Xamarin
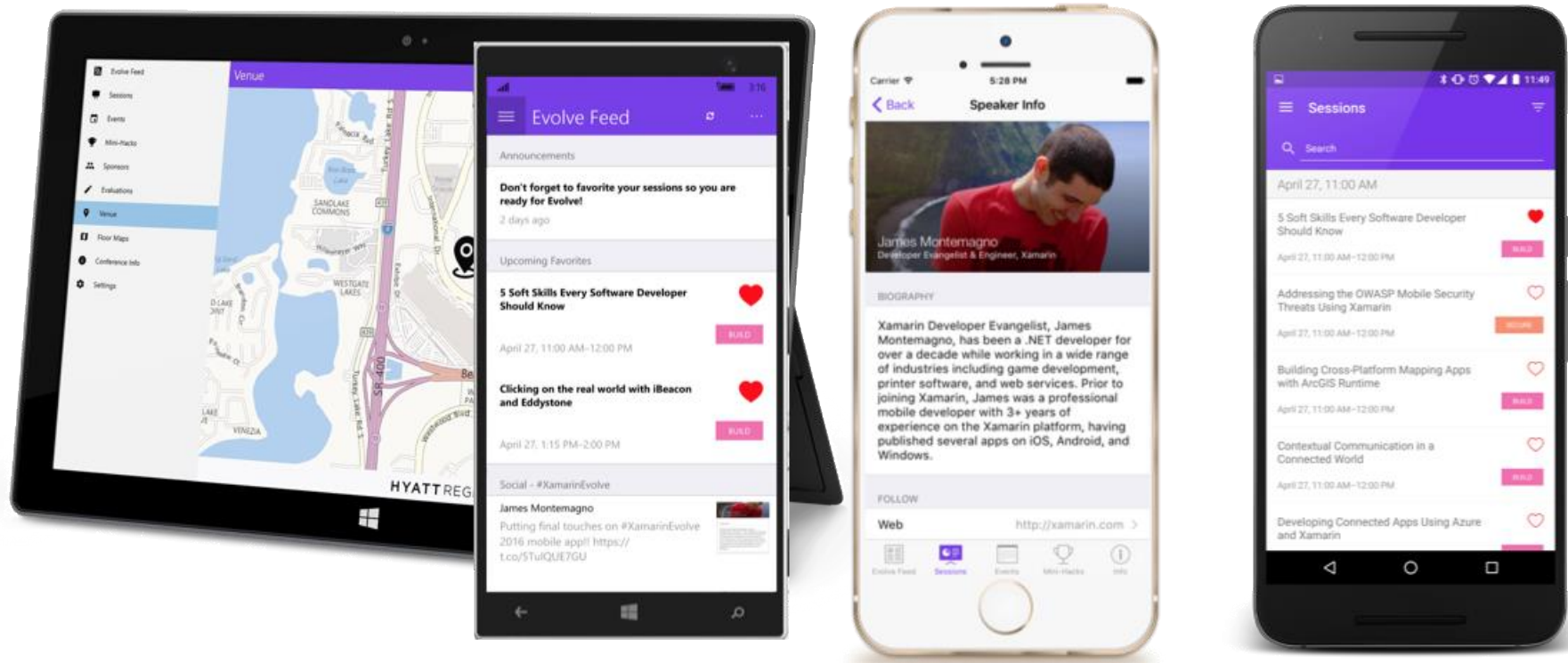## X DEV DAYS

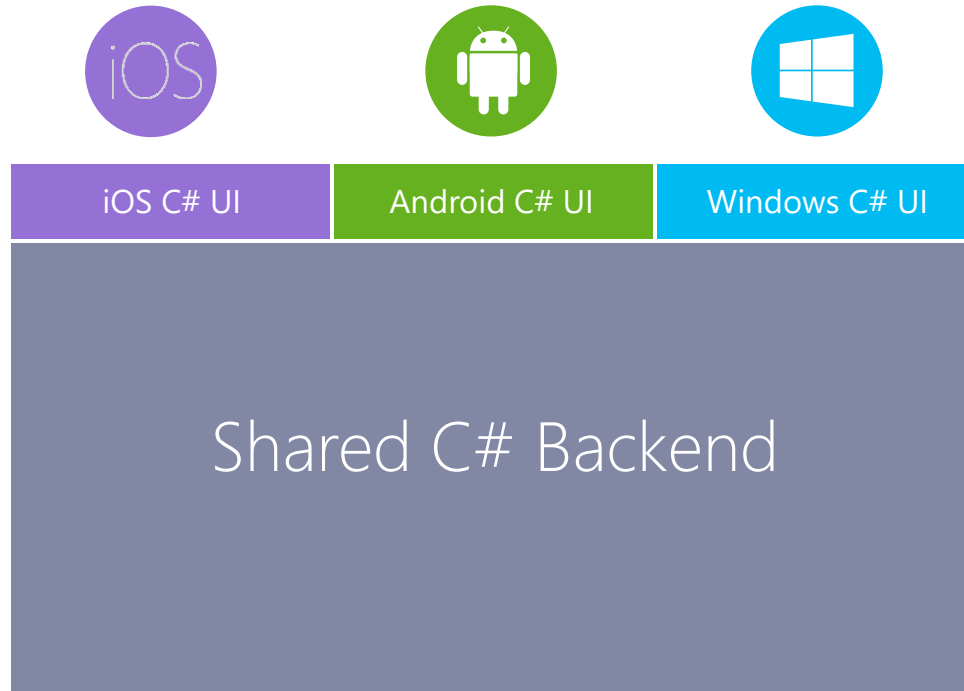# Cross-Platform Native User Interfaces with Xamarin.Forms

Sergio Bonilla
@SergioBonillaOk
System Analyst at Nareia

Meet Xamarin.Forms
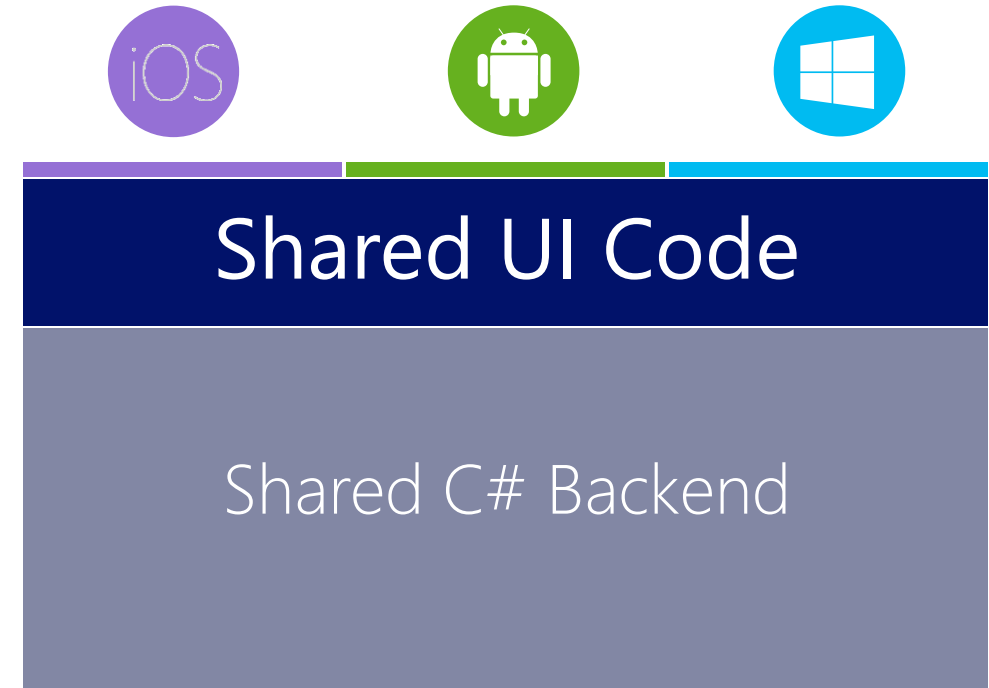

Build native UIs for iOS, Android, and Windows
from a single, shared C# codebase.
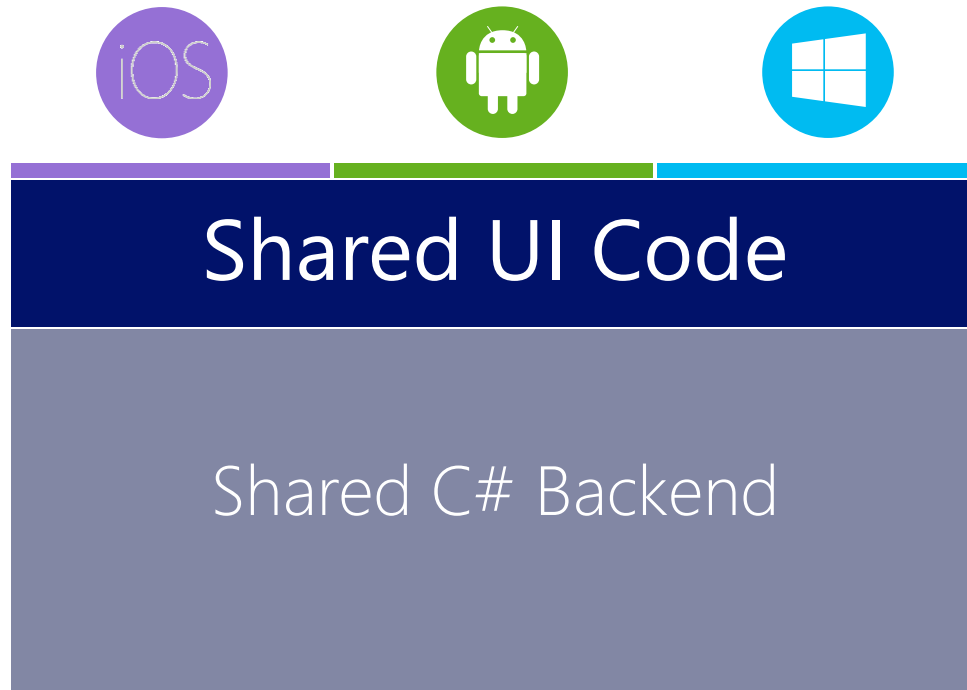
Xamarin + Xamarin.Forms

iOS · Android · Windows

iOS C# UI · **Android C# UI** · **Windows C# UI**

Shared C# Backend

Shared UI Code

Shared C# Backend
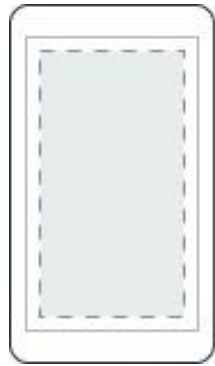
Traditional Xamarin Approach

With Xamarin.Forms:
More code-sharing, all native

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
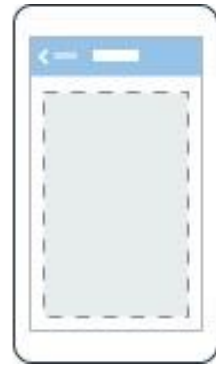
Pages

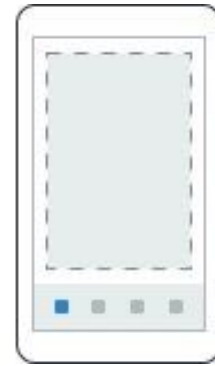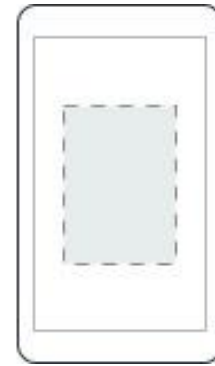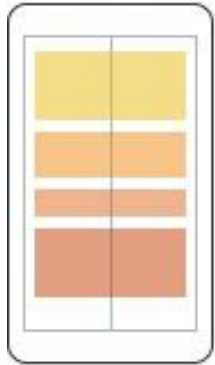| Content | MasterDetail | Navigation | Tabbed | Carousel |

Pages

Content MasterDetail Navigation Tabbed Carousel

Layouts
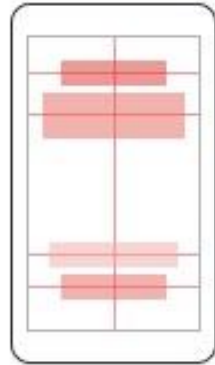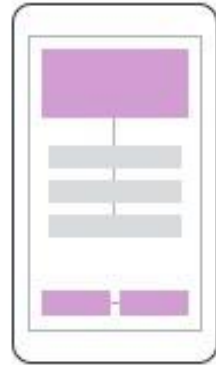
Stack Absolute Relative Grid ContentView ScrollView Frame
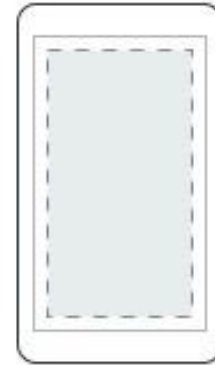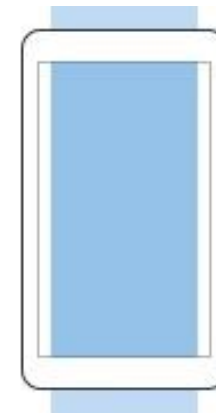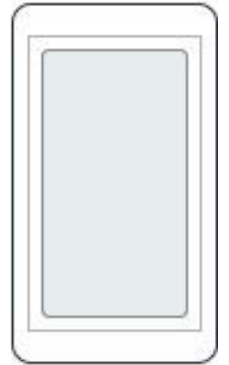
Controls

ActivityIndicator	BoxView	Button	DatePicker	Editor
Entry	Image	Label	ListView	Map
OpenGLView	Picker	ProgressBar	SearchBar	Slider
Stepper	TableView	TimePicker	WebView	EntryCell
ImageCell	SwitchCell	TextCell	ViewCell	

Xamarin.Forms Ecosystem

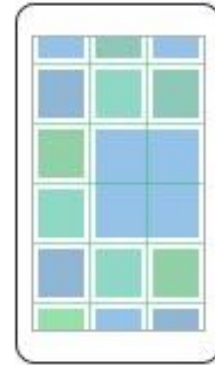| Windows	Xamarin.Forms
StackPanel	StackLayout
TextBox	Entry
ListBox	ListView
CheckBox	Switch
ProgressBar	ActivityIndicator
Grid	Grid
Label	Label
Button	Button
Image	Image
Date/TimePicker	Date/TimePicker

Control
Comparison

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

Binding Comparison

```xml
<Label Text="{Binding Color.R,
            Converter={StaticResource intConverter},
            ConverterParameter=255,
            StringFormat='R={0:X2}'}" />
```

```xml
<ContentPage.Padding>
  <OnPlatform x:TypeArguments="Thickness">
    <OnPlatform.iOS>
      0, 20, 0, 0
    </OnPlatform.iOS>
    <OnPlatform.Android>
      0, 0, 0, 0
    </OnPlatform.Android>
    <OnPlatform.WinPhone>
      0, 0, 0, 0
    </OnPlatform.WinPhone>
  </OnPlatform>
</ContentPage.Padding>
```

Platform Customization

Native UI from shared code
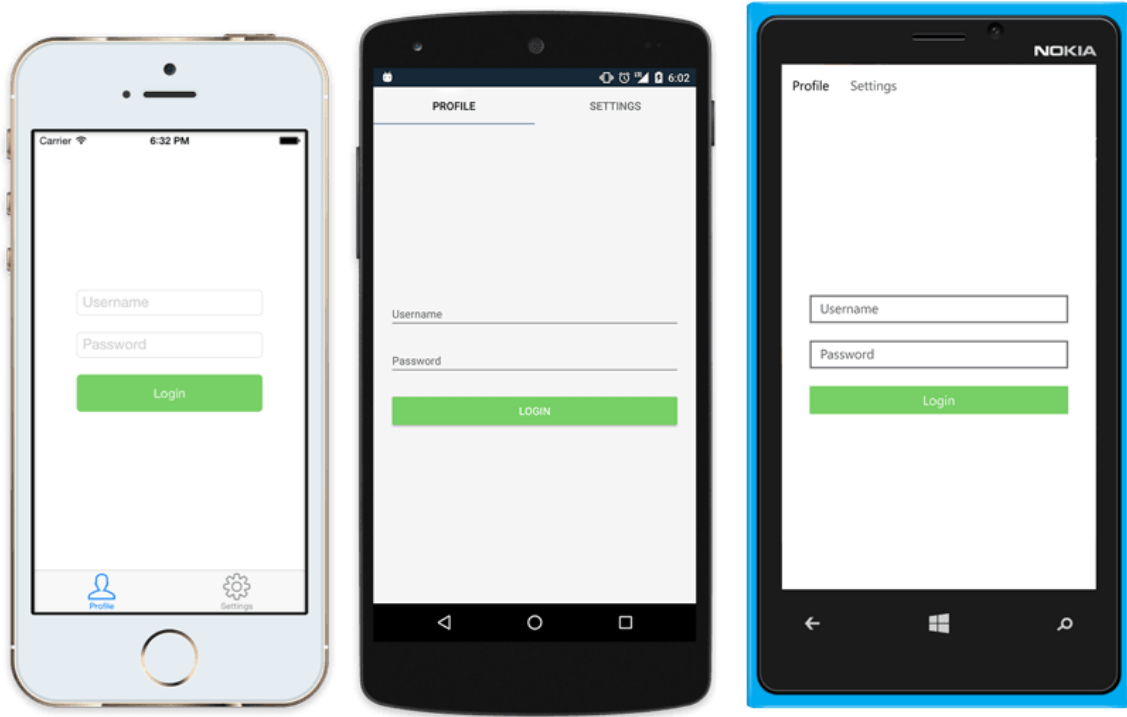

```xml
<?xml version="1.0" encoding="UTF-8"?>
<TabbedPage xmlns="http://xamarin.com/schemas/2014/forms"
            xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
            x:Class="MyApp.MainPage">
<TabbedPage.Children>
<ContentPage Title="Profile" Icon="Profile.png">
    <StackLayout Spacing="20"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

Xamarin.Forms

Demo

Latest and Greatest
in Xamarin.Forms

Xamarin.Forms
is Open Source!

open.xamarin.com

XAML Previewer
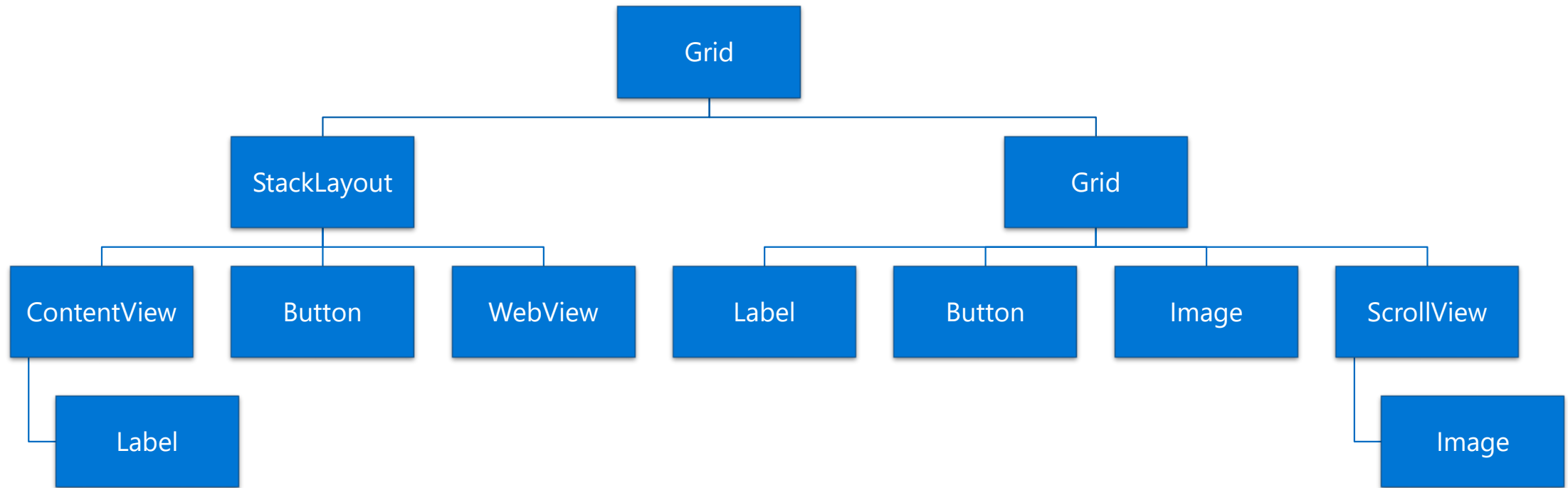
Fast Renderers

FORMS STRUCTURE

Fast Renderers
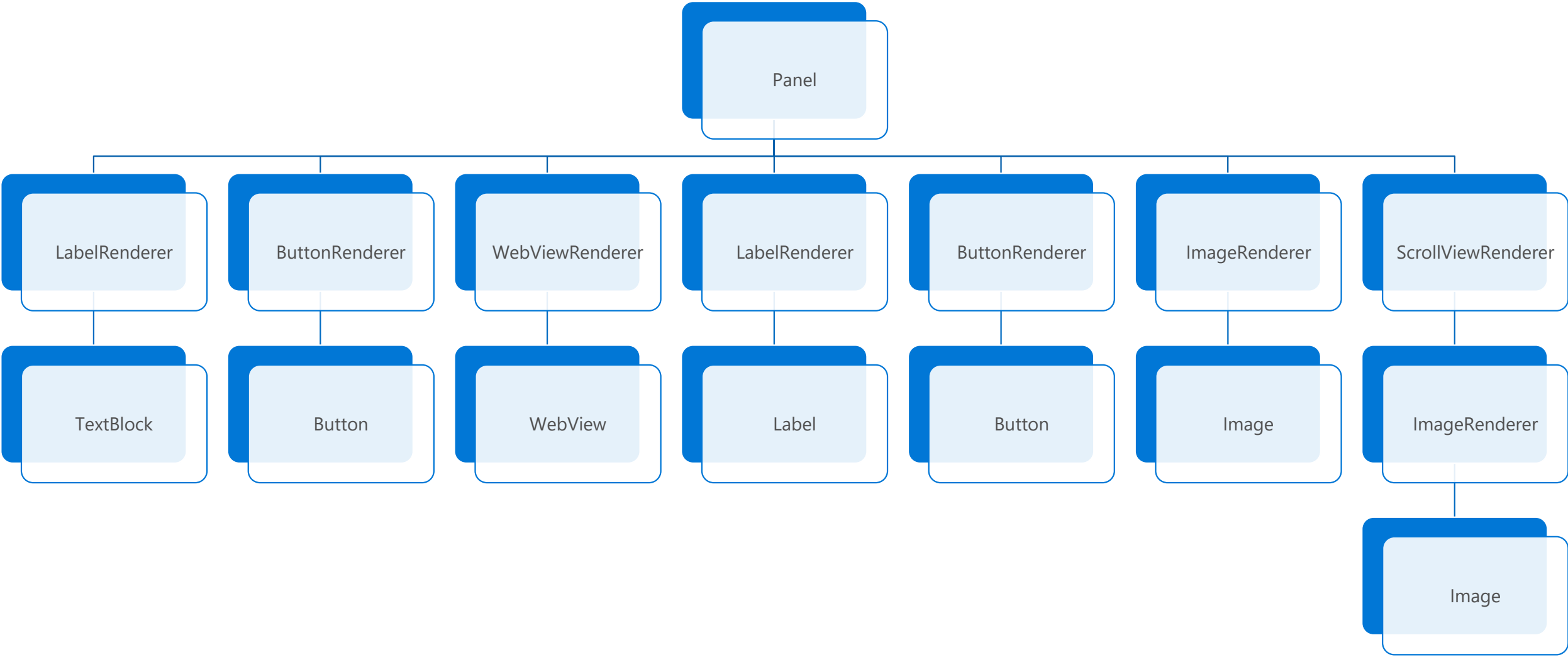
WHAT IS PRODUCED NOW

Fast Renderers

AFTER FAST RENDERERS + COMPRESSION

Layout Compression

Native View Declarations

nativemix.iOS › Debug › ‖ ⟳ ⇊ ⇡ ⚙ Xamarin Studio Enterprise   Press '⌘.' to search

AppDelegate.cs   Main.cs   MyPage.xaml ✕   MyPage.xaml.cs

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ContentPage Title="Xaml Native Views" xmlns="http://xamarin.com/schemas/2014/forms" xmlns:ios="clr-namespace:UIKit;assembly=Xamarin.iOS;target
    <ContentPage.Resources>
        <ResourceDictionary>
            <iosControls:UIColorConverter x:Key="colorConverterIOS" />
        </ResourceDictionary>
    </ContentPage.Resources>
    <ContentPage.Content>
        <StackLayout BackgroundColor="#eeeeee">
            <Label Text="This text color is Bound to the picker" FontSize="22" FontAttributes="Bold" HorizontalTextAlignment="Center"
                TextColor="{Binding FormsSelectedColor}"></Label>
            <Button Text="Change Text From Forms" Command="{Binding ChangeTextCommand}" />
            <ios:UILabel BackgroundColor="{x:Static ios:UIColor.LightGray}" Text="{Binding LabelName,}"
            <ios:UITextView Text="{Binding LabelName, Mode=TwoWay, UpdateSourceEventName=Ended}" />
            <iosColorPicker:ColorPickerView
                SelectedColor="{Binding Path=FormsSelectedColor,
                            Mode=TwoWay,
                            Converter={StaticResource colorConverterIOS},
                            UpdateSourceEventName=ColorPicked}" >
                <x:Arguments>
                    <iosCoreGraphics:CGRect>
                        <x:Arguments>
                            <x:Double>0</x:Double>
                            <x:Double>0</x:Double>
```
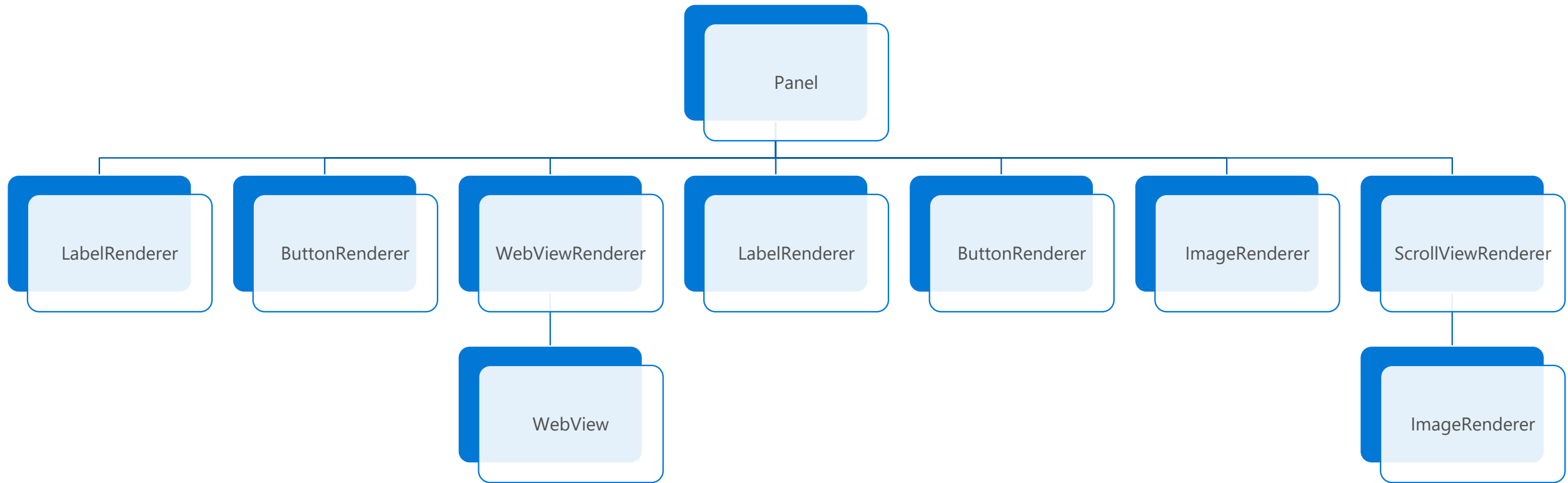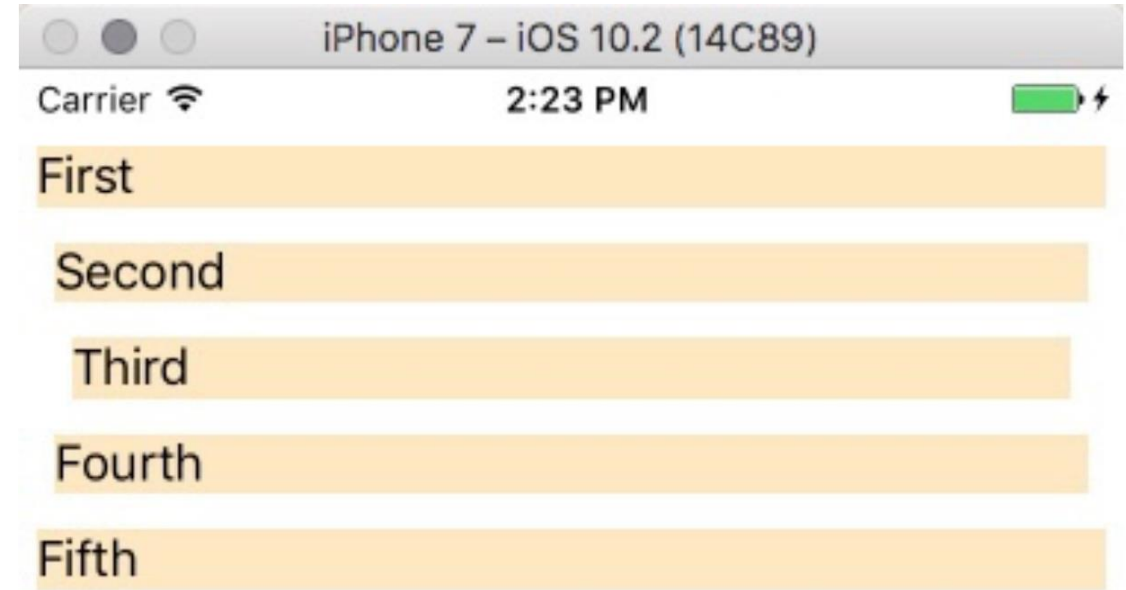
iPhone SE – iOS 10.0 (14A345)

Carrier 🛜   7:22 PM

Xaml Native Views

This text color is Bound to t
picker

Change Text From Forms
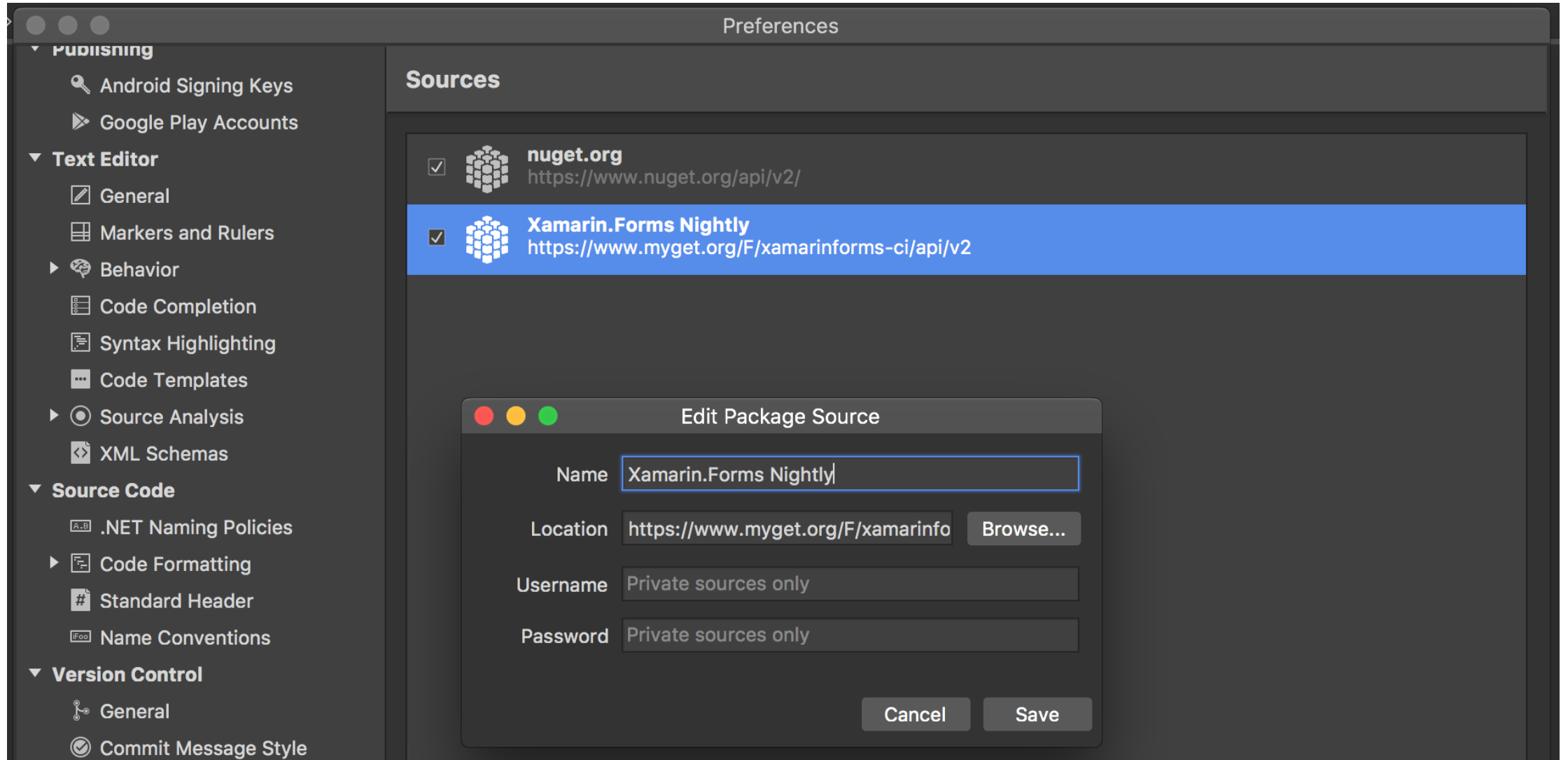
Nightly Builds

More Performance Enhancements

- Android Startup
- Reduce Android GPU Overdraw
- Single DLL

15 Minute Break

Sergio Bonilla
@SergioBonillaOk
System Analyst at Nareia

sergio.bonilla@nareia.com.uy
@SergioBonillaOk