Mobile Development with Xamarin

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What is Native?
Architecting Mobile Apps
Silo approach

<table>
<thead>
<tr>
<th>iOS</th>
<th>Android</th>
<th>Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective-C/Swift Xcode</td>
<td>Java Android Studio</td>
<td>C# Visual Studio</td>
</tr>
</tbody>
</table>

No shared code • Many languages and development environments • Multiple teams
Write once, run anywhere

Lua → App generator → iOS
Javascript → App generator → Android
Actionscript → App generator → Windows
HTML+CSS → App generator → Universal

Limited native API access • Slow performance • Poor user experience
Xamarin’s unique approach

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

Shared C# logic

Shared C# codebase • 100% native API access • High performance
How Xamarin Works
Windows APIs

C#
iOS—100% API coverage

<table>
<thead>
<tr>
<th>MapKit</th>
<th>UIKit</th>
<th>iBeacon</th>
<th>CoreGraphics</th>
<th>CoreMotion</th>
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<tr>
<td>System.Net</td>
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<td>System.IO</td>
<td>System.Linq</td>
<td>System.Xml</td>
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Android—100% API coverage

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<tr>
<th>Text-to-speech</th>
<th>actionBar</th>
<th>Printing Framework</th>
<th>Renderscript</th>
<th>NFC</th>
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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.
Always up-to-date

Same-day support:
- iOS 5
- iOS 6
- iOS 7
- iOS 8
- iOS 9
- iOS 10
- iOS 11

Full support for:
- Apple Watch
- Apple TV
- Android Wear
- Amazon Fire TV
- Google Glass
- and much more
Anything you can do in Objective-C, Swift, or Java can be done in C# with Xamarin.
Demo

Xamarin End-to-End
Sharing User Interface
Xamarin.Forms—Cross Platform UI

Shared UI Code

Shared C# Logic

Shared Native User Interface

Shared App Logic
What’s included

- 40+ Pages, layouts, and controls (Build from code behind or XAML)
- Two-way data binding
- Navigation
- Animation API
- Dependency Service
- Messaging Center
Native UI from shared code

```xml
<?xml version="1.0" encoding="UTF-8"?>
<TabbedPage xmlns="http://xamarin.com/schemas/2014/forms"
            xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
            x:Class="MyApp.MainPage">
  <TabbedPage.Children>
    <ContentPage Title="Profile" Icon="Profile.png">
      <StackLayout Spacing="20" Padding="20"
                  VerticalOptions="Center">
        <Entry Placeholder="Username"
               Text="{Binding Username}"/>
        <Entry Placeholder="Password"
               Text="{Binding Password}" IsPassword="true"/>
        <Button Text="Login" TextColor="White"
                BackgroundColor="#77D065"
                Command="{Binding LoginCommand}"/>
      </StackLayout>
    </ContentPage>
    <ContentPage Title="Settings" Icon="Settings.png"> <!-- Settings -->
    </ContentPage>
  </TabbedPage.Children>
</TabbedPage>
```
Demo

Xamarin.Forms
Xamarin Live Player
Xamarin Platform is included in Visual Studio Including Community Edition
Xamarin and Xamarin.Forms ecosystem
Take free self-guided courses that cover the core Xamarin concepts and count towards certification. Register at: university.xamarin.com/self-guided

Get a full subscription for live classes, advanced topics, and to complete certification. Sign up at: xamarin.com/university
Implementing a simple Azure Function with a Xamarin.Forms client

by Laurent Bugnion
Last updated: 1/27/2018
Edit on GitHub

http://gslb.ch/c84s
Resources

- Getting started with Xamarin
  http://developer.xamarin.com

- Xamarin University
  http://university.xamarin.com

- Xamarin Evolve conference
  http://evolve.xamarin.com

- MVVM Light and Xamarin
  http://gslb.ch/evolve14

- More MVVM Light and Xamarin
  http://gslb.ch/evolve16

All you need at
http://gslb.ch/baden18

- Xamarin Live Player
  http://gslb.ch/c26s

- Forms embedding in Native
  http://gslb.ch/c56s

- Native embedding in Forms
  http://gslb.ch/c55s

- Azure App Center
  https://appcenter.ms

@LBugnion | http://galasoft.ch | LBugnion@microsoft.com
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