

# Xamarin

# Mobile Cross-platform

김영욱 Sr. Technical Evangelist  
Microsoft / DX / 부장  
<http://YoungWook.com>



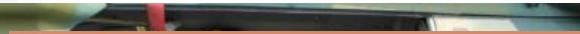
# Github

<https://github.com/koreaeva/xamarin>

## [직장인] 김영욱 부장 “꽃보다 밀덕”

좋아요 31 트윗 6 g+ 0 마우

김영욱 한국마이크로소프트 개발자플랫폼사업부 부장의 별명은 '밀덕'이다. 밀덕은 '밀 줄임말이다. 보통 군사나 총기 정보에 대해 관심이 많고 지식이 풍부한 마니아를 가리킨다.



# NEWS

2014-10-30  
updated 09:14

## 뉴스

## 스포츠

## 시사 다큐

인터넷 스페셜 | 지역 뉴스 | 시청자 광

전체 정치 경제 사회 국제 IT·과학 문화·연예 라이프

[최신뉴스] 트레이

·뉴스 > IT·과학 > 차정인기자의 T-Time

## IT·과학

### [106회] 판옥선과 귀신폭탄…‘명량’에 숨겨진 진실

입력 2014.09.11 (18:37) | 수정 2014.09.15 (18:45)

표준 화질

고화질

공감 횟수 6 댓글 0



GET IT GEAR

본방송

밀리터리 속  
규칙과 상식

JTM



시제기는 12척의 전함이 있습니다



00:00:00 / 00:26:06

자금 본방민중하면 남자들은 뛰한 늘맛김들이 내손안에 HD [www.gomtv.com](http://www.gomtv.com) GOMTV

# War of IT



YES24.COM

국내도서 | KBS 역사 버라이어티 역사저널 그날 밤간!

그레이의 50가지 그림자 | 한비야 | 한병철 | 부의 시대

분야찾기 | 베스트셀러 | 신상품 | e벤트세상 | YES캘린더 | 만월이하도서 | 정가인하도서 | 추천도서 | 기획코너 | 회원리뷰 | 미리보기 | 문화행사초

황석영 작가와 소설기행! 2015 YES24 소설학교 개강!

OPEN! 신규 서비스 4 welcome > 국내도서 > IT 모바일 > IT 전문서 > IT 비즈니스

도서 [예약판매] War of IT: 전쟁사를 통해서 본 IT 기업의 패권 다툼 [2015/03/03 이후 배송가능] [예약판매]

영욱 저 | 지앤선(志&譚)

정가 15,000원  
판매가 13,500원 (10% 할인)  
YES포인트 ? 150원 (1% 적립)  
카드혜택 더보기 > 8,100원 - 예스24하나카드 (40% 할인, 월 1만원 한도)  
8,100원 - 예스24신한카드 (40% 할인, 1만원 이상 결제시, 월 1만원 한도)  
• 5만원 이상 구매시 2,000원 추가적립 ?

2,500 하루 3번, 모바일에서는 2,500원 상품권이 쏟아진다!

• 출간일 2015년 02월 28일 • 328쪽 | 130\*190\*30mm  
• ISBN-13 978993827910 • ISBN-10 8993827915

Mobile-first,  
cloud-first



Microsoft  
LOVE ❤



**Announcing**  
Open sourcing of the Xamarin runtime

Microsoft ❤️ iOS, Android developers

Microsoft to acquire Xamarin and empower more developers to build apps on any device



Microsoft  
Xamarin  
인수  
발표

2월 24일

Now Included  
for FREE



# Announcing Xamarin for Visual Studio

Visual Studio Enterprise

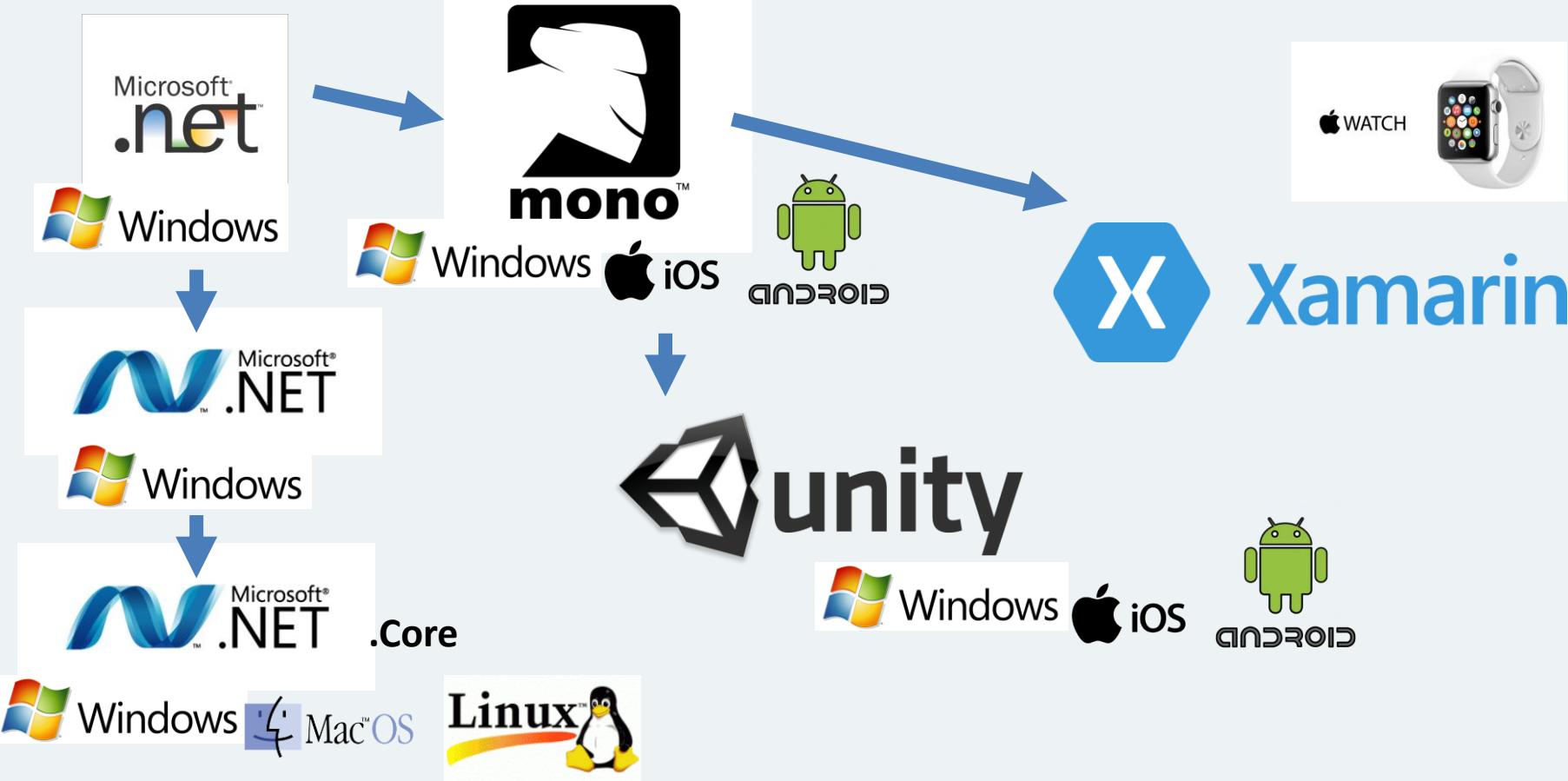
Visual Studio Professional

**Visual Studio Community**

# Hello Xamarin

## DEMO







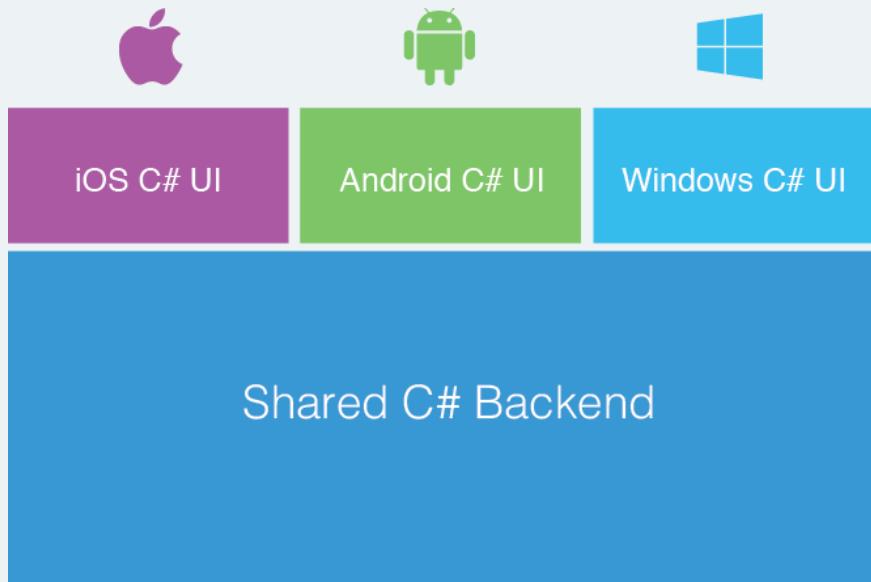
# Xamarin Platform

The image shows a Microsoft Visual Studio interface with code editor windows for ProductDetailViewController.cs and WebService.cs. The code is for a Xamarin application, likely a hybrid mobile app. Below the code editor are two smartphone screens. The left phone displays a "Food & Drinks" app with a monthly summary for May showing \$1,267 spent across various categories like Restaurants, Bars, Groceries, etc. The right phone displays a "Feed" screen for a financial app, showing expenses of \$569 for March 31st, a checking account balance of \$16,245, and a reminder to improve categorization.

Create native iOS, Android, Mac and Windows apps in Visual Studio and C#

# Xamarin's Unique Approach

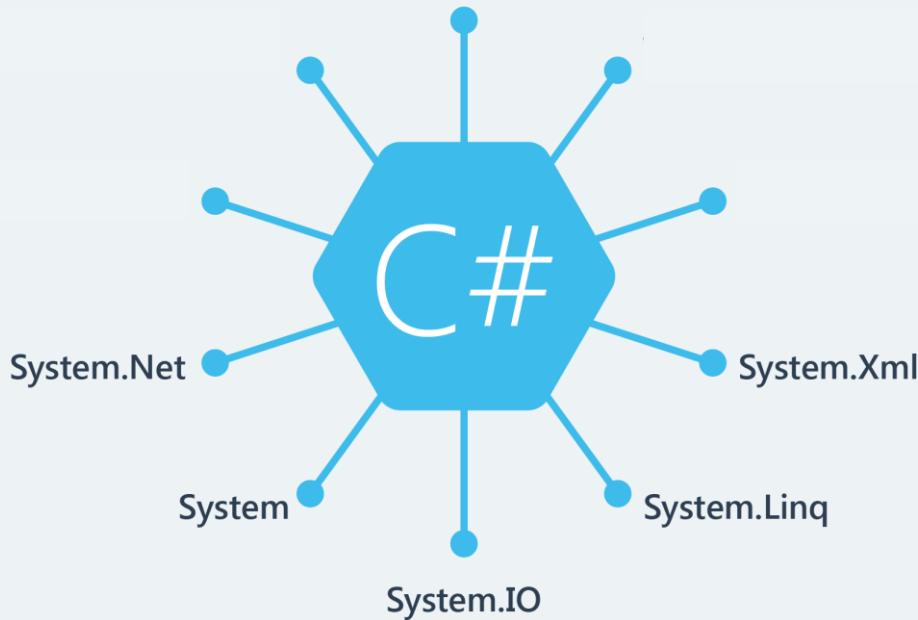
---



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

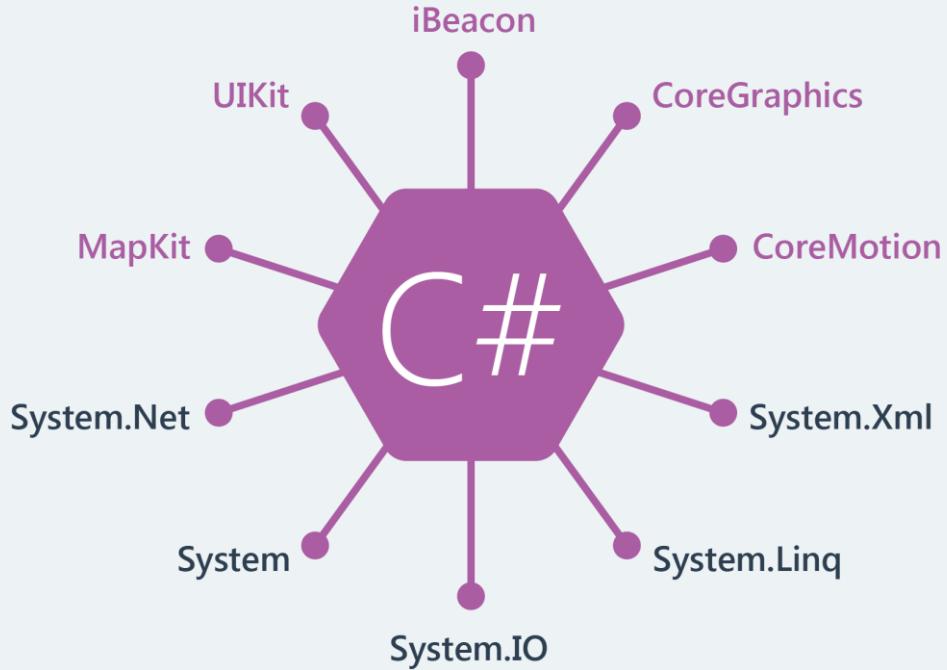
# Windows APIs

---



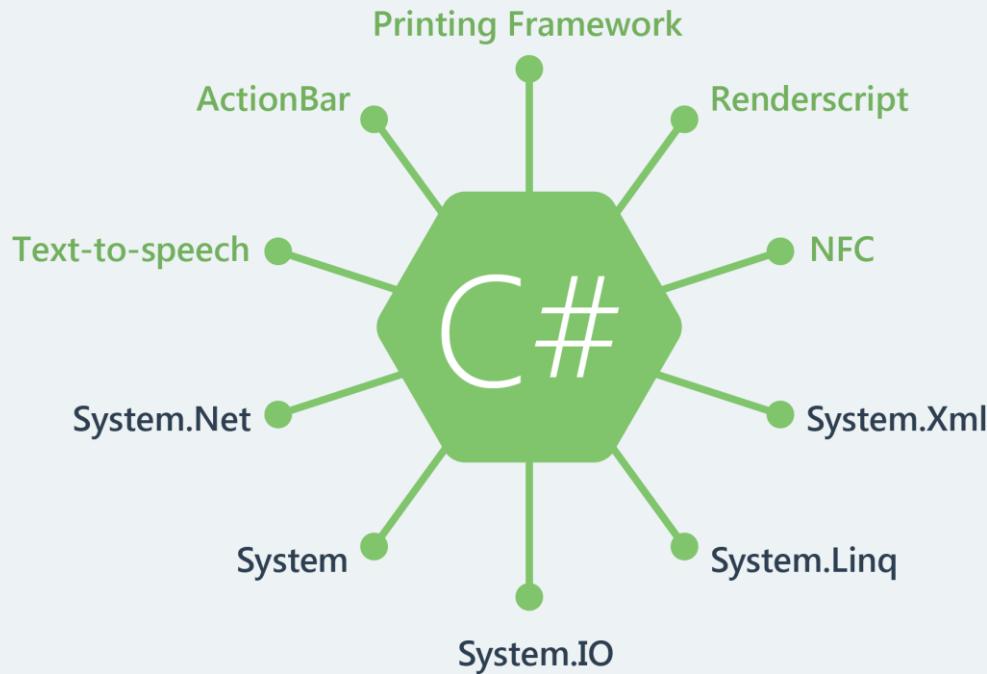
# .NET + iOS APIs | 100% Coverage

---

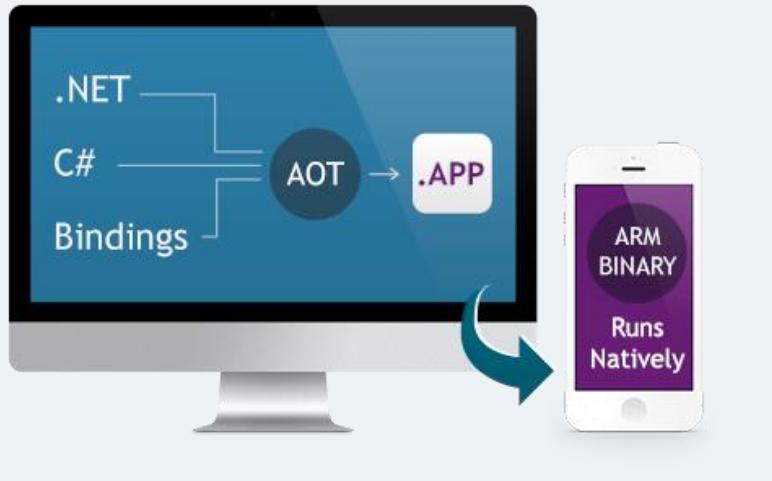


# .NET Android APIs | 100% Coverage

---



# Native Performance

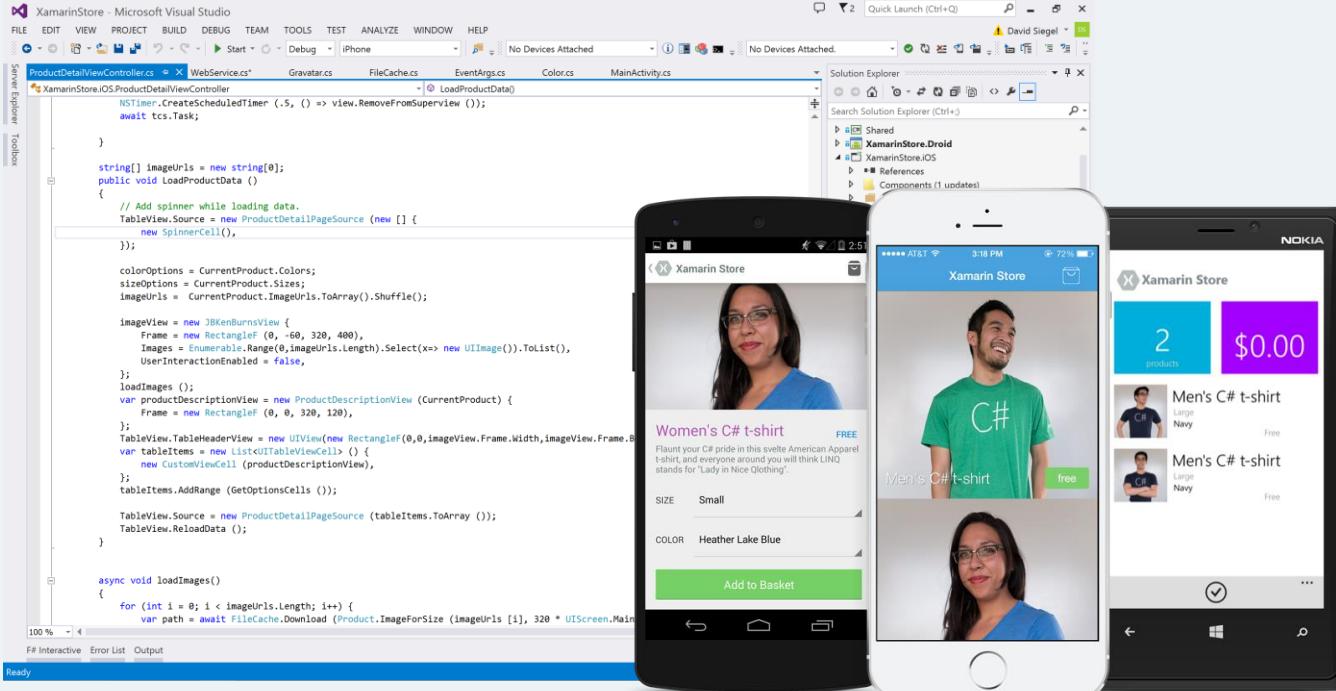


Xamarin.iOS does full Ahead Of Time (AOT) compilation to produce an ARM binary for Apple's App Store.



Xamarin.Android takes advantage of Just In Time (JIT) compilation on the Android device.

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



# Always Up-to-Date



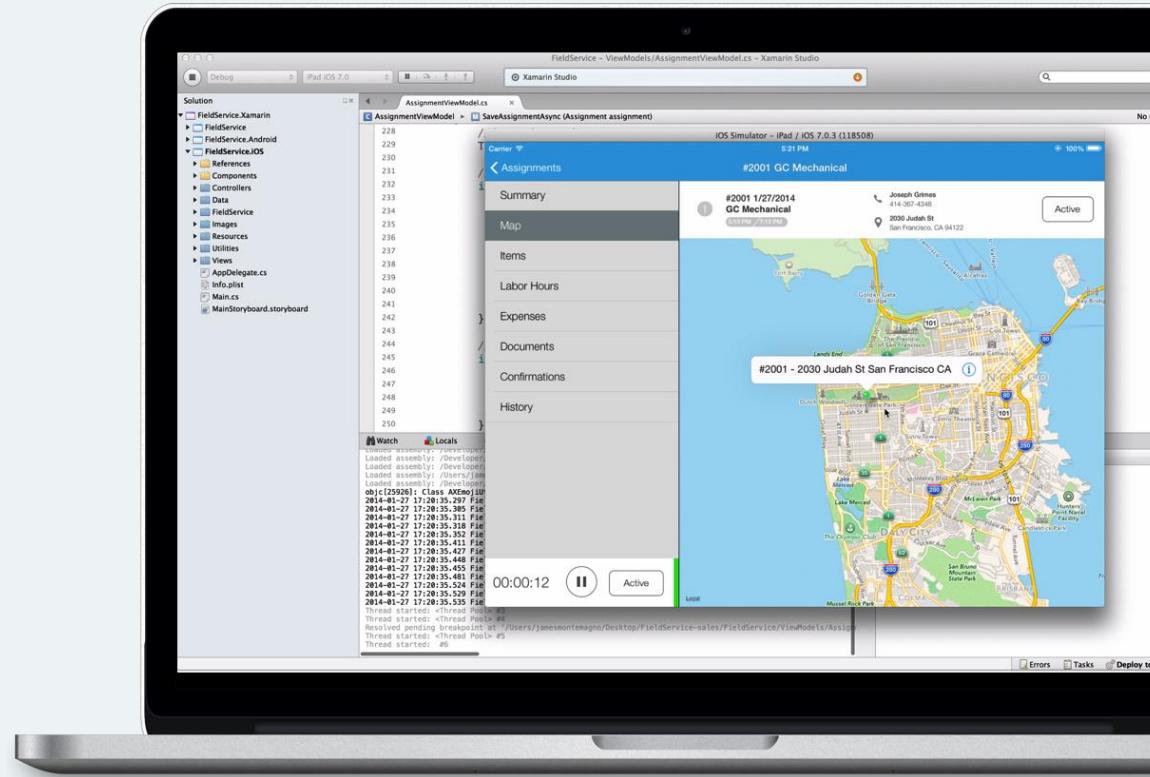
Track record of offering  
same-day support:  
iOS 5, iOS 6, iOS 7, iOS 7.1, iOS 8



Full support for:

- Google Glass
- Android Wear
- Apple Watch
- Amazon Fire TV
- More!

# Xamarin Studio – Mac or PC



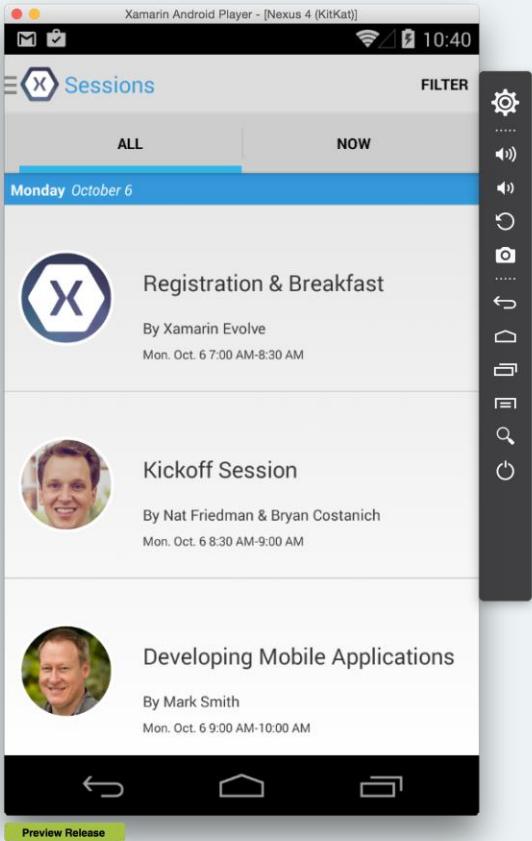
# Hello Xamarin Studio

## DEMO



Windows

# Xamarin Android Player

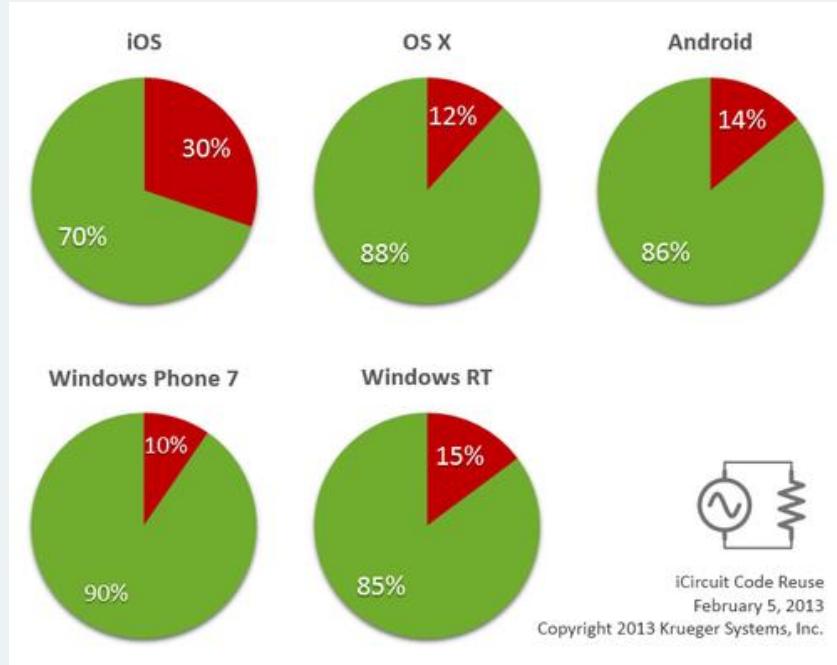


- Rapidly demo and test app builds on Mac or PC
- Hardware-accelerated virtualization
- Runs side-by-side Windows Phone Emulator
- Free for Xamarin Subscribers

[xamarin.com/Android-Player](http://xamarin.com/Android-Player)

# Code Sharing

# Code Sharing: Accelerate Development



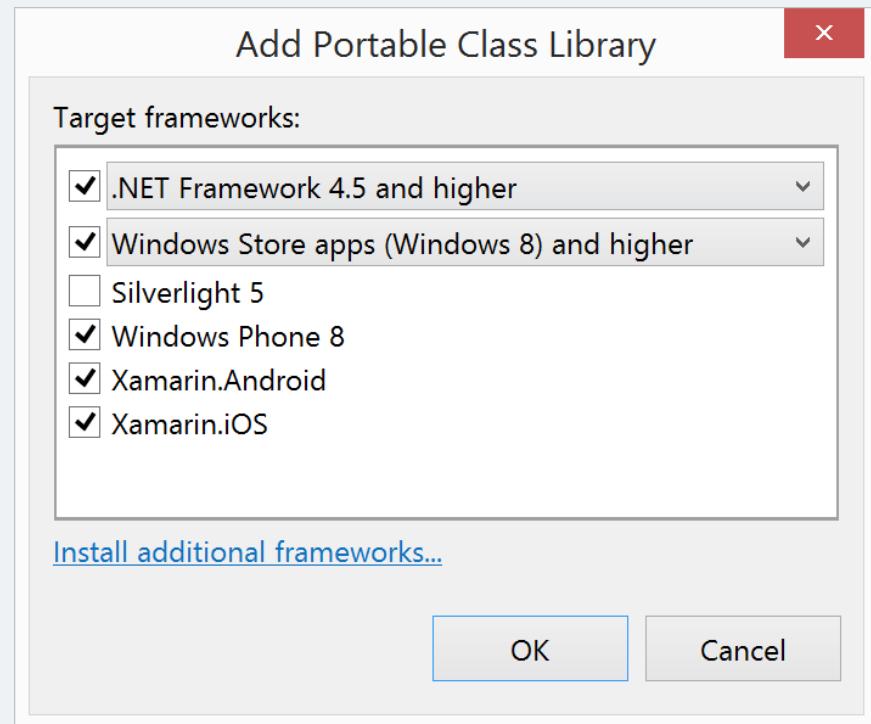
- Up to 90% Code Reuse
- Leverage existing libraries



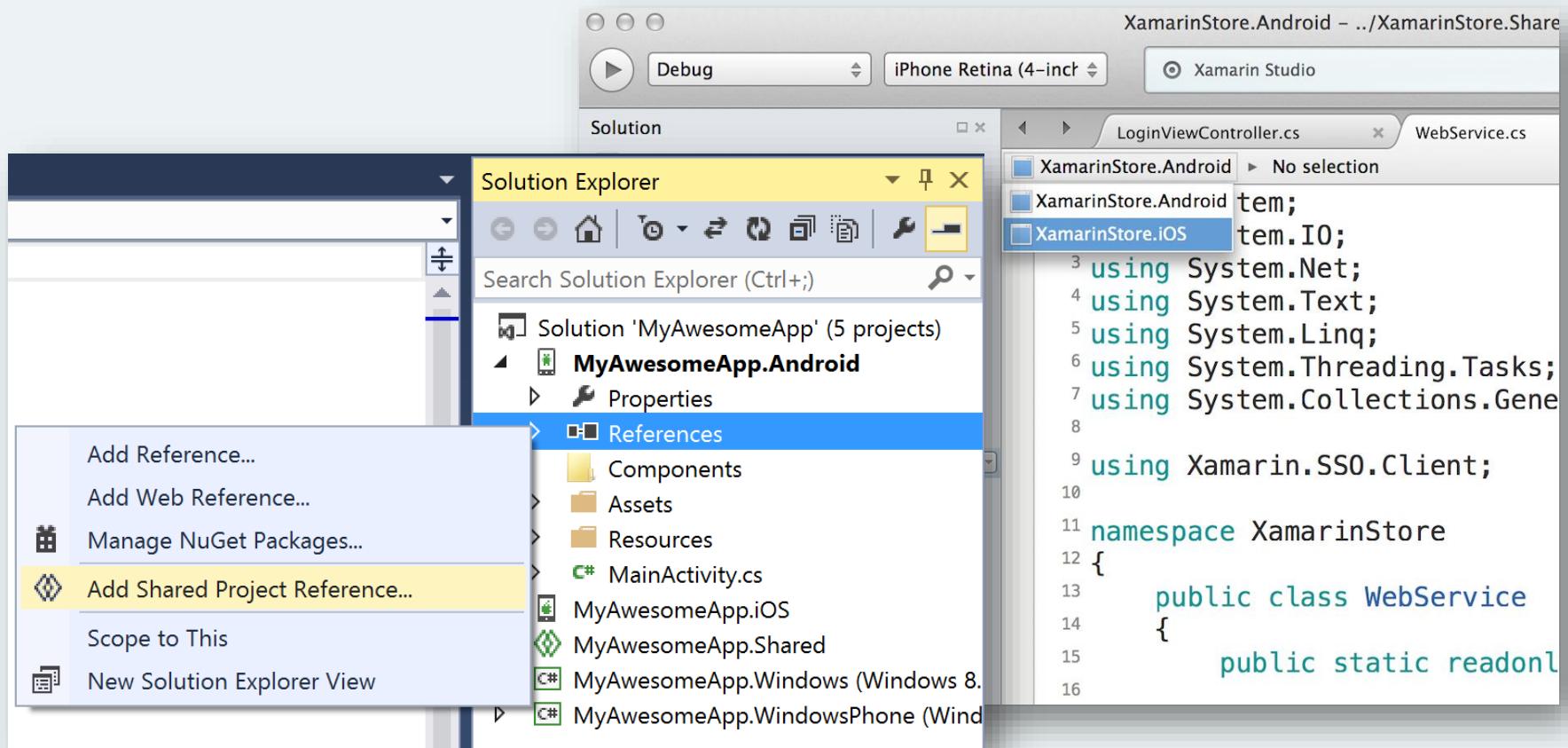
Code-sharing stats from iCircuit, built with Xamarin and featured on the App Store.  
Source: <http://praeclarum.org/post/42378027611/icircuit-code-reuse-part-cinq>

# Portable Class Libraries

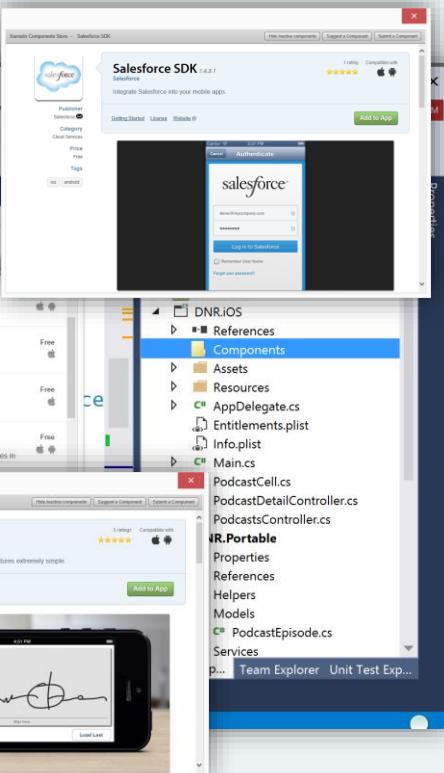
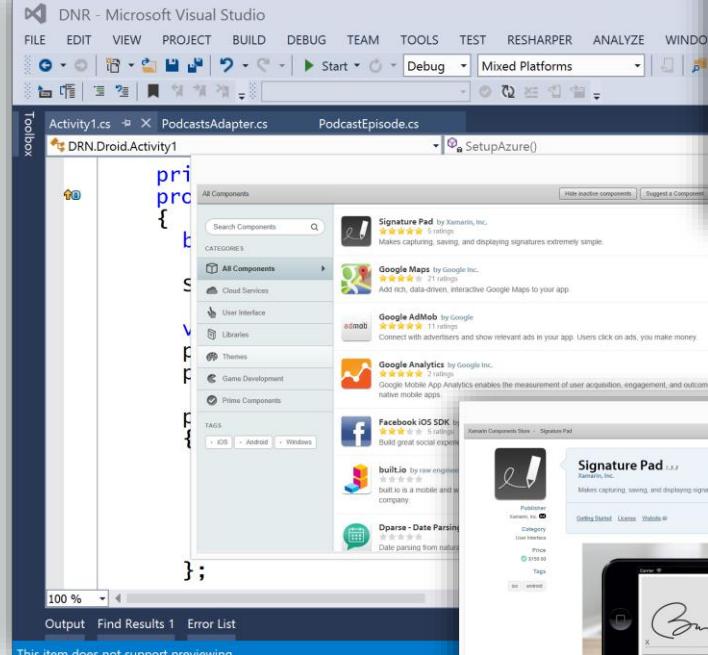
- 1 Assembly
- Multiple Platforms
- Including
  - **Xamarin.Android**
  - **Xamarin.iOS**



# Shared Projects



# Xamarin Component Store



## Build Apps Faster

- Add high quality pre-built app components directly from Visual Studio and Xamarin Studio
- Beautiful cross-platform UI controls, cloud services and enterprise backend integrations are just a few clicks away

# Xamarin.Forms

Build native UIs for iOS, Android and Windows  
from a single, shared C# codebase.



# Xamarin + Xamarin.Forms

Traditional Xamarin approach



iOS C# UI

Android C# UI

Windows C# UI

Shared C# Backend

With Xamarin.Forms:

more code-sharing, native controls



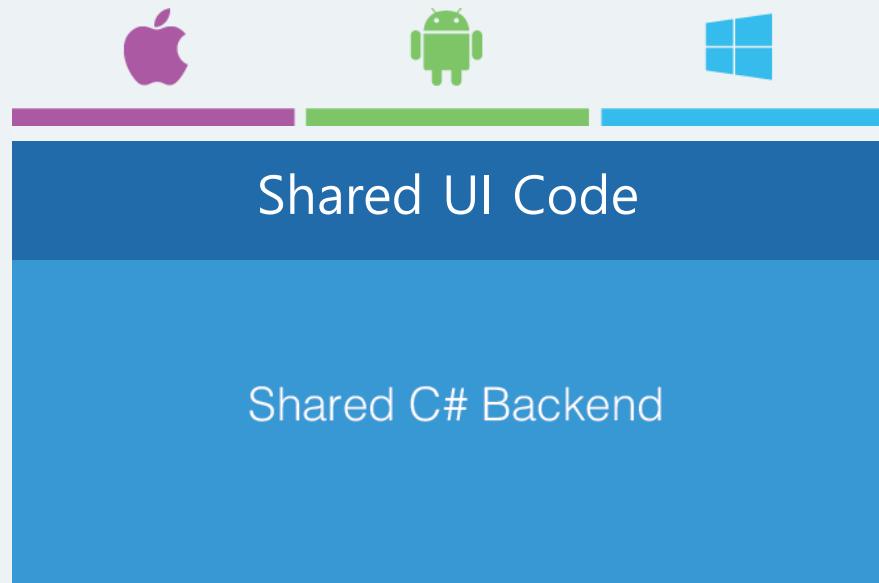
Shared UI Code

Shared C# Backend

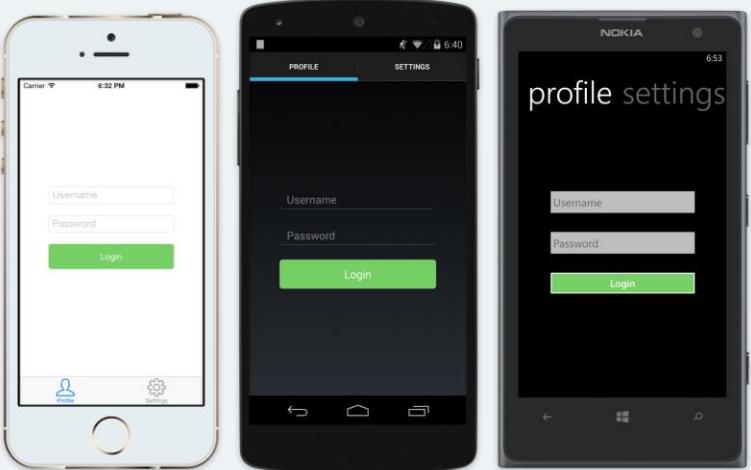
# What's Included

---

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



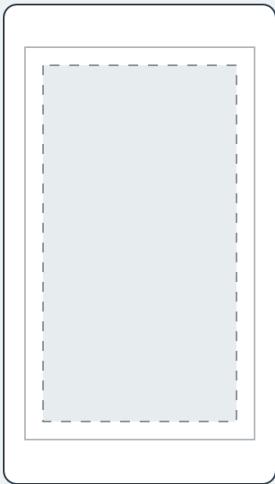
# Native UI from shared code



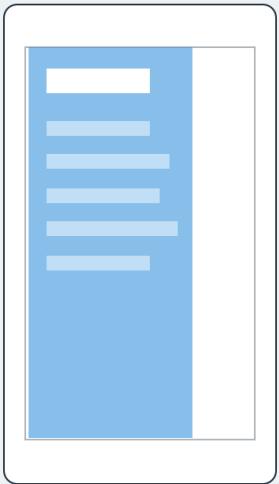
```
<?xml version="1.0" encoding="UTF-8"?>
<TabbedPage xmlns="http://xamarin.com/schemas/2014/forms"
    xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
    x:Class="MyApp.MainPage">
<TabbedPage.Children>
<ContentPage Title="Profile" Icon="Profile.png">
<StackLayout Spacing="20" Padding="20"
    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>
```

# Pages

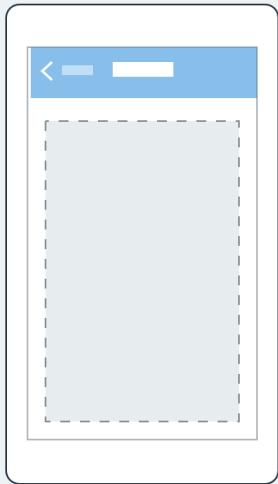
---



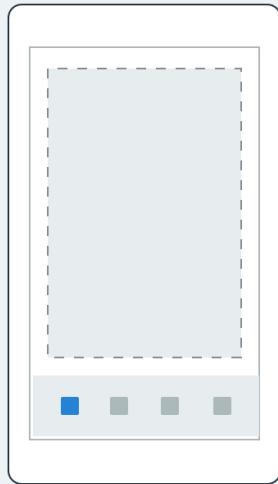
Content



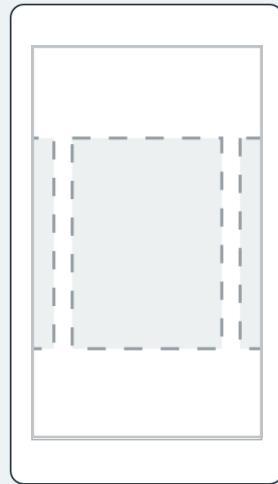
MasterDetail



Navigation



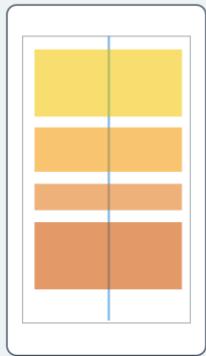
Tabbed



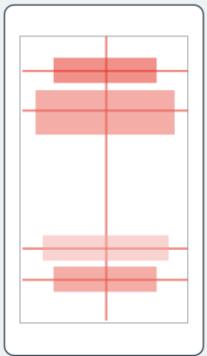
Carousel

# Layouts

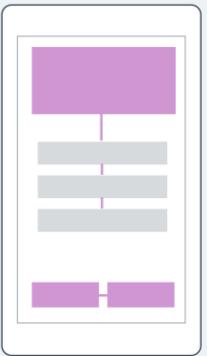
---



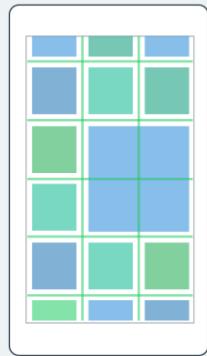
Stack



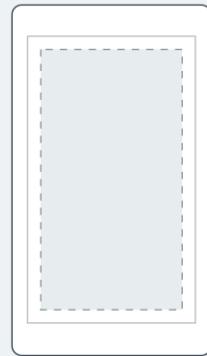
Absolute



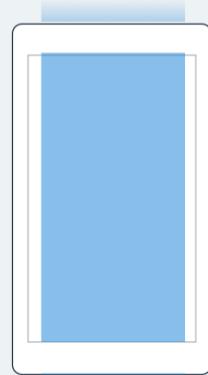
Relative



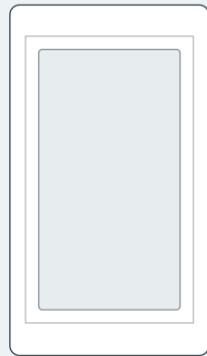
Grid



ContentView



ScrollView



Frame

# Controls

---

ActivityIndicator

BoxView

Button

DatePicker

Editor

Entry

Image

Label

ListView

Map

OpenGLView

Picker

ProgressBar

SearchBar

Slider

Stepper

TableView

TimePicker

WebView

EntryCell

ImageCell

SwitchCell

TextCell

ViewCell

# Control Comparison

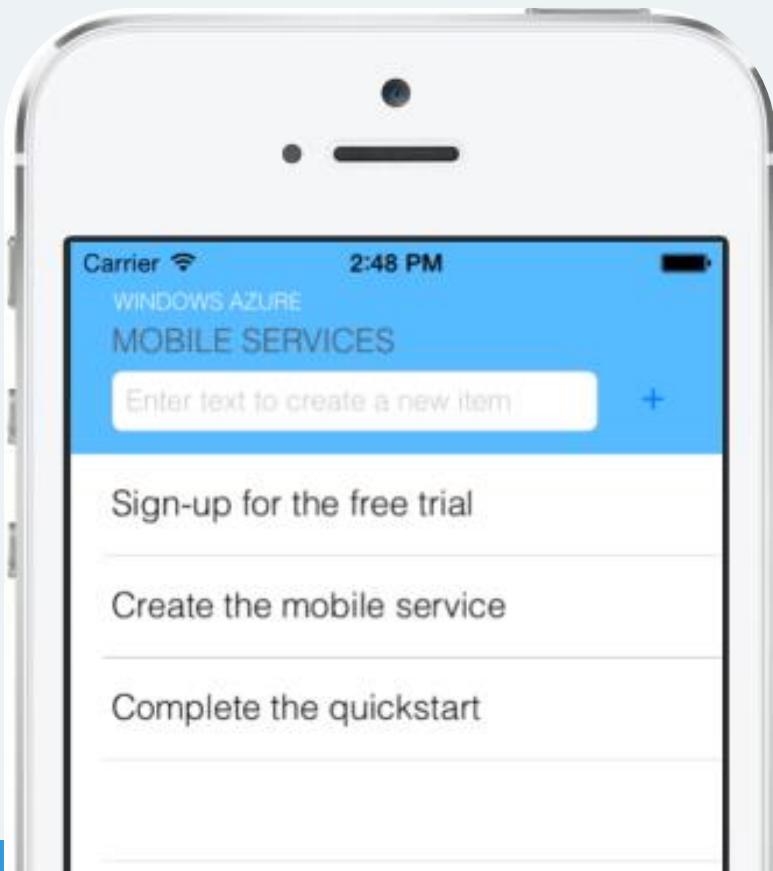
Windows	Xamarin.Forms
StackPanel	StackLayout
TextBox	Entry
ListBox	ListView
CheckBox	Switch
ProgressBar	ActivityIndicator
Grid	Grid
Label	Label
Button	Button
Image	Image
Date/TimePicker	Date/TimePicker

# Binding Comparison

Windows	Xamarin.Forms
DataContext	BindingContext
{Binding Property}	{Binding Property}
ItemsSource	ItemsSource
ItemTemplate	ItemTemplate
DataTemplate	DataTemplate

# Microsoft Azure

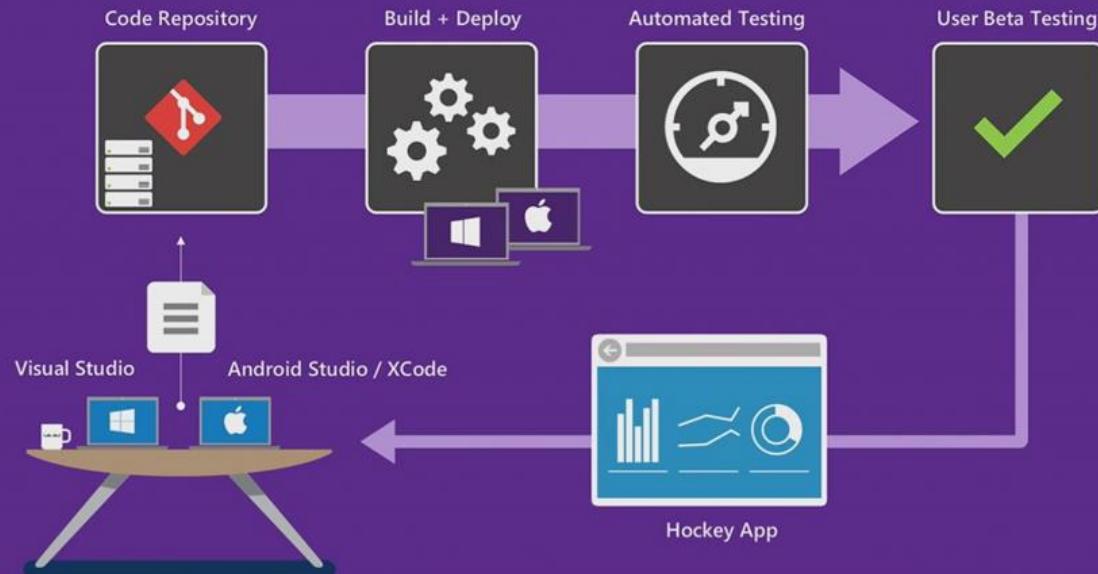
---



- Build amazing mobile apps in C# with Xamarin
- Build amazing backends using Azure
- Integrate Xamarin & Azure
  - Azure Mobile Services
  - Azure Messaging
  - Azure Storage

# Mobile DevOps

## Visual Studio Team Services: Mobile DevOps



감사합니다  
Thank you!

# Xamarin 초보탈출 필수 스킬

김영욱 Sr. Technical Evangelist  
Microsoft / DX / 부장  
<http://YoungWook.com>



Daum 검색 API  
<http://developers.daum.net/>

# Daum Open APIs

Daum Developers 콘솔 서비스 블로그 카페 서비스 winkey▼

어디서든 접근 가능한  
새로운 콘솔

팀원 등록, API Quota 설정, 사용량 조회, API 상태 조회 등  
다양한 기능을 어디서나 사용 가능합니다.

# Daum Open APIs

```
<?xml version="1.0" encoding="UTF-8"?>
<channel>
  <title>Search Daum Open API</title>
  <description>Daum Open API search result</description>
  <generator>Daum Open API</generator>
  <link>http://dna.daum.net/apis</link>
  <lastBuildDate>Tue, 28 Jul 2015 15:56:24 +0900</lastBuildDate>
  <totalCount>192905</totalCount>
  <result>10</result>
  - <item>
    <title>시빌 워</title>
    <link>http://book.daum.net/detail/book.do?bookid=KOR9788952756107</link>
    <cover_s_url>http://t1.daumcdn.net/thumb/R72x100/?fname=http%3A%2F%2Ft1.daumcdn.net%2Fbook%2FKOR9788952756107%3I</cover_s_url>
    <cover_l_url>https://t1.search.daumcdn.net/thumb/R110x160/?fname=http%3A%2F%2Ft1.daumcdn.net%2Fbook%2FKOR9788952756107%3I</cover_l_url>
    <description>당신은 어느 편인가? 그래픽노블『시빌 워』는 2006년 7월부터 2007년 1월까지 총 7부작으로 연재되었던 미니 시리즈다. 마블의 2006년 후반기</description>
    <author>마크 밀러</author>
    <translator>최원서</translator>
    <pub_nm>시공사</pub_nm>
    <pub_date>20091201</pub_date>
    <category>만화</category>
    <isbn>895275610X</isbn>
    <sale_yn>Y</sale_yn>
    <list_price>14000</list_price>
    <sale_price>12600</sale_price>
    <status_des>정상판매</status_des>
    <barcode>KOR9788952756107</barcode>
    <ebook_barcode/>
    <isbn13>9788952756107</isbn13>
    <etc_author>최원서 스티브 맥니븐 스티브맥니븐</etc_author>
    <author_t>마크 밀러</author_t>
  </item>
  - <item>
    <title>도서관 전쟁. 13</title>
    <link>http://book.daum.net/detail/book.do?bookid=KOR9791133400140</link>
    <cover_s_url>http://t1.daumcdn.net/thumb/R72x100/?fname=http%3A%2F%2Ft1.daumcdn.net%2Fbook%2FKOR9791133400140%3I</cover_s_url>
  </item>

```

# System.Net.Http.HttpClient

- Namespace: System.Net.Http.HttpClient  
Assembly: System.Net.Http (in System.Net.Http.dll)

## System.Net.Http.HttpClient

```
private async void GetData(Data.SampleDataGroup group)
{
    System.Net.Http.HttpClient client
        = new System.Net.Http.HttpClient();

    System.Net.Http.HttpResponseMessage response
        = await client.GetAsync("http://apis.daum.net/search/book?query=java");

    response.EnsureSuccessStatusCode();
    string responseBody
        = await response.Content.ReadAsStringAsync();
}
```

# System.Net.Http.HttpClient

## DEMO



# Entity Class

- `class BookItem`
- `{`  
`public Int64 Id { get; set; }`  
`public string Title { get; set; }`  
`public string Category { get; set; }`  
`public string ImageUrl { get; set; }`  
`public string Description { get; set; }`  
`}`

# Linq

# Architecture

C#

VB.NET

Others

.NET Language Integrated Query (LINQ)

LINQ data source providers

ADO.NET support for LINQ

LINQ  
to Objects

LINQ  
to Datasets

LINQ  
to SQL

LINQ  
to Entities

LINQ  
to XML

# LINQ to Objects

- C#

```
int[] nums = new int[] {0,4,2,6,3,8,3,1};  
double average = nums.Take(6).Average();  
var above = from n in nums  
            where n > average  
            select n;
```

# System.Net.Http.HttpClient

## LINQ를 통한 XAML의 파싱

```
System.Xml.Linq.XDocument xDoc =  
    System.Xml.Linq.XDocument.Parse(responseBody);
```

```
var books = from bookItem in xDoc.Descendants("item")  
            select new BookItem  
            {  
                Title = (string)bookItem.Element("title"),  
                Category = (string)bookItem.Element("category"),  
                ImageUrl = (string)bookItem.Element("cover_l_url")  
                Description = (string)bookItem.Element("description")  
            };
```

# Data binding

# Data binding basics

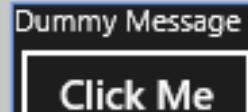


# Dynamic Data

- Use data binding to connect to a data source

```
<Page.Resources>
    <local:ViewModel x:Key="Vm"/>
</Page.Resources>

<Grid Background="{StaticResource ApplicationPageBackgroundThemeBrush}">
    <StackPanel DataContext="{StaticResource Vm}">
        <TextBlock Text="{Binding Message}"/>
        <Button Content="{Binding ButtonText}"/>
    </StackPanel>
</Grid>
```



# NuGet

The screenshot shows the NuGet interface with the search term "xamarin" entered. The results page displays several packages related to Xamarin, such as EntityFramework, Json.NET, jQuery, WebGrease, Microsoft ASP.NET MVC, Microsoft HTTP Client Libraries, and Microsoft ASP.NET Web API 2.2. The EntityFramework package is highlighted with a blue background and an "Install" button. The right side of the interface shows detailed information for the EntityFramework package, including its creator (James Newton-King), ID (Newtonsoft.Json), version (6.0.3), last published date (4/27/2014), and download count (6189092). It also lists its license, project information, report abuse, description, tags (json), and dependencies (No Dependencies).

Add Packages

nuget.org

xamarin

Xamarin.Social  
Share statuses, links, and images

Xamarin.Auth  
A cross-platform API for authentication.

Xamarin.Mobile  
Xamarin.Mobile is a library that provides common mobile device functions.

Xamarin.InAppBilling  
Component to assist in adding In-App Billing support via Google Play Services.

Xamarin.FacebookBinding  
Xamarin Android Binding library for Facebook.

BugSense plugin for Xamarin  
BugSense is the leading crash reporting and analysis platform.

Show pre-release packages

Installed packages

Online

All

nuget.org

Motz NuGets

Microsoft and .NET

Updates

EntityFramework  
Entity Framework is Microsoft's recommended data access technology for new applications.

Json.NET  
Json.NET is a popular high-performance JSON framework for .NET

jQuery  
jQuery is a new kind of JavaScript Library. jQuery is a fast and concise JavaScript Library that simplifies HTML...

WebGrease  
Web Grease is a suite of tools for optimizing javascript, css files and images.

Microsoft ASP.NET MVC  
This package contains the runtime assemblies for ASP.NET MVC.

Microsoft HTTP Client Libraries  
This package provides a programming interface for modern HTTP/REST based applications.

Microsoft ASP.NET Web API 2.2  
This package contains everything you need to host ASP.NET Web API on IIS.

View License  
Project Information  
Report Abuse  
Description:  
Json.NET is a popular high-performance JSON framework for .NET  
Tags: json  
Dependencies:  
No Dependencies

Settings

Close

# HockeyApp

# Xamarin Test Cloud

감사합니다  
Thank you!