

INTRODUCTION TO MICROSOFT SILVERLIGHT

OVERVIEW

This course goes through a series of hands-on labs to build an application and focuses on the basics of Silverlight and understanding the platform. It aims to give you a kick start for building applications on the Silverlight platform.

MAIN GOALS

- Understand Silverlight programming model and XAML
- Become familiar with the supporting frameworks and tools
- Understand data binding
- Learn to build custom controls
- Learn best practices in building Silverlight applications

TARGET AUDIENCE

Developers with good understanding of the .NET platform aiming to learn Silverlight and the supporting tools and technologies.

OUTLINE

DAY 1

1. FUNDAMENTALS OF SILVERLIGHT

A. OVERVIEW

- i. Architecture
- ii. Sandbox
- iii. Plug-in

B. DEVELOPMENT TOOLS

- i. Visual Studio 2010
- ii. Expression Studio

C. SILVERLIGHT AND THE .NET FRAMEWORK

- i. WPF Subset
- ii. BCL
- iii. Data access
- iv. DLR

2. XAML ESSENTIALS

- ##### A. SYNTAX – elements and attributes

- B. NAMESPACES
 - C. VISUAL STUDIO 2010 XAML DESIGNER SURFACE
 - D. CHILDREN OF OBJECT ELEMENTS
 - i. Content
 - ii. Collection Items
 - E. ATTACHED PROPERTIES
 - F. MARKUP EXTENSIONS
 - i. Binding
 - ii. StaticResource
 - iii. TemplateBinding
 - iv. RelativeSource
 - G. XAML AND CODE RELATIONSHIP
 - H. EVENTS
 - i. Routed Events
 - ii. Event Handlers
 - I. HANDS-ON LAB
 - i. Create basic layout with Grid
 - ii. Position controls in the layout
 - iii. Use a resource
 - iv. Attach for an event
- 3. CONTROLS – COVERS BUILT-IN, SDK AND TOOLKIT CONTROLS**
- A. LAYOUT CONTROLS AND PANELS – define page layout
 - i. Canvas
 - ii. Grid
 - iii. Border
 - iv. ScrollViewer
 - v. StackPanel
 - vi. WrapPanel
 - vii. DockPanel
 - viii. ViewBox
 - B. UI CONTROLS
 - i. Content Controls
 - ii. Items Controls
 - iii. Rich Text Area
 - iv. Tooltips
 - C. USER CONTROLS
 - D. CUSTOM CONTROLS
 - e. HANDS-ON LAB – Build user interface with content and item controls

4. DATA BINDING

- A. UNDERSTANDING DATA BINDING
 - i. Syntax
 - ii. Data Context
 - iii. Modes
 - iv. Change Notifications
 - v. Value Converters
 - vi. String Format
 - vii. Fallback and Null value binding
 - viii. Validation Errors
- B. DATA TEMPLATES
- C. COMMANDING
- D. MVVM OVERVIEW
- E. HANDS-ON LAB
 - i. Binding to collections
 - ii. Data Templates
 - iii. MVVM

5. WORKING WITH EXPRESSION BLEND

- A. ENVIRONMENT
 - i. Artboard
 - ii. Workspaces
 - iii. Toolbox
 - iv. Assets
 - v. Objects and Timeline
 - vi. Properties
 - vii. Resources
- B. TRANSFORMATIONS
- C. STORYBOARDS
- D. EASINGS
- E. BEHAVIORS
- f. HANDS-ON LAB – Create an application by utilizing storyboards, transformations, easings and behaviors

6. STYLING AND TEMPLATING

- A. RESOURCES
 - i. Local
 - ii. Global
 - iii. Merged Dictionaries
- B. STYLES
 - i. Implicit
 - ii. Referenced
 - iii. BasedOn
- C. VISUAL STATES MANAGER
 - i. Parts
 - ii. States
 - iii. Transitions
 - iv. State groups
 - v. Using VSM in Custom Controls

- D. TEMPLATES
- e. HANDS-ON LAB – Customize appearance of an application

DAY 3

7. CUSTOM CONTROLS

- a. BASE CONTROLS – Control, ContentControl, ItemsControl, Panel
- B. CONTROL TEMPLATES
- C. LOGICAL AND VISUAL TREES
- D. DEPENDENCY PROPERTIES
- E. TEMPLATE BINDINGS
- F. VISUAL STATES
- g. HANDS-ON LAB – Create a custom control utilizing dependency properties, template bindings and visual states

8. NETWORKING

- a. SERVICE ARCHITECTURE OVERVIEW – Access Restrictions, WCF, Sockets, Duplex Services
- B. DATA ACCESS
 - i. WCF
 - ii. WCF RIA Services Overview
- C. SYNDICATION
- D. WEBCIENT
- E. DEBUGGING TIPS
- F. HANDS-ON LAB
 - i. Consume WCF Service
 - ii. Use a WebClient

9. BROWSER INTEGRATION

- A. XAML SPLASH SCREEN
- B. HTML BRIDGE
 - i. Accessing the DOM from Silverlight
 - ii. Accessing Silverlight from the DOM
- C. LOCAL MESSAGING
- D. FULL SCREEN SUPPORT
- E. OUT-OF-BROWSER APPLICATIONS
 - i. Networking Monitoring API
 - ii. HTML Hosting
 - iii. “Toast” notifications
 - iv. Elevated Trust
 - v. COM Interop

STUDENT PREREQUISITES

Required

- Working knowledge in C# 3.0 or later

- Familiarity with Visual Studio

Beneficial

- Familiarity with markup languages – work with ASP.NET
- Familiarity with Expression Blend

COURSE DETAILS

The course is based on latest version of the technologies and tools – Silverlight 4 and Visual Studio 2010.

Materials – All students receive printed course manual and lab source code.

Duration - 3 days (12 hours)