a WPF application.

Lessons

- ✓ Creating and Viewing Flow Documents
- ✓ Creating and Viewing Fixed Documents
- ✓ Packaging Documents
- ✓ Printing Documents



Lab: Managing Documents

- ✓ Creating and Displaying Flow Documents
- ✓ Printing Documents
- ✓ Creating a Signing XPS Documents

After completing this module, students will be able to:

- ✓ Create and view flow documents.
- ✓ Create and view fixed documents.
- ✓ Package a document
- ✓ Print a document

● **Module 8: Graphics and Multimedia**

This module explains how to add graphics and multimedia support to a WPF application.

Lessons

- ✓ Creating 2-D graphics
- ✓ Displaying Images
- ✓ Creating 3-D Graphics
- ✓ Manipulating the 3-D Environment
- ✓ Adding Multimedia

Lab: Graphics and Multimedia

- ✓ Displaying 2-D graphics
- ✓ Displaying Images
- ✓ Displaying 3-D Graphics
- ✓ Playing Video Clips

After completing this module, students will be able to:

- ✓ Display 2-D graphics
- ✓ Add images in a WPF application.
- ✓ Display 3-D Graphics
- ✓ Use additional 3-D graphics capabilities.
- ✓ Add multimedia content to a WPF application.



- **Module 09: Model-View-ViewModel(MVVM)**

This module explains how to use the MVVM Pattern.

Lessons

- ✓ Definition and Evolution of of the Pattern
- ✓ Building Effective ViewModel Objects
- ✓ Leveraging Bindings and Commands
- ✓ Minimizing Code-Behind Files
- ✓ Data Validation and Handling Errors
- ✓ Building Unit Test and TDD

Lab:

- ✓ Building WPF application using MVVM Pattern.

After completing this module, students will be able to:

- ✓ Implement a WPF application using MVVM Model Pattern

- **Module 10: Configuring and Deploying Applications in Windows Presentation Foundation**

This module explains how to configure and deploy WPF applications.

Lessons

- ✓ Deployment Options
- ✓ Deploying a Stand-Alone WPF Application
- ✓ Deploying an XBAP Application
- ✓ Configuring Manifest Settings

Lab: Configuring and Deploying WPF Applications

- ✓ Deploying a Stand-Alone WPF Application
- ✓ Updating a Deployment Manifests
- ✓ Deploying an XBAP Application

After completing this module, students will be able to:

- ✓ Explain deployment options.
- ✓ Deploy a standalone WPF application.
- ✓ Deploy an XBAP Application
- ✓ Configuring security settings



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