



# 10 FACTS ABOUT XAMARIN



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pumpingco.de

@einRobby

#1

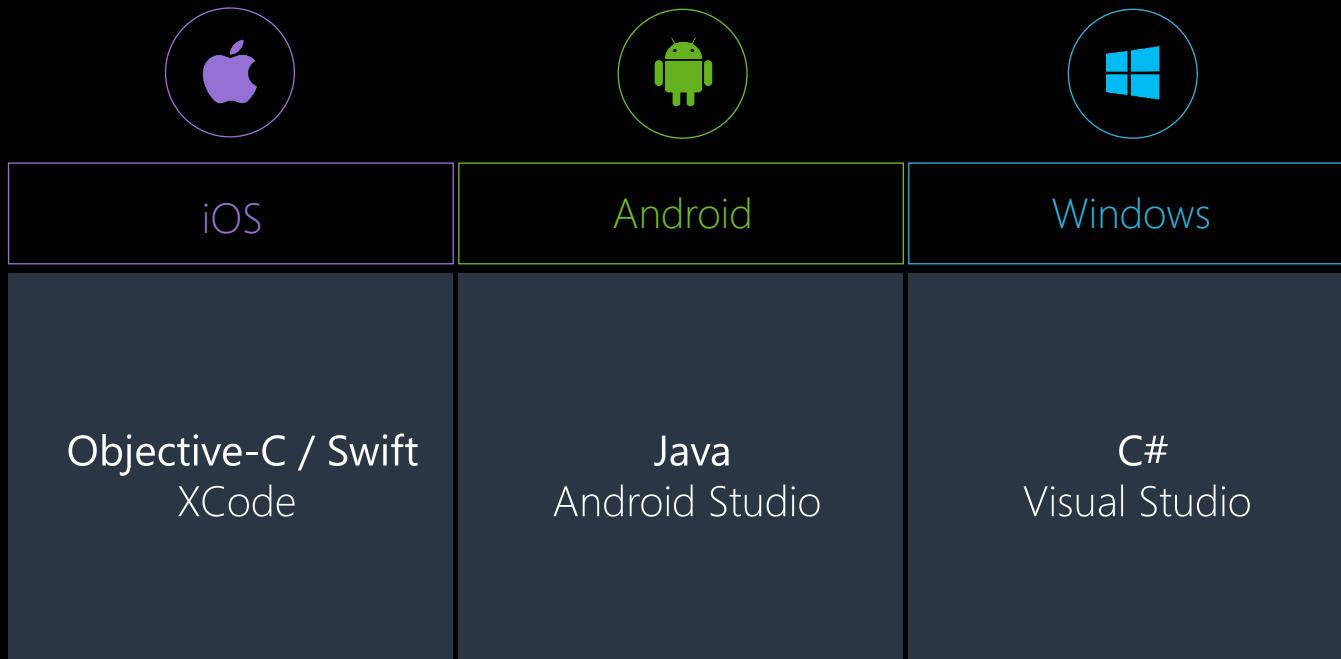
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NO HYBRID OR SILO SOLUTION

#1

# NO HYBRID OR SILO SOLUTION

## SILO APPROACH

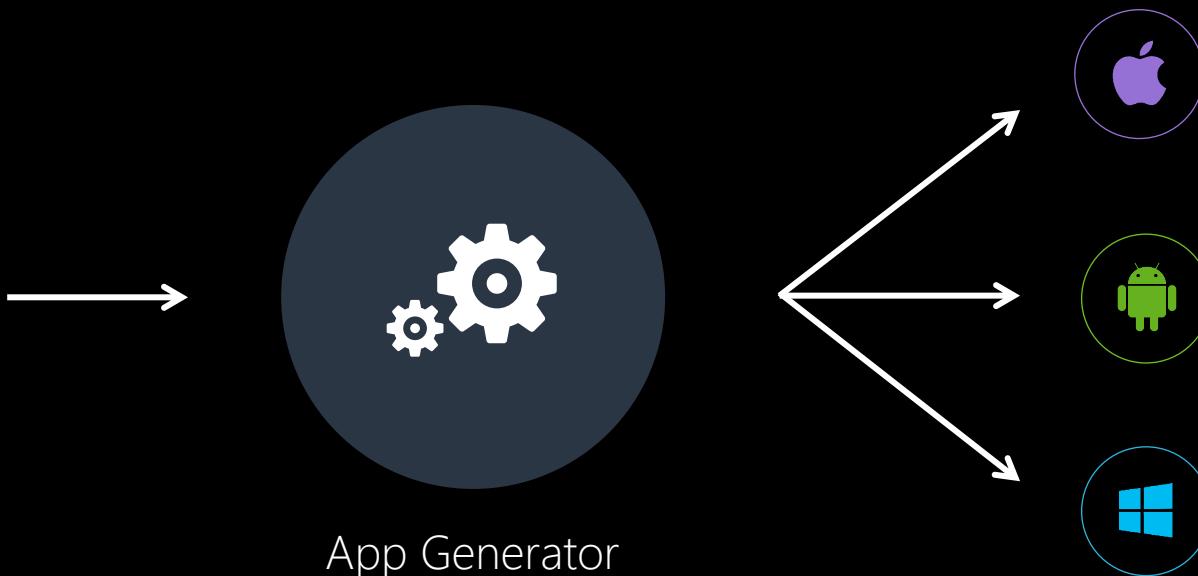


#1

# NO HYBRID OR SILO SOLUTION

HYBRID APPROACH

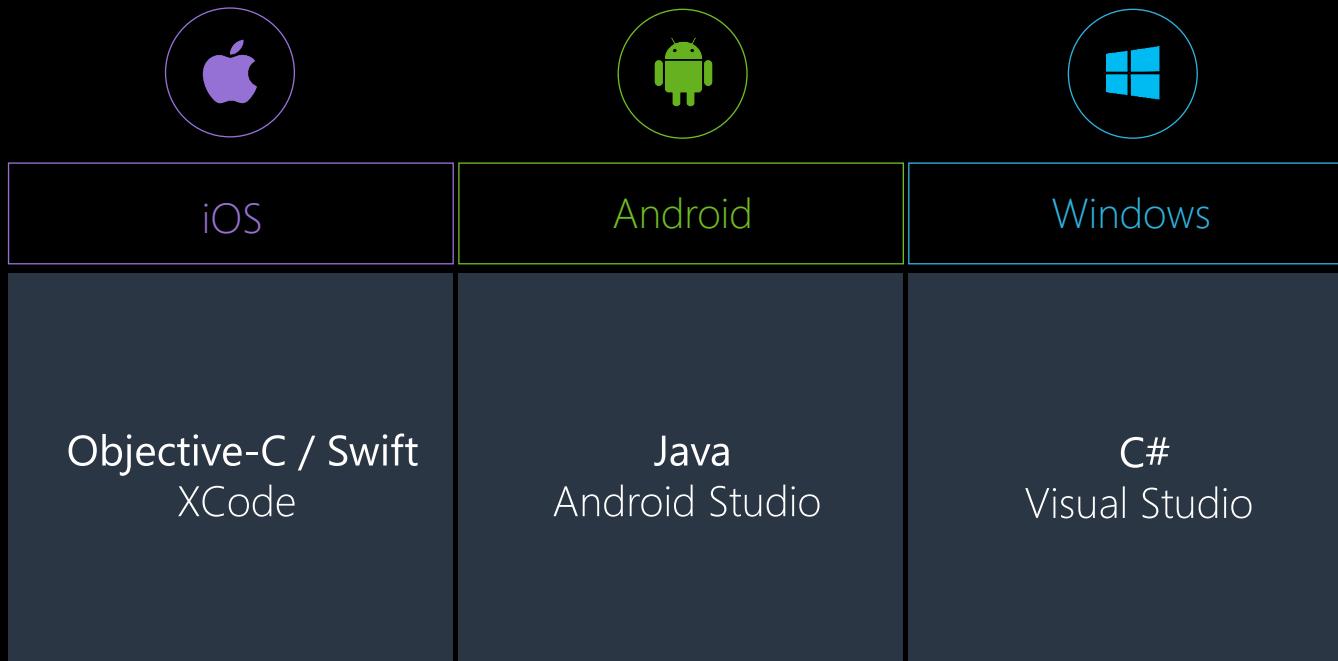
Lua  
Javascript  
Actionscript  
HTML+CSS



#1

# NO HYBRID OR SILO SOLUTION

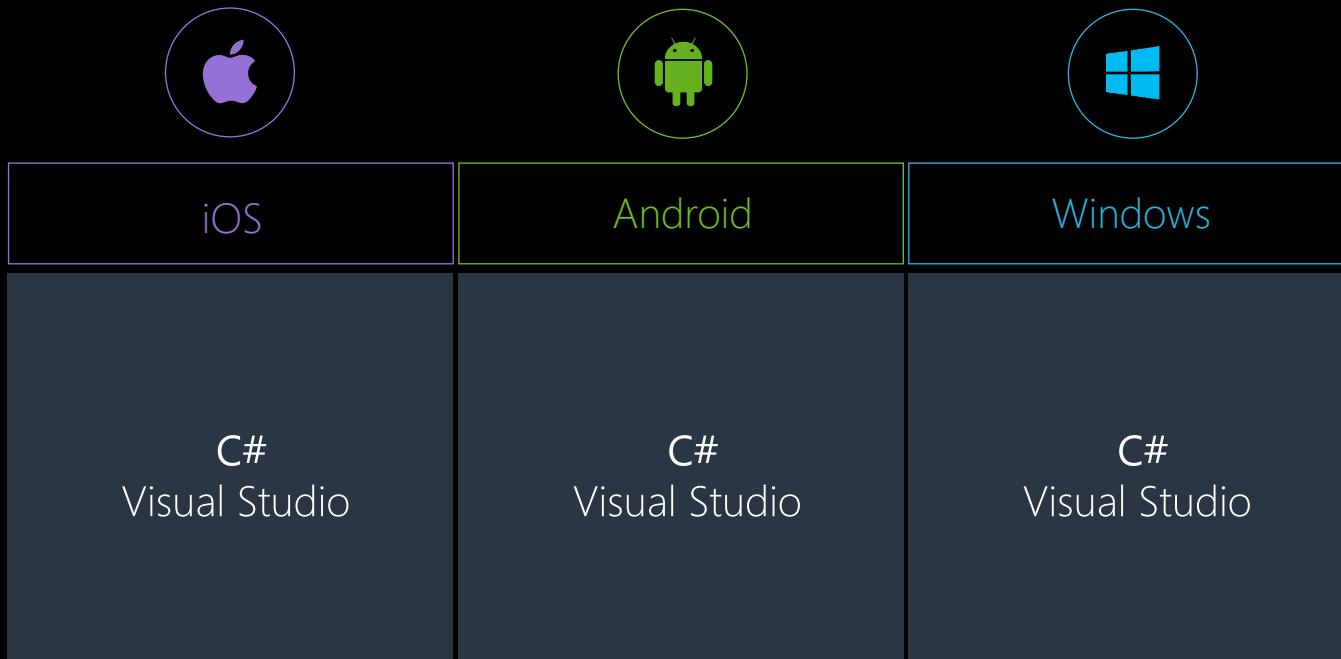
## SILO APPROACH



#1

# NO HYBRID OR SILO SOLUTION

## XAMARIN APPROACH



A photograph of a silver laptop resting on a dark wood desk. A large, semi-transparent white graphic of the number '#2' is overlaid on the center of the laptop's keyboard area. To the right of the laptop, a stack of several thick, light-colored books or notebooks is visible, along with a small container holding various colored pens and pencils.

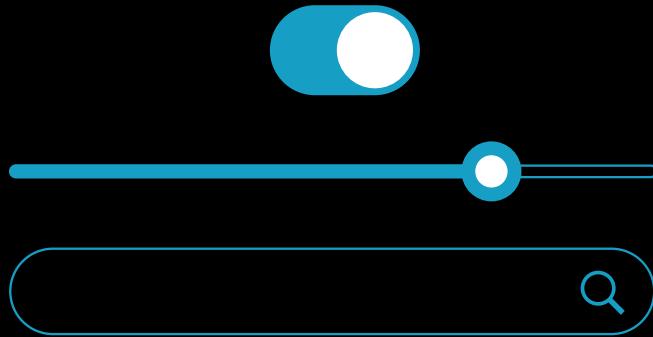
#2

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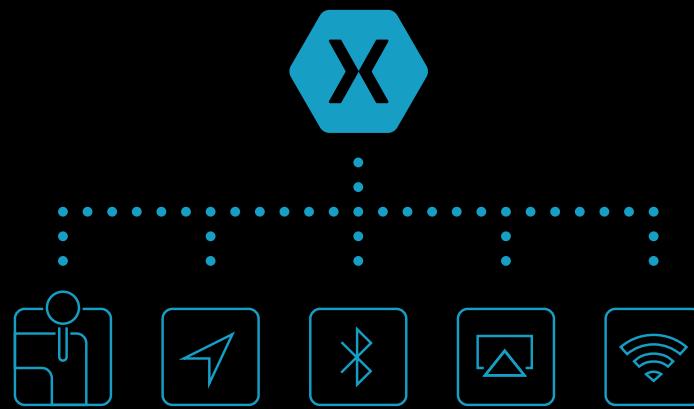
NATIVE APPS

#2

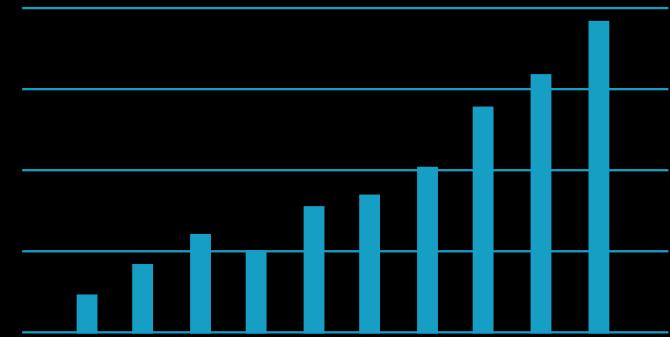
# NATIVE APPS



Native User Interface



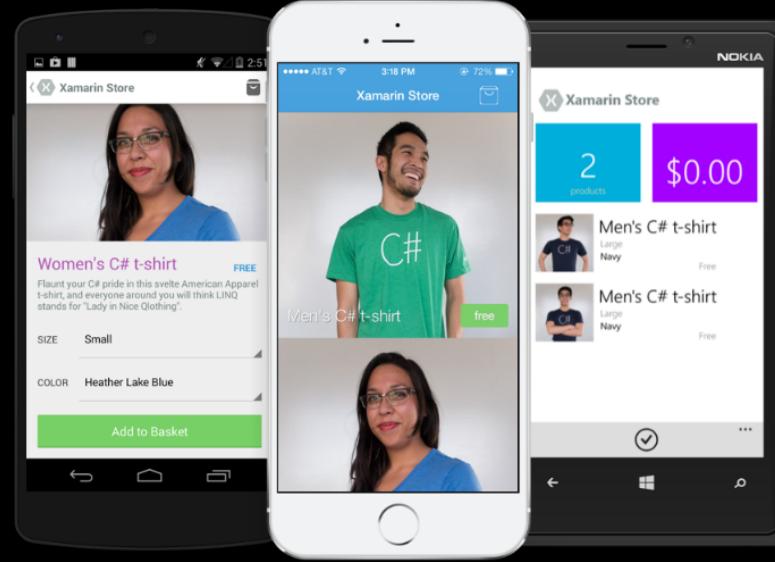
Native API Access



Native Performance

#2

# NATIVE APPS



Everything you can do in Objective-C, Swift, or Java,  
you can do in **C#** with Xamarin.

#2

## NATIVE APPS

100% API COVERAGE  
SAME DAY SUPPORT FOR iOS

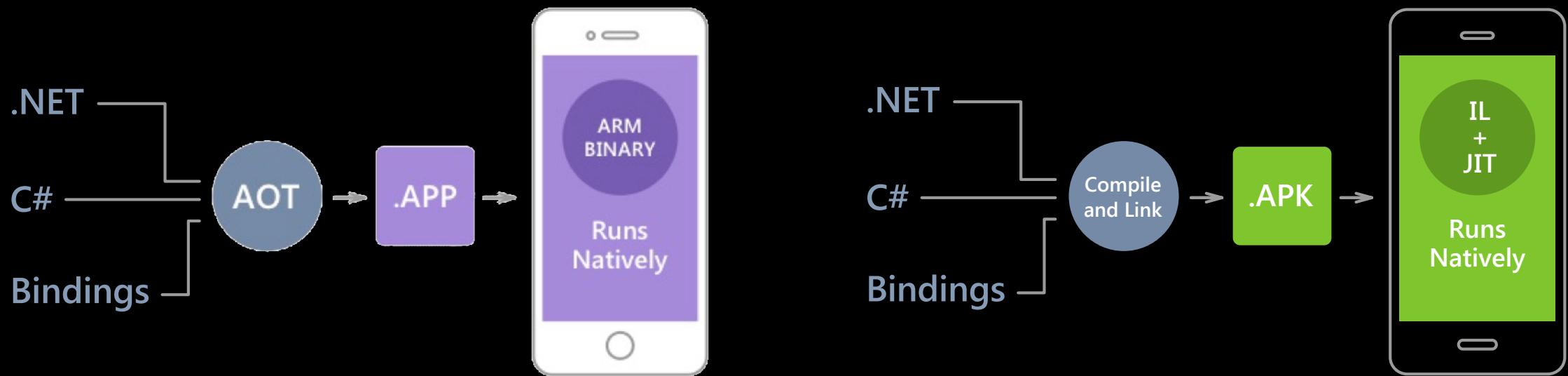
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## PLATTFORM SUPPORT

iOS, Android, Windows, Apple Watch, Google Glass, Android Wear, Amazon Fire OS, tvOS, macOS, ...

#2

# NATIVE APPS



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.

A photograph of a group of approximately ten people sitting around a campfire at night. The scene is dimly lit by the fire, with some blue light from a screen or tent visible in the background. The people are engaged in conversation, with some looking towards the camera and others looking away. The overall atmosphere is casual and social.

#3

UNIFIED PROGRAMMING LANGUAGE

#3

# UNIFIED PROGRAMMING LANGUAGE

MapKit

UIKit

iBeacon

CoreGraphics

CoreMotion

Text-to-speech

ActionBar

Printing Framework

Renderscript

NFC

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#

# #3 UNIFIED PROGRAMMING LANGUAGE

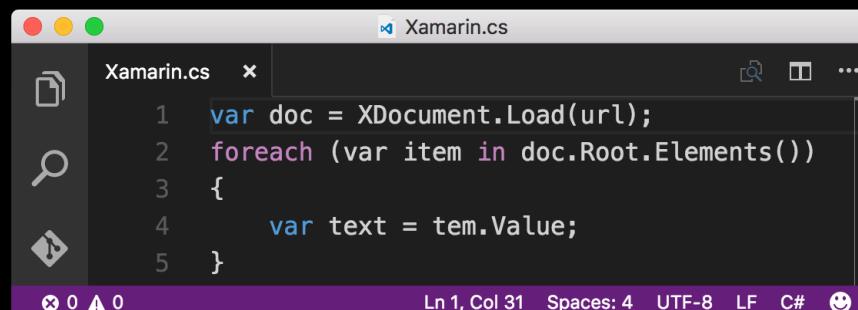


A screenshot of a Mac OS X-style interface showing a code editor window titled "Xamarin.cs". The code in the editor is:

```
1 from p in Table<Person>()
2     where p.Id == Id
3     select p;
```

The status bar at the bottom shows: Ln 3, Col 14 Spaces: 4 UTF-8 LF C# 😊

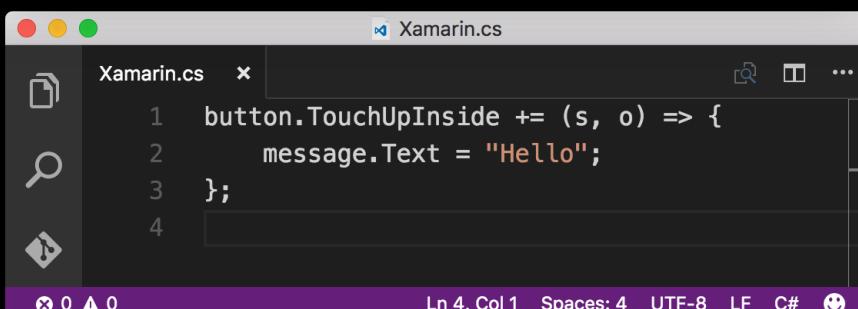
LINQ Support



```
1 var doc = XDocument.Load(url);
2 foreach (var item in doc.Root.Elements())
3 {
4     var text = item.Value;
5 }
```

The status bar at the bottom shows: Ln 1, Col 31 Spaces: 4 UTF-8 LF C# 😊

Work with XML easily



```
1 button.TouchUpInside += (s, o) => {
2     message.Text = "Hello";
3 };
4
```

The status bar at the bottom shows: Ln 4, Col 1 Spaces: 4 UTF-8 LF C# 😊

Event Handling & Delegates

# #3 UNIFIED PROGRAMMING LANGUAGE



A photograph of a group of people gathered around a campfire at night. One person in the foreground is holding a book, possibly reading from it.

```
Xamarin.cs
1 public class Person
2 {
3     public string Name { get; set; }
4     public DateTime Birthday { get; set; }
5 }
6
7 var person =
8     new Person() {
9         Name = "Bob",
10        Birthday = new DateTime(1987, 2, 2)};
11
12 // Serialization
13 var json = JsonConvert.SerializeObject(person);
14
15 // Deserialization
16 person = JsonConvert.DeserializeObject<Person>(json);
17
```

x 0 ▲ 0      Ln 17, Col 1   Spaces: 4   UTF-8   LF   C#   ☺

## JSON

Json.NET offers simple conversations  
to/from JSON strings and .NET objects



#4

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SHARED BUSINESS LOGIC

#4

# SHARED BUSINESS LOGIC



iOS



Android



Windows

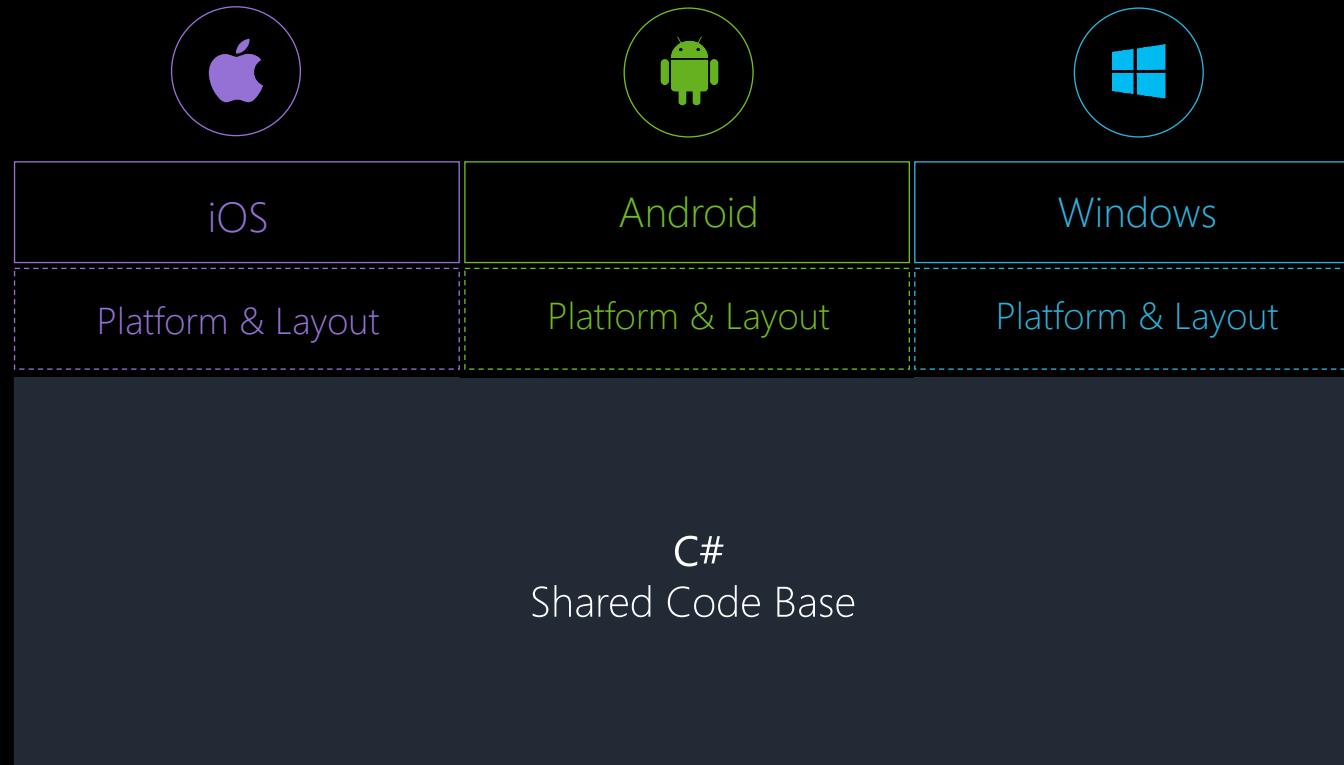
C#  
iOS Code

C#  
Android Code

C#  
iOS Code

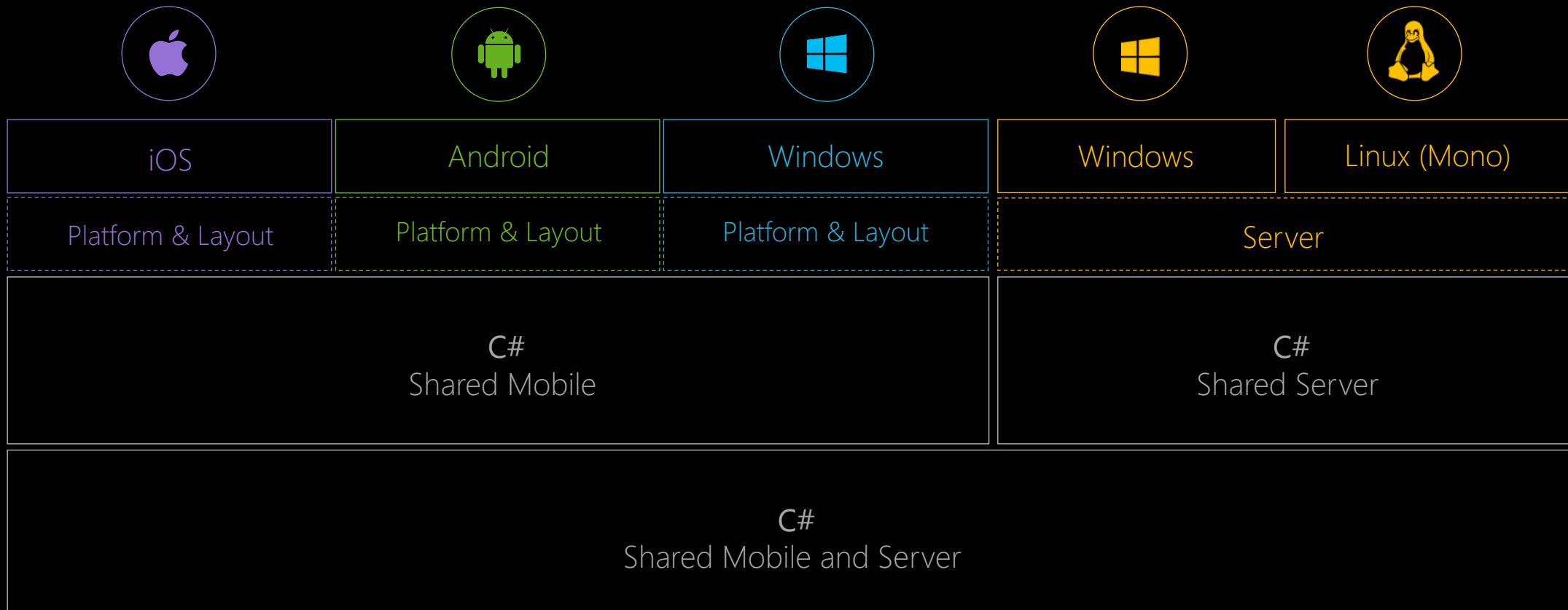
#4

# SHARED BUSINESS LOGIC



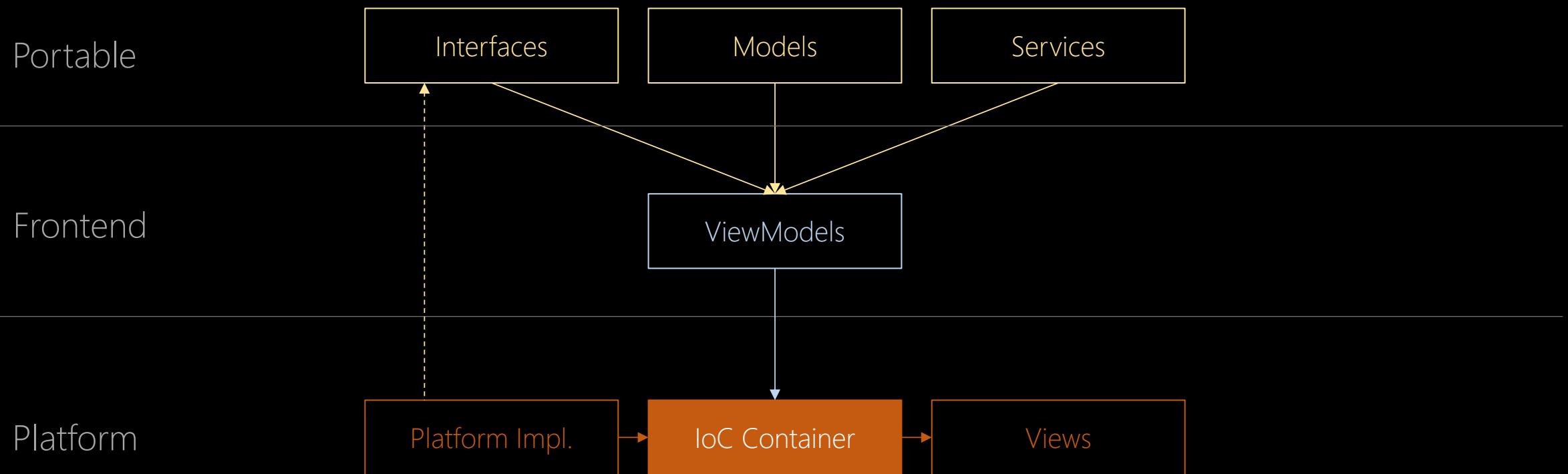
#4

# SHARED BUSINESS LOGIC



#4

# SHARED BUSINESS LOGIC





#5

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UNIFIED DEVELOPMENT ENVIRONMENT

# #5 UNIFIED DEVELOPMENT ENVIRONMENT



The image shows a wooden workbench with various hand tools such as hammers, wrenches, and pliers scattered across it, symbolizing a traditional workshop environment.

**Visual Studio macOS**

**Solution Explorer**

**Code Editor**

```
Polenalarm - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
Solution Explorer
Server Explorer
Toolbox
SQL Server Object Explorer
Search Solution Explorer (Ctrl+U)
Solution 'Polenalarm' (10 projects)
Backend
Core
Frontend
Shared
Xamarin.Forms
  Pollenalarm.Frontend.Forms (Portable)
    Properties
    References
    Converters
    CustomRenderers
    MarkupExtensions
    Properties
    Resources
    Services
    Views
    App.xaml
    Bootstrapper.cs
  MainPage.xaml
    MainPage.xaml.cs
    packages.config
  Pollenalarm.Frontend.Forms.Droid
  Pollenalarm.Frontend.Forms.iOS
  Pollenalarm.Frontend.Forms.UWP
  Pollenalarm.Frontend.Forms.Windows
  Pollenalarm.Frontend.Forms.WinPhone
Shared
MainPage.xaml.cs
Web.config
DataTableHelper.cs
PollutionUpdate.cs
PollutionController.cs
PollutionService.cs
PlacesList_ItemSelected(object sender, SelectedItemC...
Properties
Notifications
```

This screenshot illustrates a "Unified Development Environment" where multiple mobile application frameworks (Xamarin.Forms, Droid, iOS, UWP, Windows, WinPhone) are managed from a single IDE (Visual Studio). The left pane shows the solution structure with ten projects under the 'Polenalarm' solution. The right pane displays the code editor for the 'MainPage.xaml.cs' file, which contains C# code for Xamarin.Forms. The status bar at the bottom indicates the file is 49 lines long, column 2, character 2, and in insert mode (INS).

VISUAL STUDIO  
Windows

VISUAL STUDIO  
macOS

# #5 UNIFIED DEVELOPMENT ENVIRONMENT



MAC BUILD HOST  
in your network

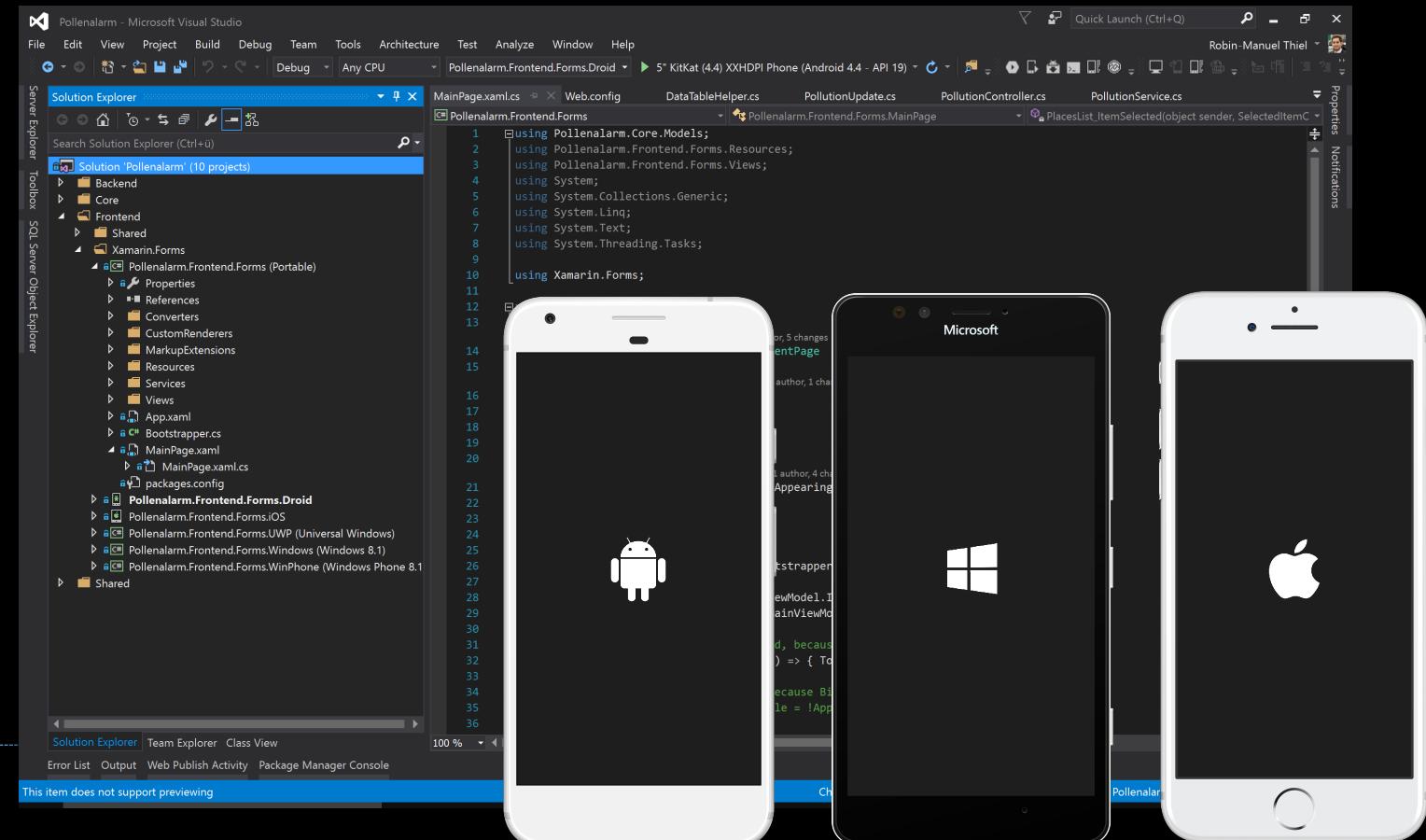
The screenshot shows the Microsoft Visual Studio interface with the title "Pollenalarm - Microsoft Visual Studio". The "Solution Explorer" pane on the left lists a solution named "Pollenalarm" containing ten projects: Backend, Core, Frontend (which is expanded to show Shared, Xamarin.Forms, and Pollenalarm.Frontend.Forms.Droid), and Shared. The "MainPage.xaml.cs" file is open in the "Code Editor" pane on the right. The code is as follows:

```
1  using Pollenalarm.Core.Models;
2  using Pollenalarm.Frontend.Forms.Resources;
3  using Pollenalarm.Frontend.Forms.Views;
4  using System;
5  using System.Collections.Generic;
6  using System.Linq;
7  using System.Text;
8  using System.Threading.Tasks;
9
10 using Xamarin.Forms;
11
12 namespace Pollenalarm.Frontend.Forms
13 {
14     5 references | Robin-Manuel Thiel, 21 days ago | 1 author, 5 changes
15     public partial class MainPage : ContentPage
16     {
17         1 reference | Robin-Manuel Thiel, 97 days ago | 1 author, 1 change
18         public MainPage()
19         {
20             InitializeComponent();
21         }
22
23         7 references | Robin-Manuel Thiel, 21 days ago | 1 author, 4 changes
24         protected override async void OnAppearing()
25         {
26             base.OnAppearing();
27
28             if (BindingContext == null)
29                 BindingContext = App.Bootstrapper.MainViewModel;
30
31             if (!App.Bootstrapper.MainViewModel.IsLoaded)
32                 await App.Bootstrapper.MainViewModel.RefreshAsync();
33
34             // Hide Add button on Android, because we use the Floating Action Button here
35             Device.OnPlatform(Android: () => { ToolbarItems.Remove(AddItem); });
36
37             // Hide No-Places-Warning, because Binding does not work
38             // lblNoPlacesWarning.Visible = !App.Bootstrapper.MainViewModel.Places.Any();
39         }
40     }
41 }
```

# #5 UNIFIED DEVELOPMENT ENVIRONMENT



MAC BUILD HOST  
in your network



Emulators and Simulators  
Remote iOS Simulator on Windows

A photograph of a person working on a laptop at a wooden desk. The desk is decorated with a vase of white flowers, a small potted succulent, and a cup of coffee. The person's hands are visible on the laptop keyboard. In the background, there are shelves with books and other items.

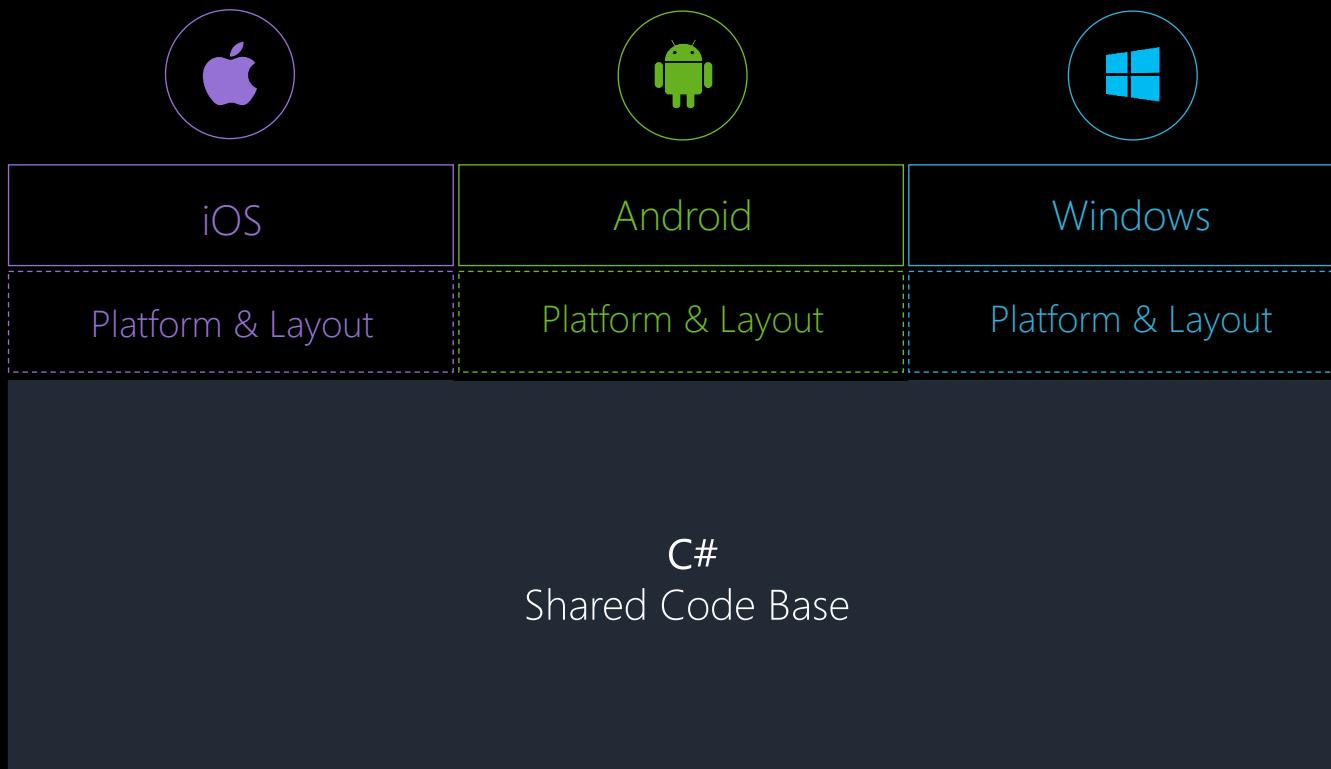
#6

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LAYOUT CAN BE SHARED

#6

# LAYOUT CAN BE SHARED



#6

# LAYOUT CAN BE SHARED



iOS



Android



Windows

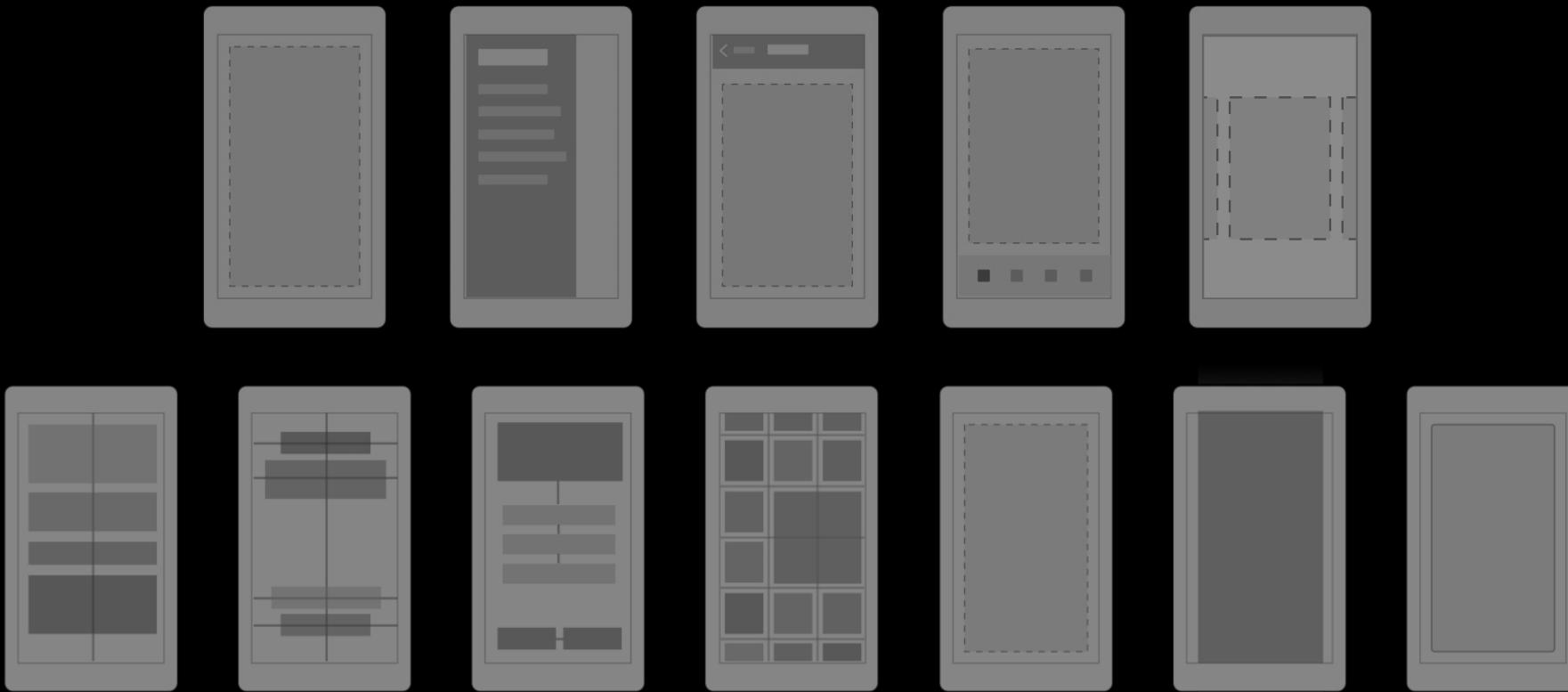
Shared Layout with Xamarin.Forms

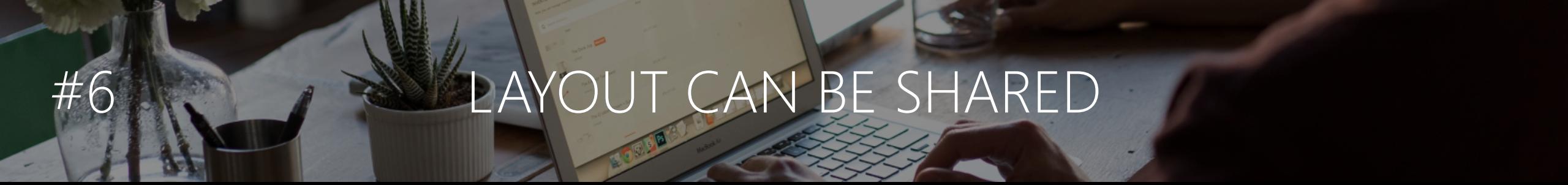
C#

Shared Code Base

#6

# LAYOUT CAN BE SHARED





#6

# LAYOUT CAN BE SHARED

## RAPID PROTOTYPING

FAST RESULTS, SUITABLE FOR SIMPLE UI,  
INSTANT CROSS-PLATFORM

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## PERFORMANCE AWARENESS

RENDERING MOSTLY AT RUNTIME  
PERFORMANCE ISSUES BY MORE COMPLEX LAYOUT



#7

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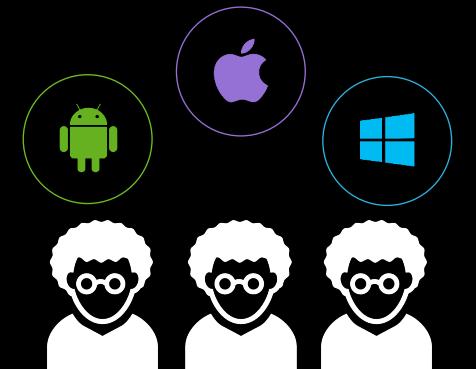
FREE FOR EVERYONE

#7

FREE FOR EVERYONE

\$999.00

Developer / Platform / Year  
BEFORE MICROSOFT



=

\$6K

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3 DEVELOPERS  
ALLE PLATFORMS

PER YEAR

#7

FREE FOR EVERYONE

# VISUAL STUDIO LICENSE

WITH MICROSOFT



Visual Studio Community

free

Restricted Usage



Visual Studio Professional

from 45 \$ / Month

Team Features



Visual Studio Enterprise

from 250 \$ / month

DevOps

#8

OPEN SOURCE



#8

# OPEN SOURCE



# HANDED OVER TO THE .NET FOUNDATION

# SOURCE CODE AT GITHUB

# ACTIVE COMMUNITY CONTRIBUTIONS

## COMMUNITY GETS INTEGRATED

## FUTURE-PROOF

A photograph of a wooden boardwalk with railings, leading into a dense forest. The perspective is from the middle of the boardwalk, looking down its length.

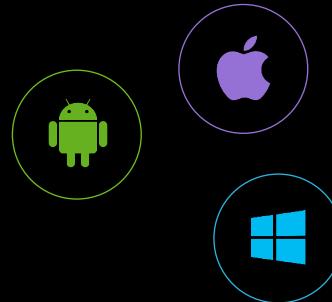
#9

---

NO MAGIC BULLET

#9

# NO MAGIC BULLET



C#

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PLATTFORM KNOWLEDGE

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LANGUAGE KNOWLEGDE

## SOME HIDDEN TRAPS

very clean architecture highly recommend  
some performance traps  
multiple garbage collectors

A photograph of a person's feet resting on the deck of a green kayak. The kayak is positioned in the foreground, facing towards a calm lake. In the background, there are dark, silhouetted evergreen trees lining the shore, and further back, a range of mountains with some snow-capped peaks under a cloudy sky.

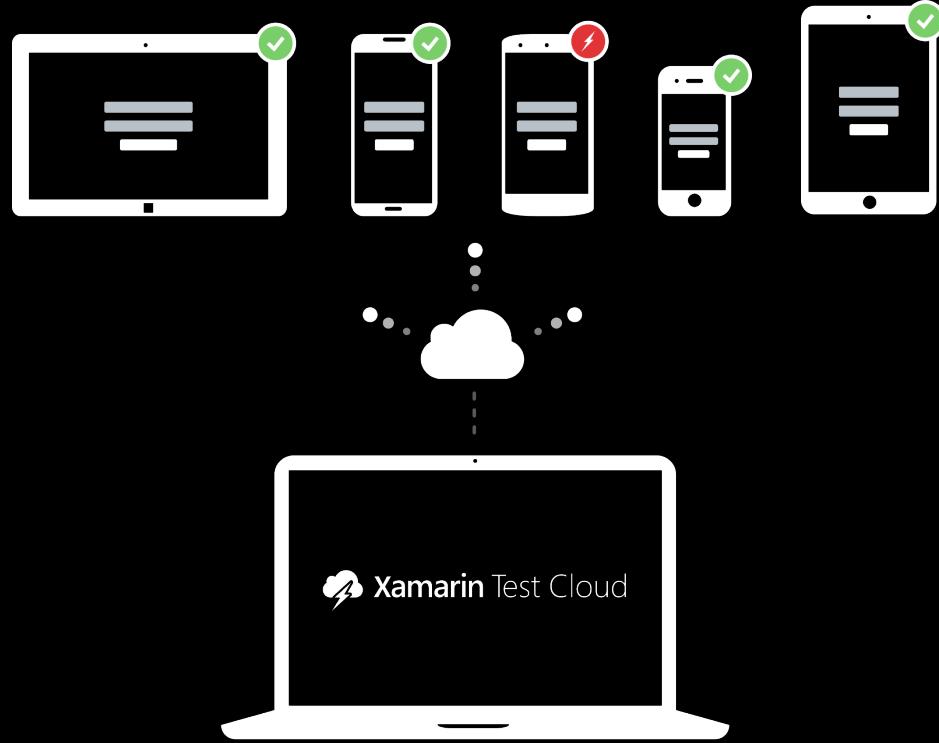
#10

---

MORE THAN JUST APP DEVELOPMENT

#10

# MORE THAN JUST APP DEVELOPMENT



## AUTOMATED TESTING

Test your apps on thousands of physical devices at once  
and detect bugs earlier

#10

MORE THAN JUST APP DEVELOPMENT



Xamarin  
University

CERTIFIED XAMARIN DEVELOPER

High-class learning content for Cloud- and App Development  
Live courses from certified experts

#10

# MORE THAN JUST APP DEVELOPMENT

The screenshot shows the Visual Studio Mobile Center interface. On the left, a sidebar lists various project management and monitoring tools: Getting started, Build, Test, Distribute, Tables, Identity, Crashes, and Analytics. The main area is divided into three sections: **Branches**, **Build**, and **Analytics**.

**Branches:** Shows a list of branches including master, release-1.3.0, release-1.3.1, development, push-sdk-support, feature-twitter-share, and release-1.1.10.

**Build:** Shows the build configuration for the master branch, which automatically builds on push. It includes fields for SCHEME (Release), PROVISIONING (Ride360Provision), and CERTIFICATE (BikeSharing). Below this, the **LAST COMMIT** is shown: "Merge pull request #133 from bikesharing360/ride360-new-welcome" by Christina Young, 10min ago, with a "Build now" button. The **BUILDS** section lists recent builds with details like commit message, status (BUILDING, BUILT, FAILED), timestamp, and date.

Build	Status	Date
New specs for locate bikes nearby Patricia Hart	BUILDING	10min ago
New welcome flow about to land Christina Young	BUILT	10min ago
Fix misaligned button on KitKat 4.4.3 Jessica Steger	BUILT	2h ago
Typo Jessica Steger	FAILED	6h ago
Fix missing dependency, adding md5 for assets James Montemagno	BUILT	Yesterday
Release 1.1.10 Carl Henderson	BUILT	Yesterday
Change ButtonGroup and Button imports to rent history Lawrence Collins	BUILT	Yesterday
API changes on locate nearby bikes callbacks Bruce Curtis	FAILED	Yesterday
Prevent errors and warnings in tests. Jessica Steger	BUILT	Yesterday
Fix styles Christina Young	BUILT	Yesterday
Release 1.1.7 James Montemagno	BUILT	Yesterday

**Analytics:** This section is partially visible at the bottom of the screenshot.



Visual Studio  
Mobile Center

Build

Test

Distribute

Crashes

Analytics



# THANK YOU

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