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Reactive Programming

*aka "Data Binding
Gone Mad"*

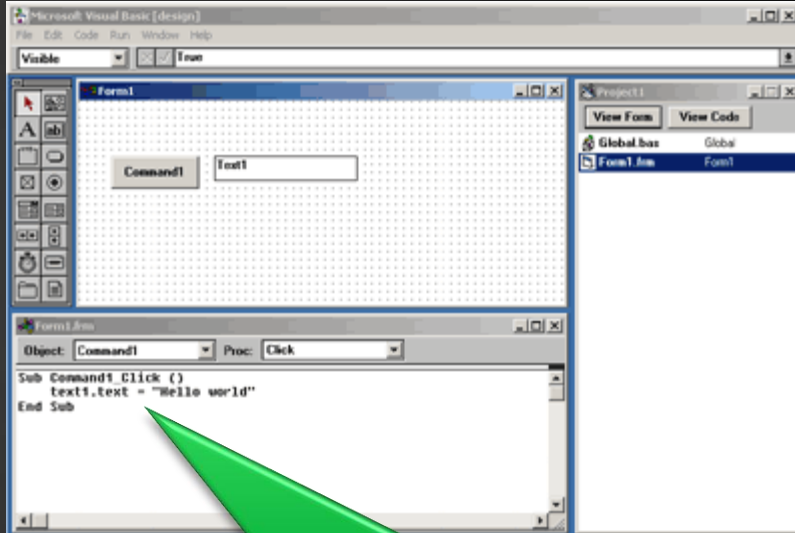
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Readify

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Visual Basic 1.0 for Windows 1991

```
Sub Command1_Click()  
    text1.text = "Hello world"  
End Sub
```



Part I: Reactive Programming

Microsoft Excel demo

Discreet
evaluation and
assignment

Continuous
data flow



The diagram consists of two green, cloud-like shapes at the top. The left cloud contains the text 'Discreet evaluation and assignment' and the right cloud contains 'Continuous data flow'. Two green arrows point from the bottom of each cloud towards the equation 'a = b + c' centered below them.

$$a = b + c$$

Propagating change



.NET 1.0

```
interface INotifyPropertyChanged
{
    event PropertyChangedEventHandler PropertyChanged;
}
```

```
interface INotifyCollectionChanged
{
    event NotifyCollectionChangedEventHandler CollectionChanged;
}
```

Using INotifyPropertyChanged demo

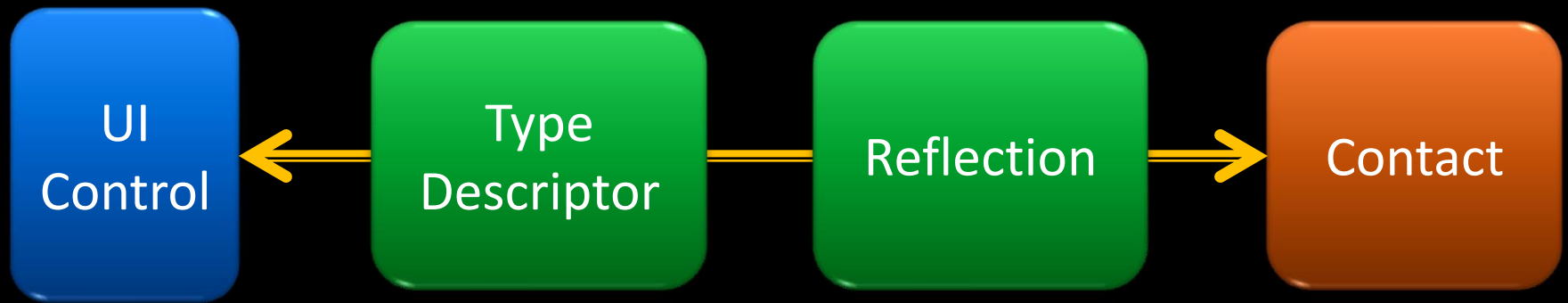
Manipulating the Flow

- ▶ Format strings
- ▶ Converters
- ▶ Type Descriptors

WPF Converters

demo

Type Descriptors

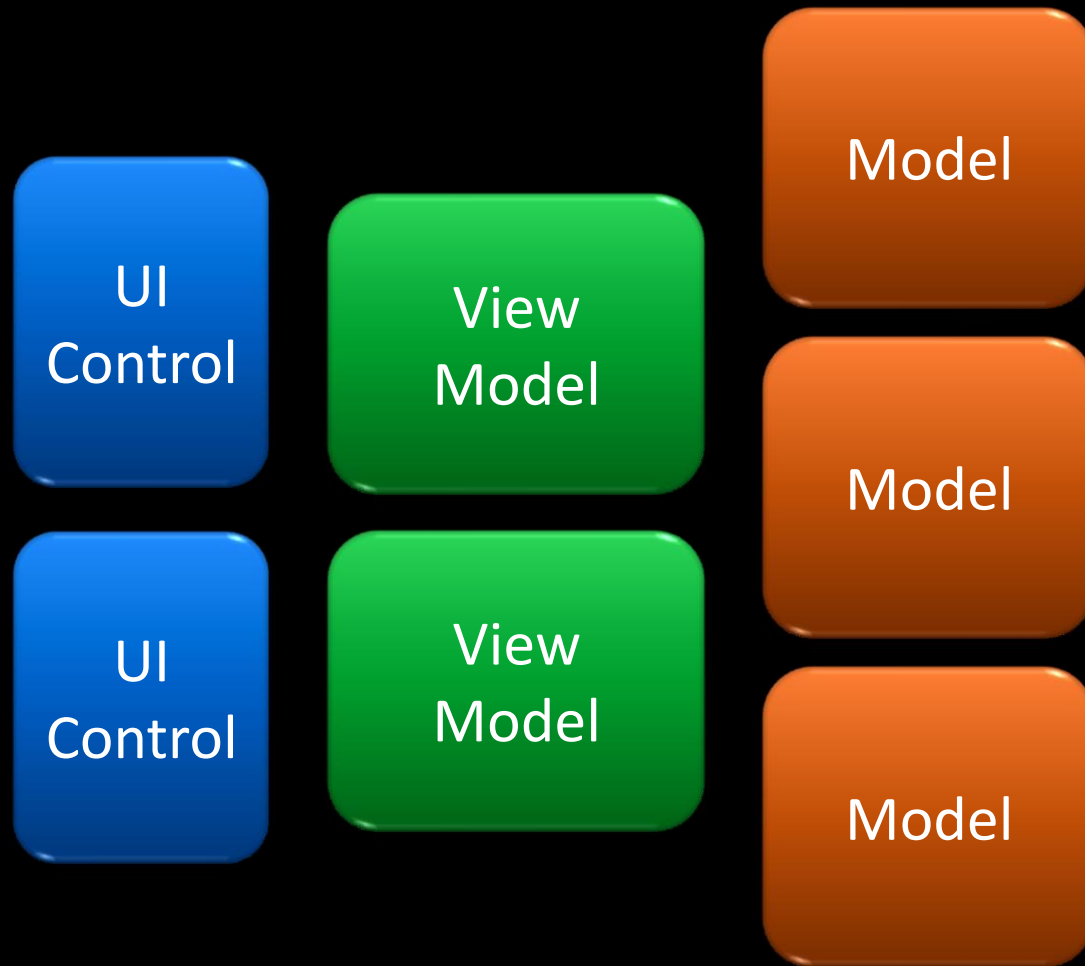


Type Descriptors demo

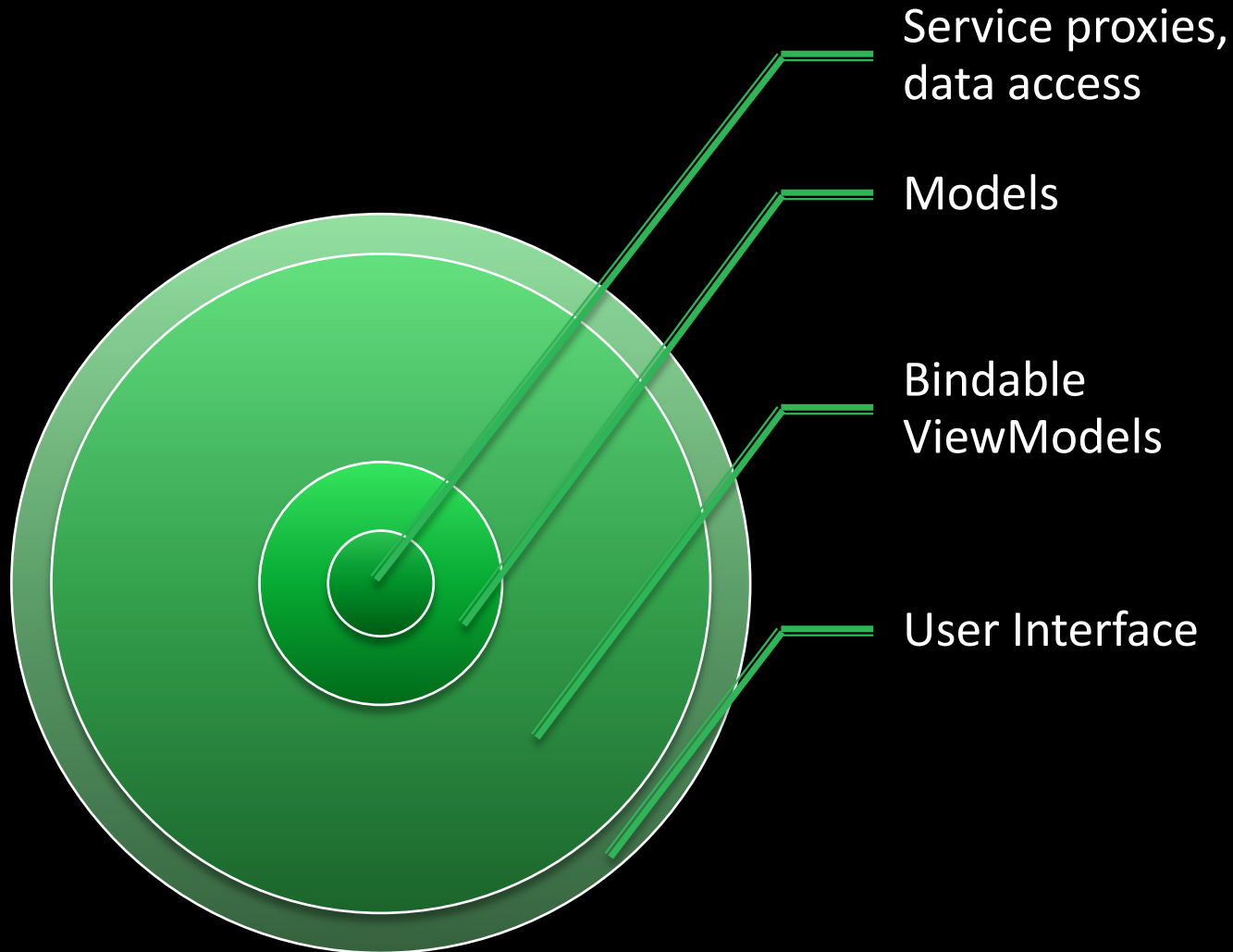


Part II: Reactive Domain Models

Model/View/ViewModel



Reactive Applications



Reactive Search demo



Part III: Bindable LINQ

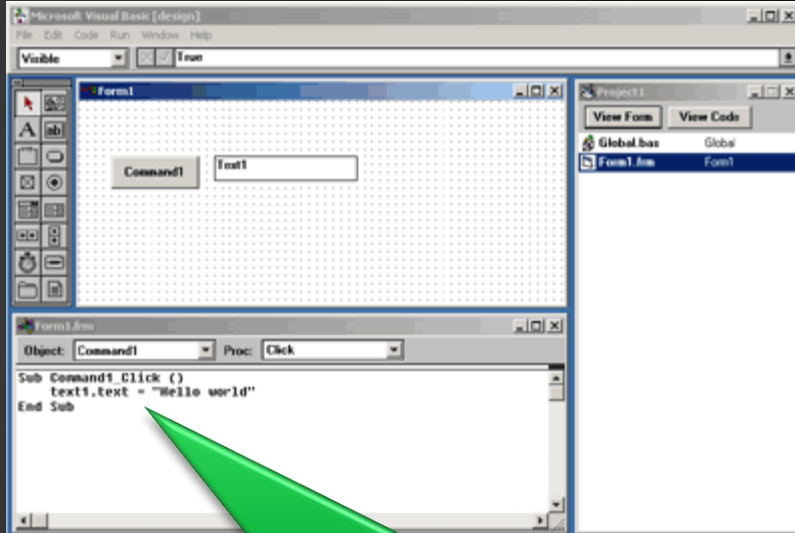
Bindable LINQ demo

Alternatives

- ▶ Bindable LINQ
www.codeplex.com/bindablelinq
- ▶ Optics
www.codeplex.com/Optics
- ▶ Continuous LINQ
www.codeplex.com/clinq
- ▶ Flapjax
www.flapjax-lang.org

Summary

- ▶ Propagation of changes to state
- ▶ Try Bindable LINQ (or alternatives)
- ▶ Forms should have no more than 200 lines of code



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Q & A

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My Blog:

www.paulstovell.com

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