Xamarin.Forms 101

A half day workshop

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What we will cover

- Intro to Xamarin /XAML
- MVVM
- Projects
- Controls (Button, Label, etc.)
- Code behind files
- Data binding
- Events and Commands
- Navigation

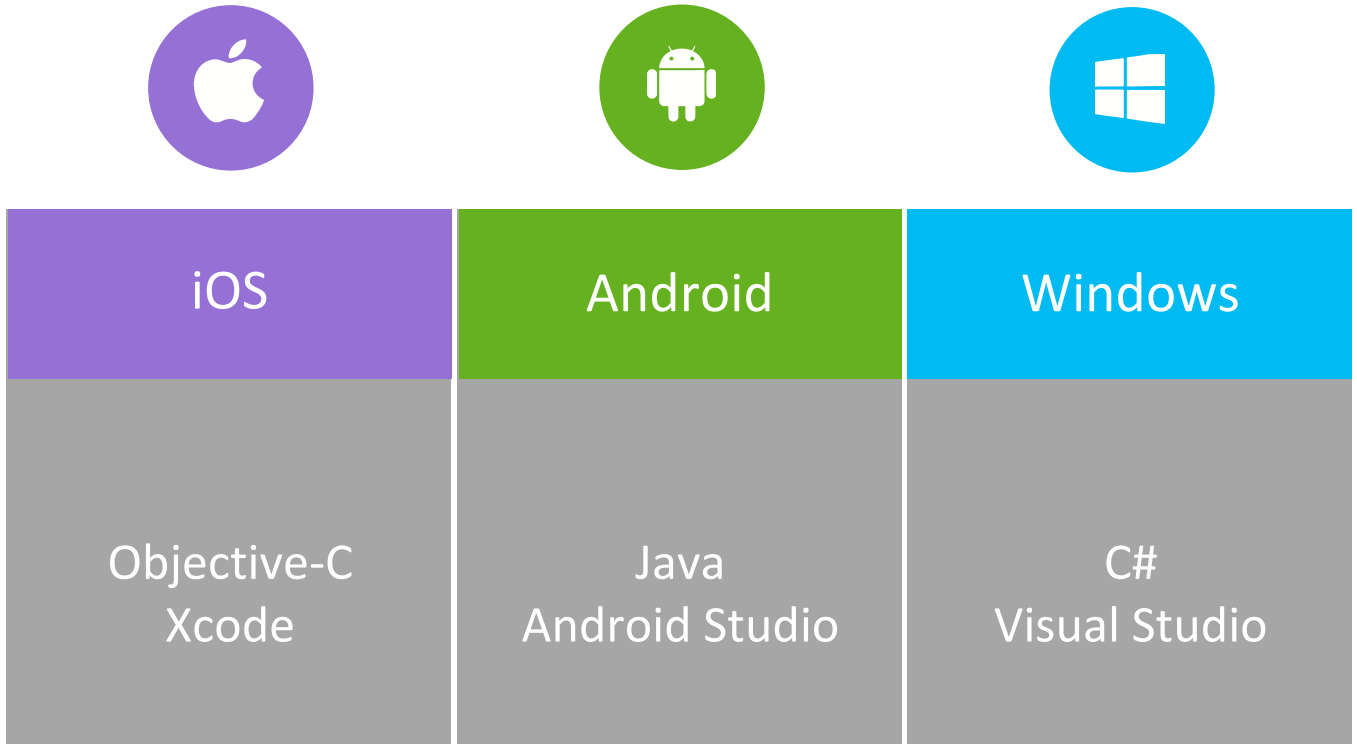
What we will cover

- Grids
- ListViews
- Custom Templates
- Styles
- Xamarin Essentials

What we will not cover

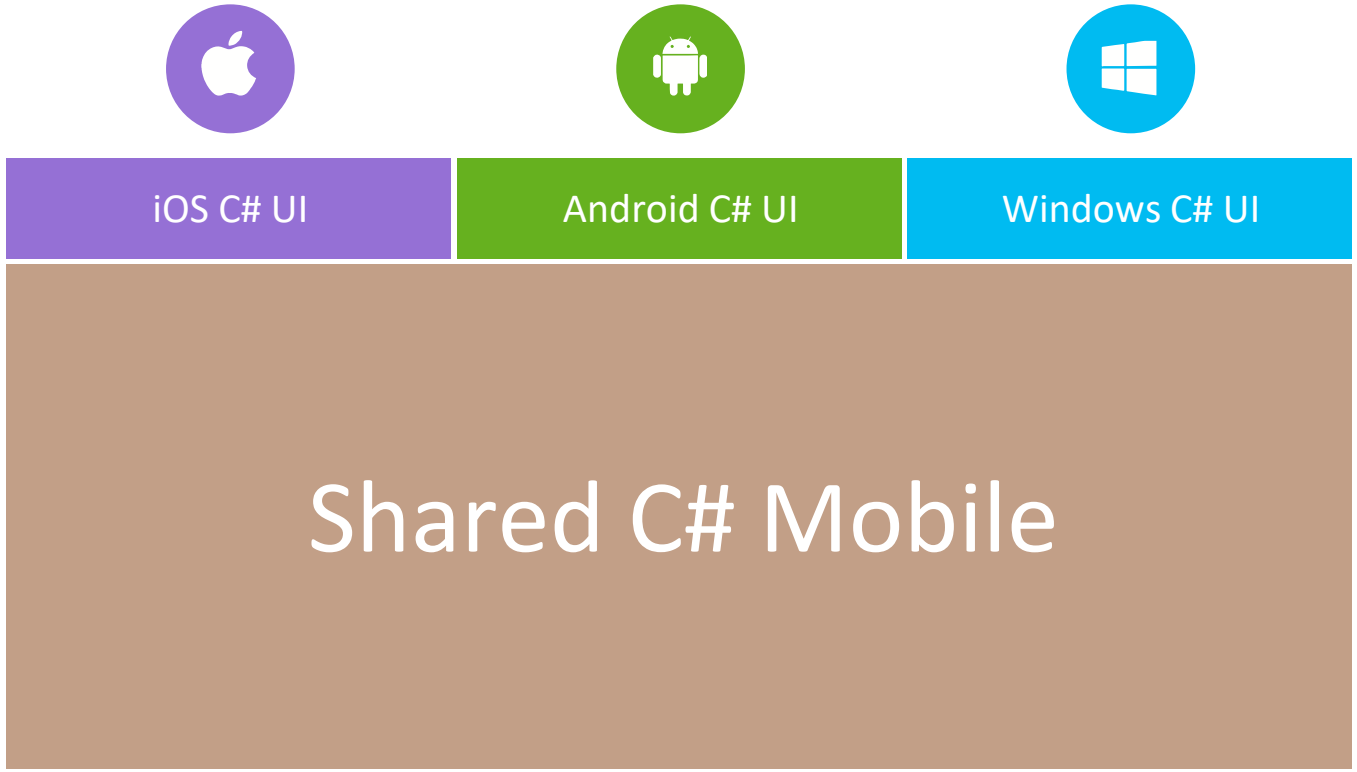
- Data converters
- Messages
- Behaviors
- Triggers
- SQLite
- Dependency Injection

Silo Approach



No shared code • Many languages & development environments • Multiple teams

Xamarin's Approach



Shared C# codebase • 100% native API access • High performance

Xamarin.Forms

Shared C# Mobile
& Shared UI
95% + Reuse

Shared C# & UI • 100% native API access • High performance

Code Reuse

Xamarin iOS

60-75% Reuse

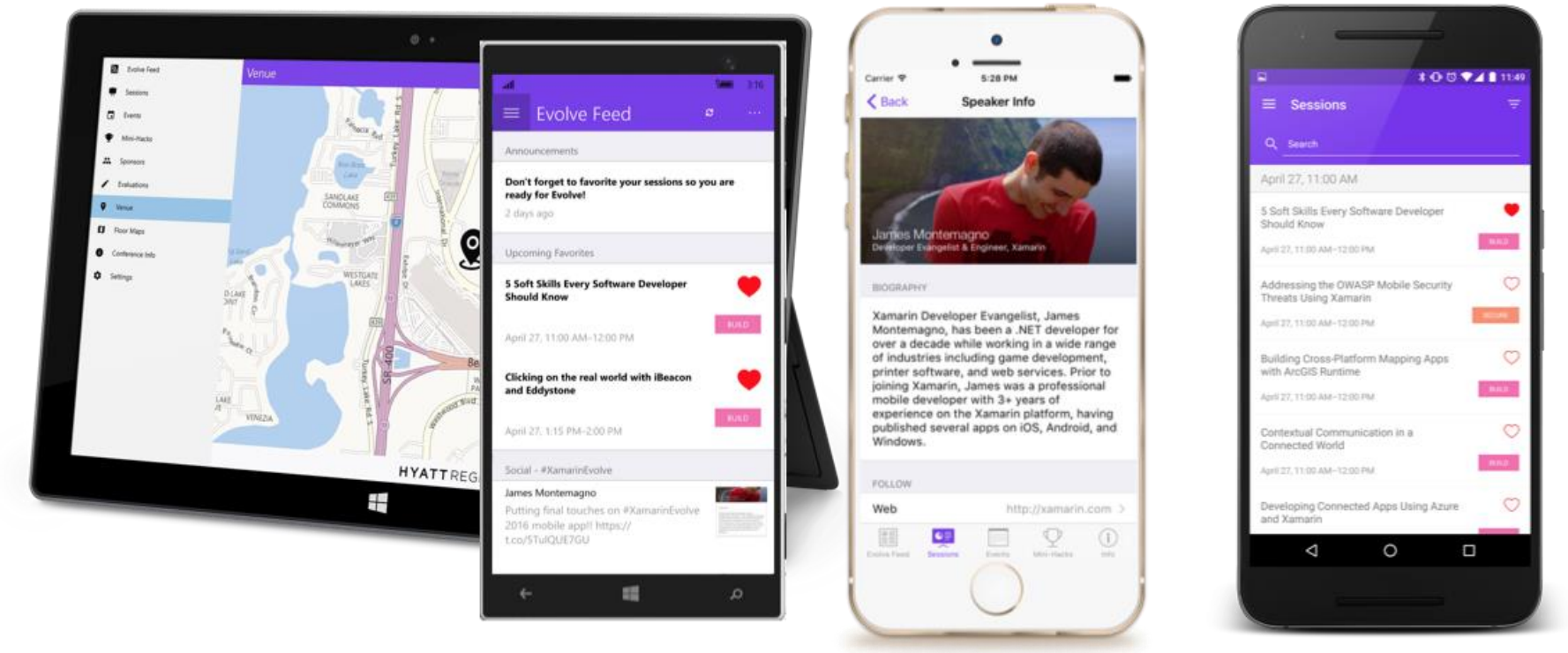
Xamarin Android

60-75% Reuse

Xamarin.Forms

95%+ Reuse

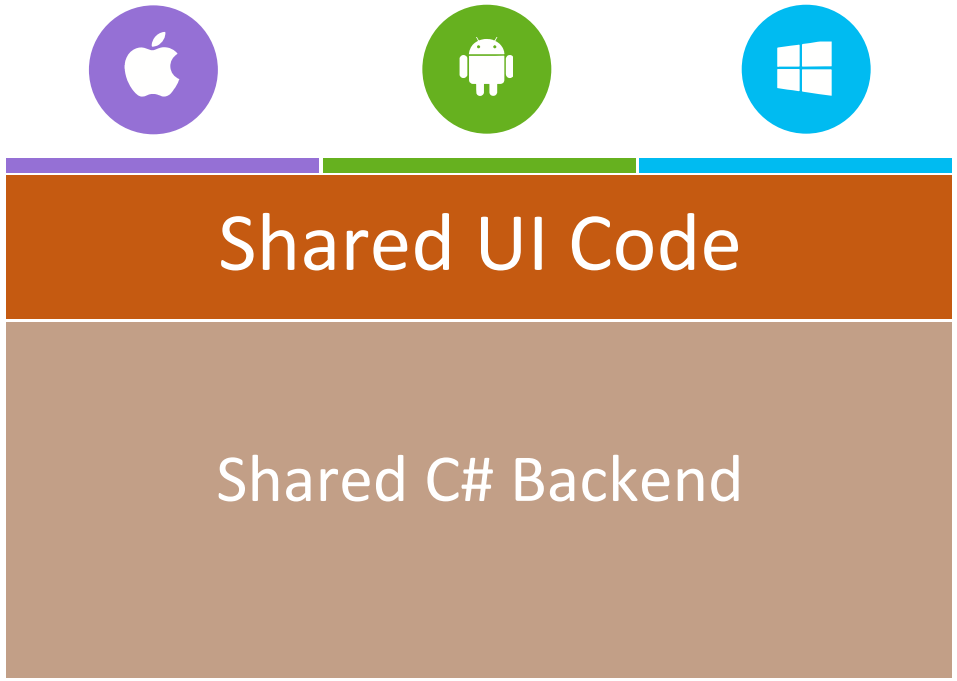
Xamarin.Forms



Build native UIs for iOS, Android, and Windows

from a single, shared C# codebase.

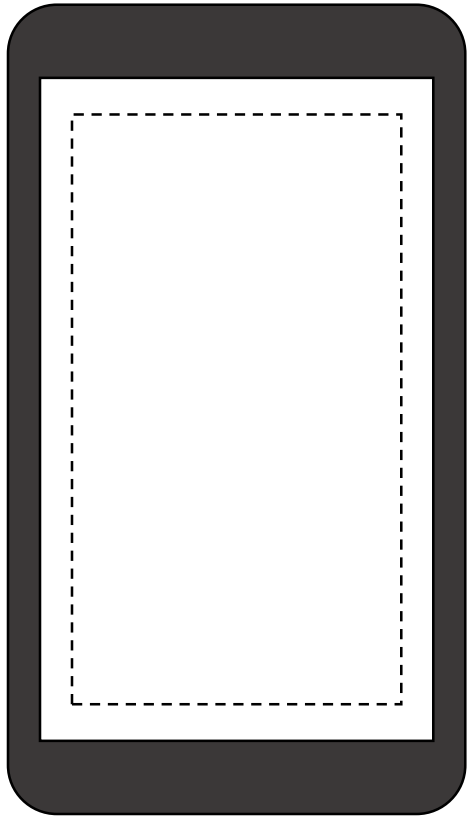
Xamarin.Forms



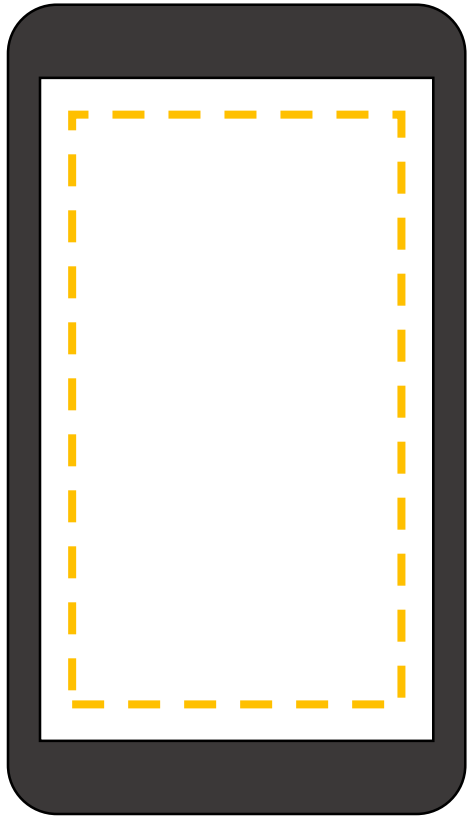
- ✓ 40+ Pages, layouts, and controls

(Build from code behind or XAML)

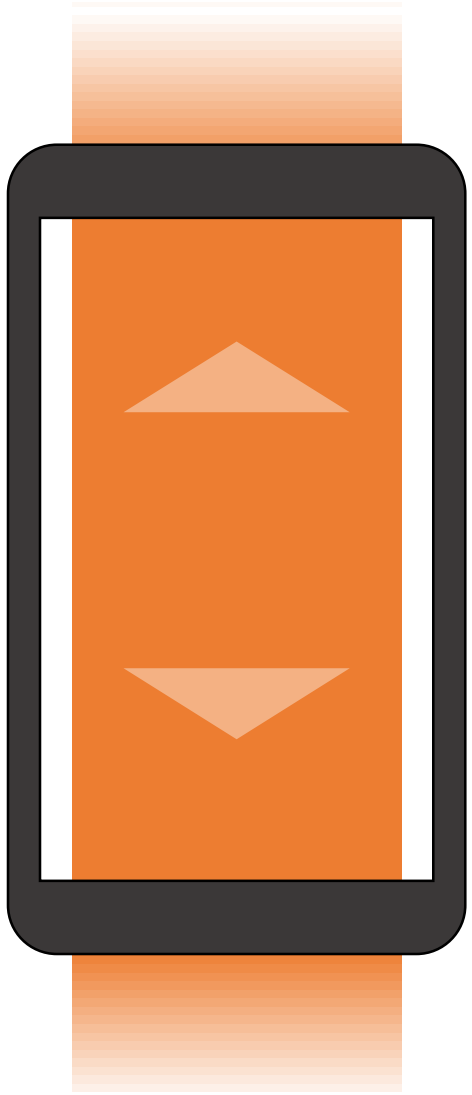
- ✓ Two-way data binding
- ✓ Navigation
- ✓ Animation API
- ✓ Dependency Service
- ✓ Messaging Center



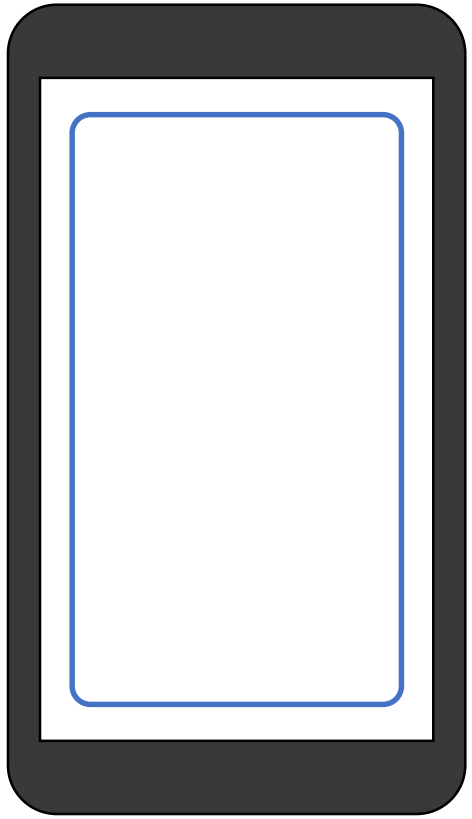
ContentPresenter



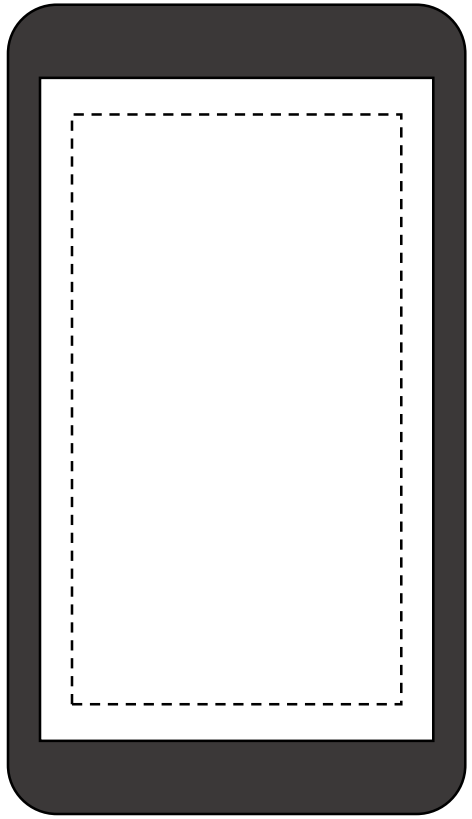
ContentView



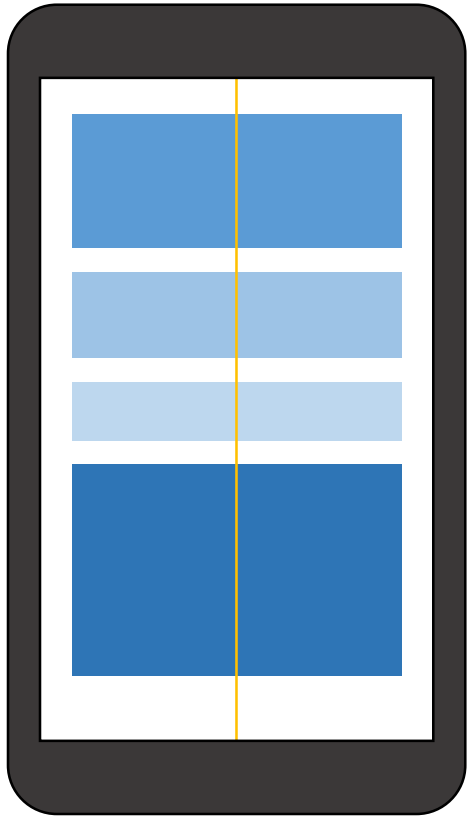
ScrollView



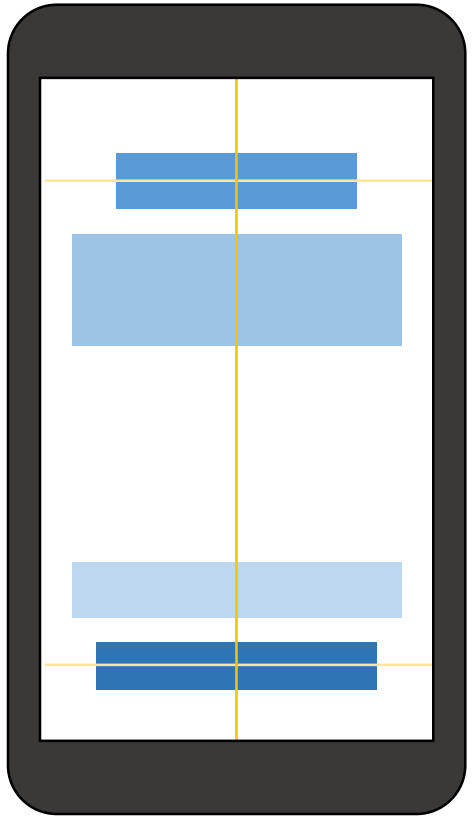
Frame



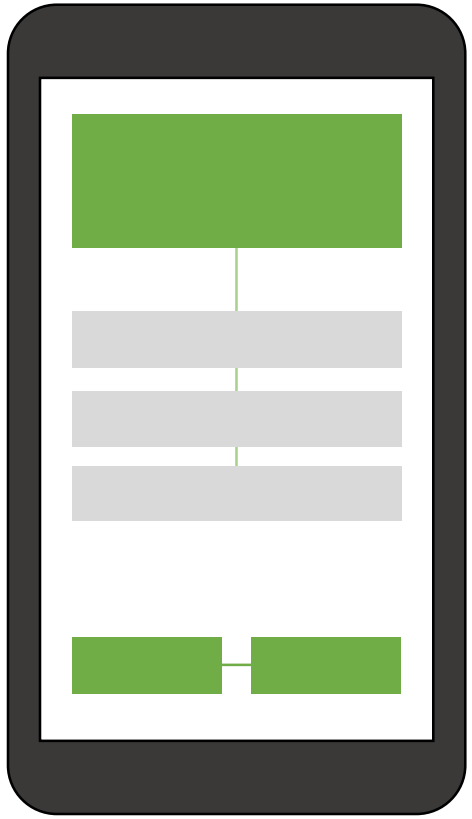
TemplatedView



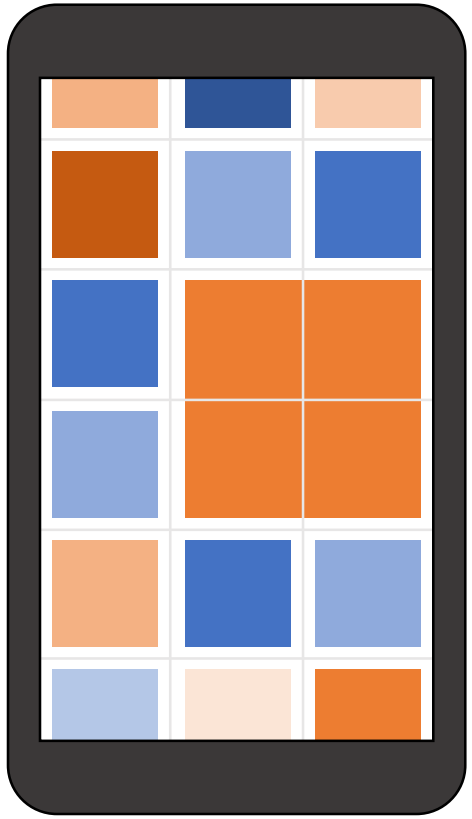
StackLayout



AbsoluteLayout



RelativeLayout



GridLayout

Views

Activity Indicator

BoxView

Button

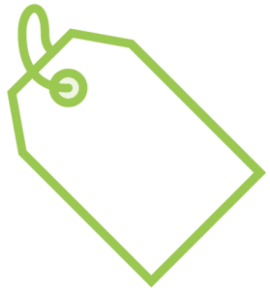
Date Picker

Editor

Entry

Views

Image



- Label

- ListView

- Open GL View

- Pickers

- Progress Bar

Views

Search Bar

Slider

Stepper

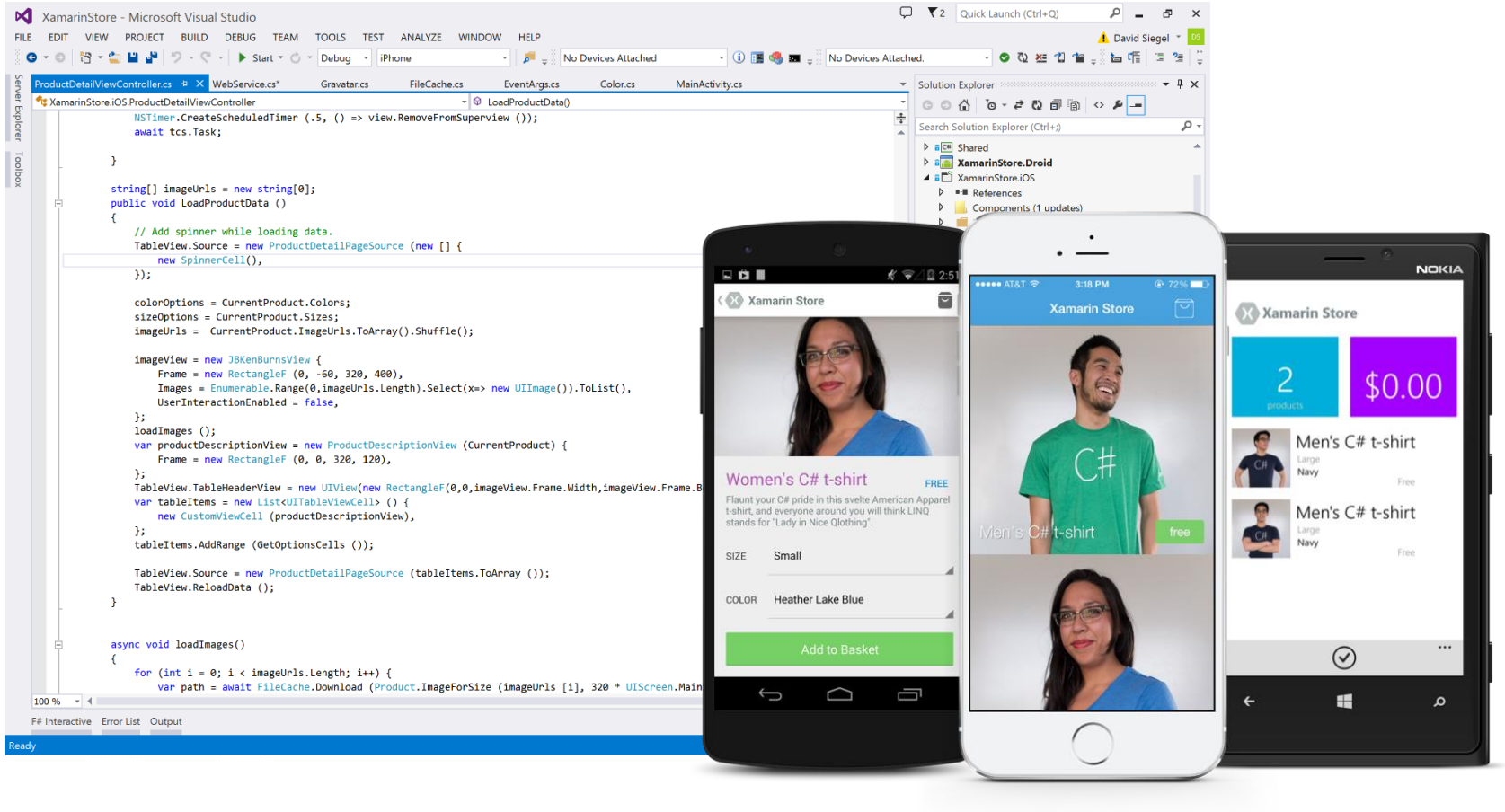
Switch

TableView

Web View

When Writing to Xamarin.Forms, you’re writing native code

Anything you can do in Objective-C, Swift, or Java can be done **in C# with Xamarin.Forms**.



✓Always Up-to-Date

Same-day support:

- iOS 5
- iOS 6
- iOS 7
- iOS 7.1
- iOS 8
- iOS 9
- iOS 10
- iOS 11
- iOS 12
- iOS 12.1.2

Full support for:

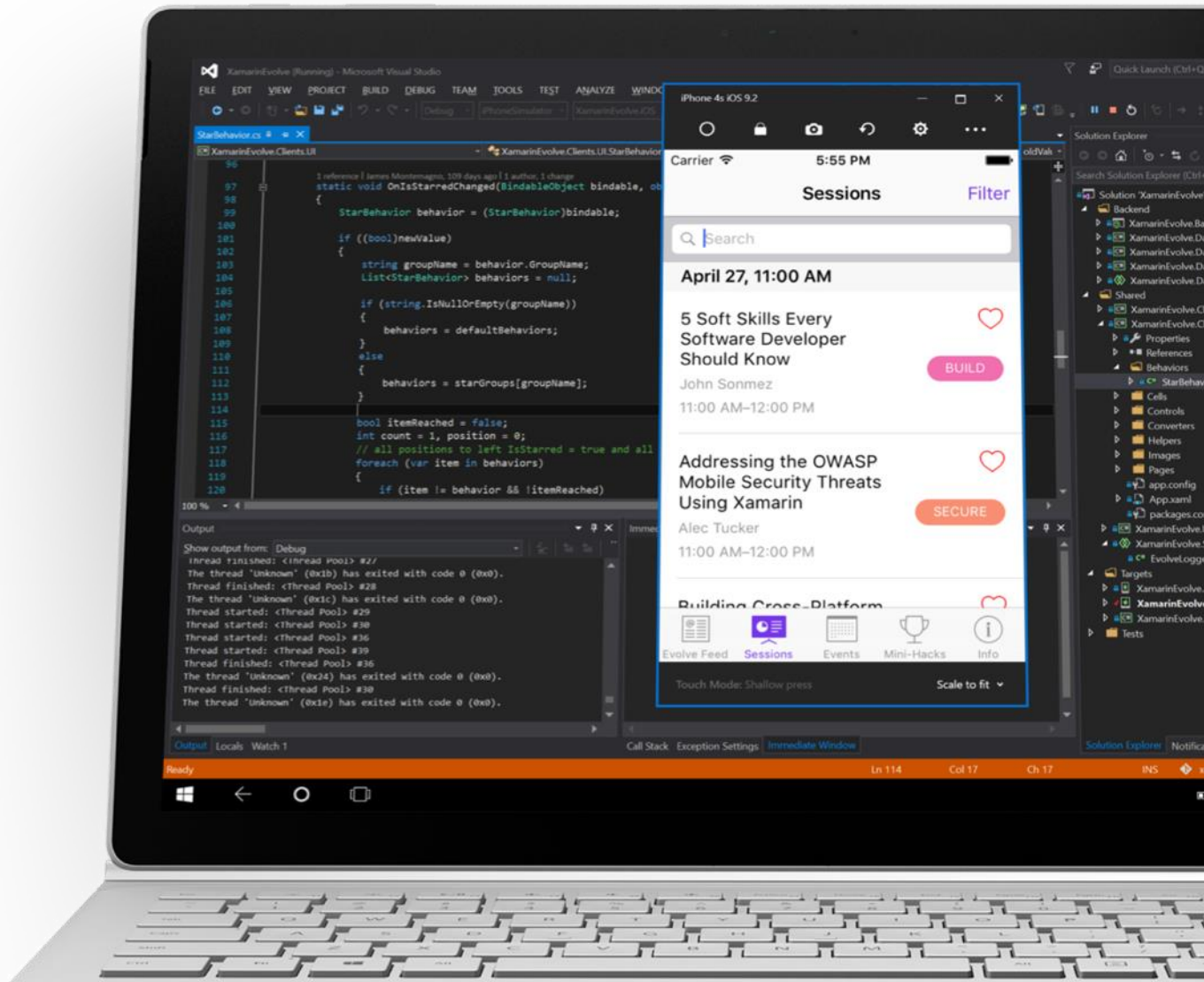
- Apple Watch
- Android Wear
- Amazon Fire TV
- Google Glass
- and much more

Xamarin is included in Visual Studio

Including Community Edition!

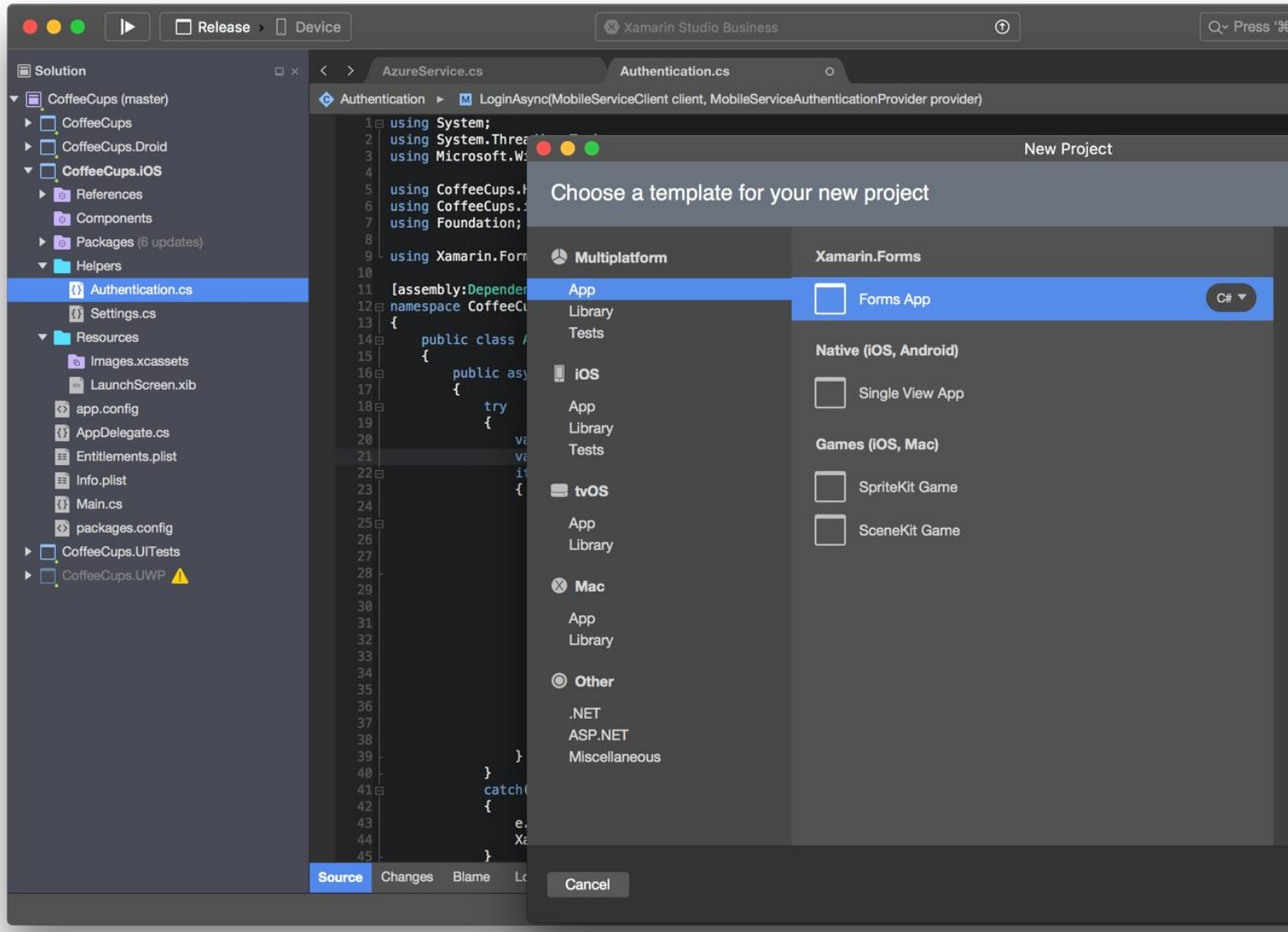
Xamarin.Forms on Visual Studio

- Connect to Mac for iOS
- Mac Simulator in VS
- Xamain.Forms included



*available as a preview

Visual Studio For Mac



Let’s Get Going…

MVVM - The Key Pattern

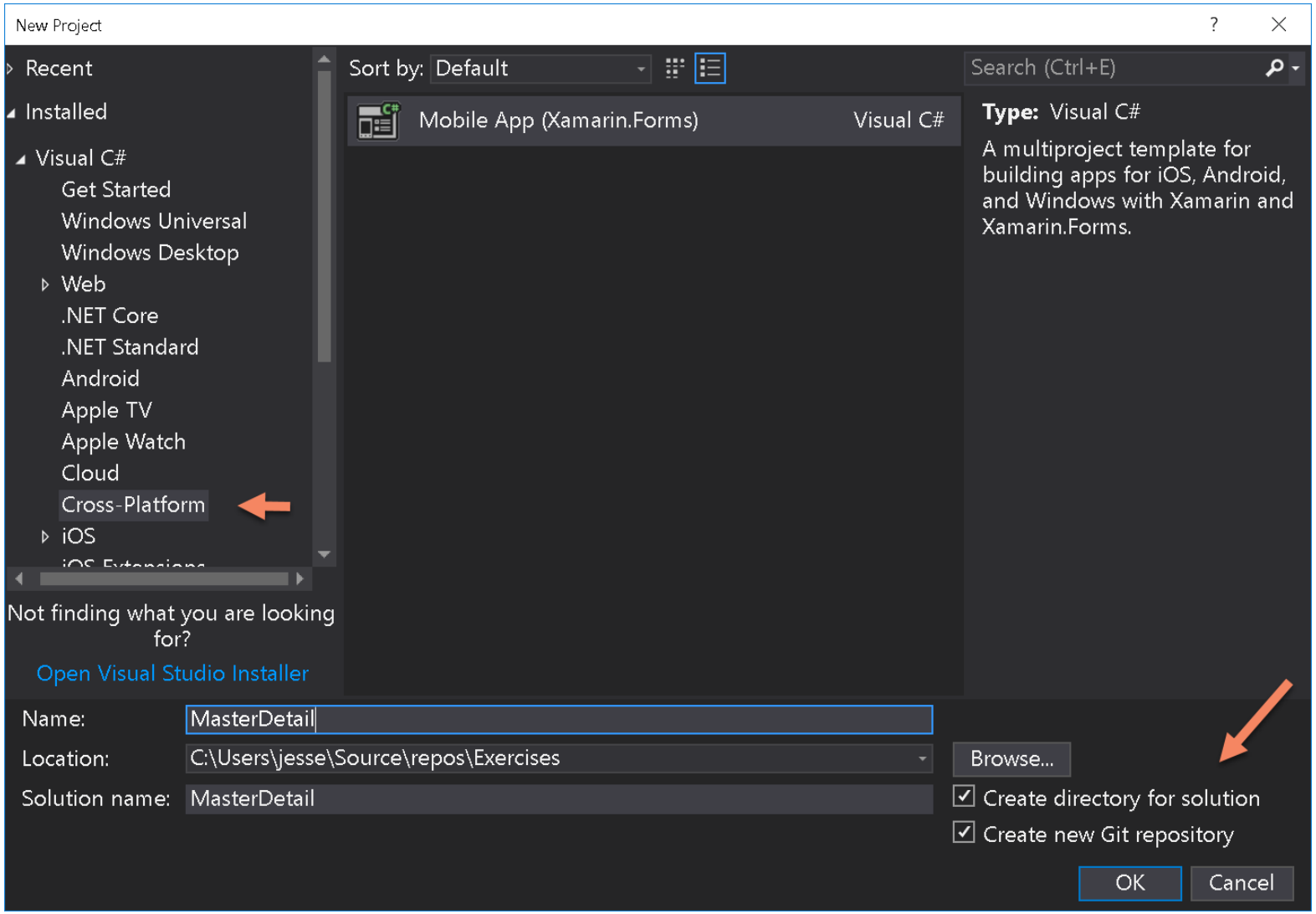
- Pattern born with WPF and Silverlight
- Model – View – ViewModel

- Model = Data
- View (Page) = Display
- ViewModel = Logic

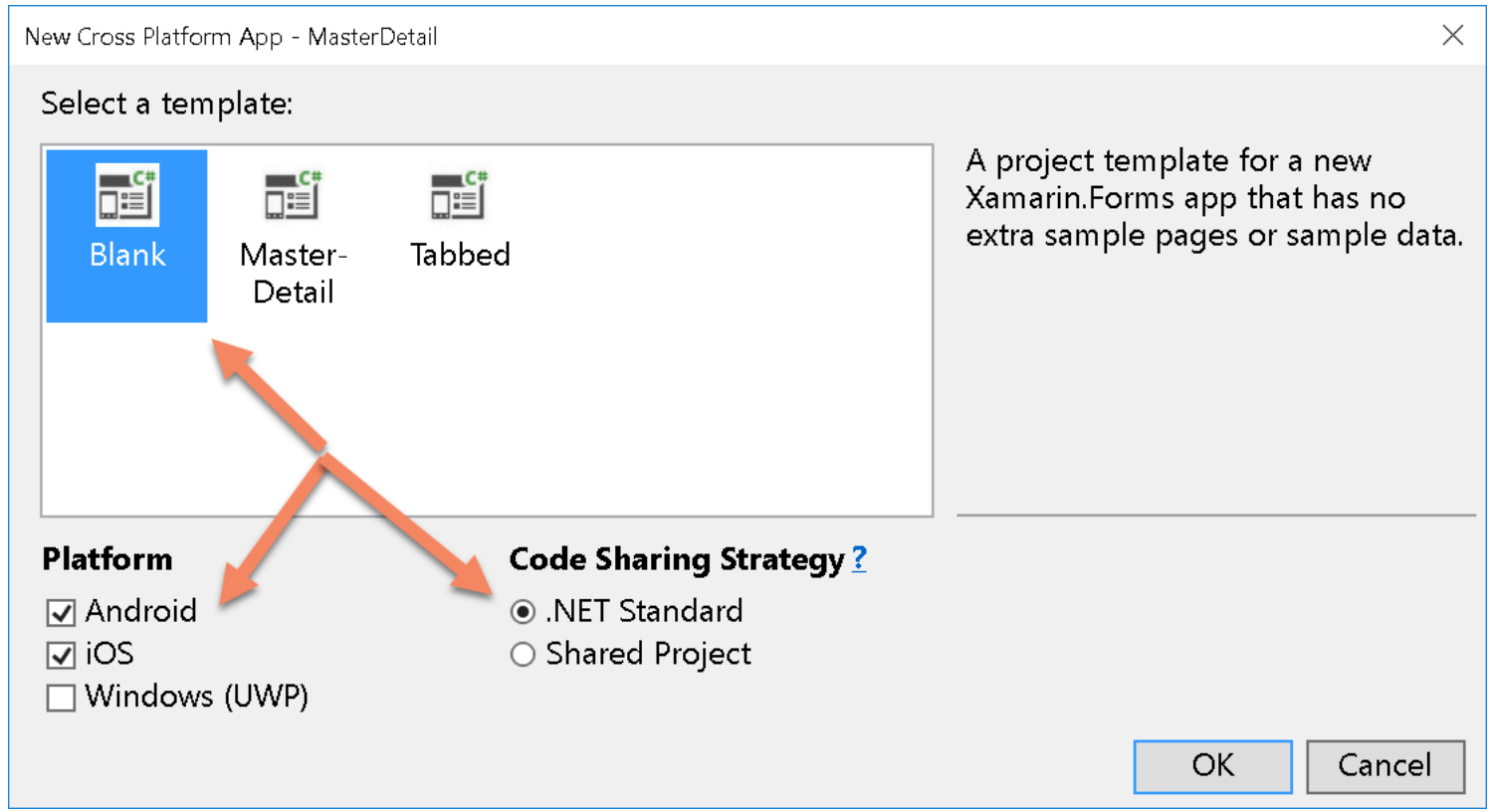
- All the action is in the ViewModel

First Project

Exercise - Create a Xamarin.Forms Project



Exercise - Start with a blank project



Exploring the “blank” project

Label – Display Text

```
<Label Text="New Project" />
```

Button – Clicked **Event Handler**

```
<Button
    Text="Click me"
    Clicked="Handle_Clicked"
    HorizontalOptions="Center" />
```

Theory of Learning…

Theory of Learning

- Explain
- Demonstrate
- Practice
- Questions

Code Behind File

- MyXamlFile.xaml.cs
- Handles events
- Won’t be used much once we move to MVVM

Demo 1

- Buttons, labels and event handling

Exercise 1

- Add an Entry control and a label
- Add a button which displays the entered text in the label

Data Binding

Databinding connects a view to its data

A Control Binds to a property in the ViewModel

Two Way Binding allows a control to write back to the data property.

Demo2

- Adding a button and a label
- Clicking the button changes the property
- Label is updated

Demo 3

- Add an Entry control and bind it to a property (two way)
- Add a label and bind it to a different property
- Add a button which displays the entered text in a label through databinding

https://github.com/JesseLiberty/XamarinWorkshop

Commands move event handling to the View Model.

Demo 4

- Adding a command
- Initializing the command
- Invoking the command

Exercise

- Move response to button click to View Model (command)

Navigation

Demo 5

- Moving from page to page
- Navigation support is built in

Demo 5A

- Pass data from page to page

Exercise

- Create two pages
- Move data between them
- Note: Use PopAsync() to go back to a calling page!

GridView

- Create Grid Rows and Columns
- Set size with * values, auto or absolute values
- Refer to row and column in elements
- Row 0 and Column 0 are implicit (Best Practice: make explicit)

Demo 6 - Grids

- Note sizing

Demo 7

- ListView
- Templates
- INotifyPropertyChanged
- Repository Pattern

Styles

XAML Styles

- Explicit Styles
- Implicit Styles
- Global Styles
- Style Inheritance

Demo 8 – XAML Styles

- Explicit
- Implicit

Demo 9 – Global Styles

- Created in app.xaml
- Referenced in your page

Exercise

- Create a global style and run your program
- Add a local explicit style for the same elements; what happens?
- Add a local implicit style for the same elements; what happens?

Xamarin Essentials

Advanced Topics

Data Converters

Demo 10 Converters

Exercise Converters

Messages

Demo 12 Messages

Exercise Messages

Storing Data

SQL Lite

Demo 13 SQLite

Exercise SQLite

User Preferences Plugin

Xamarin Essentials

Building Your Frist Mobile Application with Xamarin.Forms and Visual Studio 2017

Jesse Liberty

http://jesseliberty.me

Available today on Pluralsight