

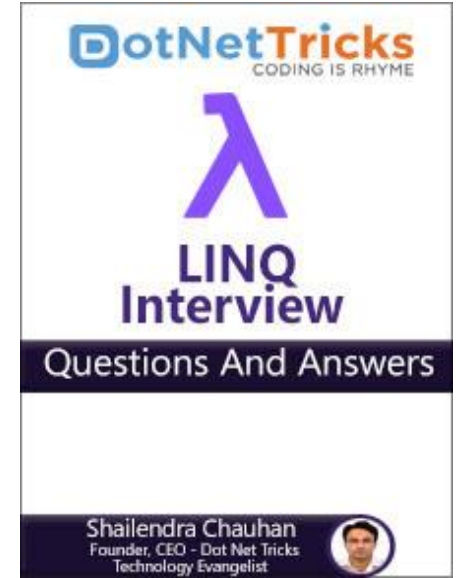
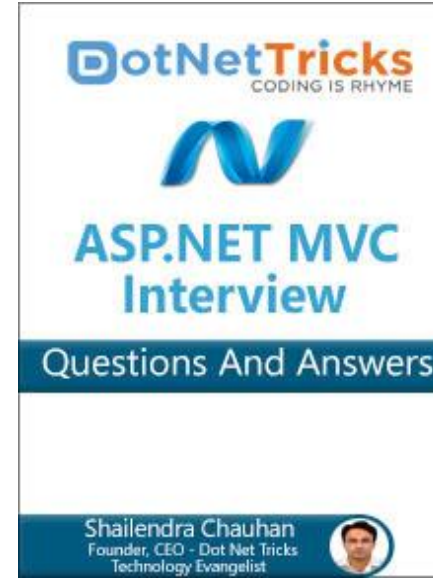
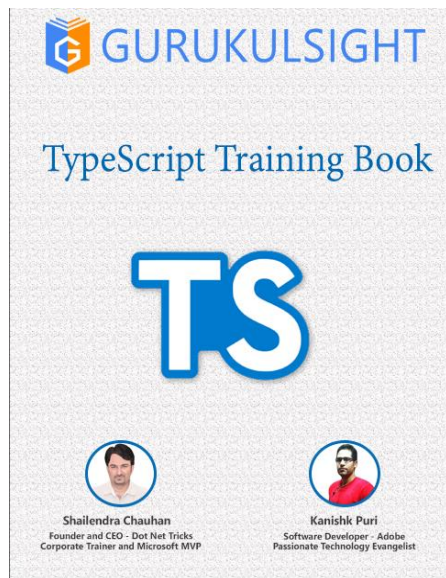
Xamarin + Microsoft Azure



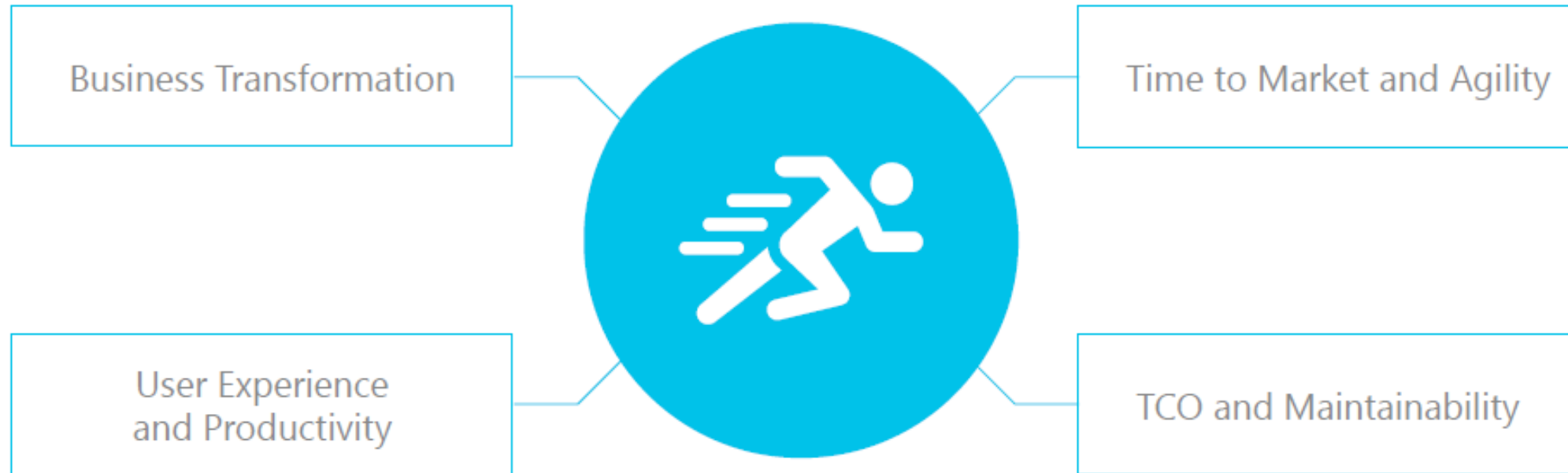
Shailendra Chauhan

Microsoft MVP, Founder & CEO - Dot Net Tricks

Author of Most Popular Free e-Books



Enterprise Mobile Considerations



Mobile Apps Frameworks

1st
Gen

Platform Proprietary



Objective-C / Swift



Android Java



Windows .NET

Native UX
High performance
Multi-platform
Unified codebase
Hardware & platform access

2nd
Gen

Hybrid HTML & JavaScript Frameworks



PhoneGap



APACHE CORDOVA



ionic

Native UX
High performance
Multi-platform
Unified codebase
*Hardware & platform access

3rd
Gen

Cross- Platform Native



Xamarin



React Native

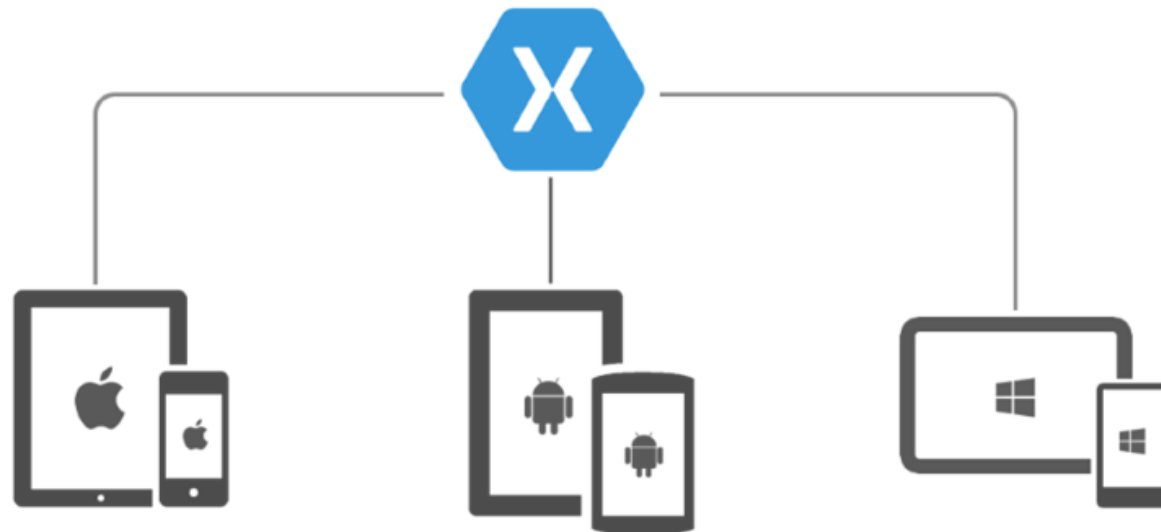


NativeScript

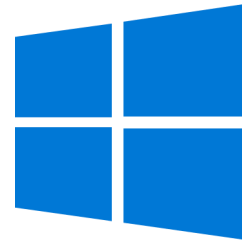
Native UX
High performance
Multi-platform
*Unified codebase
Hardware & platform access

Xamarin

- An open-source .NET solution run on Mono & .NET framework
- C# based apps run on iOS, Mac, Android and Windows
- Build truly native apps with native performance and Native UI



Xamarin - A Better Model for Mobile Development



One Language
One Toolset

Native API/Performance

Native UI/Performance

Xamarin Forms - Single UI Framework

Source control

Build System

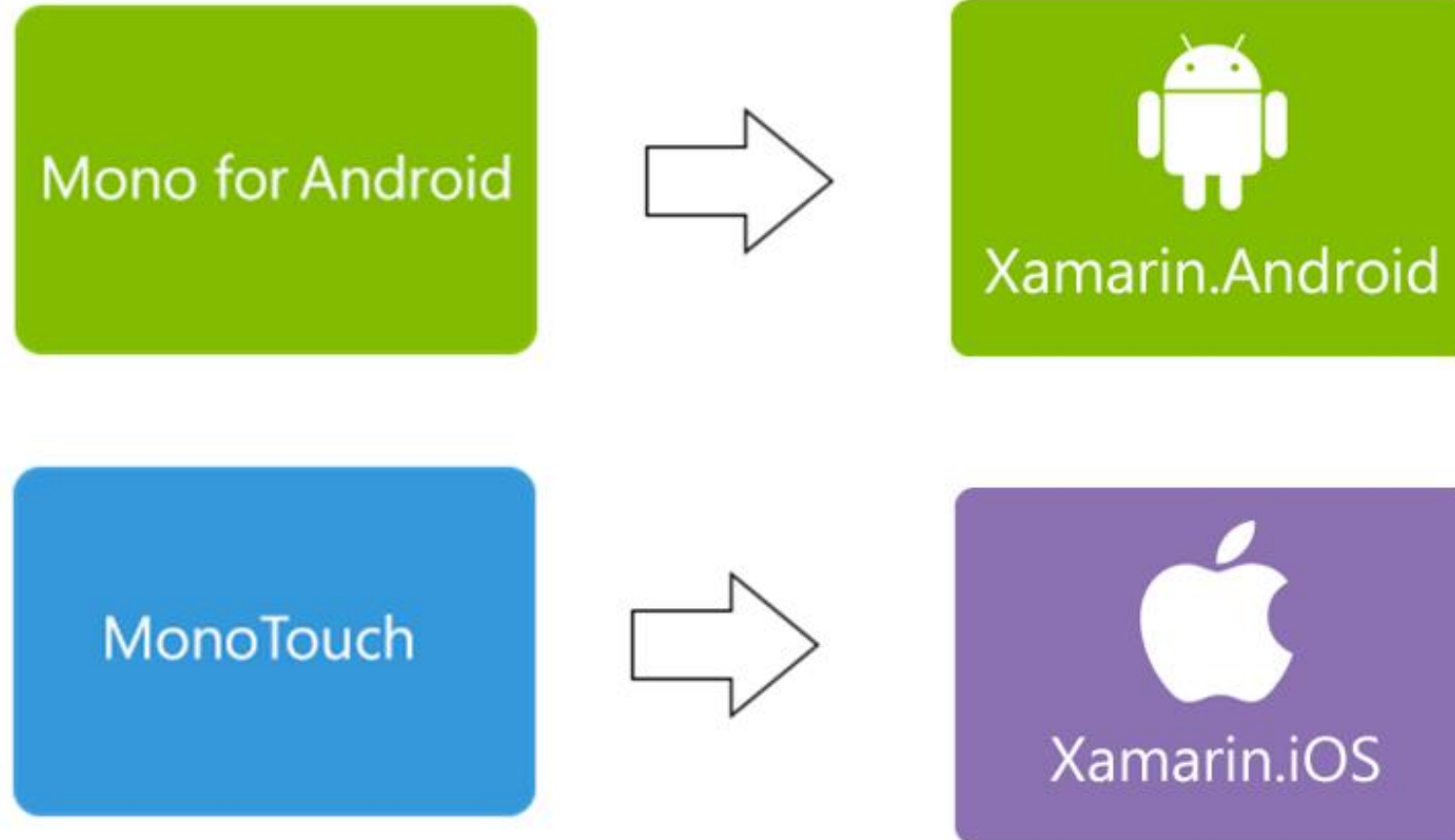
Testing

Monitoring

Xamarin Architecture



Mono



Xamarin Family



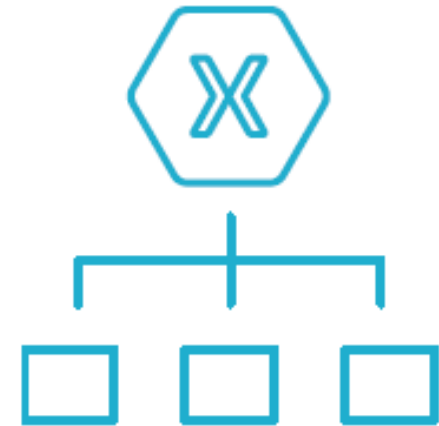
Xamarin.Android

Native mobile apps for Android, Android Wear, and Android TV



Xamarin.iOS & Xamarin.Mac

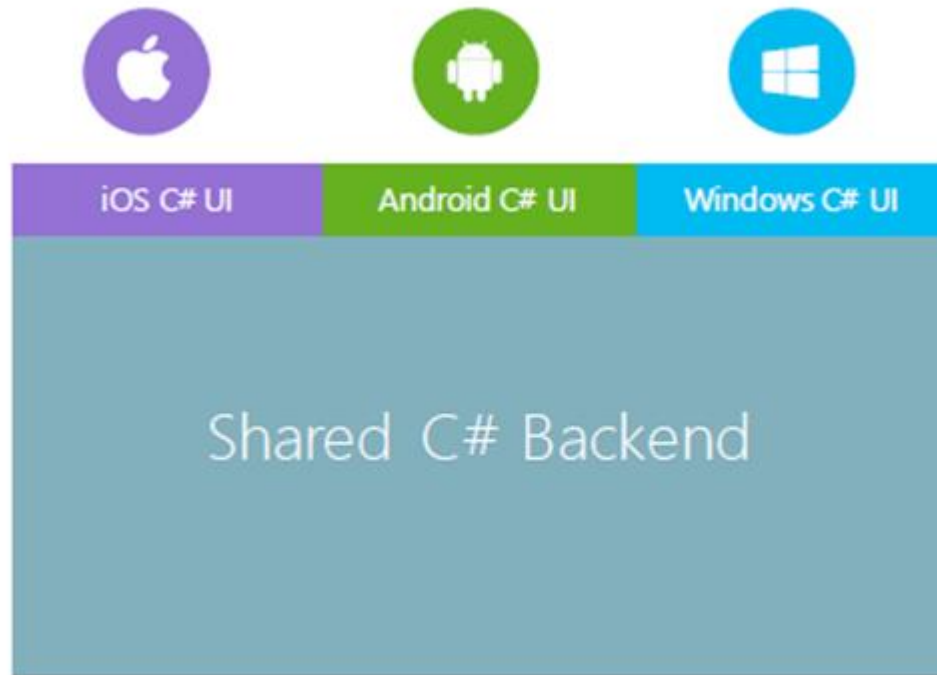
Native mobile apps for iOS, watchOS, tvOS, and OS X



Xamarin Forms

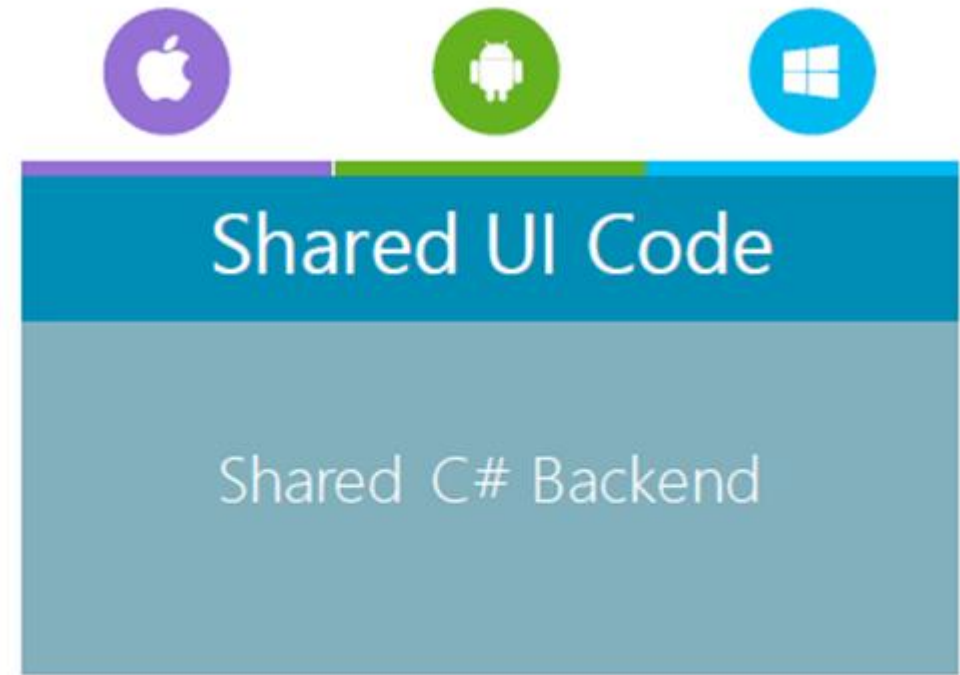
Native UIs for iOS, Mac, Android & Windows from a single, shared codebase

Xamarin App Development Approaches



Xamarin Unique Approach

100% Native API Access



Xamarin Forms

More Code Sharing, 100% Native

Which Xamarin approach is best for your app?



Xamarin.Forms is best for:

- Apps that require little platform-specific functionality
- Apps where code sharing is more important than custom UI
- Developers comfortable with XAML



Xamarin.iOS & Xamarin.Android are best for:

- Apps with interactions that require native behavior
- Apps that use many platform-specific APIs
- Apps where custom UI is more important than code sharing

Who are using Xamarin?

Over 15,000 companies rely on Xamarin.

ThermoFisher
SCIENTIFIC

 **THE WORLD BANK**
IBRD • IDA

SIEMENS

OUTBACK
STEAKHOUSE®



 **Kimberly-Clark**

CINEMARK®

 **NATIONAL
INSTRUMENTS**™

Dutch Tax Office

Honeywell

 **slack**


BOTTLING CO.
CONSOLIDATED

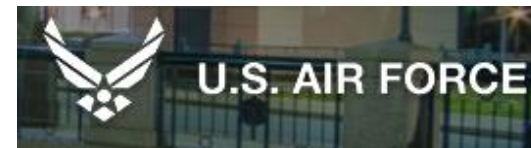
Alaska
AIRLINES

Kellogg's

jetBlue

MCKESSON

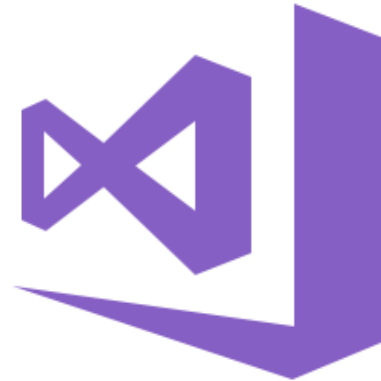
Xamarin Apps Show Case?



Development IDEs

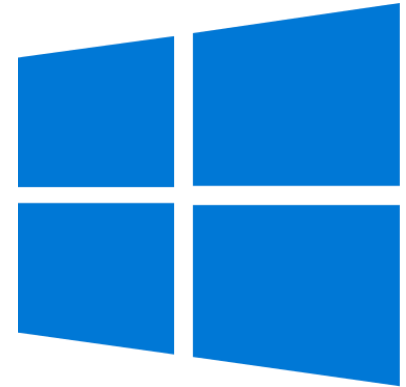


Visual Studio for Mac



Visual Studio for Windows

Development SDKs



Development with Mac

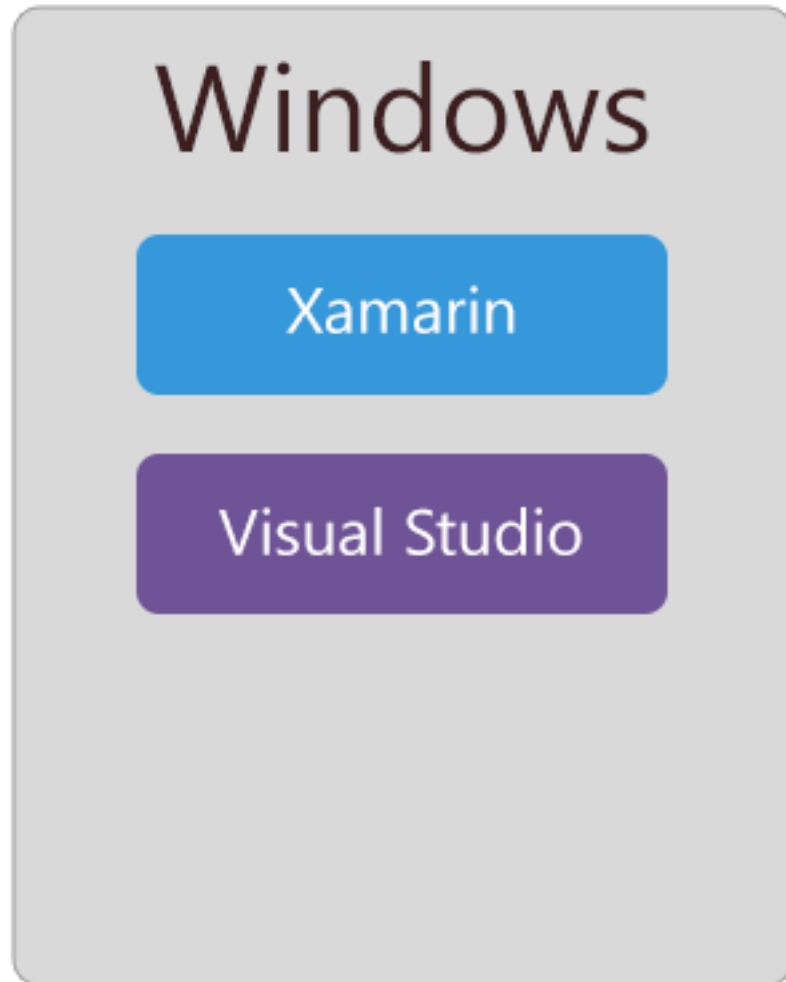


Android



iOS

Development with Windows

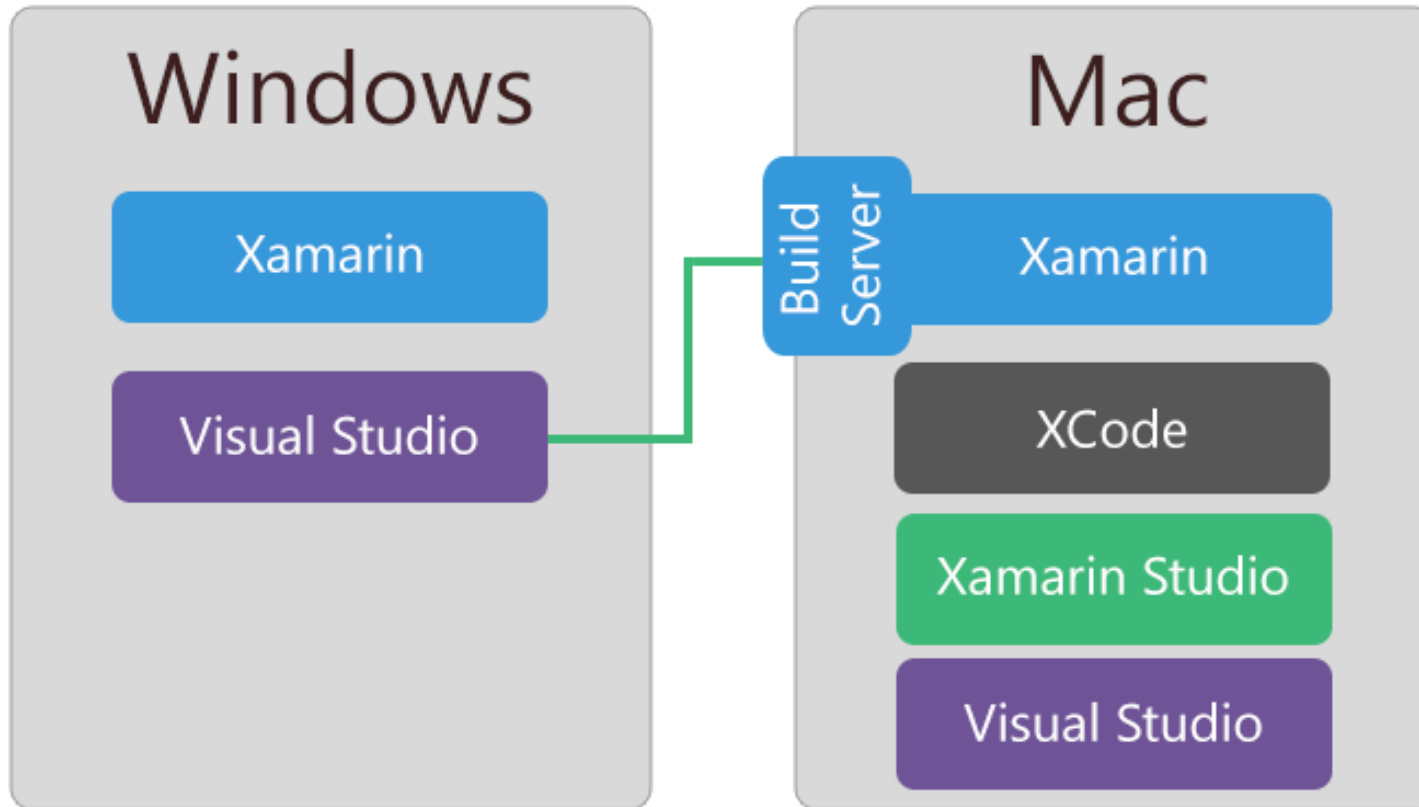


Android



UWP

Development for All Devices



Android



iOS



UWP

Why Xamarin?

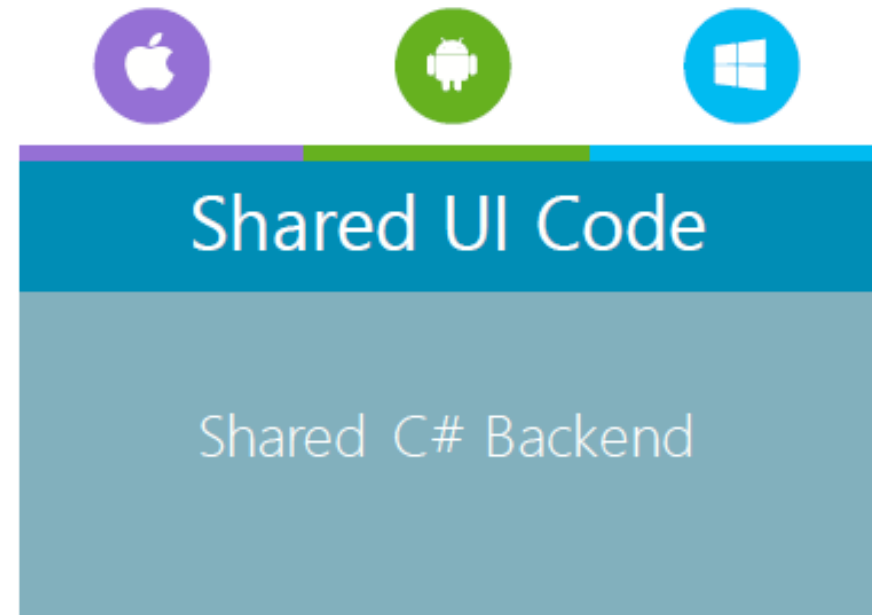
- Target iOS, Android, MacOS & UWP from single code base
- Reach Smart Watches and Smart TVs
- Reuse existing skills in C#/XAML
- Familiar software paradigms
- Consistent cross-platform APIs
- Top-notch tooling/IDEs – Visual Studio on Windows or Mac
- Great deployment & testing tools
- Lots of frameworks, utilities & Standardization efforts
- Support for full DevOps workflows
- Fantastic developer community

Xamarin Limitations

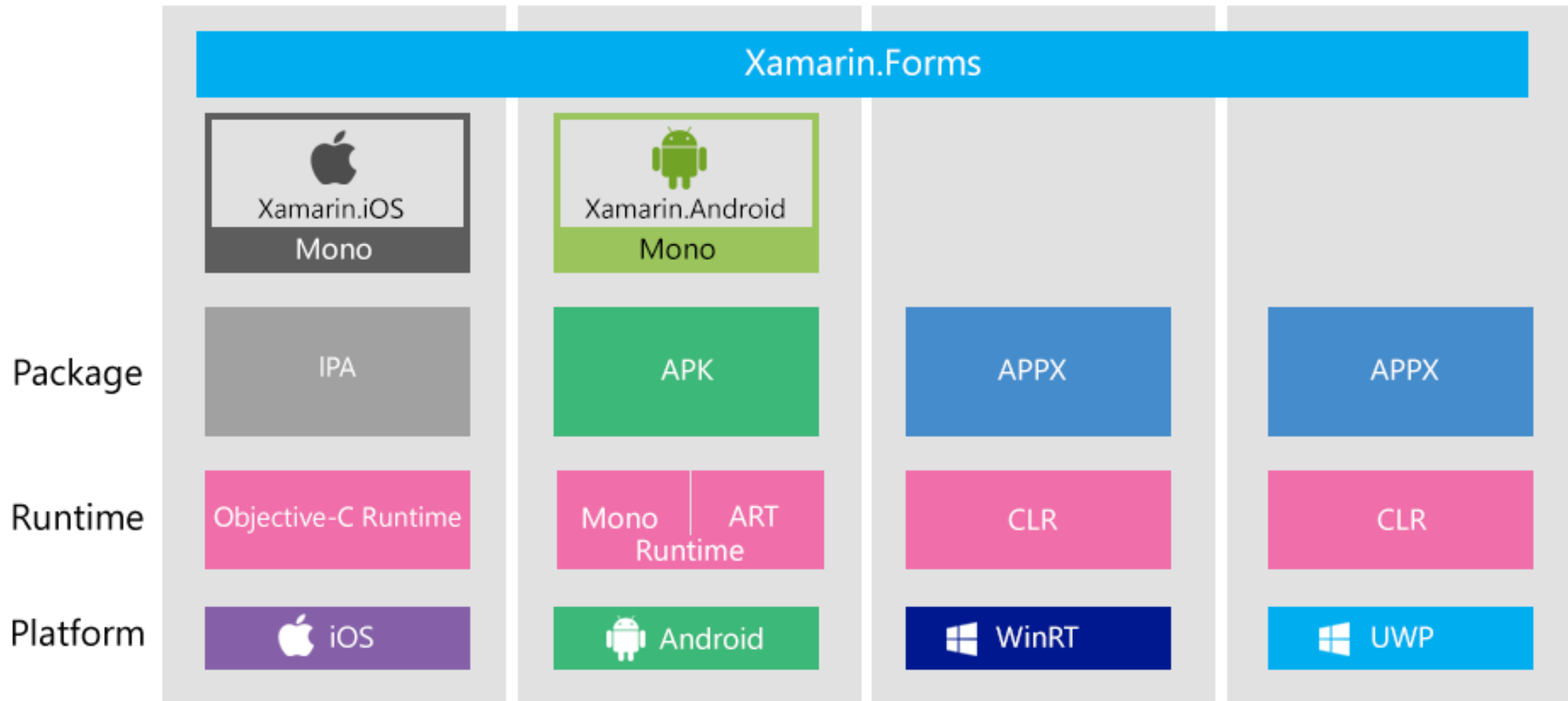
- Limited Dynamic Language Support
- Limited Generics Support
- Limited Sharing of UI Code Across iOS, Mac and Android
- Limited .NET API Support

Xamarin Forms

- A UI library which is compiled for iOS, Android, and Windows phones devices to develop native cross platform app
- Provides Pages, Layouts, Views and Cells to develop UI
- Allows you to access the platform specific features through injection with UI customization and custom renderers

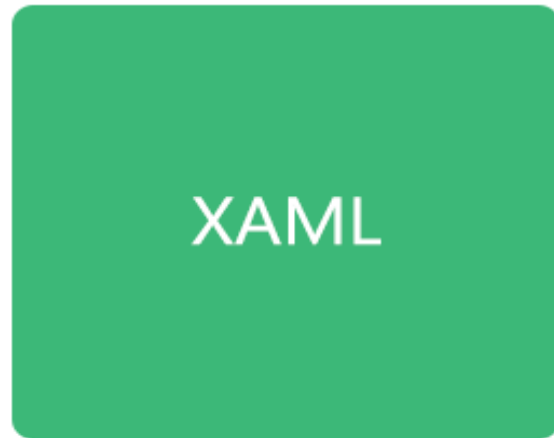


Xamarin.Forms Architecture



Xamarin Forms UI

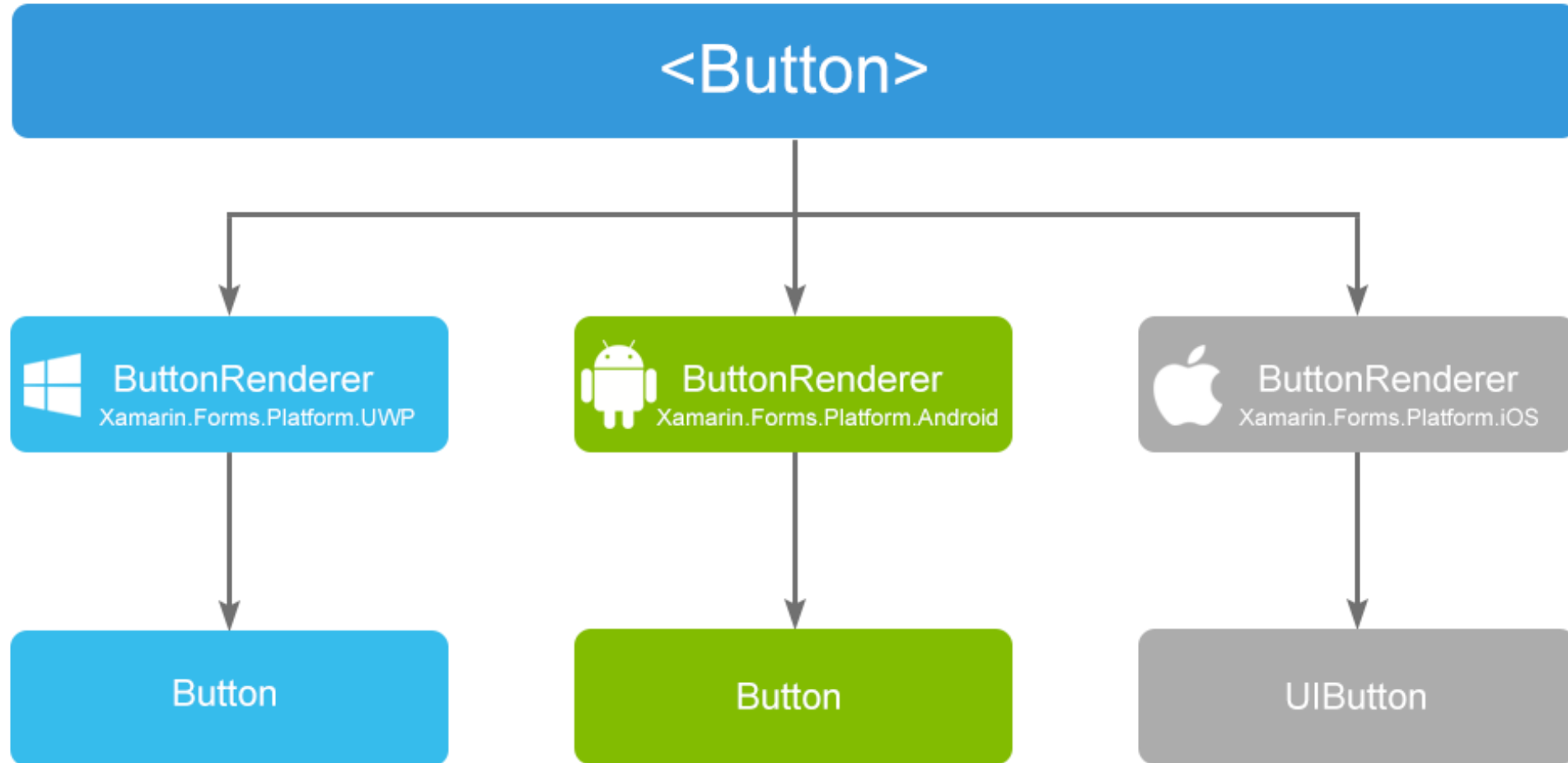
Visual appearance



Behaviour

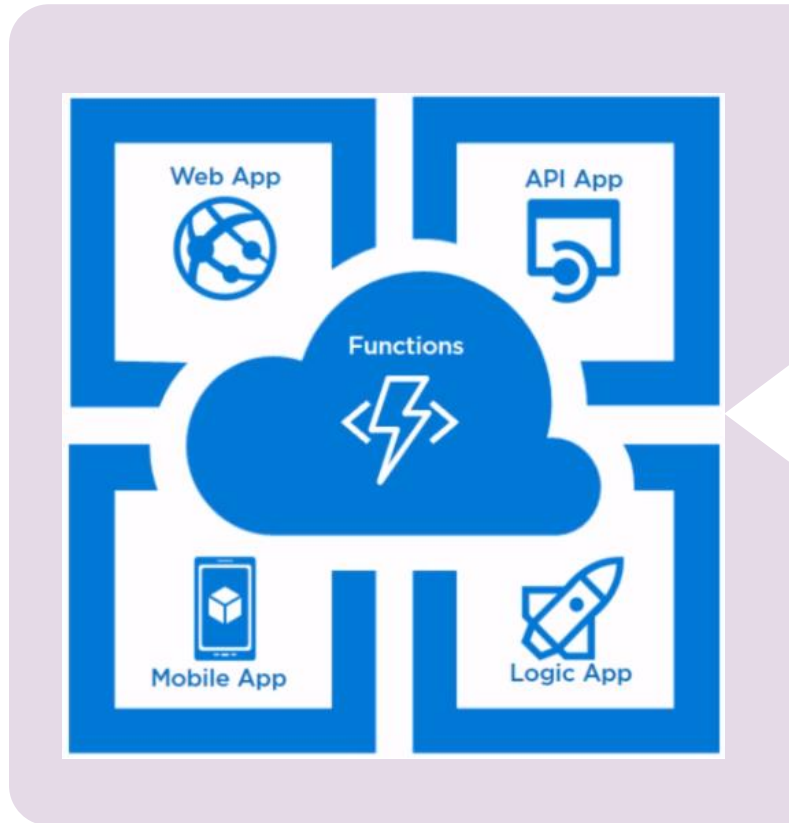


Xamarin Forms UI Rendering Process



Mobile + Cloud

Azure App Service



Build and scale great cloud apps

.NET, Java, Node.js, PHP, Python

Auto patching

Auto scale

Integration with existing apps

Continuous deployment

Why Azure Mobile Apps?

- Extremely powerful
- Flexible
 - Easy Tables (Node.js Backend)
 - App Service (ASP.NET Backend)
- Cross-platform client SDK
 - iOS, Android, and Windows
- Open source C#
 - Backend and Client SDKS on GitHub

Azure Mobile Apps




Xamarin, iOS,
Android &
Windows SDKs

Offline
sync








REST API

Offline Sync








Data connections








SQL Tables Mongo O365 API Apps

User Authentication




Facebook Twitter Microsoft Google Azure Active Directory


Push Notifications



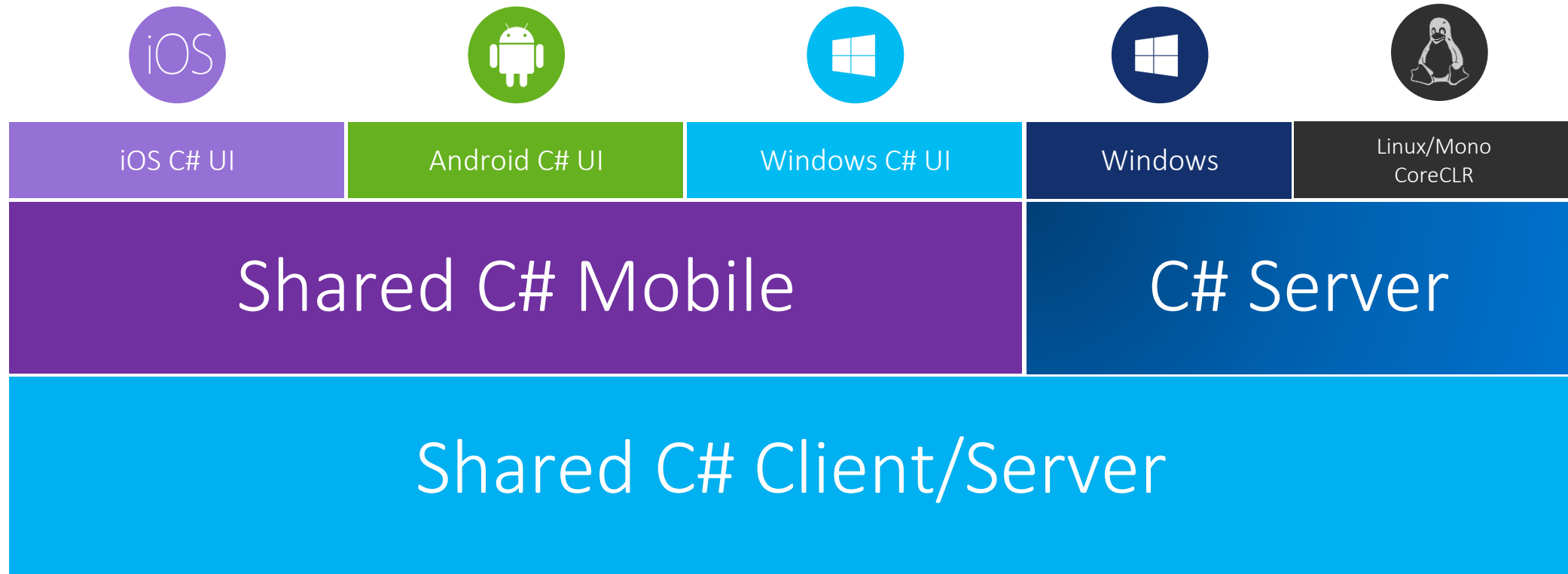
iOS Android Chrome Windows Kindle In-App

Backend code



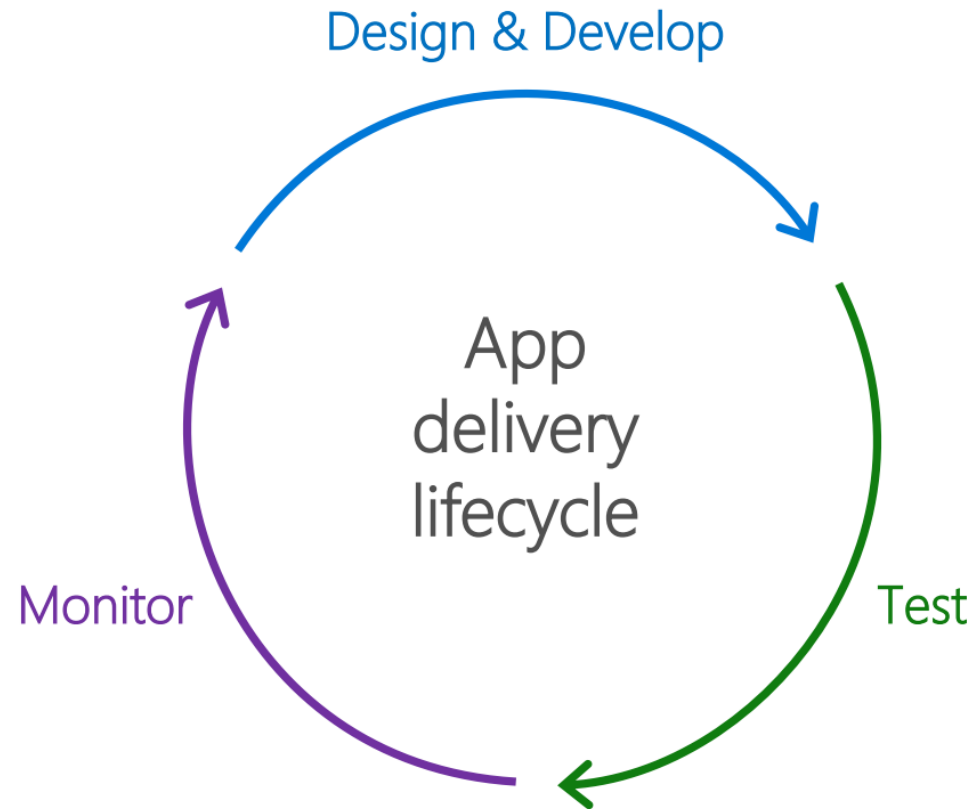


Mobile + Server (Xamarin and C#)

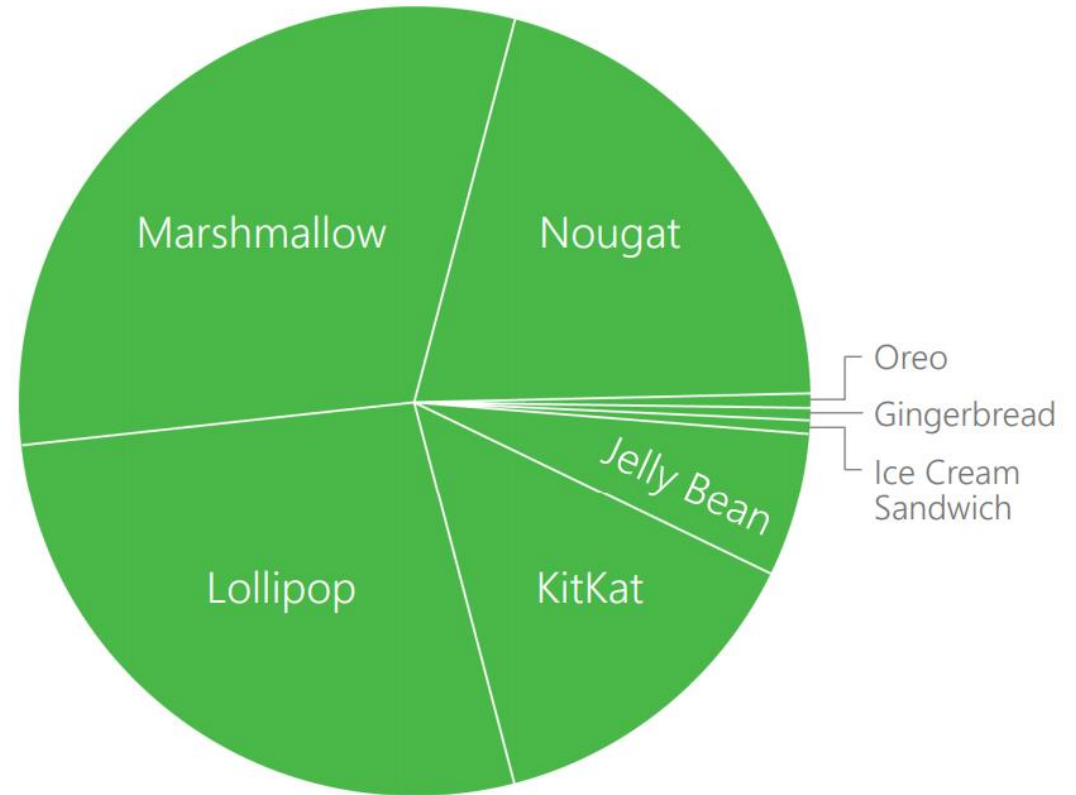
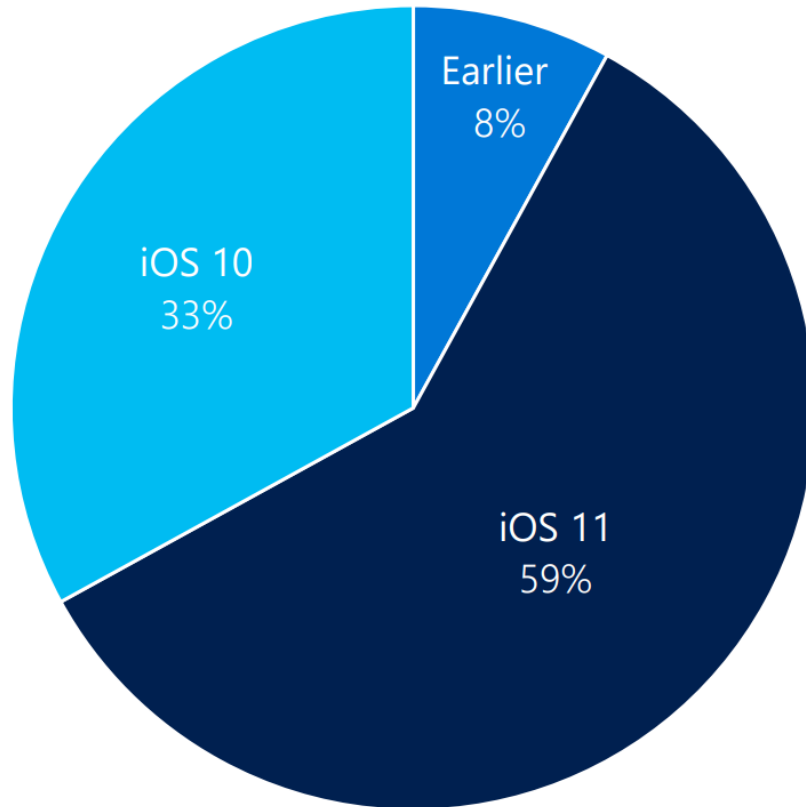


Shared C# codebase • 100% native API access • High performance

Mobile App Delivery Cycle



Testing on different OS Versions



Introducing Visual Studio App Center

The Platforms you need

- ✓ Android
- ✓ iOS
- ✓ UWP
- ✓ macOS (Preview)

The Frameworks you love

- ✓ Xamarin
- ✓ Java
- ✓ Obj-C/Swift
- ✓ React Native



What you can do with App Center?



Build



Test



Distribute



Crashes





Analytics





Push


Test the App on Real Devices


Test run – July 15th, 9:28 AM
18 tests



Calendar view



Add an event



Change view



Navigate between events


- Tap "Calendar" in the bottom bar
- Tap first calendar item
- Tap "Show More"



Mail view



Compose an email



Navigate between pivots, filter mes...




Search

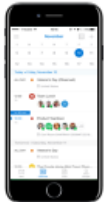

Batch operations

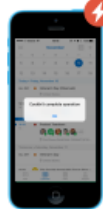

Files view



Add service

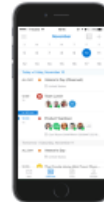

Calendar view / Navigate between events
Tap first calendar item

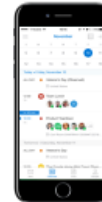
25%  



iPhone 7
iOS 11.0.3

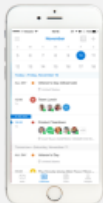

iPhone 5C
iOS 9.0.2

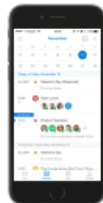

iPhone SE
iOS 9.0

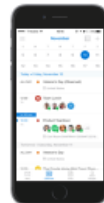

iPhone 6S
iOS 11.0.3

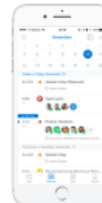

iPhone 7
iOS 11.0.3

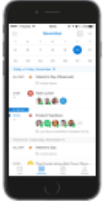

iPhone 4S
iOS 9.3.5

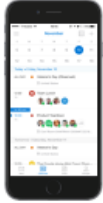

iPhone 6S Plus
iOS 11.1

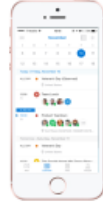

iPhone 6
iOS 10.0.2

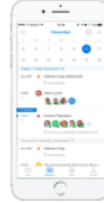

iPhone 6S
iOS 11.1

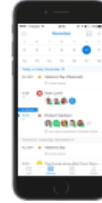

iPhone 7 Plus
iOS 11.1


iPhone 6

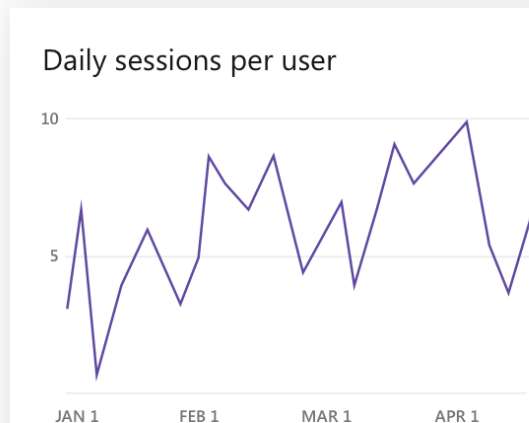
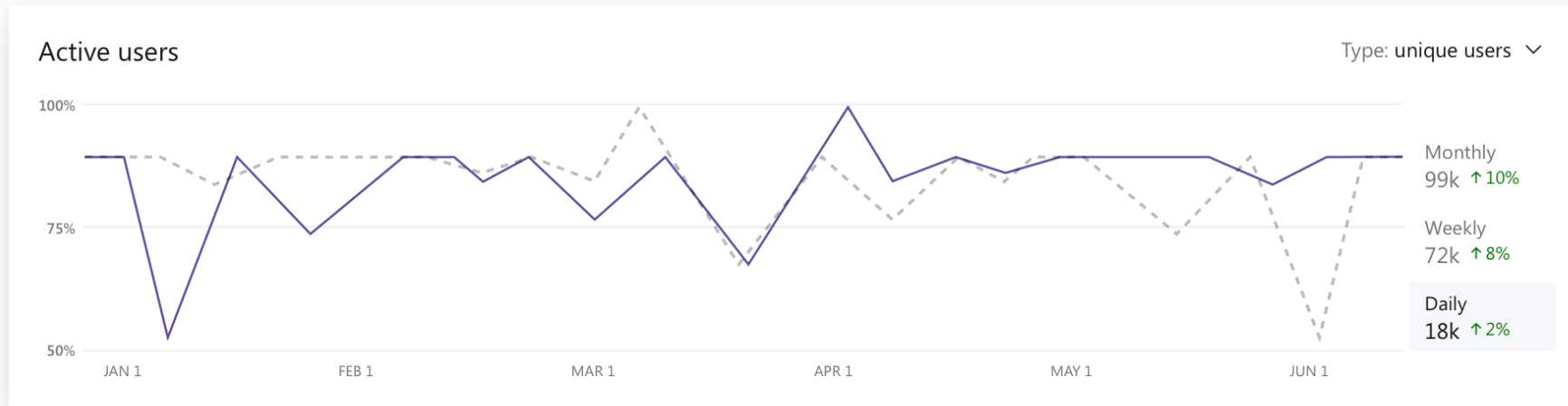

iPhone 6S


iPhone SE


iPhone 7 Plus

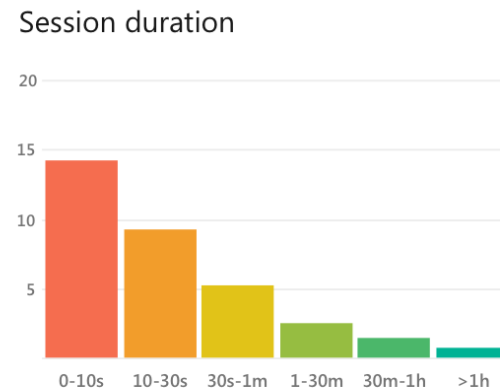

iPhone 6

App analytics, made for developers



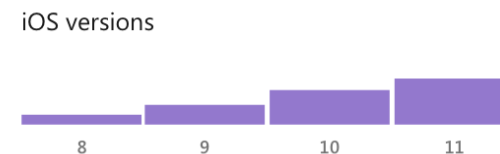
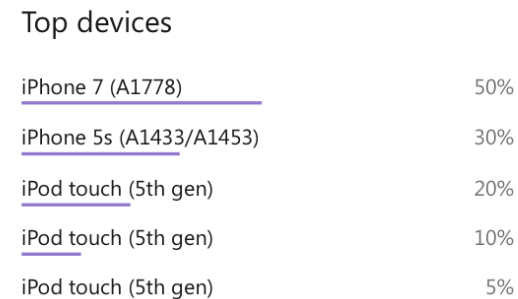
Total sessions
18k ↑ 10%

Avg. sessions per day
<1k ↓ 125.9%



Avg. Session length
4s ↑ 87.1%

Unknown sessions
180 ↑ 87.1%



Coding is Rhyme