

CSLA .NET for Silverlight

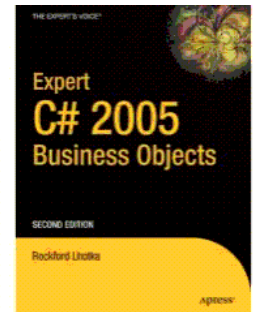
Rockford Lhotka

MagenicSM

*Nobody's more serious about
Microsoft.*



Microsoft
Regional Director
PROGRAM



About



- Enables
 - Object-oriented business layer
 - Clearly defined logical architecture
 - 1-, 2- and 3-tier deployment models
 - Support multiple interfaces
 - WPF, Windows, WCF, Web, Service-oriented, Workflow
 - Flexible data access
 - ADO.NET, LINQ, Entity Framework, others ...
 - Standardized coding structures
 - Maintainability, Reuse, Lower cost

About



- One of the most widely used development frameworks in .NET
- Used by



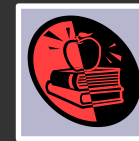
Business

- Retail
- Manufacturing
- Telecom
- Finance
- Shipping
- Medical
- HR and Payroll
- Sports
- Security
- Media
- Web sales



Government

- Federal
- State
- Local
- City
- Police
- Fire



Other

- Military
- International
- NGO
- Education

CSLA .NET Primary Features

Data binding

- WPF, Windows, Web (and Web Service?)

Validation rules

- WPF, Windows, Web and Web Service

Authorization rules

- WPF, Windows, Web and Web Service

N-level undo

- WPF, Windows (and Web?)

LINQ

- Synced queries against lists

Mobile objects

- 1-, 2-, 3- and 4-tier deployment models

Abstract persistence

- ADO.NET, LINQ, EF, others

N-Layer

Interface

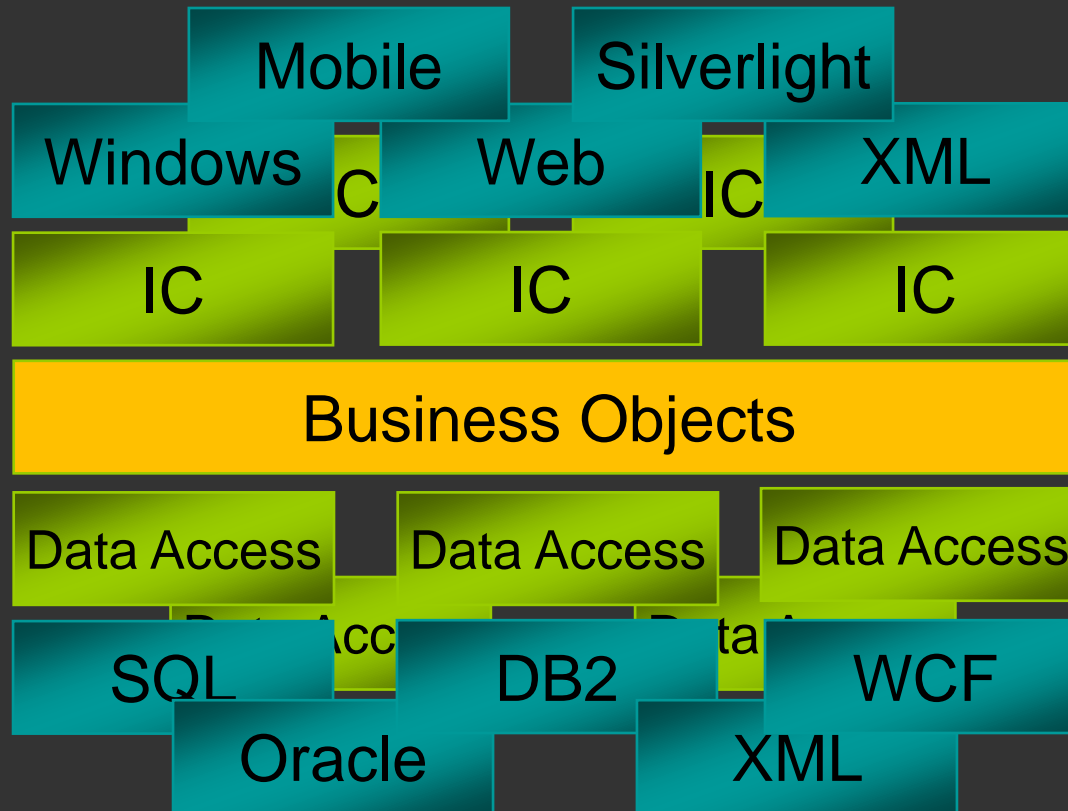
Interface Control

Business Objects

Data Access

Data Storage and Management

Layered Flexibility



CSLA .NET 3.5



New property declaration syntax

- Reduce coding, complexity/Prep for Silverlight

Enhanced validation rules processing

- Extensibility/Flexibility

Improved authentication

- Extensibility

Updated SmartDate

- Automatic cast

Enhanced data portal

- Performance/Child objects

LINQ to CSLA

- Synced query results/Indexing

Data access

- ConnectionManager/ContextManager

CSLA .NET for Windows



Integration with
CSLA .NET for Silverlight

- MobileFormatter and data portal

Asynchronous data portal

- Run DAL on background thread

Asynchronous validation
rules

- Execute code on background thread

New WPF controls

- PropertyStatus, BusyAnimation

Enhanced
LINQ to CSLA

- Improved indexing

CSLA .NET for Silverlight



Include existing CSLA .NET Features

- Data binding, validation, authentication, authorization, n-level undo, data portal, LINQ to CSLA, etc.

Integration with CSLA .NET for Windows

- MobileFormatter and data portal

Asynchronous data portal

- Run DAL on background thread

Asynchronous validation rules

- Execute code on background thread

Silverlight UI controls

- CslaDataProvider, PropertyStatus, BusyAnimation, ObjectStatus

Porting to Silverlight

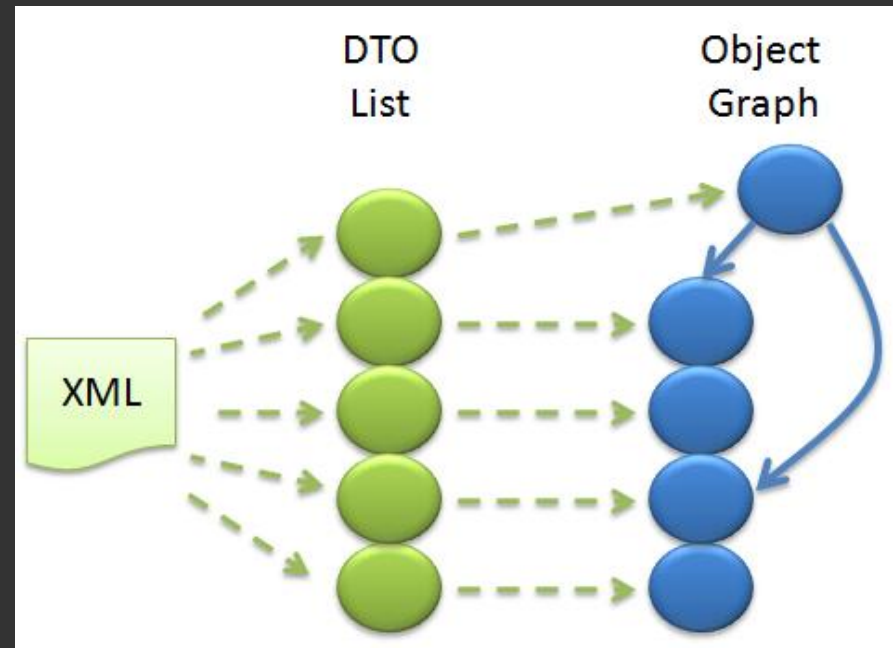
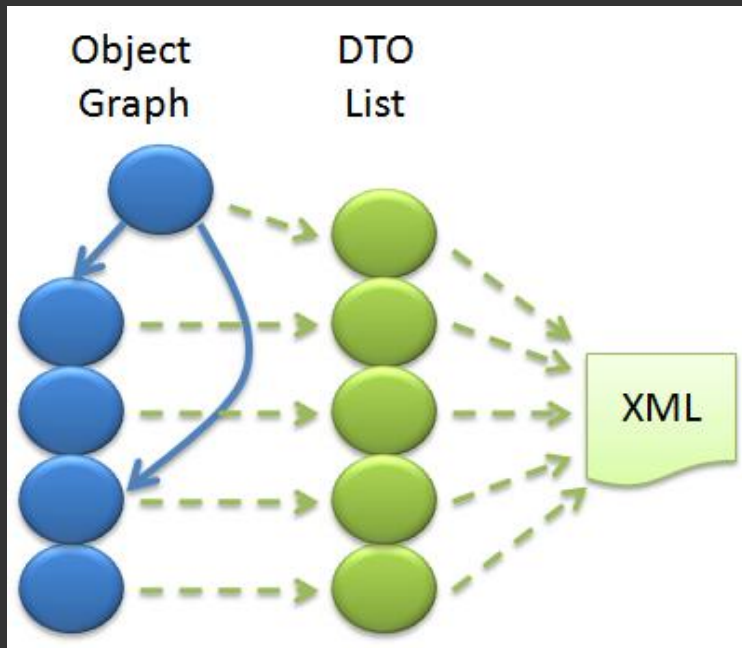
- Unit testing
- Serialization
- Asynchronous server interaction
- Data binding
- Authentication and authorization
- Sharing code between client and server
- Navigation

Unit Testing

- www.codeplex.com/UnitDriven
 - Silverlight runner + nunit/mstest add-in
 - Enable easy testing for async operations
 - Common code for .NET and SL tests

Serialization

- No “deep” serialization in Silverlight
- Very limited reflection in Silverlight
- Silverlight <-> .NET type differences



Async is Pervasive

- Async server access
 - The source of complexity and coolness
- Async data portal
 - Local and remote
- Async validation rules
 - Any rule accessing data is async
- UI must deal with async
 - Prevent invalid user action during async ops

Asynchronous Server Interaction

- Requires async data portal

```
private void Form_Loaded(object s, RoutedEventArgs e)
{
    var dp = new DataPortal<Customer>();
    dp.FetchCompleted += GotCustomer;
    dp.SendFetch(new SingleCriteria<Customer, int>(123));
}

private void GotCustomer(object s, DataPortalResult<Customer> e)
{
    if (e.Error != null) throw e.Error;
    this.MainGrid.DataContext = e.Object;
}
```

Data Binding

- IDataErrorInfo
 - Not on Silverlight
 - csla:PropertyStatus
- Commanding
 - Not on Silverlight
 - csla:InvokeMethod
- IEditableObject
 - Grid differences
 - Custom column types

Data Binding

- No `IBindingList`
 - Use `INotifyCollectionChanged`
- No `DataProvider`
 - `csla:CslaDataProvider`
 - Matches WPF `CslaDataProvider` functionality

Authentication & Authorization

- ASP.NET authenticates
 - Silverlight piggy-backs
 - But Silverlight code has no explicit identity
 - WindowsIdentity, MembershipIdentity, custom
- Authorization requires access to roles
 - Need client-side Principal/Identity
 - Data portal support
- Providing visual cues
 - `csla:PropertyStatus`
 - `csla:ObjectStatus`

Sharing Types Across Runtimes

- Two projects, one class file
 - Use Visual Studio linked files
- Partial classes
 - Customer.cs
 - Shared class file
 - Customer.Client.cs
 - Silverlight-only code
 - Customer.Server.cs
 - .NET-only code

Navigation

- Many options in Windows Forms, WPF, Web
- Silverlight <-> Browser interaction
 - Address bar, Back/Forward buttons
 - `csla:Navigator` encapsulates implementation

Summary

- CSLA .NET 3.6
 - Versions for Windows and Silverlight
 - Enable powerful business object creation
 - Support all .NET interface technologies
 - Support all .NET data access technologies
 - Enable n-tier and service-oriented architectures





Thank You!

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