

Silverlight 3: UI Programming

UI Concepts, Content Model, Object Tree, Dependency Props, Panels, Controls, Events, Style/Resources, VSM, Project

Silverlight is the next-generation RIA framework from Microsoft. It offers a growing subset of .NET/WPF features in areas such as user interface, graphics, animation, multimedia, networking, web services and data access. This course focuses on user interface programming and covers the very latest version 3 of Silverlight. With v2 and v1 already in use, v3 is a maturing of this foundation which is now suitable for more substantial apps.

Silverlight offers a comprehensive set of primitive UI controls (e.g. Button, CheckBox, ListBox), containers that house the primitives (e.g. StackPanel, Dock, Grid, Canvas), classes for

window / application management, along with classes to manage UI features such as routed events, dependency properties, navigation and so on.

The teaching approach we take is to cover the inheritance tree from the base up (DependencyObject > UIElement > FrameworkElement > Panel / Control > ContentControl / ItemsControl). Though it takes slightly longer to get to fancy UI samples, it means developers gain a crystal clear understanding of the architecture of Silverlight UI APIs.

Though this course focuses on Silverlight 3 UI, it should be noted that this is (mostly) a subset of WPF UI, and differences are pointed out along the way.

<i>Learning Topics</i>	
<p>Target Audience: Experienced C# software engineers who wish to programmatically create Silverlight user interfaces.</p> <p>Prerequisites: Participants require good C# experience, some .NET programming experience and a rudimentary knowledge of the fundamentals of Silverlight.</p>	<p style="text-align: center;">Overview</p> <p>Approaches to learning Silverlight UI UI Continuum: WPF, SL, AJAX, XHTML Quick tour of Silverlight UI features</p> <p style="text-align: center;">DependencyObject</p> <p>Root of UI inheritance hierarchy Dependency Properties Concept of object tree Attached Properties Dispatcher Silverlight UI & threads AnimationBase</p> <p style="text-align: center;">UIElement</p> <p>UIElement class Routed events (bubbling only) Layout Rendering / Opacity Matrix3DProjection / PlaneProjection</p> <p style="text-align: center;">FrameworkElement</p> <p>FrameworkElement class Object Tree / Visual Tree Helper Data Binding INotifyPropertyChanged Reusing UI styling data Naming and accessing styles Applying styles</p> <p style="text-align: center;">Panel</p> <p>Principles of panels StackPanel Grid Grid Splitter / Grid definitions Placing controls in grid cells DockPanel & how to dock WrapPanel</p>
	<p style="text-align: center;">Control</p> <p>Control class Font management Padding ContentAlignment UserControl vs. Control Tabbing & focus TextBox</p> <p style="text-align: center;">ContentControl & Button</p> <p>What is "content"? ContentControl class ContentProperty attribute ContentPresenter as placeholder ButtonBase and hierarchy RangeBase</p> <p style="text-align: center;">ItemsControl</p> <p>ItemsControl class ItemsPresenter DataTemplate Selector ListBox ComboBox</p> <p style="text-align: center;">Control Templates & VSM</p> <p>Control contract Control template ContentPresenter Altering behavior/visual for a control Visual States State Transitions</p> <p style="text-align: center;">Project</p> <p>Participants are asked to complete a project that involves many of the features covered in this course.</p>