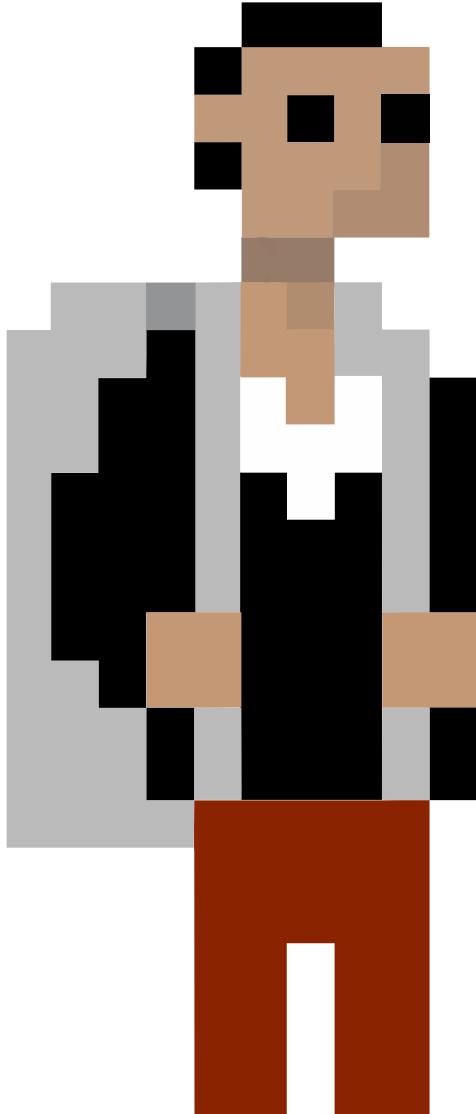


Motz Codes Live

@JamesMontemagno
motzcod.es

PCL vs Shared Projects
December 4, 2015

Who is Motz?



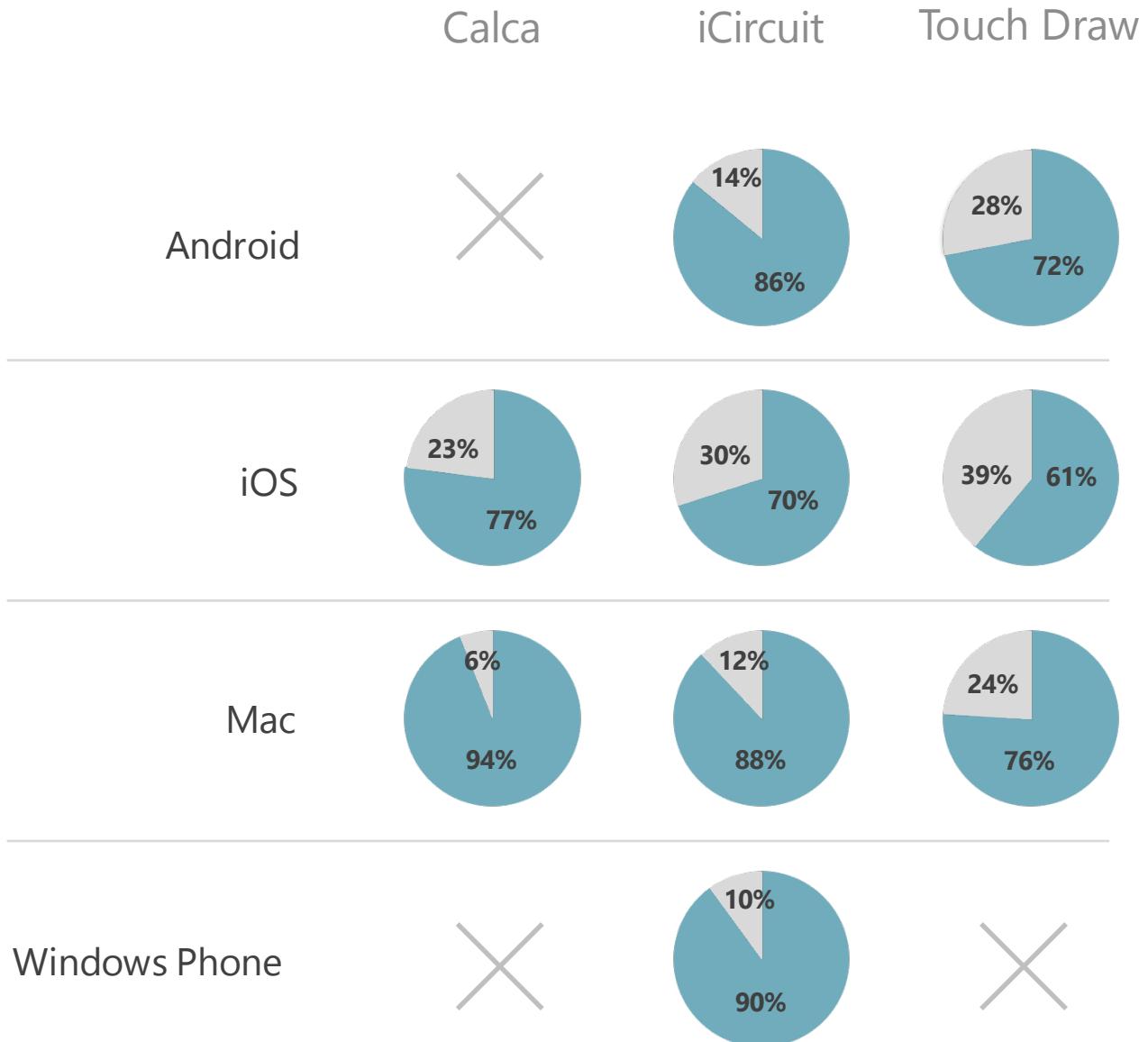
James
Montemagno
Developer Evangelist, Xamarin

james@xamarin.com

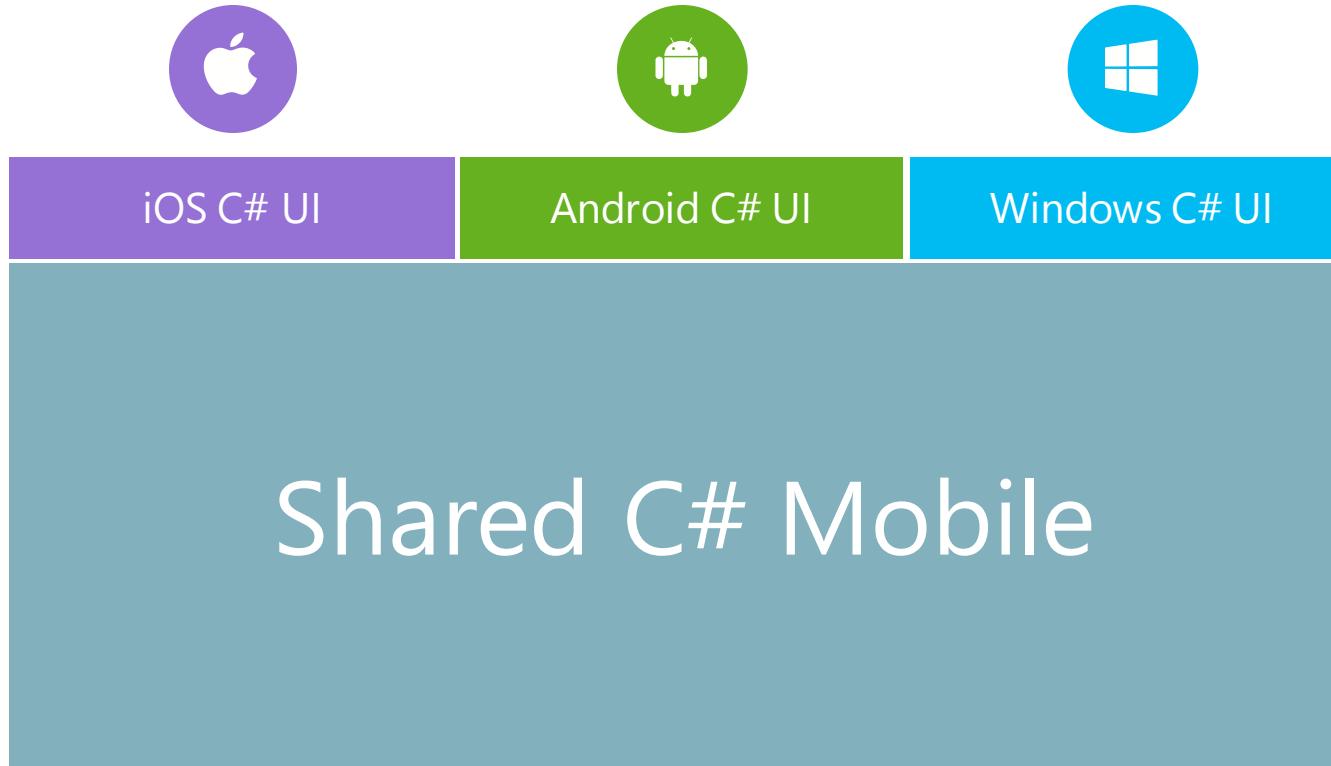
motzcod.es

@JamesMontemagno

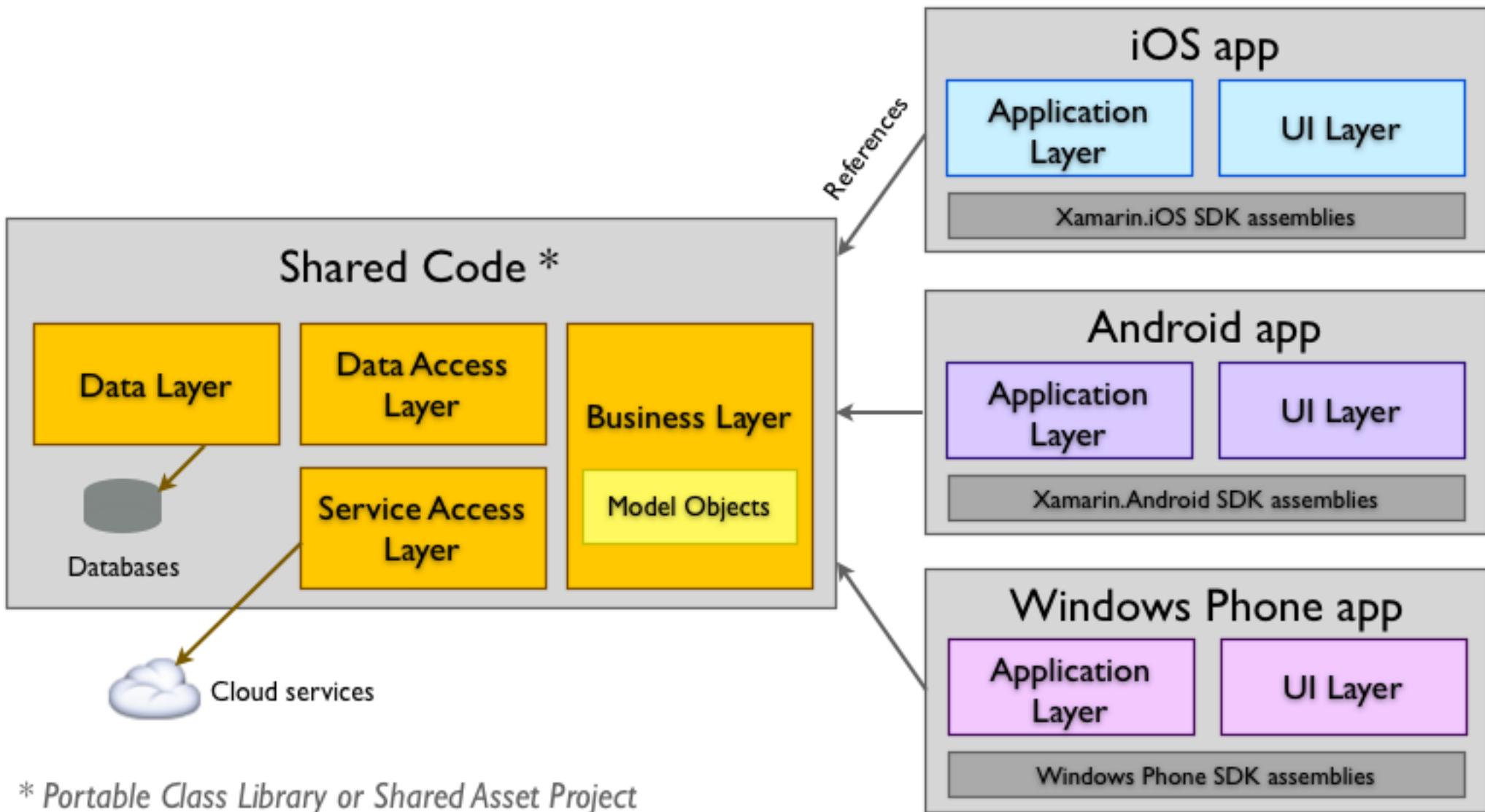
Code Sharing Stats



Xamarin's Unique Approach



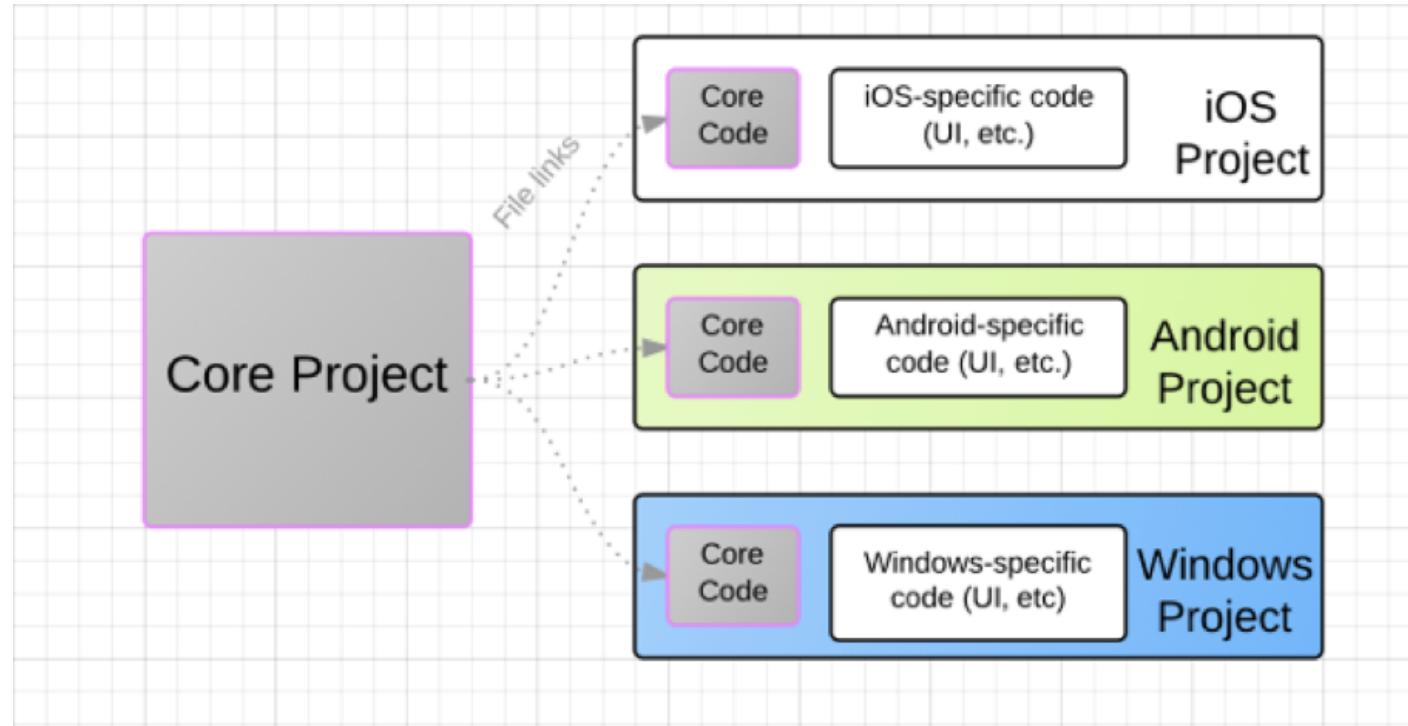
Shared C# codebase • 100% native API access • High performance



So let's do it!

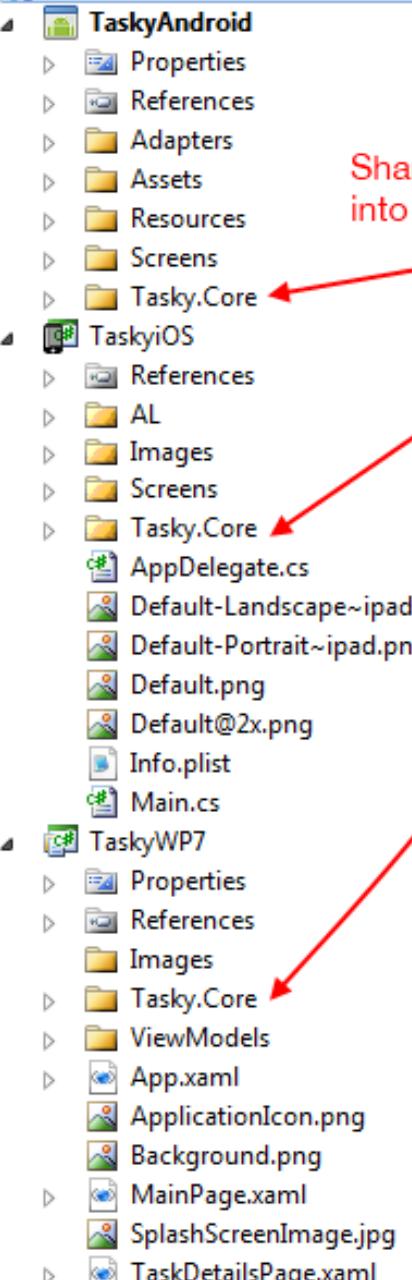
Old School Code Sharing

File Linking 101



Solution

Solution 'TaskyProIntegrated' (3 projects)



Shared files linked
into each app

Filesystem

TaskyProIntegrated

Dependencies

Tasky.Core

BL

DAL

DL

TaskyAndroid

Adapters

Assets

Properties

Resources

Screens

Tasky.Core

Empty 'Tasky.Core' folder structure

TaskyiOS

AL

Images

Screens

Tasky.Core

Empty 'Tasky.Core' folder structure

TaskyWP7

Images

Properties

Tasky.Core

ViewModels

Empty 'Tasky.Core' folder structure is required
by the IDE to link the files

Shared C# code files, eg.

SQLite.cs

TaskDatabase.cs

Breakdown

Benefits

- Shared code
- Compiler Directives for platforms specific code

Disadvantages

- No “output” assembly
- Not shared across multiple solutions
- Not shareable with the world
- Messy to get under control

Modern Day Code Sharing

Shared Code Projects

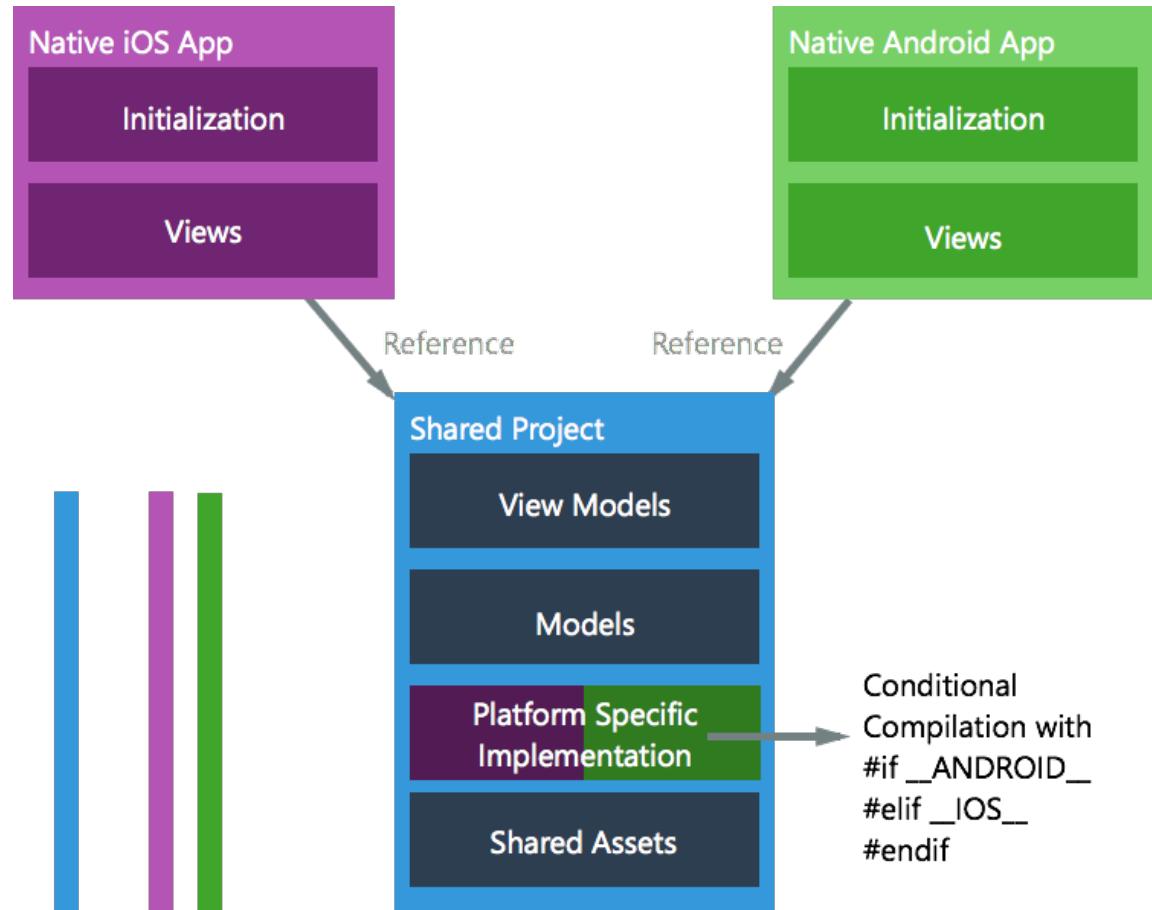
- Glorified File Linking
- VS 2013 & XS

Portable Class Libraries

- Portable Library
- 1 Assembly, Multiple Platforms
- VS 2012 & XS

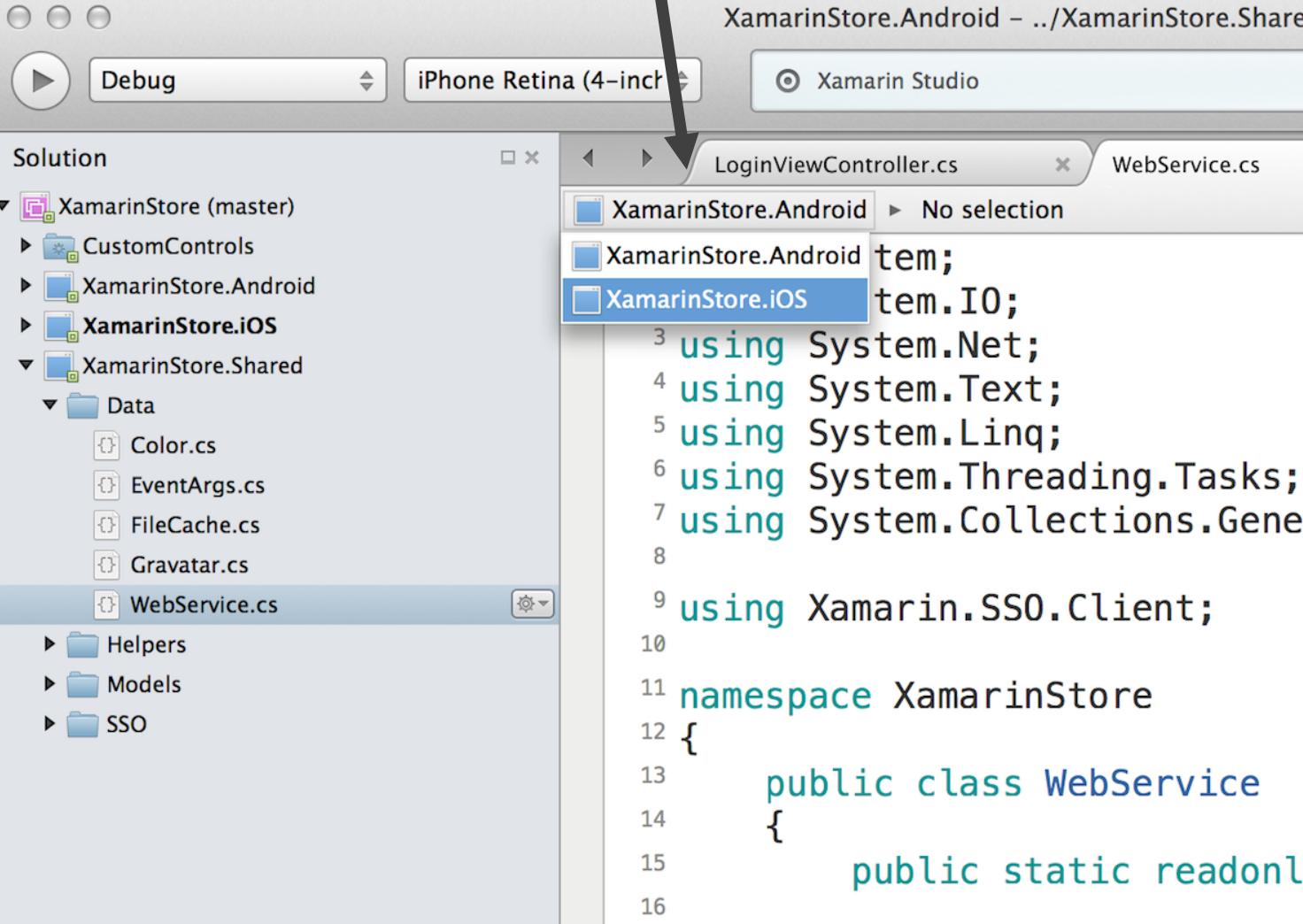
Shared Projects

- The easiest way to share code
- Eliminates the hassle of file-linking
- Easier to collaborate



Simple Example

- Shared is “Shared”
- Has references of it's parents



The screenshot shows the Xamarin Studio interface. The top bar displays "XamarinStore.Android -/XamarinStore.Shared" and "iPhone Retina (4-inch)" under "Debug". The "Solution" sidebar lists the project structure:

- XamarinStore (master)
 - CustomControls
 - XamarinStore.Android
 - XamarinStore.iOS** (selected)
 - XamarinStore.Shared
 - Data
 - Color.cs
 - EventArgs.cs
 - FileCache.cs
 - Gravatar.cs
 - WebService.cs (selected)
 - Helpers
 - Models
 - SSO

A large black arrow points from the "WebService.cs" file in the Solution Explorer towards the code editor.

The code editor window shows the "WebService.cs" file content:

```
XamarinStore.Android – ..../XamarinStore.Shared
iPhone Retina (4-inch) | Xamarin Studio
LoginViewController.cs | WebService.cs

using System;
using System.Collections.Generic;
using System.Linq;
using System.Net;
using System.Text;
using System.Threading.Tasks;
using System.Collections.Generic;
using Xamarin.SSO.Client;
namespace XamarinStore
{
    public class WebService
    {
        public static readonly
```

Breakdown

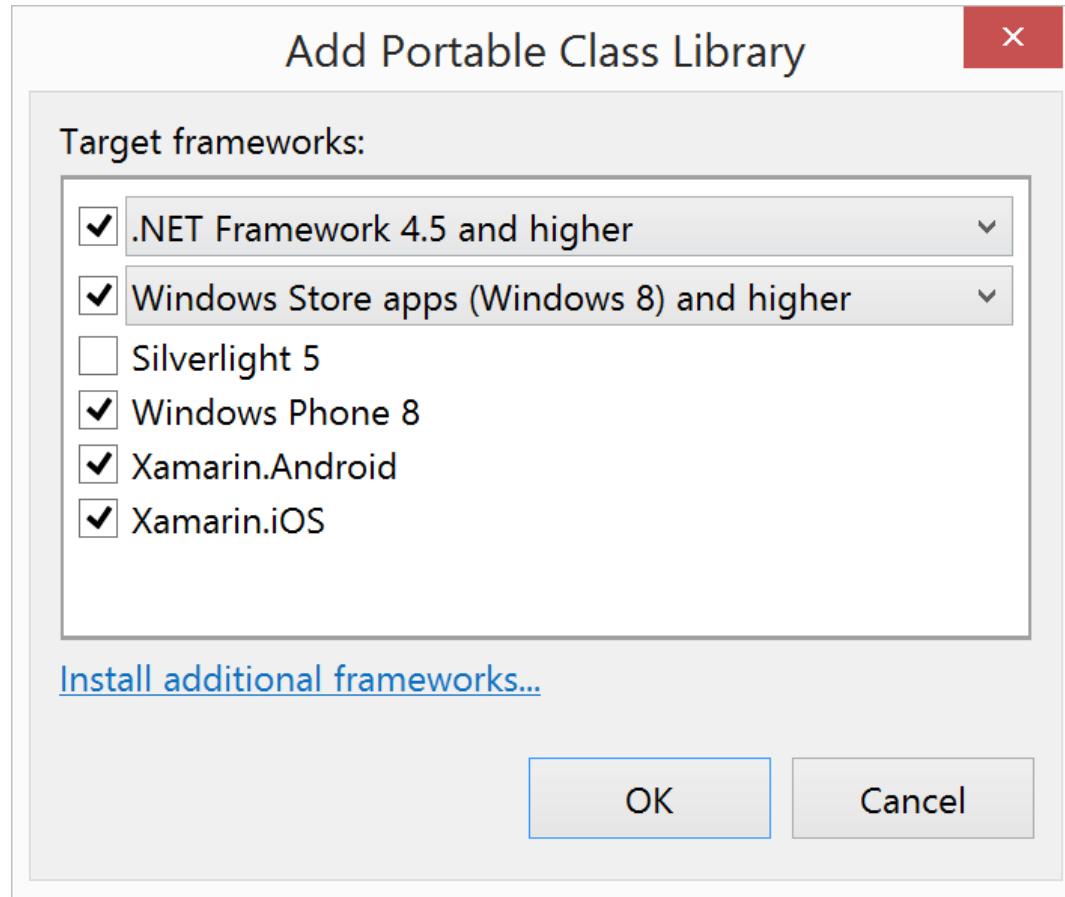
Benefits

- Shared code easily
- Compiler Directives for platforms specific code
- Shared code could utilize platform-specific references

Disadvantages

- No “output” assembly
- Files are treated as part of the parent project
- Refactoring inside of ‘inactive’ compiler directives don’t update
- Can’t really be “shared” with others

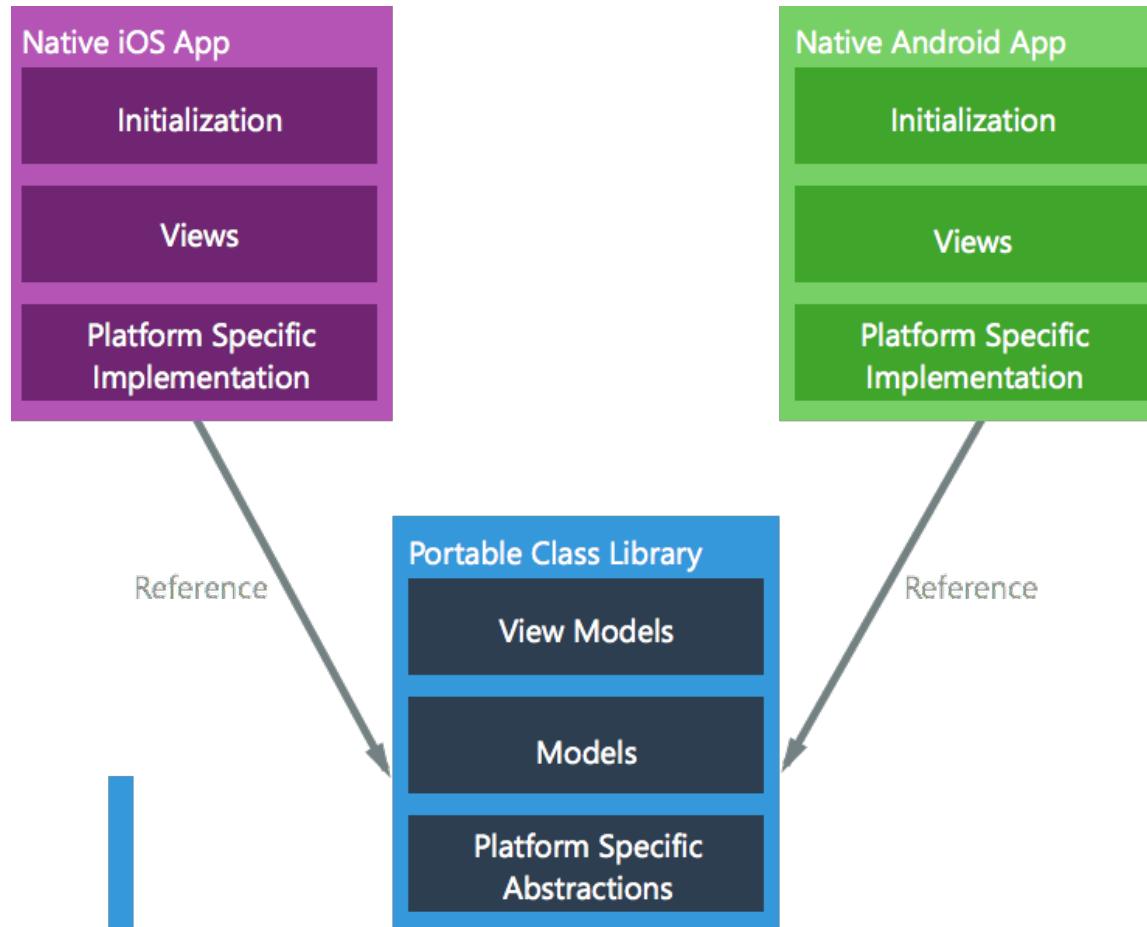
Portable Class Libraries



1 Assembly
Multiple Platforms

Including:
Xamarin.iOS and Xamarin.Android

Portable Class Libraries



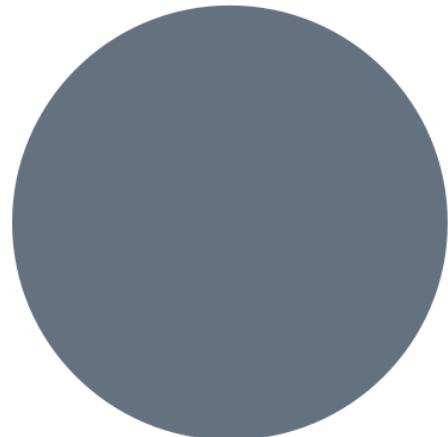
- Centralized Code Sharing
- Project/Assembly Sharing
 - NuGet
- Magic Reference Swapping
(that is a whole other talk!)

Portable Class Libraries

Platforms

Profile 7

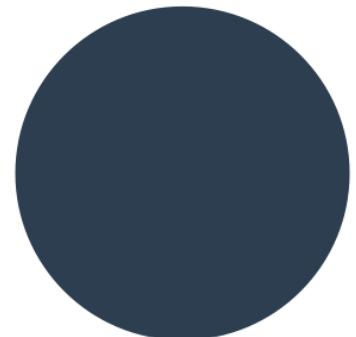
.NET 4.5
Windows Store 8+
Xamarin.iOS
Xamarin.Android



1.90 MB

Profile 78

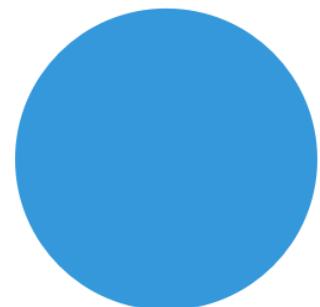
.NET 4.5
Windows Phone Silverlight 8+
Windows Store 8+
Xamarin.iOS
Xamarin.Android



1.46 MB

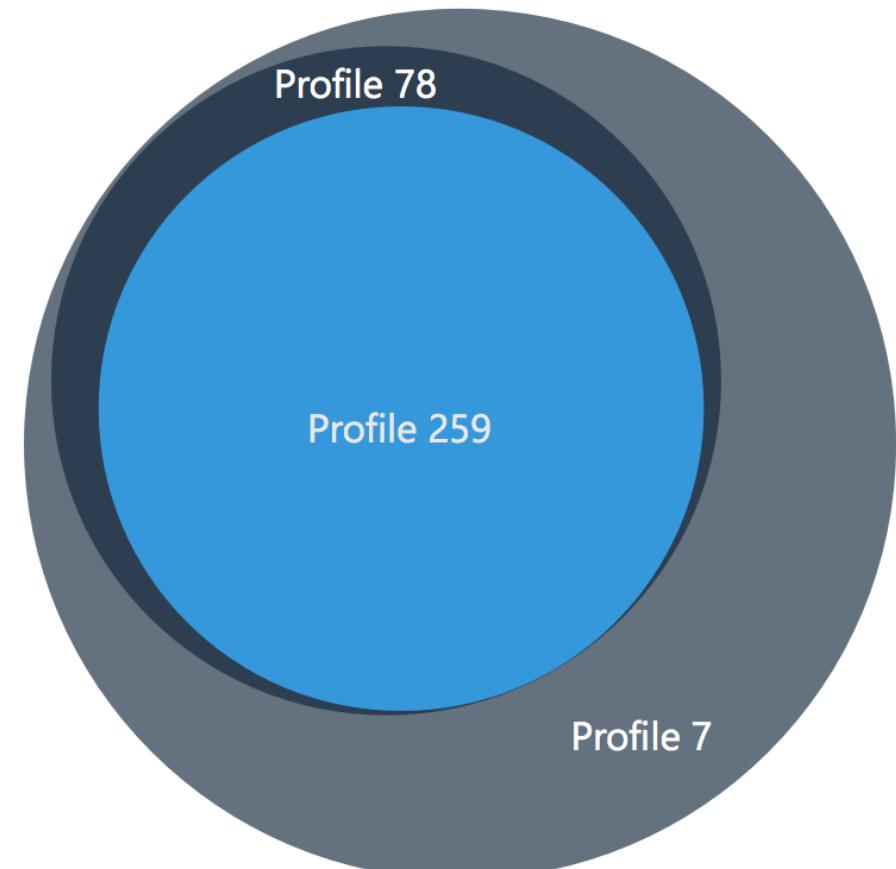
Profile 259

.NET 4.5
Windows Phone 8.1
Windows Phone Silverlight 8+
Windows Store 8+
Xamarin.iOS
Xamarin.Android



1.32 MB

Available .NET APIs in PCL Profile



NuGet

Add Packages

nuget.org

Xamarin.Social
Share statuses, links, and images on Facebook, Flickr, Twitter, and more.

Xamarin.Auth
A cross-platform API for authenticating users and storing their information.

Xamarin.Mobile
Xamarin.Mobile is a library that exposes a single set of APIs for common mobile device functionality across iOS, Android and Windows Phone.

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

Xamarin.FacebookBinding
Xamarin Android Binding library for Facebook Android SDK.

BugSense plugin for Xamarin Android application
BugSense is the leading crash reporting and quality metric analysis tool for mobile applications.

Show pre-release packages

Each package is licensed to you by its owner. Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.

xamarin

PlanetXamarin.WinStore - Manage NuGet Packages

Installed packages

Online

All

nuget.org

Motz NuGets

Microsoft and .NET

Updates

Stable Only

Sort by: Most Downloads

xamarin

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

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

Install

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

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

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

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

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

?

xamarin

Created by: James Newton-King

Id: Newtonsoft.Json

Version: 6.0.3

Last Published: 4/27/2014

Downloads: 6189092

License

[View License](#)

[Project Information](#)

[Report Abuse](#)

Description:

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

Tags: json

Dependencies:

No Dependencies

1 2 3 4 5

Settings

Close

PCL – All about re-usability!

PlanetXamarin.WinStore - Manage NuGet Packages

Installed packages

Online

All

nuget.org

Motz NuGets

Microsoft and .NET

Updates

Each package is licensed to you by its owner. Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.

Settings

Stable Only

Sort by: Most Downloads

xamarin

EntityFramework

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

Json.NET

Json.NET is a popular framework for .NET

jQuery

jQuery is a new kind of JavaScript library. It makes working with HTML documents easier and faster than ever before.

WebGrease

Web Grease is a suite of tools for manipulating CSS and images.

Microsoft ASP.NET

This package contains the Microsoft ASP.NET SignalR library.

Microsoft HTTP Client

This package provides a REST based application programming interface (API) for interacting with Microsoft services.

Microsoft ASP.NET

This package contains the Microsoft ASP.NET SignalR library.

Xamarin.Social

Share statuses, links, and images on Facebook, Flickr, Twitter and more.

Xamarin.Auth

A cross-platform API for authenticating users and storing their accounts.

Xamarin.Mobile

Xamarin.Mobile is a library that exposes a single set of APIs for accessing common mobile device functionality across iOS, Android and Windows platforms.

Xamarin.InAppBilling

Component to assist in adding In-App Billing to a Xamarin.Android application via Google Play Services.

Xamarin.FacebookBinding

Xamarin Android Binding library for Facebook Android SDK

BugSense plugin for Xamarin Android applications

BugSense is the leading crash reporting and quality metrics service for mobile applications. This is the official plugin for Xamarin Android applications.

Created by: James Newton-King

Id: Newtonsoft.Json

Add Packages

xamarin

Xamarin.Social

1.1.1

Xamarin.Social posts statuses, links, images, and other media to social networks using a simple, cross-platform API. With Xamarin.Social, you can easily:

Id [xamstore-xamarin.social](#)

Author [Xamarin](#)

Published [4/1/2014](#)

Downloads [40](#)

License [View License](#)

Project Page [Visit Page](#)

Dependencies None

Show pre-release packages

Close

Add Package

The screenshot shows the 'Manage NuGet Packages' window for a project named 'PlanetXamarin.WinStore'. The search bar at the top right contains the text 'xamarin'. The results list several packages, with 'Xamarin.Social' being the top result. A detailed view of 'Xamarin.Social' is shown on the right side of the screen, including its version (1.1.1), description, author (Xamarin), publish date (4/1/2014), download count (40), license information, project page, and dependencies. The left sidebar shows sections for 'Installed packages', 'Online' (with filters for 'All', 'nuget.org', 'Motz NuGets', and 'Microsoft and .NET'), and 'Updates'. A note at the bottom left states that each package is licensed by its owner, and Microsoft is not responsible for third-party packages. A 'Settings' button is also visible.

Breakdown

Benefits

- Share code across multiple platforms
- Refactoring easily
- Shareable across many projects
- Access only APIs that exist on all platforms

Disadvantages

- No compiler directives
- Subset of the .NET Framework

What to pick?

What should I use?

- Stick with PCLs
- Mix some Shared Projects in when needed
- Do what works for you ☺

Let's do some stuff!

Resources

- Code Sharing Guide
 - http://developer.xamarin.com/guides/cross-platform/application_fundamentals/building_cross_platform_applications/
- Motz Codes Live:
 - <https://www.youtube.com/user/jamesmontemagno>
 - <https://github.com/jamesmontemagno/MotzCodesLive>

Thank you. Questions?



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