Xpirit

Introduction to Xamarin

Xamarin hands-on-labs

Agenda

- Introduction to Xamarin

- Cross Platform UI with Xamarin.Forms

- Breaking Through the Abstractions

- Mobile First Architecture

- Resilient Connected Apps (*if time permits*)

Let's get started…..

How would you rate your current Xamarin skills?

Mentimeter

0

No idea

0

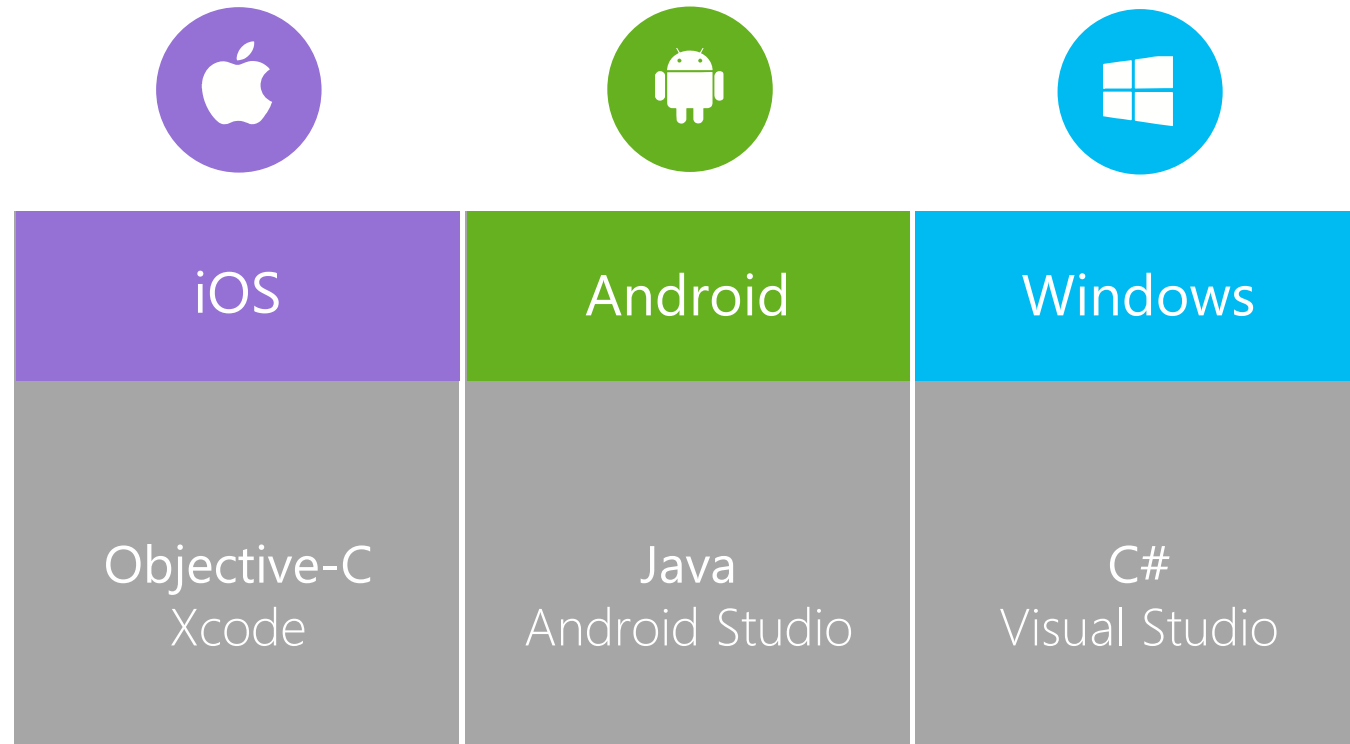Familiar

0

Proficient

0

Advanced

0

Expert

0

Jedi Master
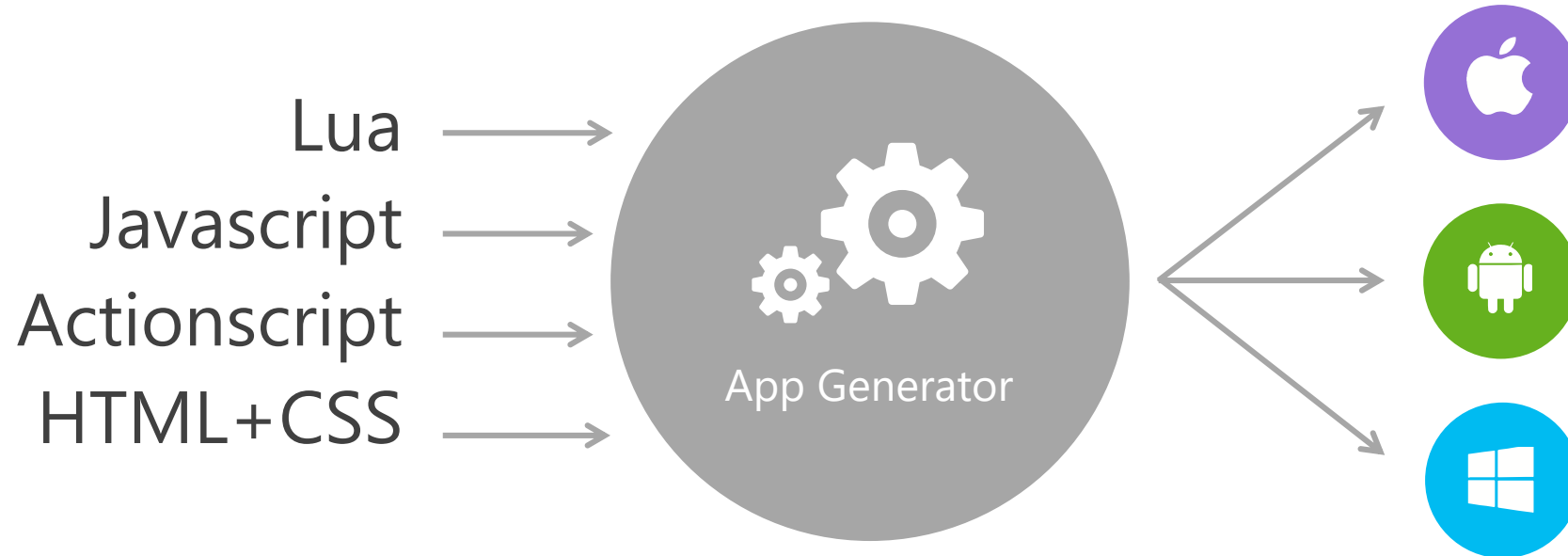
Slide is not active Activate

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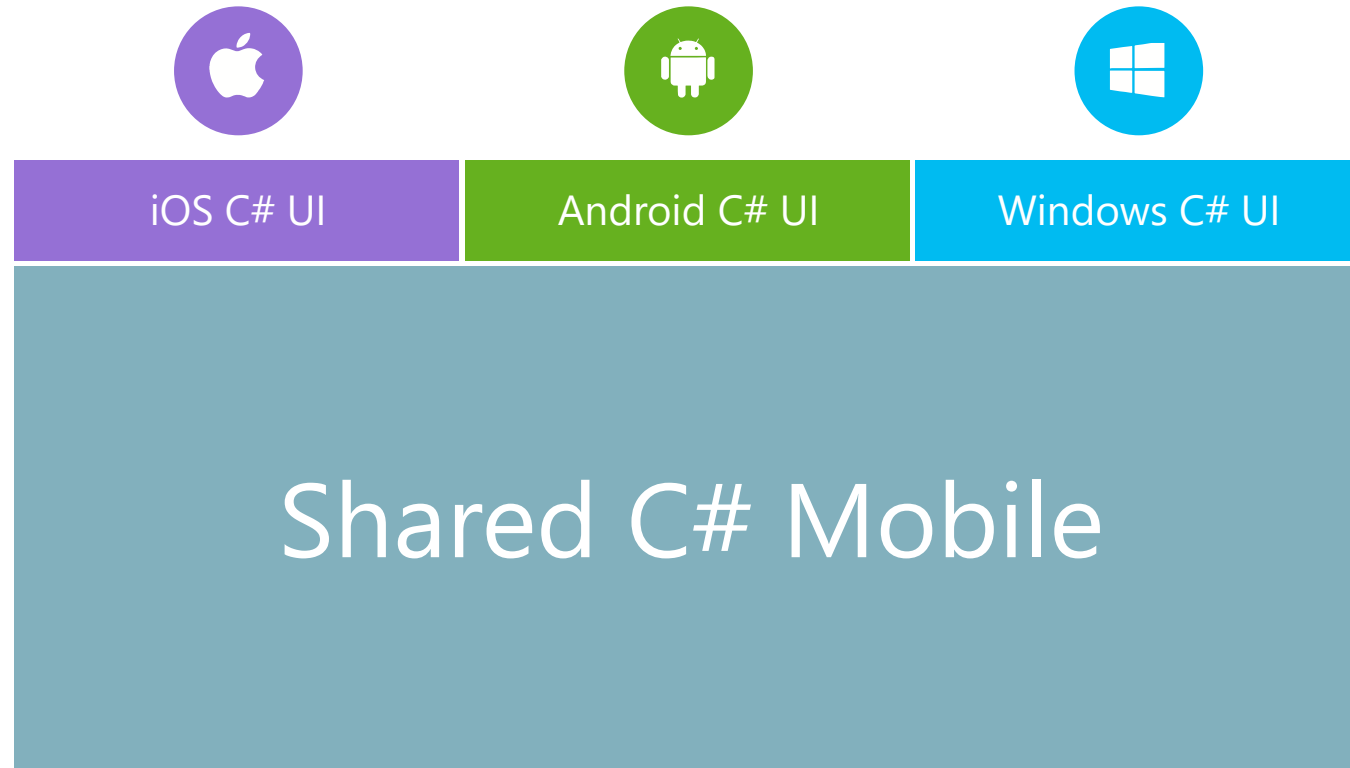# Architecting Mobile Apps

Silo Approach

iOS	Android	Windows
Objective-C Xcode	Java Android Studio	C# Visual Studio

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

Write Once, Run Anywhere

Lua →
Javascript →
Actionscript →
HTML+CSS →

App Generator →

Limited native API access • Slow performance • Poor user experience

Xamarin's Unique Approach

iOS C# UI	Android C# UI	Windows C# UI

Shared C# Mobile

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

Windows APIs

Microsoft.Phone	Microsoft.Networking	Windows.Storage	Windows.Foundation	Microsoft.Devices
System.Net	System	System.IO	System.Linq	System.Xml
System.Data	System.Windows	System.Numerics	System.Core	System.ServiceModel

C#

iOS – 100% API Coverage

MapKit	UIKit	iBeacon	CoreGraphics	CoreMotion
System.Net	System	System.IO	System.Linq	System.Xml
System.Data	System.Windows	System.Numerics	System.Core	System.ServiceModel

C#

Android – 100% API Coverage

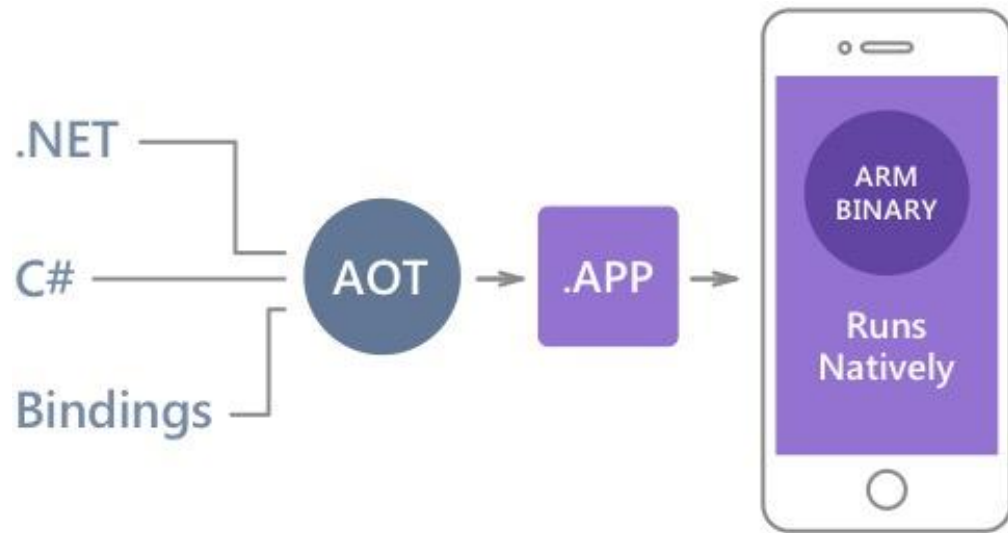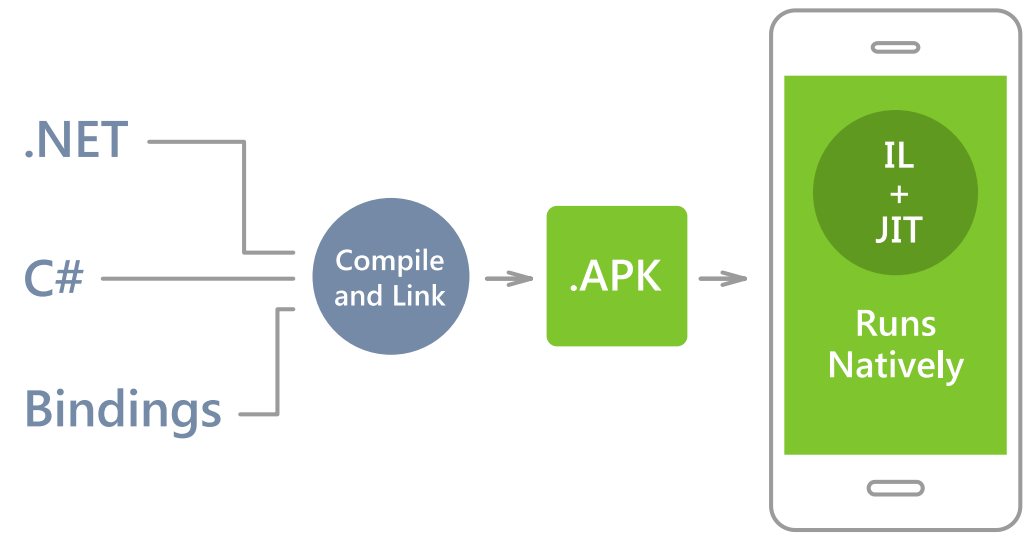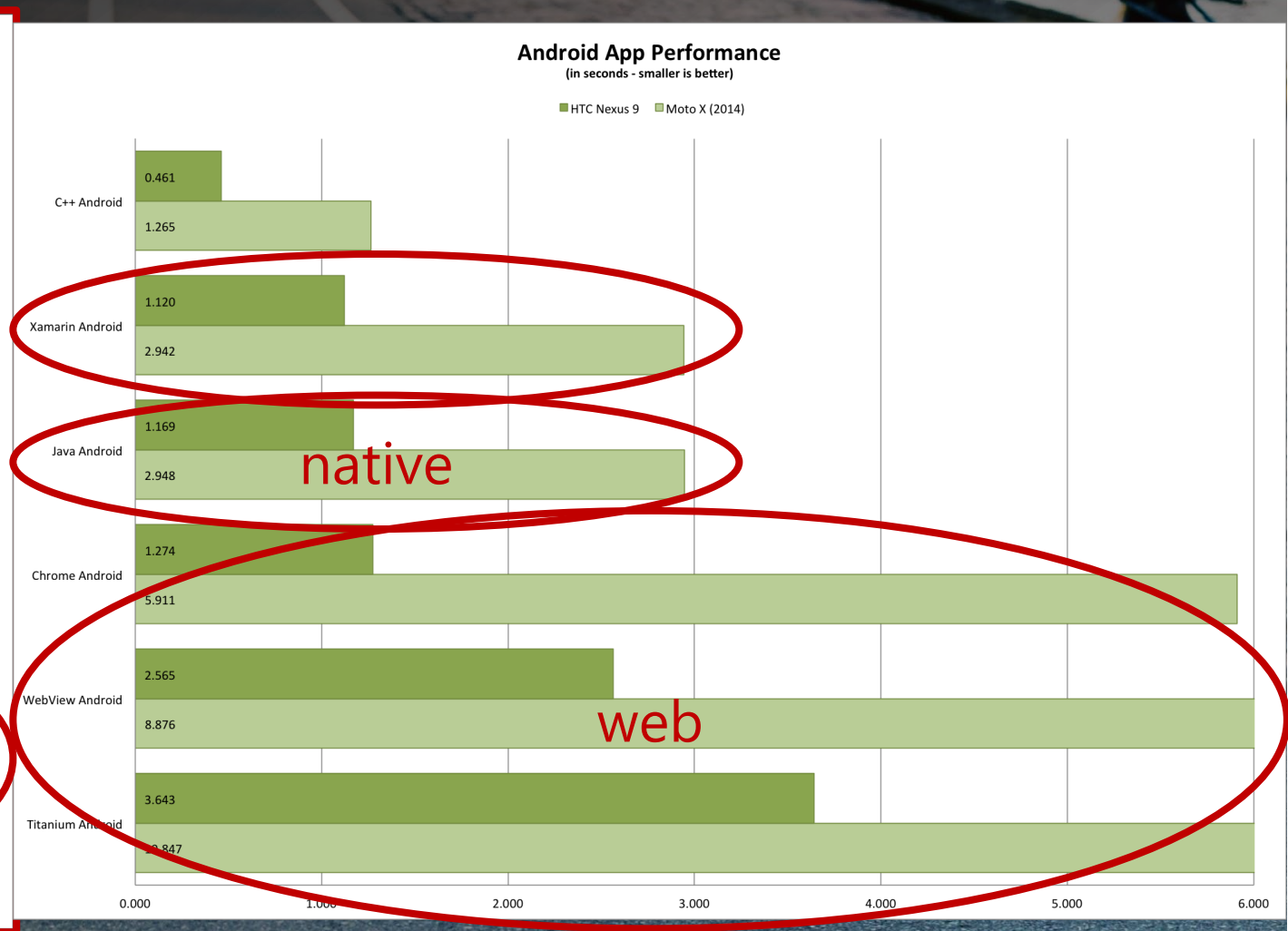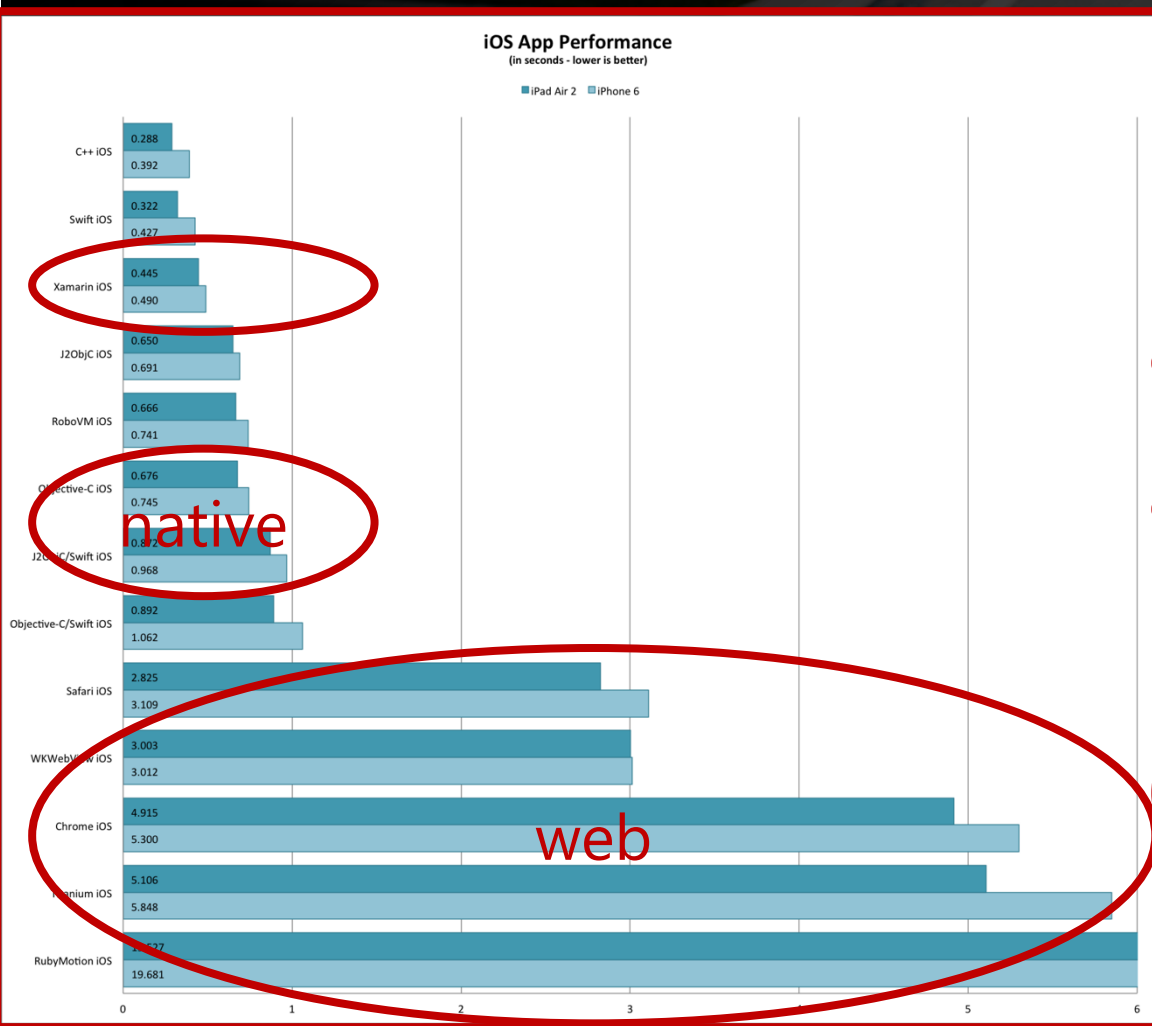| Text-to-speech	ActionBar	Printing Framework	Renderscript	NFC
System.Net	System	System.IO	System.Linq	System.Xml
System.Data	System.Windows	System.Numerics	System.Core	System.ServiceModel

C#

Native Performance

Xamarin.iOS does full Ahead Of Time (AOT) compilation to produce an ARM binary for Apple's App Store.

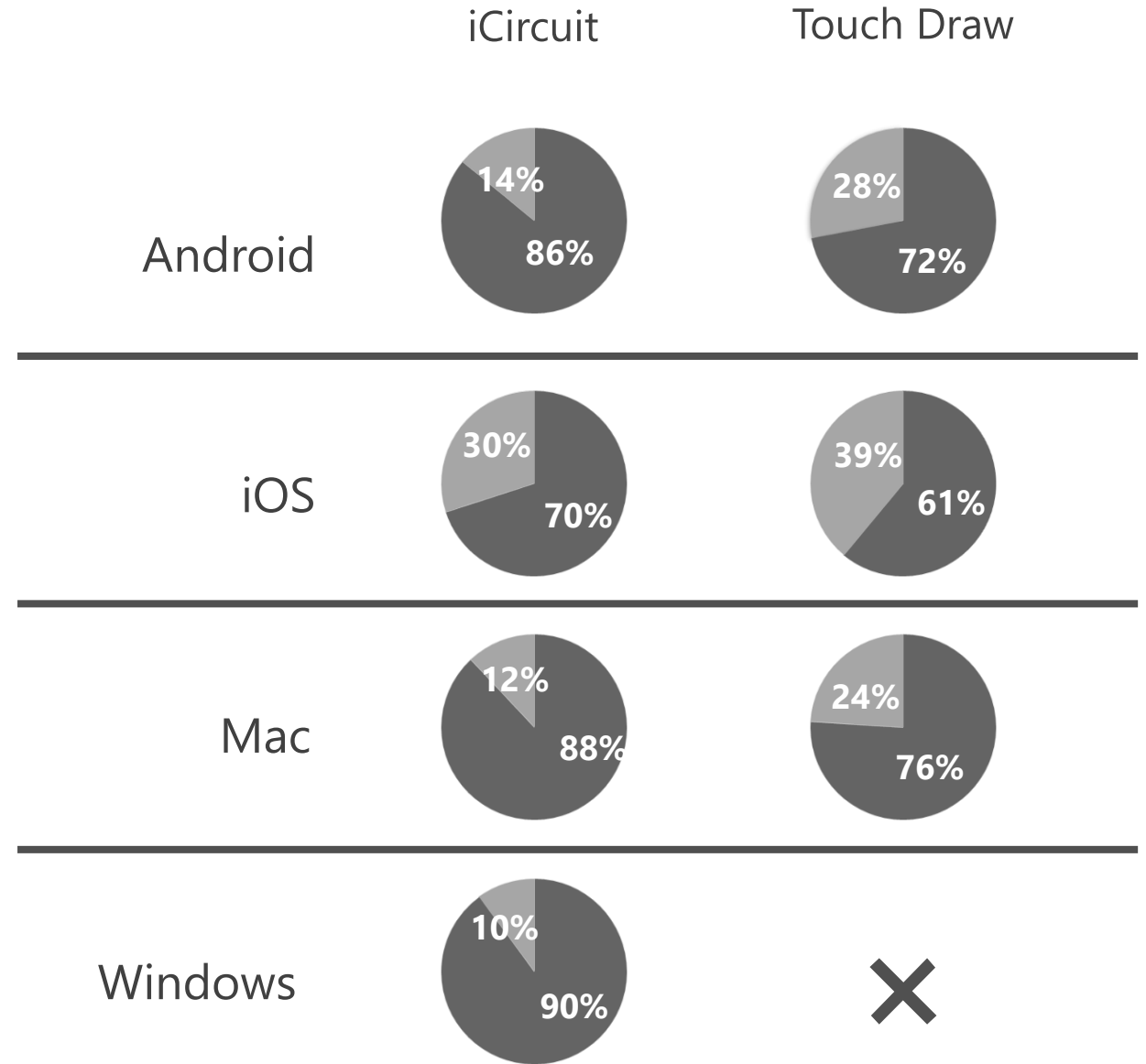Xamarin.Android takes advantage of Just In Time (JIT) compilation on the Android device.
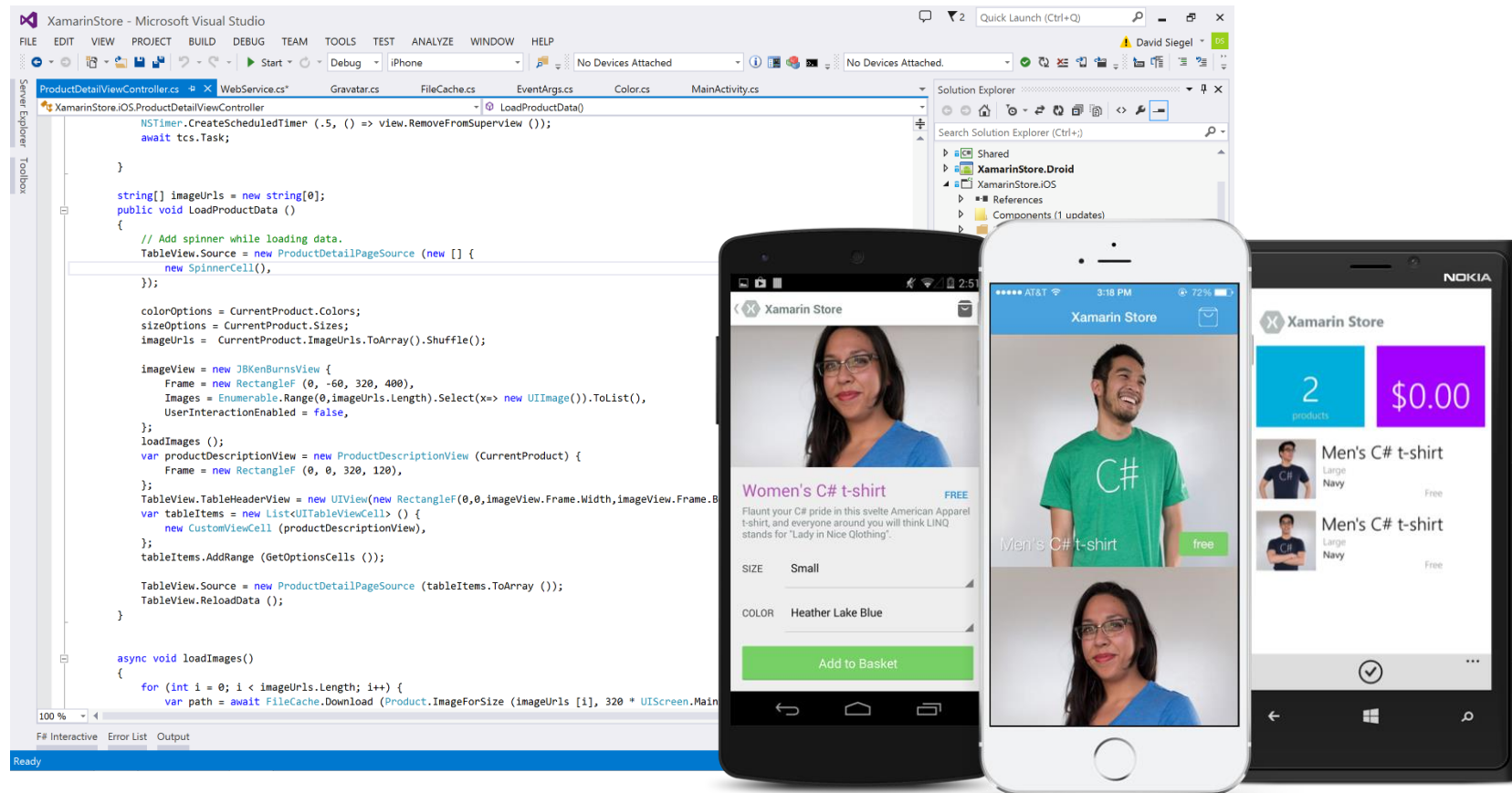
iOS App Performance
(in seconds - lower is better)
■ iPad Air 2 ■ iPhone 6

C++ iOS	0.288 / 0.392
Swift iOS	0.322 / 0.427
Xamarin iOS	0.445 / 0.490
J2ObjC iOS	0.650 / 0.691
RoboVM iOS	0.666 / 0.741
Objective-C iOS	0.676 / 0.745
J2ObjC/Swift iOS	0.968
Objective-C/Swift iOS	0.892 / 1.062
Safari iOS	2.825 / 3.109
WKWebView iOS	3.003 / 3.012
Chrome iOS	4.915 / 5.300
Titanium iOS	5.106 / 5.848
RubyMotion iOS	19.681

native

web

Android App Performance
(in seconds - smaller is better)
■ HTC Nexus 9 ■ Moto X (2014)

C++ Android	0.461 / 1.265
Xamarin Android	1.120 / 2.942
Java Android	1.169 / 2.948
Chrome Android	1.274 / 5.911
WebView Android	2.565 / 8.876
Titanium Android	3.643 / 9.847

native

web

0.000 1.000 2.000 3.000 4.000 5.000 6.000

http://bit.ly/mobile-app-performance

DOES IT PERFORM?

Code sharing stats

	iCircuit	Touch Draw
Android	14% / 86%	28% / 72%
iOS	30% / 70%	39% / 61%
Mac	12% / 88%	24% / 76%
Windows	10% / 90%	✕

Anything you can do in Objective-C, Swift, or Java can be done in C# and Visual Studio with Xamarin.

✓ Always Up-to-Date

Same-day support:

- iOS 6
- iOS 7
- iOS 8
- iOS 9
- iOS 10
- iOS 11
- iOS 12

Full support for:

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

Development Experience

Xamarin is included in Visual Studio

Including Community Edition!

Open Source – open.xamarin.com
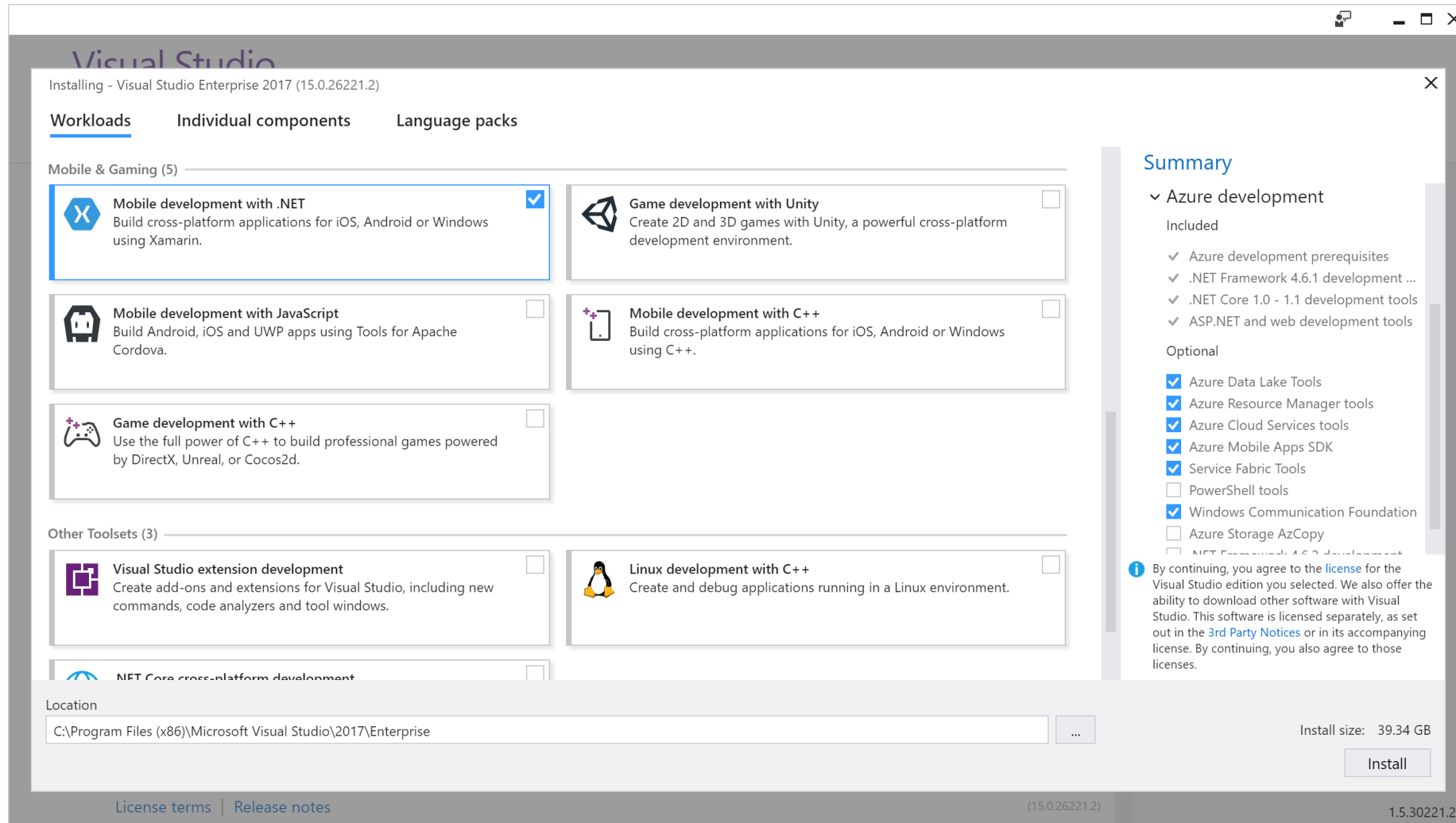

Xamarin
OPEN SOURCE

Xamarin SDK   Documentation   Community   **Contribute**
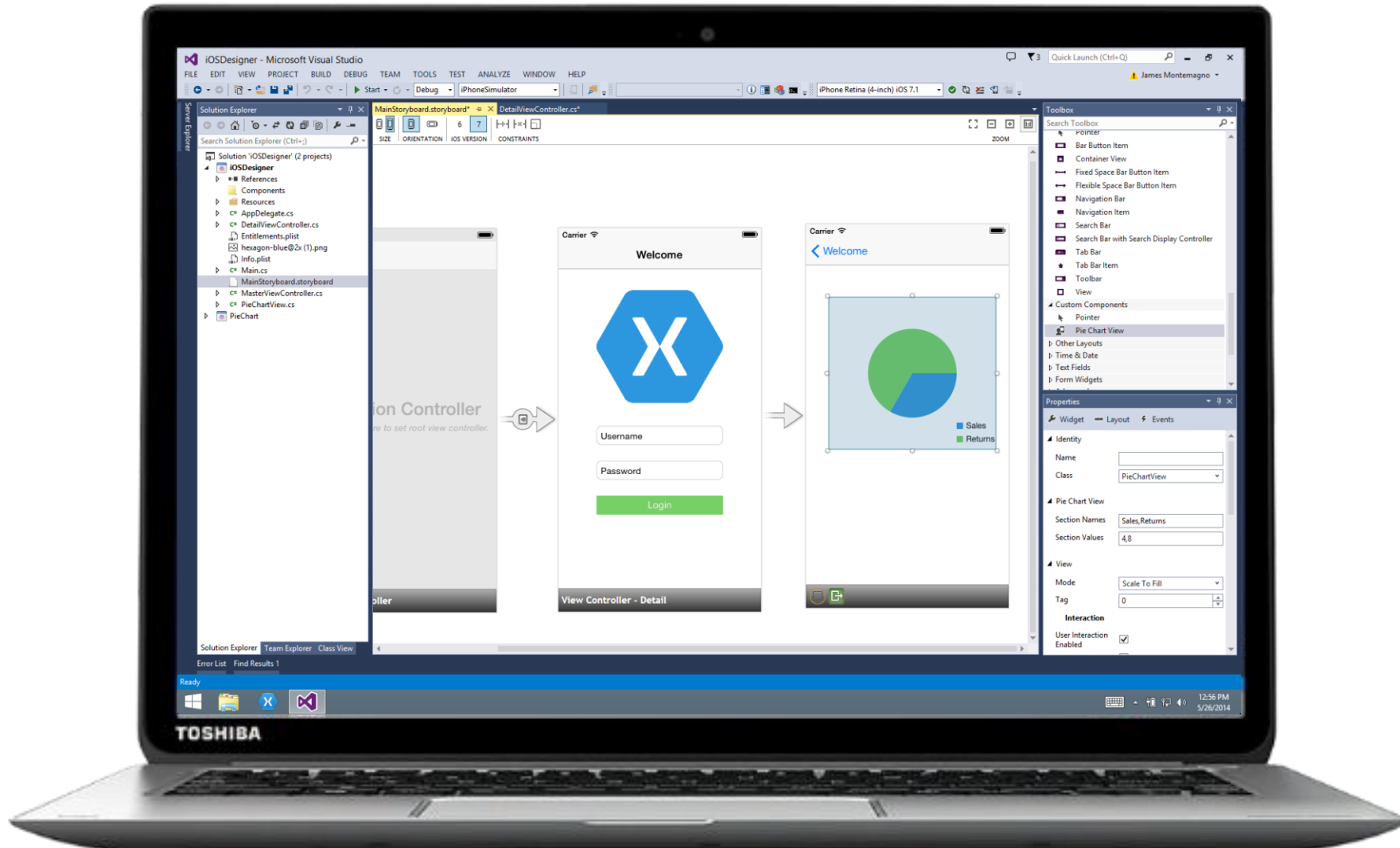
Build the future of apps with Xamarin.

Xamarin SDK is now fully available under the MIT license.

Visual Studio Integration

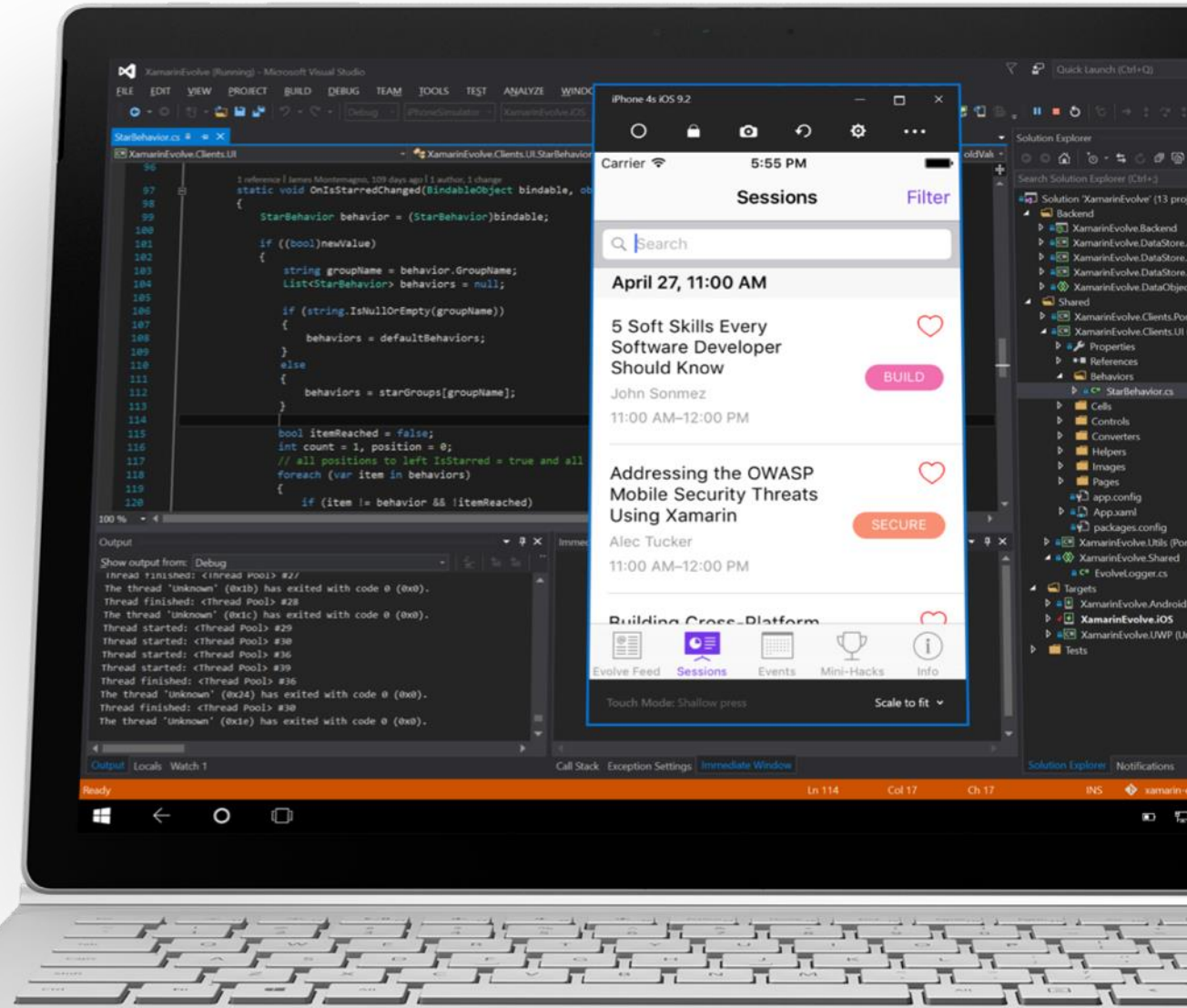https://visualstudio.microsoft.com/xamarin

Xamarin for Visual Studio

Visual Studio iOS Simulator Remoting

- Multi-Touch Enabled
- Pressure Sensitive
- Super Fast
- Rotate, screenshots, location changes
- Never leave VS

*Requires Visual Studio Enterprise

Demos, & Labs - Clone or Download

github.com/xpiritbv/xamarin-hands-on-labs

Validate your installation

Lab

Demo: iOS

Demo: Android

Let's build a native app

Lab01 – app-helloworld
pick Android or iOS (or both)