

Developing Rich Internet Applications Using Microsoft Silverlight 4

Introduction

This **5-day** course covers intermediate and advanced topics required to develop professional Silverlight 4 applications that can be deployed to the **Web, Windows desktops, and Windows Phone 7** devices. The course will include hands-on labs that comprise approximately 50% of the classroom time and enable the student to learn Silverlight 4 programming within a variety of real-world scenarios.

Audience Profile

The target audience for this training course is professional developers who have **experience with XAML** (either through **WPF or Silverlight**), a limited amount of Silverlight development experience, and experience working in **Visual Studio 2010**. This audience is interested in learning to develop advanced Silverlight 4 applications using Visual Studio 2010.

This course is intended for developers who have programming experience using either **Visual Basic .NET or Visual C#** and who understand the concepts of **object-oriented programming**. This course is designed for developers who are comfortable using **Expression Blend** and **Visual Studio 2010**.

This course is not designed for new programmers.

At Course Completion

After completing this course, students will be able to:

- Build data-driven Silverlight applications
- Create advanced user interfaces
- Implement advanced media techniques in Silverlight
- Work with Silverlight Media Framework
- Access hardware in Silverlight applications
- Create application that can be Globalized & Localized
- Implement Network Communications
- Deploy Silverlight applications
- Understand the basics of developing Silverlight applications for Windows Phone 7
- Implement advanced Silverlight techniques for Windows Phone 7 Development

Pre-requisites

In addition to the technical knowledge, students who attend this training should have hands-on experience in the following areas:

- Professional programming experience with Visual Studio 2010. (Pre-req Course [4994](#) and Course [10266](#))

- Some professional experience with **XAML and Expression Blend** (Course [10553](#))
- Some experience developing **Web applications**. (Pre-req course [10267](#) and MCTS course [10264](#) and [10265](#))

Duration

- 5 days
- Includes lunch, refreshments and manuals

Level: 200

Course Outline

Module 1: Introduction to Building Silverlight Business Applications

This module an overview of Silverlight for building business application and describes how to build out-of-browser applications.

Lessons

- Overview of Silverlight 4.0
- Silverlight Architecture
- Developing Out-of-Browser Applications with Silverlight

Lab : Building Silverlight Business Applications

- Creating a Silverlight Application
- Configuring Out-of-Browser settings for the Silverlight Application

After Completing this module, students will be able to:

- Provide an overview of Silverlight 4.0.
- Describe the general Silverlight architecture for developing solutions.
- Describe how and when to build out-of-browser applications by using Silverlight.

Module 2: Building Data-Driven Applications

This module discusses various data access techniques in Silverlight, and focuses on how to use ADO.NET entity data models in Silverlight applications.

Lessons

- Overview of Data Access in Silverlight 4.0
- Defining Data Access by Using ADO.NET Entity Data Models
- Displaying Data by Using Domain Services

Lab : Consuming Data

- Connecting to a Database in a Silverlight Project
- Querying and Displaying Data from a Database



Learning Solutions

- After Completing this module, students will be able to:
- Describe data access in Silverlight 4.0.
- Use ADO.NET entity data models in your Silverlight applications.
- Display data by using domain services in your Silverlight applications.

Module 3: Advanced Data Management

This module explains how to modify data using domain services, implement data binding, and format data for display.

Lessons

- Manipulating Data by Using Domain Services
- Binding and Validating Data

Lab : Manipulating Data

- Implementing Full Read-Write Scenarios

After Completing this module, students will be able to:

- Modify data by using domain services in your Silverlight applications.
- Understand and implement data binding.
- Format data for display and validate user input.

Module 4: Implementing User Controls and Navigation

This module describes how you can create user controls that allow you to group various controls in a single unit and customize both the display and functionality to suit your needs. Depending on how generic you create your user controls, they can easily be reused across your Silverlight applications.

Lessons

- Working With Controls
- Threading
- Implementing Navigation

Lab : Implementing User Controls and Navigation

- Adding a Navigation User Control
- Updating the Number of Cards Periodically

After Completing this module, students will be able to:

- Describe the difference between standard controls and user controls.
- Describe control parts and control part mapping.
- Describe and create user controls.
- Create and work with background threads in UI scenarios.
- Implement a navigation framework.

Module 5: Creating Advanced User Interfaces

This module explains how you can create your own presenter objects to contain other objects, and define collections and templates for sub-objects, all in a flexible way.

Lessons

- Creating Content Presenter Classes
- Creating Item Templates for Presentation
- Developing Classes as Item Instances

Lab : Presenting Items, Classes, and Dependency Properties

- Creating ItemsControl Objects
- Configuring Content Classes for use in the ItemsControl Class
- Using the Custom ItemsControl object in a User Control

After Completing this module, students will be able to:

- Create content presenter classes with custom collections of sub-objects.
- Create item templates for items in a custom collection.
- Develop classes for use as item instances in custom collections.

Module 6: Using Local Assets

This module discusses how you can add features that allows users to use local resources, e.g., print data from your solutions. Additionally, it explains how you can persist settings across sessions, and enable users to open and save files to the local computer's file system.

Lessons

- Printing in Silverlight Applications
- Accessing Local Storage in Silverlight Applications
- Accessing Local File Systems in Silverlight Applications

Lab : Using Local Assets

- Printing from Silverlight Applications
- Accessing the Clipboard in Silverlight Applications
- Accessing Isolated Storage in Silverlight Applications
- Accessing the File System in Silverlight Applications

After Completing this module, students will be able to:

- Print from Silverlight applications.
- Access local storage in Silverlight applications.
- Access local file systems in Silverlight applications.



Module 7: Implementing Advanced Media Techniques in Silverlight

This module explain how you can implement deep zoom and play media files.

Lessons

- Implementing Deep Zoom in Silverlight
- Playing Media Files

Lab : Implementing Advanced Media Techniques in Silverlight

- Adding a Deep Zoom Image
- Adding a Media Player

After Completing this module, students will be able to:

- Describe how Silverlight implements deep zoom.
- Describe how Silverlight implements media.

Module 8: Developing Silverlight Media Framework Solutions

This module explains how you can use Silverlight Media Framework to implement many enhancements over the built-in media elements of Silverlight, and simplify your job of developing rich media-based solutions.

Lessons

- Introduction to the Silverlight Media Framework
- Developing Silverlight Media Framework Solutions

Lab : Developing Silverlight Media Framework Solutions

- Adding Support for the Silverlight Media Framework
- Configuring the Silverlight Media Framework Player

After Completing this module, students will be able to:

- Describe the Silverlight Media Framework.
- Develop advanced media-based solutions by using the Silverlight Media Framework.

Module 9: Accessing Hardware in Silverlight Applications

This module focuses on how you can use Silverlight to develop solutions that interact with hardware devices, such as webcams, audio equipment, mouse wheels, and keyboards. Adding interaction with such hardware and implementing features such as video capture and image creation from video sources enables you to add a high degree of rich interactivity to your solutions.

Lessons

- Interacting with Mice and Keyboards
- Interacting with Audio and Video Hardware

Lab : Interacting with Hardware Programmatically

- Interacting with the Mouse Wheel
- Interacting with the Keyboard

After Completing this module, students will be able to:

- Mice and keyboards.
- Video and audio hardware.

Module 10: Globalization and Localization

This module explains how you can develop solutions that can be globalized to work across cultures, and localized to a specific culture.

Lessons

- Globalization
- Localization

Lab : Globalizing and Localizing Applications

- Globalizing an application
- Localizing an application

After Completing this module, students will be able to:

- Can be globalized to work across cultures.
- Can be localized to a specific culture.

Module 11: Implementing Network Communications

This module, describes some common techniques for providing configuration data to Silverlight applications, such as providing initiation parameters that identify external XML configuration files or services, and consume such external XML configuration files or services by using various approaches. Also it explains how to implement communication between Silverlight applications by using sockets and local TCP connections.

Lessons

- Configuring Applications for Network Communications
- Implementing Web Calls
- Implementing Low-Level Communications

Lab : Building Dynamic Silverlight Applications

- Consuming Initiation Parameters
- Consuming Data by Using HTTPWebRequest Objects
- Consuming Data by Using WebClient Objects
- Sending and Receiving Data by Using Local Connections

After Completing this module, students will be able to:

- Configure applications for network communications.
- Implement web calls.
- Implement low-level communications



Module 12: Deploying Silverlight Applications

This module covers how to host a Silverlight application and thus make it available to end users, as well as which features you can make use of after your application has been deployed.

Lessons

- Application Features and Hosting
- Managing Application Resources Dynamically

Lab : Deploying Silverlight Applications

- Adding Application Features
- Loading Resources Dynamically

After Completing this module, students will be able to:

- Work with the features of a deployed application.
- Implement dynamically loading application resources.

After Completing this module, students will be able to:

- Describe the features of Windows Phone.
- Explain some of the considerations associated with Windows Phone Application Development.
- Create a simple Windows Phone application.

Module 13: Application Guidance

This module focuses on the MVVM design pattern and the Prism guidance.

Lessons

- Getting Started with the MVVM Design Pattern
- Getting to Know Prism

Lab : Implementing the MVVM Design Pattern

- Installing the Simple MVVM Toolkit
- Examining a Silverlight MVVM project
- Implementing MVVM Items

After Completing this module, students will be able to:

- Understand and apply the MVVM design pattern to a Silverlight project.
- Understand and use the Prism guidance for creating composite Silverlight applications.

Module 14: Windows Phone Development—First Look

This module explains the basics of Windows Phone Application Development.

Lessons

- Introduction to Windows Phone
- Beginning Windows Phone Development
- Creating a Windows Phone Application

Lab : Creating a Windows Phone Application

- Capturing User Input
- Responding to Orientation Changes

