

Microsoft's Silverlight is a new client-side Web technology that enables the implementation of visually stunning Web applications that depend only on a small, easy-to-install plug-in that works in browsers for both Windows® and Macintosh®. Silverlight 4 provides a cross-platform and cross-browser implementation of the .NET Framework. Out-of-browser support enables Silverlight applications to run disconnected from the Internet. Silverlight applications can be implemented in .NET languages such as C# and Visual Basic as well as in JavaScript.

This four-day course provides the C# programmer with a thorough foundation in Silverlight 4. After introducing the Silverlight plug-in and SDK and the programming model for Silverlight, the course provides a thorough survey of Extensible Application Markup Language (XAML), which is also the foundation of Windows Presentation Framework (WPF). The course then shows how to use Silverlight to draw shapes, lines, text and images. Layout is discussed in detail, including sizing and positioning of controls and the use of panels. Event handling is covered. There is an introduction to Silverlight animation and the use of video and audio. The last part of the course covers topics in networking, data controls and data binding, and data access. An appendix covers transforms in Silverlight, which can be used to achieve various special visual effects.

Course Objectives:

- Gain a practical knowledge of using Silverlight in Web applications.
- Understand the use of XAML with Silverlight, including the creation of dynamic content.
- Use Silverlight to draw shapes, lines, text and images.
- Implement input-driven Web applications using Silverlight.
- Use advanced Silverlight features such as animation and multimedia.
- Communicate over the network using HTTP and Web services.
- Use data controls and data binding.
- Access data in Silverlight applications.
- Interoperate between JavaScript and managed code.
- Implement out-of-browser Silverlight applications, including ones with elevated trust.
- Do printing and clipboard access from Silverlight applications.

Audience: Programmers needing to create web applications using Silverlight.

Prerequisites: A basic understanding of Web application development using HTML and programming experience in .NET using C#. Some exposure to JavaScript would be helpful but is not essential. A basic knowledge of ADO.NET is also desirable for the data access chapter.

Number of Days: 4 days

<p>1. Introduction to Silverlight What Is Silverlight? Silverlight and AJAX Silverlight and Flash Installing the Silverlight Plug-In</p>	<p>Silverlight Tools Hello Silverlight Allowing Blocked Contact Default.html Page.xaml</p>
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- XAML
- XHTML
- JavaScript Helper Functions
- Using Silverlight.js
- createSilverlight.js
- Using createObjectEx()
- Width and Height in Per Cent
- Providing for User Plug-In Download
- Automatic Plug-In Download
- 2. Programming Silverlight**
- Silverlight Programming Models
- Interactive JavaScript Applications
- Using the Document Object Model
- Default.html
- JavaScript Code
- XAML Files
- Using Visual Studio 2010
- Hosting the Silverlight Application
- MainPage.xaml
- MainPage.xaml.cs
- Designer Support
- Layout Panels
- Using a StackPanel
- Handling Events in Managed Code
- Events Window
- Adding Events in XAML
- Code-Behind File
- Names of XAML Elements
- Silverlight Controls
- Application Package (.xap)
- 3. Using XAML**
- Windows Presentation Framework
- What Is XAML?
- Missing XML Namespace
- Default Namespace
- <TextBlock> as the Root Element
- Canvas
- An Opaque Ellipse
- Property Element
- Type Converters
- Content Element Syntax
- Collection Syntax
- Implicit Collection Syntax
- Attached Properties
- XAML and C#
- Assigning Property Values
- Using the XAML Namespace
- Assigning Simple Properties
- Properties Attached to Canvas
- Assigning Attached Properties
- XamlReaderLoad()
- BrushFromString()
- Navigating from the Root
- MainPage.xaml
- Code-Behind File
- Using an Event Sender
- Handling an XAML Event
- 4. Shapes and Lines**
- Shapes
- Size and Position
- Rectangle and Ellipse
- MainPage.xaml
- MainPage.xaml.cs
- More Shape Properties
- Opacity and Visibility
- Receiving Mouse Events
- Polygon
- Line
- Dashed Lines
- Polyline
- Path
- Arc Segments
- Bezier Curves
- Clipping
- 5. Texts and Fonts**
- TextBlock
- Text Wrapping
- Font Attributes
- Font Families
- Font Weights
- Additional TextBlock Properties
- TextBlock Dimensions
- ActualWidth and ActualHeight
- Rich Text Content
- Run and LineBreak
- 6. Brushes and Images**
- Brushes
- SolidColorBrush
- Predefined Color Names
- RGB Color Space
- Enhanced RGB Color Space
- Gradient Brushes
- Linear Gradient Brushes
- Default Gradient Axis
- Horizontal and Vertical Gradient Axis
- Color Interpolation Mode

Spread Methods
 Repeat and Reflect
 Alpha Channel Changes
 Painting Other Shapes
 Radial Gradient Brushes
 GradientOrigin
 ImageBrush
 Using an ImageBrush with Text
 Image
 Stretch Property
 Code-Behind File

7.

Layout

Layout in Silverlight
 Controlling Size
 Margin and Padding
 Thickness Structure
 Alignment
 Panels
 Grid
 Using the Collections Editor
 Star Sizing
 Grid.ColumnSpan
 Positioning on a Canvas
 Moving Elements
 Z-Order
 Clipping

8.

Handling Events

Events in Silverlight
 Event Handlers in XAML
 Adding/Removing Event Handlers
 Loaded Event
 Mouse Events
 Microsoft Silverlight Configuration
 MouseEventArgs
 C# Code
 Rubber-Band Drawing
 Naïve Implementation
 drawRect() Helper Function
 Final Implementation
 Drag and Drop
 Drag and Drop – XAML File
 Drag and Drop – Code-Behind
 Capturing the Mouse
 Routed (or “Bubbled”) Events

9.

Animation and Media

Manual Animation
 Silverlight Animation
 Storyboard Methods

User Interface
 DoubleAnimation
 ColorAnimation
 ColorAnimation – Code-Behind
 PointAnimation
 Audio and Video
 Resources
 Loose Files as Resources

10.

Application Structure and Networking

Silverlight Application Structure
 A Simple Package
 Application Package
 Application Manifest
 Application Class
 XML Processing
 Image Resource Files
 Resource File in a Component
 Resource File in the Package
 Application Library Caching
 External Parts
 CopyLocal is False
 Using WebClient
 Downloading Content on Demand
 DoanLoadImage Code

11.

Web Services

Accessing Web Services in Silverlight
 REST
 EchoREST Web Service
 SOAP
 Web Service Proxies
 Windows Communication Foundation
 EchoSOAP Web Service

12.

Data Controls and Data Binding

Listbox Control
 Book.cs
 Auto-Implemented Properties
 Using Items Property
 Deleting a Book
 Selection
 Binding to a Collection
 DataPager Control
 DisplayMode
 DataGrid Control
 Paging with DataGrid
 Sorting with DataGrid
 More about Data Binding
 Dependency Properties

- Binding Object
- ElementName Binding
- Binding to a CLR Object
- Change Notification
- Updating the Book Object
- INotifyPropertyChanged
- Notification with Collections
- Book Class
- MainPage.xaml.xs
- Updating Collection Elements
- Notification by Collection Elements
- Notification in Book Class

13. Data Access

- Accessing Data on the Server
- SmallPub Database
- ADO.NET Entity Framework
- SmallPub Tables
- SmallPub Entity Data Model
- Entity Data Model Concepts
- Querying the EDM
- Class Diagram
- Context Class
- List of Categories
- List of Books
- Language Integrated Query (LINQ)
- IntelliSense
- Modifying a Data Source
- Entity Framework in a Class Library
- Data Access Class Library
- Client Code
- Silverlight Database Clients
- Adding a Web Service
- Consuming a Web Service
- Modifying the Configuration File
- Auto-Generated Columns
- WCF Data Services
- Choosing Data Objects
- BookModel.edmx
- WCF Data Service Template
- DataService Class
- A REST-based Web Service
- Disabling Feeds
- Open Data Protocol (OData)
- OData and WCF Data Services
- URI Conventions
- Resource Path Options
- Query String Options
- OData Operations

- A Console Client
- A Silverlight Client
- Accessing XML Data
- Accessing an XML File
- Using LINQ to XML
- Isolated Storage
- Isolated Storage Store
- Saving Data to a File
- Loading Data from a File
- Deleting a File

14. Additional Features

- HTML Bridge
- HAMTL and JavaScript
- HtmlPage Class
- JavaScript from Managed Code
- Managed Code from JavaScript
- Out-of-Browser Support
- Configuring Out-of-Browser Support
- Installing Out-of-Browser
- Running Out-of-Browser
- Application Manifest
- Elevated Trust
- Printing
- Print Dialog Box
- Printing Code
- Clipboard Access

15. Appendix A – Learning Resources

16. Appendix B – Transforms

- Transforms
- Translate Transform
- A Dynamic Transform
- Rotate Transform
- Scale Transform
- Skew Transform
- Combining Transforms