

BUILDING BUSINESS APPLICATIONS WITH SILVERLIGHT 4

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What we are going to cover...

- ▣ Silverlight 4 Features
- ▣ Business Application Architecture
- ▣ DI/IOC – Prism
- ▣ WCF RIA Services
- ▣ Structuring your Application
 - ▣ VB.NET vs. C# - where each fits well. (XML Literals/Lambdas)
- ▣ Interface driven design



- ▣ Enums
- ▣ Parent/Child Relationships
- ▣ Popup Manager
- ▣ Toolbar
- ▣ RIA Controls
- ▣ RIA Services / Server
- ▣ Publishing

Silverlight 4 Features

- Tooling
- Printing API
- Right-click event handling
- Webcam/microphone access
- Mouse wheel support
- RichTextArea Control
- ICommand support
- Clipboard API
- HTML Hosting with WebBrowser
- Elevated trust applications
- Local file access
- COM interop
- Notification (“toast”) API
- Network authentication
- Cross-domain Networking changes
- Keyboard access in full screen mode
- Text trimming
- ViewBox
- Right-to-left, BiDi and complex script
- Offline DRM
- H.264 protected content
- Silverlight as a drop target
- Data binding
- IDataErrorInfo and Async Validation
- DependencyObject Binding
- StringFormat, TargetNullValue, FallbackValue
- Managed Extensibility Framework (MEF)
- Data Grid enhancements
- Fluid UI support in items controls
- Implicit theming
- Google Chrome support

Business Application Architecture



Dependency Injection/Inversion of Control

- ▣ Prism
 - IEventAggregator
 - IRegionManager
 - IUnityContainer
 - Catalog.xaml (Demo)
 - ▣ WhenAvailable and OnDemand
 - Assembly References – Copy Local
- ▣ MEF
 - Import
 - Export
 - PartInitializer.SatisfyImports()
- ▣ Prism + MEF

WCF RIA Services

- ▣ Linq To SQL
- ▣ Linq To Entity Framework
- ▣ Linq To Nhibernate

- ▣ Linq To SQL
 - Data Model – DBML (Primary & Foreign Keys)
 - Domain Service / Domain Context
 - Meta Data
 - Partial Class
 - Shared Code

WCF RIA Services cont'd

- ▣ (Demo)

Structuring your Application

- ▣ Support multiple solutions
- ▣ Support modularization
- ▣ Support team development
- ▣ Support common assemblies
- ▣ Support continuous integration

- ▣ (Demo)

Structuring your Application cont'd

- ▣ VB.NET vs. C#
- ▣ XML Literals
 - XamlReader.Load()
- ▣ Model-View-ViewModel
- ▣ Linq Expressions
- ▣ Extensions (Demo)
 - IUnityContainer
 - IRegionManager
 - IPopupManager
- ▣ Source Control / Continuous Integration

Interface Driven Design / Design by Contract

- ▣ You know you need to refactor when...
- ▣ Interfaces help keep your application decoupled.
- ▣ Dependency injection can inject concrete implementations of interfaces into other modules.

- ▣ (Demo)
 - IPopupMenuManager

Enums

- ▣ Enums (Shared Code)
 - Binding to ComboBoxes (Behavior)
 - Binding to Multiple CheckBoxes (Converter)
 - Bitwise operations (Converter)

- ▣ (Demo)

Parent/Child Relationships

- ▣ Multi-Selector
 - ListBox/DataGrid
 - ▣ Custom control to remove from the underlying collection
 - ▣ Add new button
 - Provides one-to-many support
 - Global Popup Manager

- ▣ (Demo)

Popup Manager

- ▣ Popup Manager
 - Floatable Window
 - Contextual Dialog
 - Injecting XAML content

- ▣ (Demo)

Toolbar

- ▣ Toolbar
 - Use same toolbar across all modules
 - Action/ Action<T>
 - Toolbar monitors all activity in the application
 - ViewModel injection

- ▣ (Demo)

RIA Controls

- ▣ RIA Controls
 - DomainDataSource
 - AutoLoad, LoadSize, PageSize, Filtering
 - DataForm
 - ItemsSource controls inside a DataForm
 - CommandButtonsVisibility, ReadOnlyTemplate, EditTemplate
 - Content appears to only work when there is only one DataForm visible
 - Master/Detail scenarios
 - Navigation pitfall - CommitEdit()
 - DataPager - PageSize pitfall (returns all records)
- ▣ (Demo)

RIA Services / Server

- ▣ RIA Services
 - DomainContext – each screen has its own, sometimes
 - ▣ Pros – context gets shared
 - ▣ Cons – context gets shared
 - ▣ Example: IsDirty
- ▣ RIA Services Server
 - Where IN/NOT IN clause
 - ▣ Not supported on client side.
 - ▣ Work around on Server.
 - Submit Logic – metadata fields
- ▣ (Demo)

Publishing

- ▣ New publish/deploy wizard in Visual Studio 2010
- ▣ Very nice but has some issues
 - Cannot not find “..... .xap” file(s).
 - Work around
- ▣ Make sure you use an Application Pool for .NET 4.0
- ▣ Also be sure that your Web project is set or you will have strange runtime exceptions as well.
- ▣ (Demo)

Code Generation

- ▣ Xaml Manager
- ▣ View Manager
- ▣ ViewModel Manager
- ▣ Interface Manager
- ▣ Conventions and error handling

- ▣ (Demo)

DEMO - Putting it all together

- ▣ Screen Designer
- ▣ Code Generator
 - Drag and drop
 - Preview
 - Out of Browser
 - Local file access
 - Toast Notification
 - Right Mouse Click

References

- ▣ [Silverlight 4 Training - \(MSDN\)](#)
- ▣ [Silverlight 4 Training Course \(Channel 9\)](#)
- ▣ [Silverlight 4 - New Feature List](#)
- ▣ [Silverlight 4 presentation at the Montreal UG](#)
- ▣ [PDC Session: Silverlight 4 Beta Overview](#)
- ▣ [Silverlight 4 HTML Puzzle: How Does It Work?](#)
- ▣ [WPF and XAML Conventions](#)
- ▣ [Floatable Window](#)
- ▣ [DataPager PageSize Pitfall](#)