

Data Binding Overview

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pluralsight 
hardcore developer training

Outline

Data Binding
Overview

Key Concepts

DataContext
Scopes

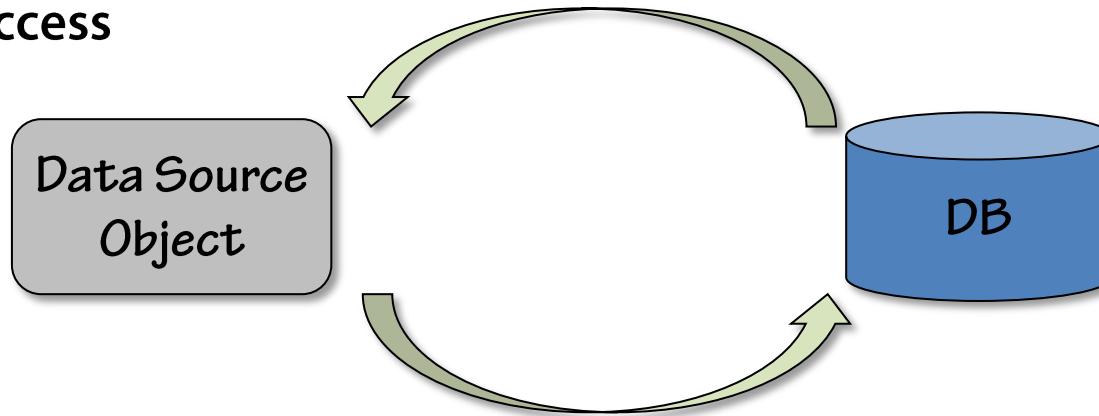
Data Binding
Fundamentals
Demos

Data Binding Overview

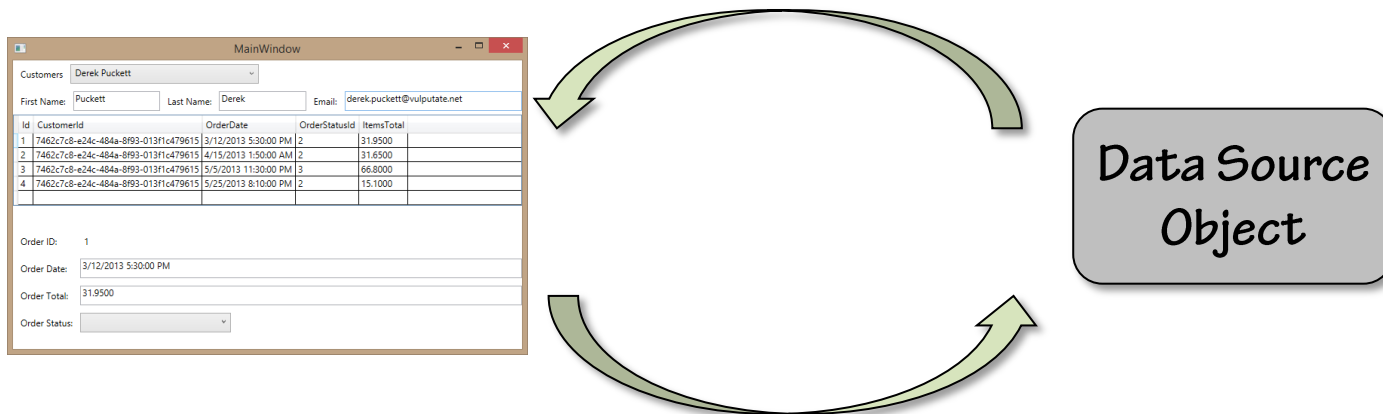
- **One of the most powerful XAML platform features**
- **Promotes loose coupling**
 - View ≠> Model
 - View ≠> Data access
 - View ≠> Interaction logic
- **Reduces code / maintenance effort**
 - Automatic data flow to-from screen
 - Per property push-pull logic
 - Natural associations between screen elements and data objects
- **Facilitates Developer-Designer workflow**
 - Lets designers work on XAML in isolation
- **Key enabler for Model-View-ViewModel (MVVM) pattern**
 - Bindings are the non-sticky bond between a view and its view model
 - Provide two way data flow and communication

Data Access vs Data Binding

■ Data Access



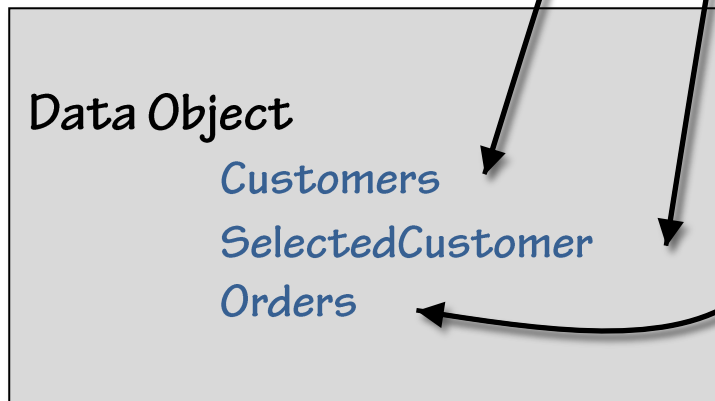
■ Data Binding



Sources and Targets

Data binding flows data between a source object property and target element property

Source



A screenshot of a Windows application window titled 'MainWindow'. The window contains a form with the following elements: a 'Customers' dropdown menu showing 'Derek Puckett'; input fields for 'First Name: Puckett', 'Last Name: Derek', and 'Email: derek.puckett@vulputate.net'; a table with 5 columns (Id, CustomerId, OrderDate, OrderStatusId, ItemsTotal) and 4 rows of data; and a section for 'Order ID: 1' with input fields for 'Order Date: 3/12/2013 5:30:00 PM', 'Order Total: 31.9500', and a dropdown for 'Order Status:'. A red rectangular box highlights the 'Customers' dropdown, the 'First Name' and 'Last Name' fields, the 'Email' field, and the table.

Id	CustomerId	OrderDate	OrderStatusId	ItemsTotal
1	7462c7c8-e24c-484a-8f93-013f1c479615	3/12/2013 5:30:00 PM	2	31.9500
2	7462c7c8-e24c-484a-8f93-013f1c479615	4/15/2013 1:50:00 AM	2	31.6500
3	7462c7c8-e24c-484a-8f93-013f1c479615	5/5/2013 11:30:00 PM	3	66.8000
4	7462c7c8-e24c-484a-8f93-013f1c479615	5/25/2013 8:10:00 PM	2	15.1000

Target

Target properties must be DependencyProperties

Data Binding Building Blocks

- **DataContext**

- Ambient data source object for a scope of elements

- **Binding**

- Object that ties a source object property to a target element property

- **XAML Parsing**

- Bindings are created and evaluated to populate target properties

- **Change notifications**

- Allow Source objects to raise PropertyChanged events to tell Bindings to update the Target property with the current Source property value
 - Target element properties are DependencyProperties, which trigger Bindings to set Source property values from Target property values in two way data binding

Data Binding Building Blocks

DataContext

Bindings

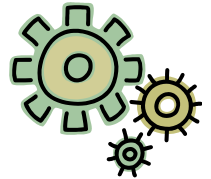
XAML Parsing

Change Notifications

```
<Grid Grid.Row="1">
  <Grid.ColumnDefinitions>
    <ColumnDefinition Width="Auto" />
    <ColumnDefinition Width="*" />
    <ColumnDefinition Width="Auto" />
    <ColumnDefinition Width="*" />
    <ColumnDefinition Width="Auto" />
    <ColumnDefinition Width="2*" />
  </Grid.ColumnDefinitions>
  <Label Content="First Name:" />
  <TextBox Grid.Column="1"
    Text="{Binding SelectedCustomer.LastName}" />
  <Label Content="Last Name:" />
  <TextBox Grid.Column="2"
    Text="{Binding SelectedCustomer.FirstName}" />
  <Label Content="Email:" />
  <TextBox Grid.Column="4" />
  <TextBox Grid.Column="5"
    Text="{Binding SelectedCustomer.Email}" />
</Grid>
```

Customer
- FirstName

First Name: Puckett



DataContext Scope

MainWindow

Customers: Derek Puckett

First Name: Puckett Last Name: Derek Email: derek.puckett@vulputate.net

Id	CustomerId	OrderDate	OrderStatusId	ItemsTotal
1	7462c7c8-e24c-484a-8f93-013f1c479615	3/12/2013 5:30:00 PM	2	31.9500
2	7462c7c8-e24c-484a-8f93-013f1c479615	4/15/2013 1:50:00 AM	2	31.6500
3	7462c7c8-e24c-484a-8f93-013f1c479615	5/5/2013 11:30:00 PM	3	66.8000
4	7462c7c8-e24c-484a-8f93-013f1c479615	5/25/2013 8:10:00 PM	2	15.1000

Order ID: 1

Order Date: 3/12/2013 5:30:00 PM

Order Total: 31.9500

Order Status:

Data Binding Fundamentals

No data binding

Label, TextBox
ListBox, DataGrid
Binding

Single DataContext
(Poor man's MVVM)

Summary

Loose coupling

Sources <=> Targets

*DataContext
provides scoped
data source*

*Bindings tie a source
property to a target
element property*