

Xamarin

Martin Bojnanský

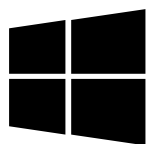
MSP, Riganti

@martinbojnansky

martin.bojnansky@outlook.com

<http://bojnansky.com>

Vývoj aplikací pre



Windows



Android



iOS

Prečo Xamarin?

Jeden programovací jazyk C#

Natívne API / Výkon

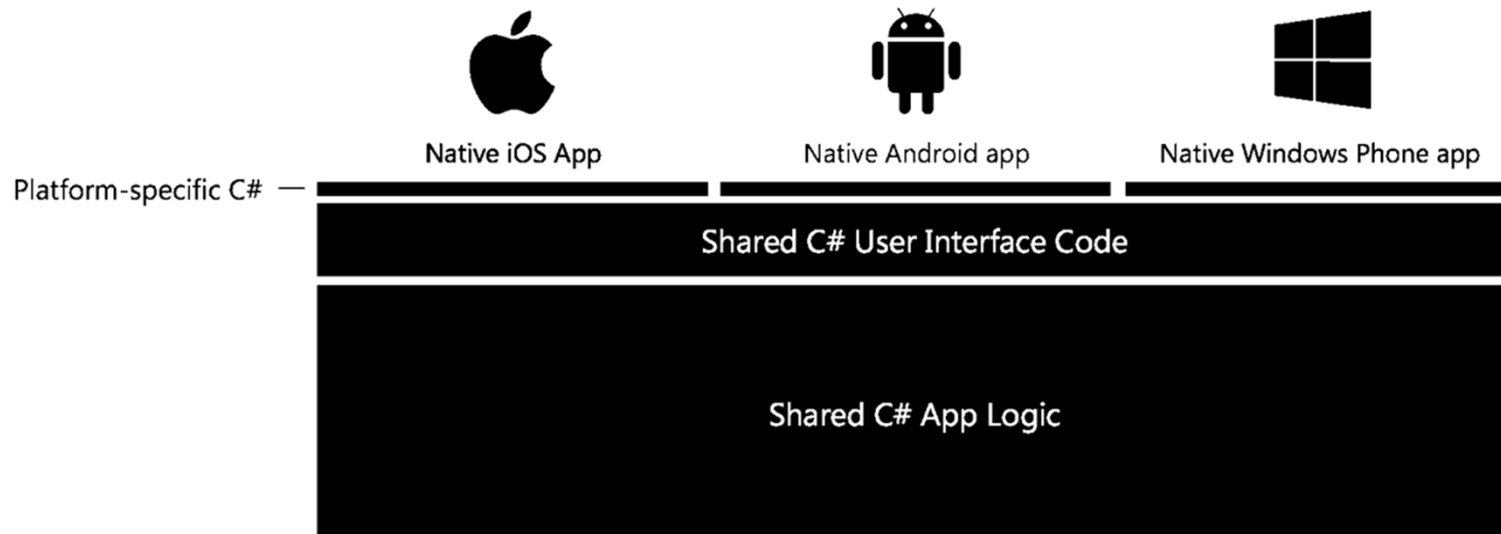
Natívne UI / Výkon

Spoločný UI Framework

Zdieľanie kódu

Priemerne 75% aplikačnej logiky

Takmer 100% pri využití Xamarin.Forms



Prečo nie?

Veľkosť výslednej aplikácie

Balíky tretích strán

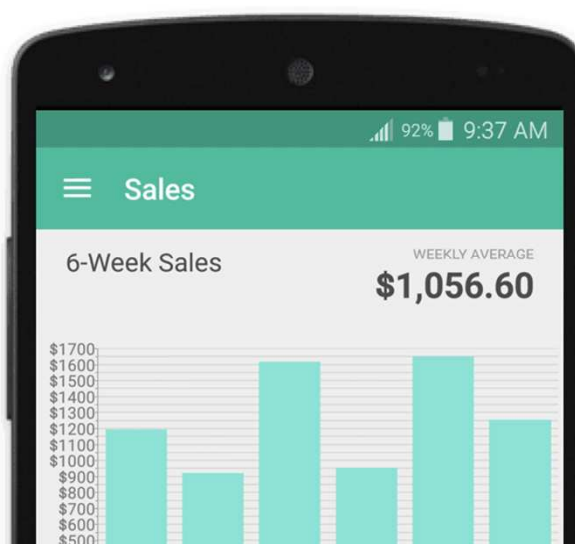
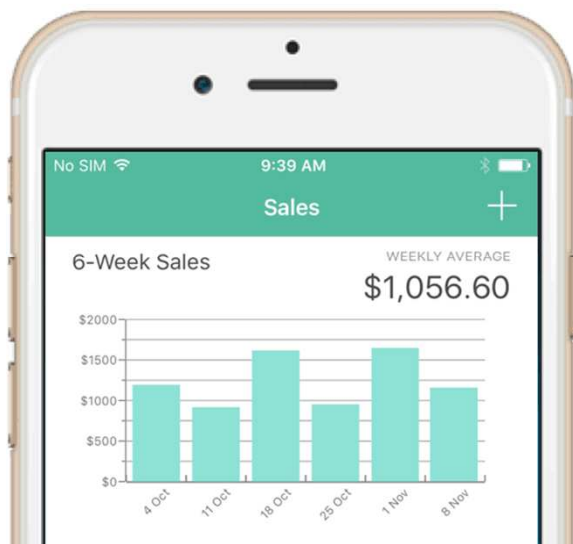
Xamarin.Forms

Framework pre tvorbu UI

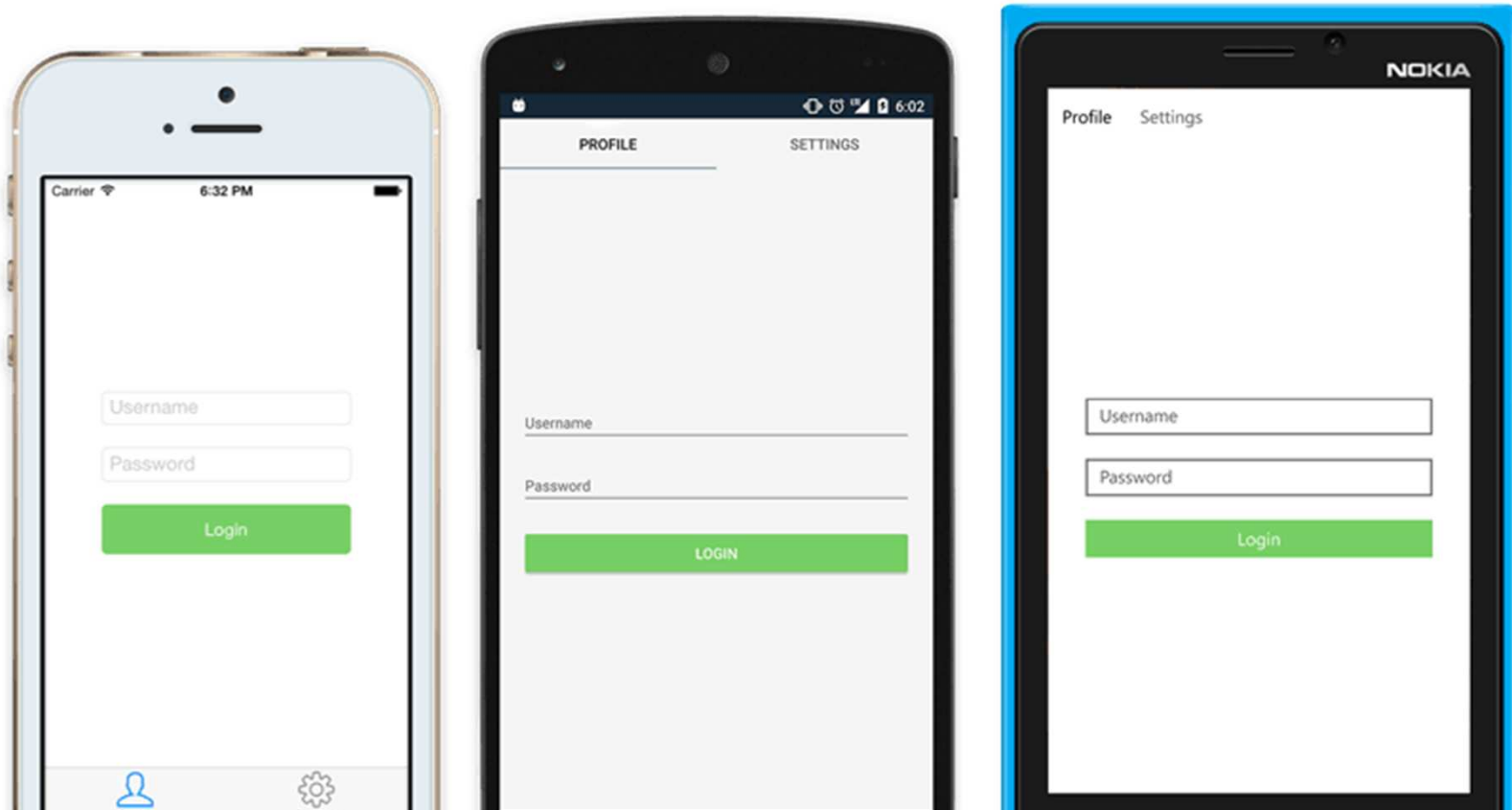
Spoločný pre všetky platformy

Neovplyvňuje výkon aplikácie

Natívne UI na všetkých platformách



Xamarin.Forms



Xamarin.Forms

XAML

```
<?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>
```

C# XAML

C#

```
using Xamarin.Forms;

var profilePage = new ContentPage {
  Title = "Profile",
  Icon = "Profile.png",
  Content = new StackLayout {
    Spacing = 20, Padding = 50,
    VerticalOptions = LayoutOptions.Center,
    Children = {
      new Entry { Placeholder = "Username" },
      new Entry { Placeholder = "Password", IsPassword = true },
      new Button {
        Text = "Login",
        TextColor = Color.White,
        BackgroundColor = Color.FromHex("77D065") }}}
};

var settingsPage = new ContentPage {
  Title = "Settings",
  Icon = "Settings.png",
  (...)
};

var mainPage = new TabbedPage { Children = { profilePage, settingsPage } };
```

C# XAML

Xamarin vs. Xamarin.Forms

XAMARIN

Dôležitosť natívneho a špecifického

UI

Veľké množstvo platform-specific

API

XAMARIN.FORMS

Dôležitosť zdieľania kódu

Klientske aplikácie s množstvom

formulárov a pod.

Čo potrebujem?



Visual Studio
for Windows



Visual Studio for Mac
for Mac

Visual Studio Workloads

Modifying — Visual Studio Professional 2017 — 15.5.2

Workloads Individual components Language packs

Windows (3)

| | | |
|---|---|--|
|  Universal Windows Platform development Create applications for the Universal Windows Platform with C#, VB, JavaScript, or optionally C++. |  .NET desktop development Build WPF, Windows Forms, and console applications using C#, Visual Basic, and F#. |  Desktop development with C++ Build classic Windows-based applications using the power of the Visual C++ toolset, ATL, and optional features like |
|---|---|--|

Web & Cloud (7)

| | | |
|--|--|--|
|  ASP.NET and web development Build web applications using ASP.NET, ASP.NET Core, HTML/JavaScript, and Containers including Docker support. |  Azure development Azure SDK, tools, and projects for developing cloud apps and creating resources. |  Python development Editing, debugging, interactive development and source control for Python. |
|  Node.js development Build scalable network applications using Node.js, an asynchronous event-driven JavaScript runtime. |  Data storage and processing Connect, develop, and test data solutions with SQL Server, Azure Data Lake, or Hadoop. |  Data science and analytical applications Languages and tooling for creating data science applications, including Python, R and F#. |
|  Office/SharePoint development Create Office and SharePoint add-ins, SharePoint solutions, and VSTO add-ins using C#, VB, and JavaScript. | | |

Mobile & Gaming (5)

| | | |
|---|--|--|
|  Mobile development with .NET Build cross-platform applications for iOS, Android or Windows using Xamarin. |  Game development with Unity Create 2D and 3D games with Unity, a powerful cross-platform development environment. |  Mobile development with JavaScript Build Android, iOS and UWP apps using Tools for Apache Cordova. |
|  Mobile development with C++ Build cross-platform applications for iOS, Android or Windows using C++. |  Game development with C++ Use the full power of C++ to build professional games, powered by DirectX, Unreal, or Cocos2d. | |

Other Toolsets (3)

Summary

- > Visual Studio core editor
- > Universal Windows Platform development
- ✓ Mobile development with .NET *

Included

- ✓ Xamarin
- ✓ .NET Framework 4.6.1 development tools
- ✓ C# and Visual Basic
- ✓ .NET Portable Library targeting pack
- ✓ ASP.NET templating engine
- ✓ .NET Core 2.0 development tools
- ✓ ASP.NET and web development tools

Optional

- ✓ Xamarin Workbooks
- ✓ Xamarin Remoted Simulator
- ✓ Xamarin SDK Manager
- ✓ Android NDK (R13B)
- ✓ Android SDK setup (API level 25)
- ✓ Java SE Development Kit (8.0.1120,13)
- ✓ Google Android Emulator (API Level 25)
- ✓ Intel Hardware Accelerated Execution Manager (HAXM)
- ✓ Universal Windows Platform tools for Xamarin

Individual components

- ✓ C# and Visual Basic Roslyn compilers
- ✓ MSBuild
- ✓ Text Template Transformation
- ✓ .NET Framework 4.7 SDK
- ✓ .NET Framework 4.7 targeting pack
- ✓ .NET Framework 4.7.1 SDK
- ✓ .NET Framework 4.7.1 targeting pack
- ✓ PowerShell tools
- ✓ Class Designer
- ✓ Dependency Validation
- ✓ LINQ to SQL tools

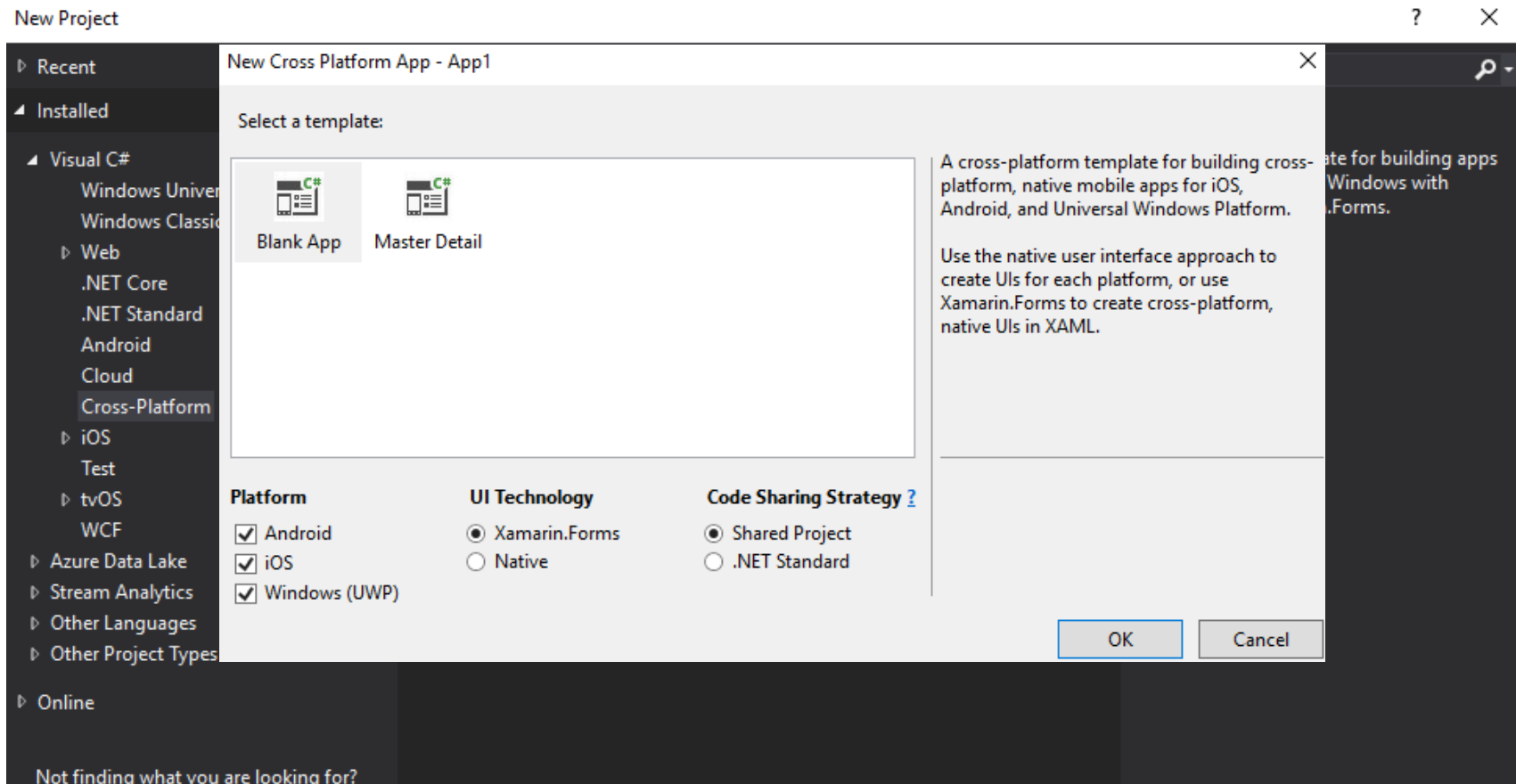
Vývoj pre iOS

Pre kompiláciu potrebujeme tzv. Mac Agent

Kompilácia prebieha na zariadení Mac OS

Simulátor beží priamo vo Windows

Vytvorenie projektu



Zdieľanie kódu

SHARED PROJECT

Zdieľané súbory pre všetky
platformy

Možný override pre konkrétnu
platformu

Pred-procesorové direktívy

.NET STANDART LIBRARY

Jedna DLL pre všetky platformy

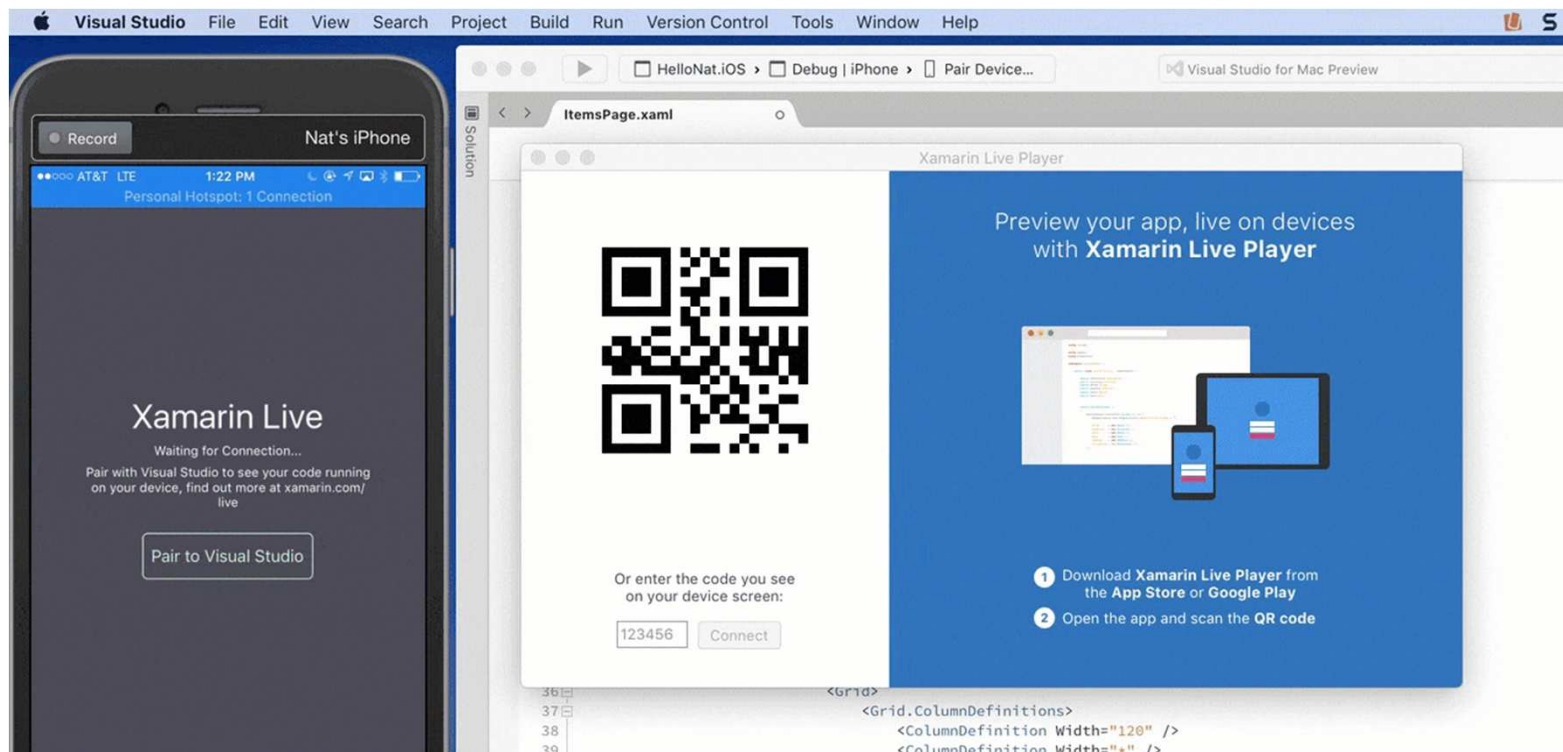
Len spoločné veci

Špecifické veci je možné odtieniť
pomocou interface

Prvý pokus

Xamarin Live Player

Živý náhľad UI pre iOS a Android zariadenia



Odporúčané zdroje

Xamarin Developer

<https://developer.xamarin.com/>

Základy C#

<https://mva.microsoft.com/en-US/training-courses/c-fundamentals-for-absolute-beginners-16169>

Xamarin Forms

https://mva.microsoft.com/en-US/training-courses/mastering-xamarinforms-development-part-1-pages-layout-and-navigation-17554?l=xyikQaUpD_8200115881