



Dev Days

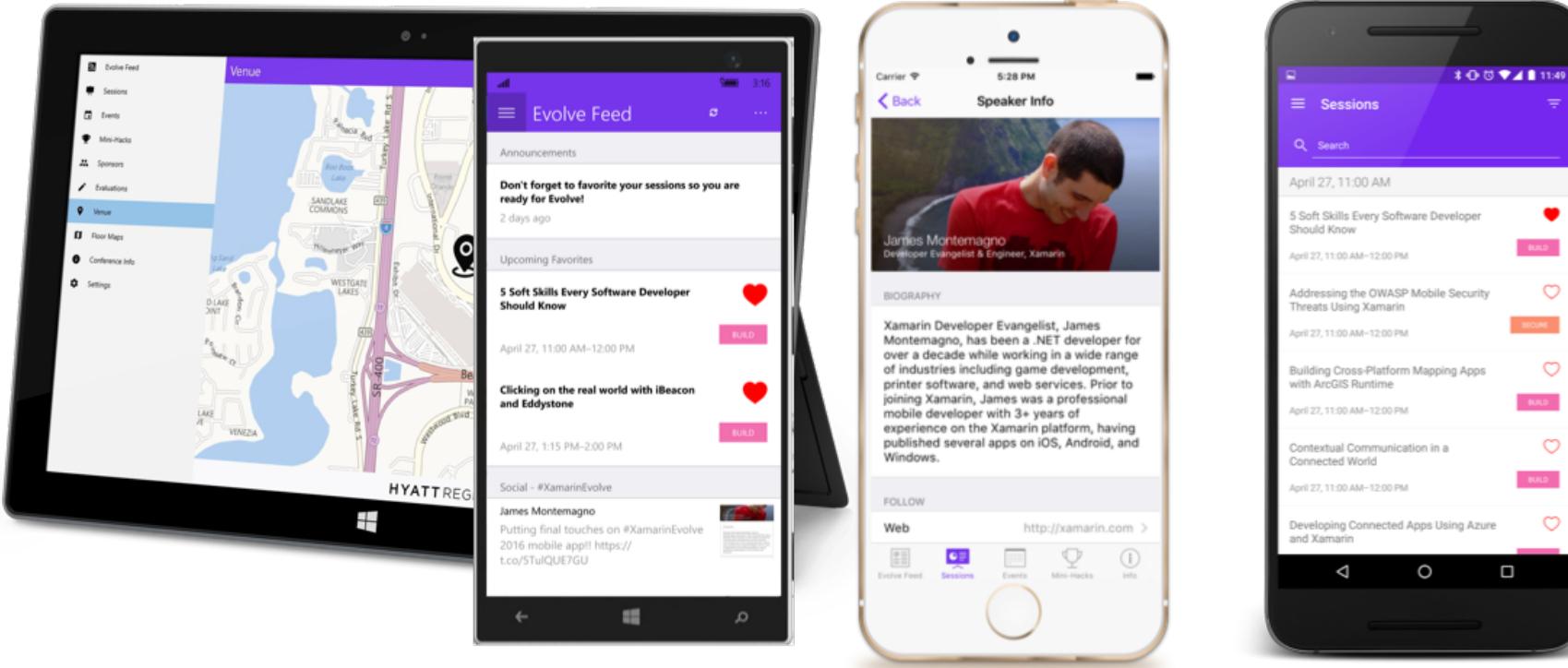
(X) Dev Days

#XamarinDevDays

Cross-Platform Native User Interfaces with Xamarin.Forms

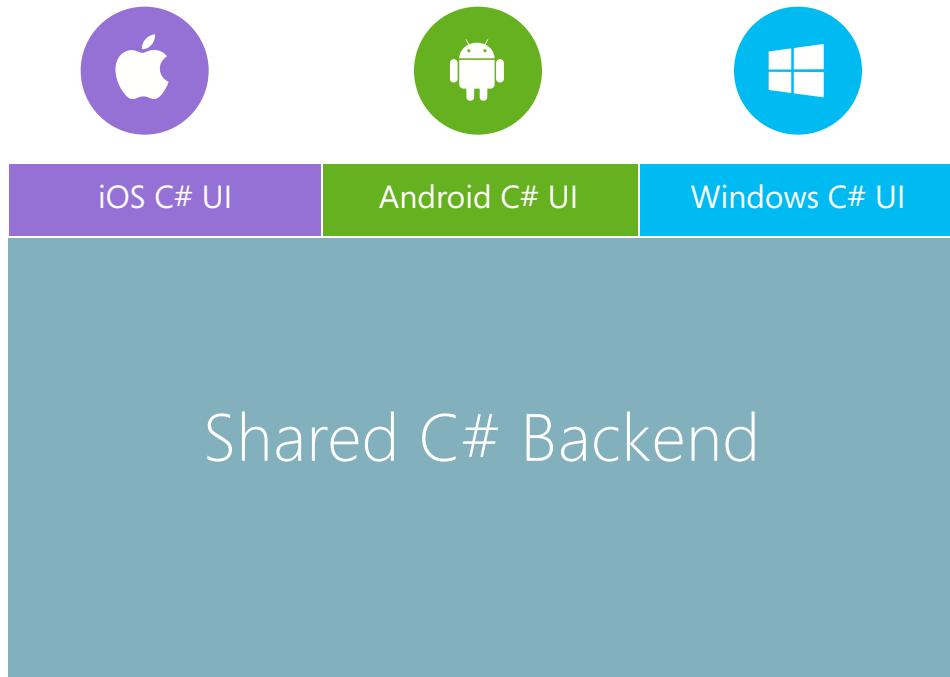
Geert van der Cruijsen – Lead Consultant Xpirit
@Geertvdc
<http://mobilefirstcloudfirst.net>

Meet Xamarin.Forms

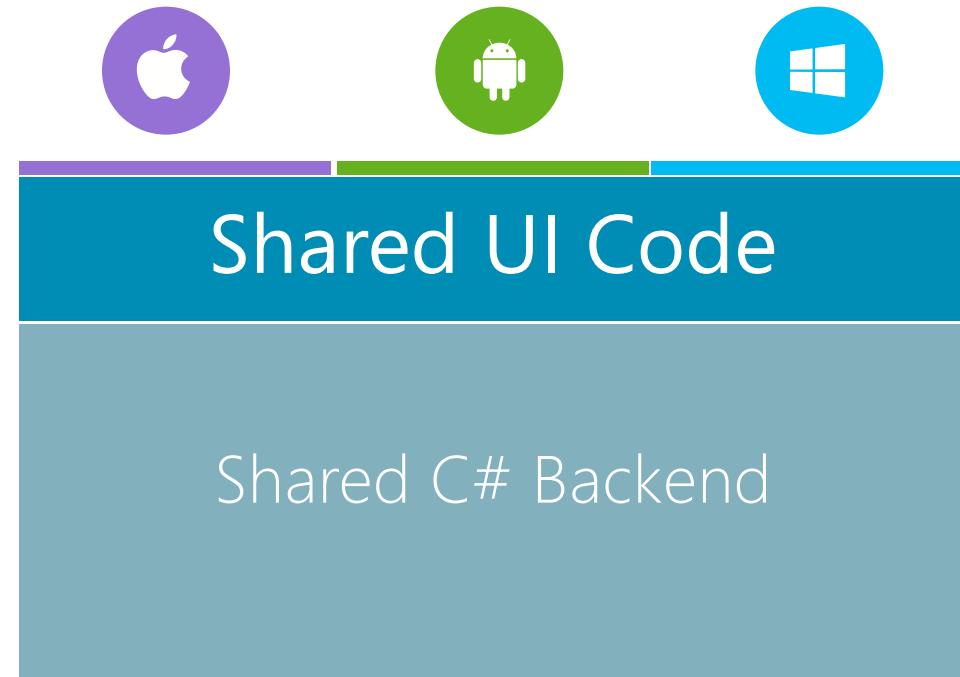


Build native UIs for iOS, Android, and Windows
from a single, shared C# codebase.

Xamarin + Xamarin.Forms

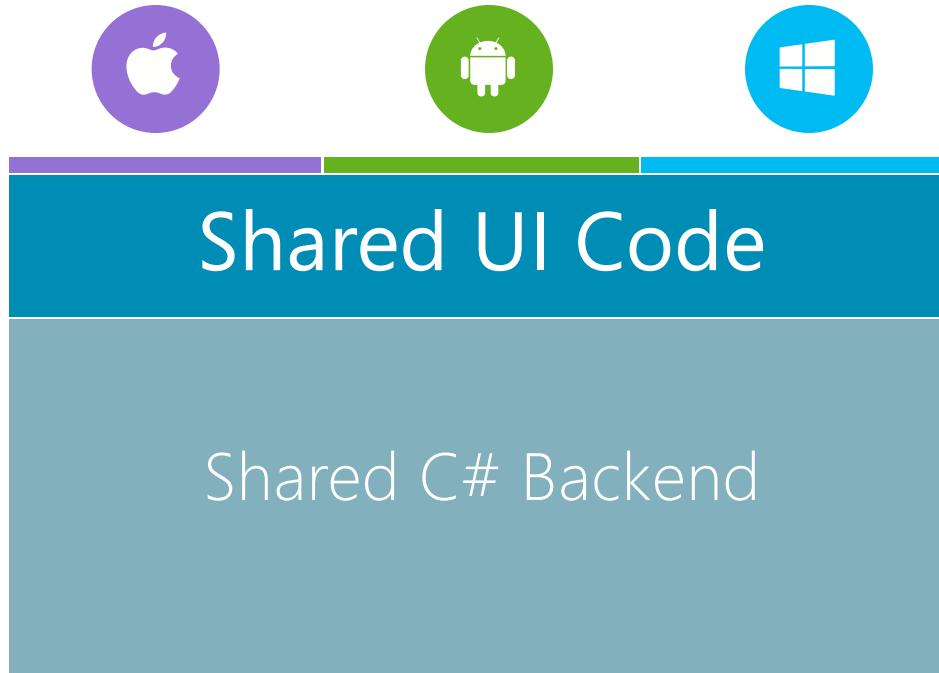


Traditional Xamarin Approach



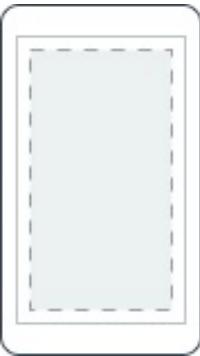
With Xamarin.Forms:
More code-sharing, all native

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

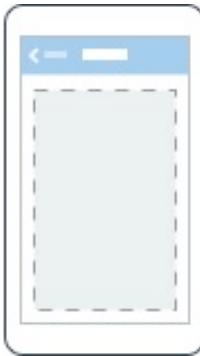
Pages



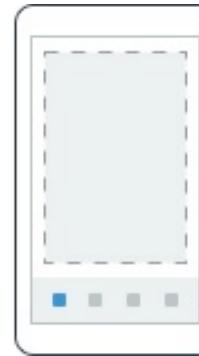
Content



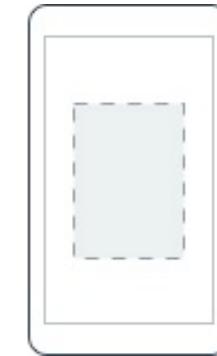
MasterDetail



Navigation

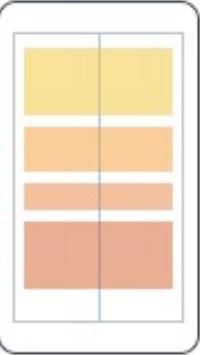


Tabbed

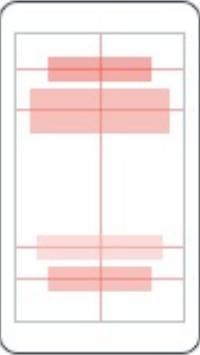


Carousel

Layouts



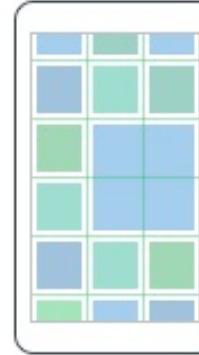
Stack



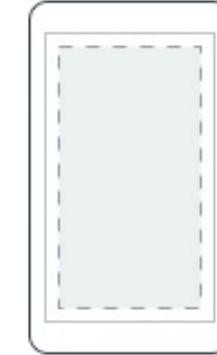
Absolute



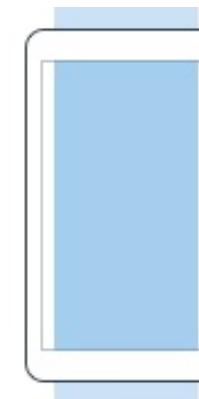
Relative



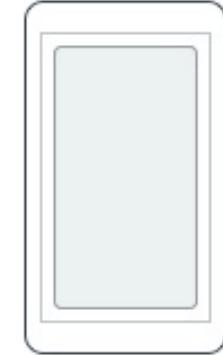
Grid



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



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

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

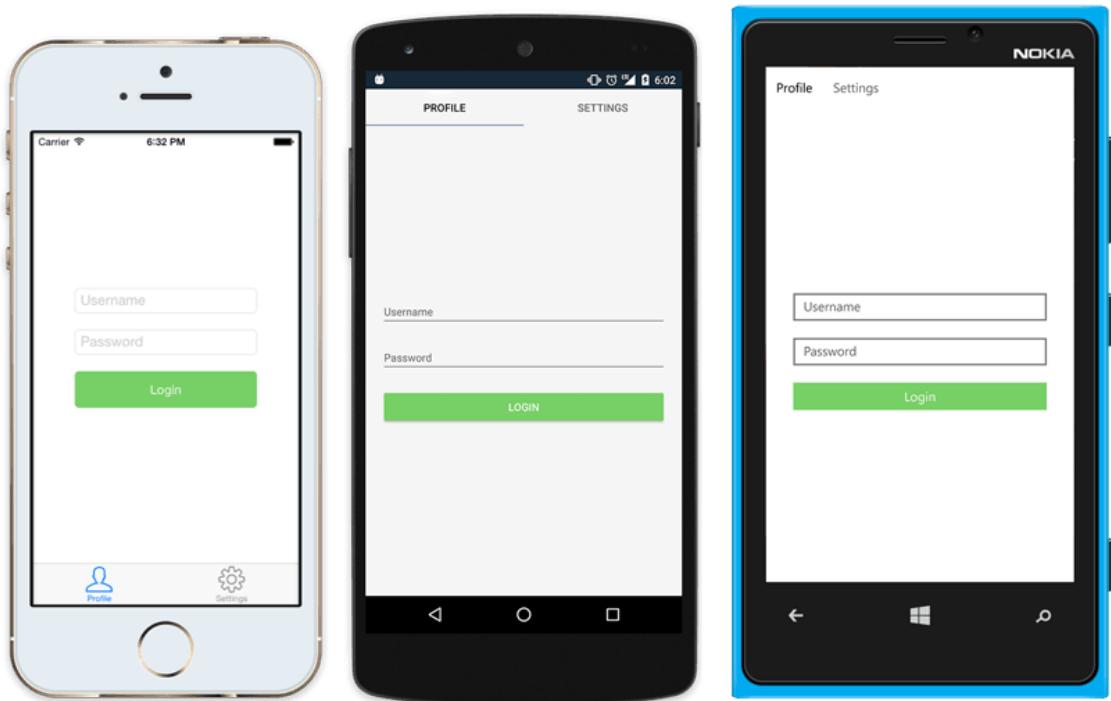
```
<Label Text="{Binding Color.R,  
        Converter={StaticResource intConverter},  
        ConverterParameter=255,  
        StringFormat='R={0:X2}' }" />
```

Binding Comparison

```
<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 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

What's new?

Xamarin.Forms 2.0!

Xamarin.Forms
is Open Source!

open.xamarin.com

Performance
Performance
Performance

ListView CachingStrategy

```
public enum ListViewCachingStrategy
{
    RetainElement = 0,
    RecycleElement,
}
```

- ✓ Improves scrolling performance
- ✓ Old behavior is currently the default (but likely to change)

XAML Compilation

XAML

XAMLC

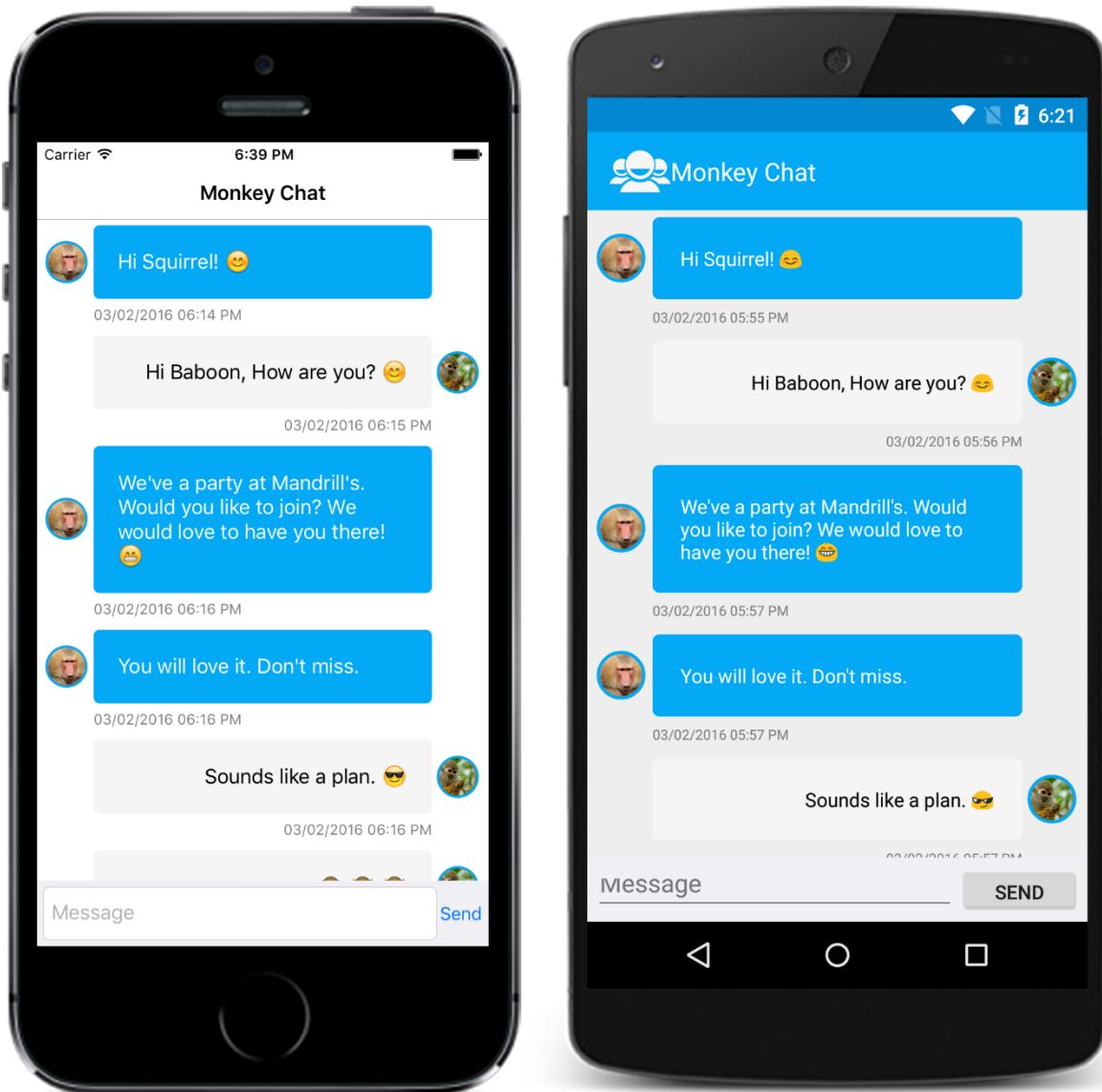


Benefits

- ✓ Faster Loading
- ✓ Smaller App Size
- ✓ See XAML errors at build time

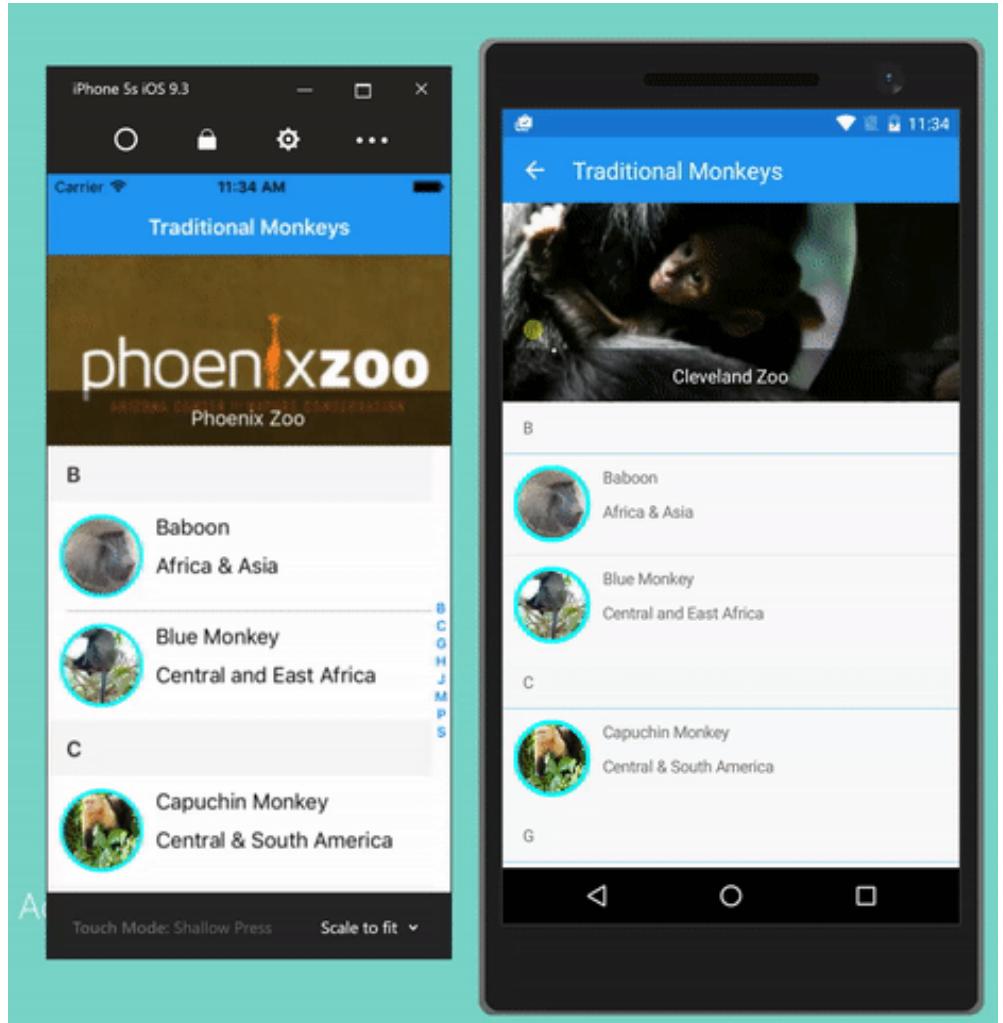
Design & Controls

Data Templates



CarouselView

- Embeddable Carousel
- ItemTemplate & DataTemplates
- Highly customizable & Virtualized



Effects I

- ✓ Custom renderer “lite”
 - ✓ Change properties on the native control
 - ✓ Optional
 - ✓ “stringly-typed”
-
- ✗ *No methods or events*
 - ✗ *No replacing the control*

Effects II

```
entry.Effects.Add (Effect.Resolve("Xamarin.BorderEffect"));
```

```
// located inside iOS specific codebase
public class BorderEffect : PlatformEffect
{
    protected override void OnAttached ()
    {
        Control.Layer.BorderColor = UIColor.Purple.CGColor;
        Control.Layer.BorderWidth = 2;
    }

    protected override void OnDetached ()
    {
        Control.Layer.BorderWidth = 0;
    }
}
```

So much more

XAML Previewer

Screenshot of the Xamarin Studio XAML Previewer interface.

The top bar shows the project configuration: Debug | iPhone Simulator > iPhone 6s iOS 9.3. The title bar says "Xamarin Studio Business". There are 7 notifications and a search bar.

The tabs at the top are: App.cs, ImageCircleRenderer.cs, ImageCircleRenderer.cs, CoffeesPage.xaml (selected), and a blank tab.

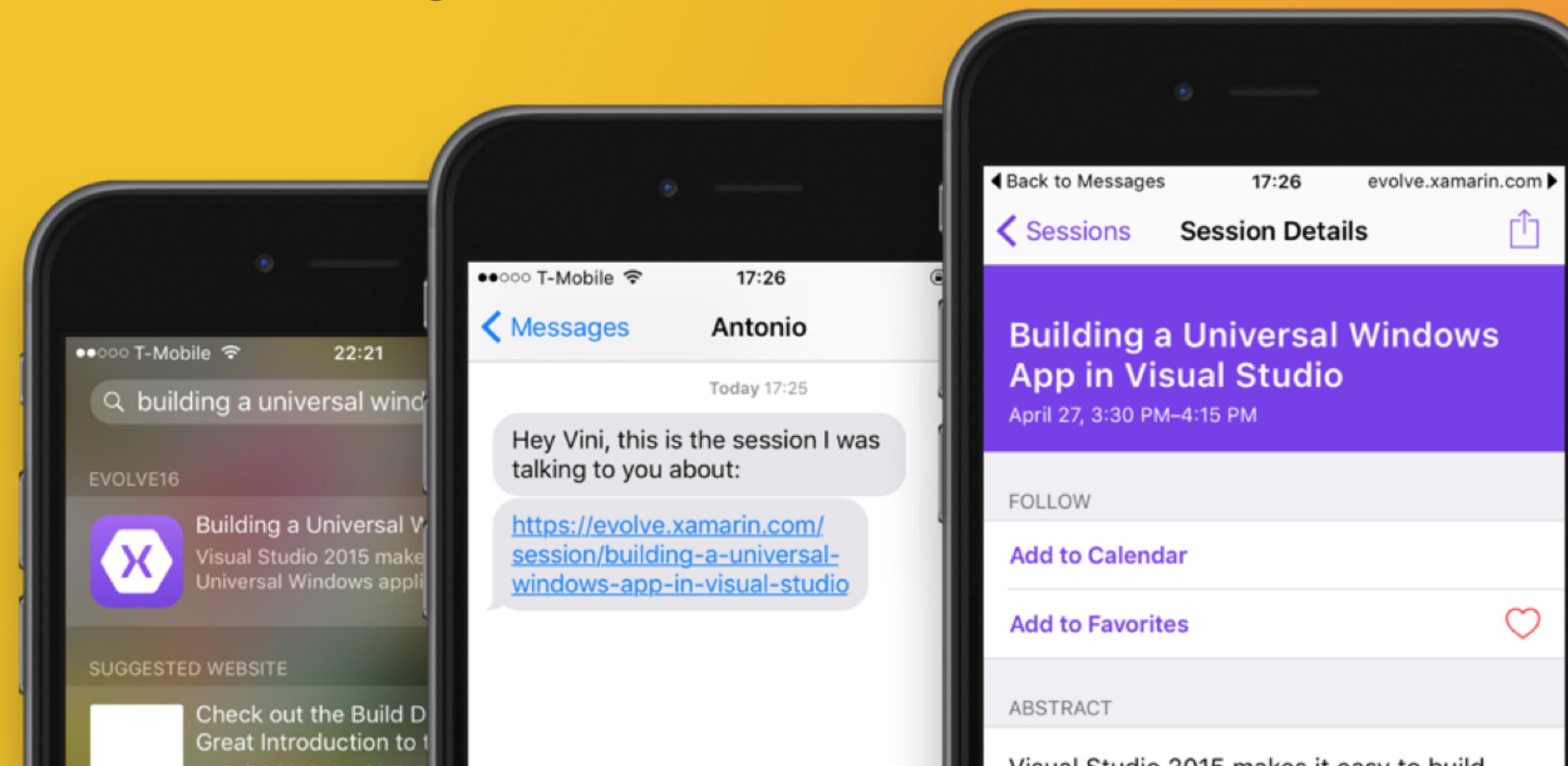
The preview window shows a list of coffee entries:

Date	Made At Home?	Image
4/26/2016 10:17:53 AM	OFF	
10:17 AM	Made At Home	
4/25/2016 10:17:53 AM		
10:17 AM		
10:17 AM	Made At Home	

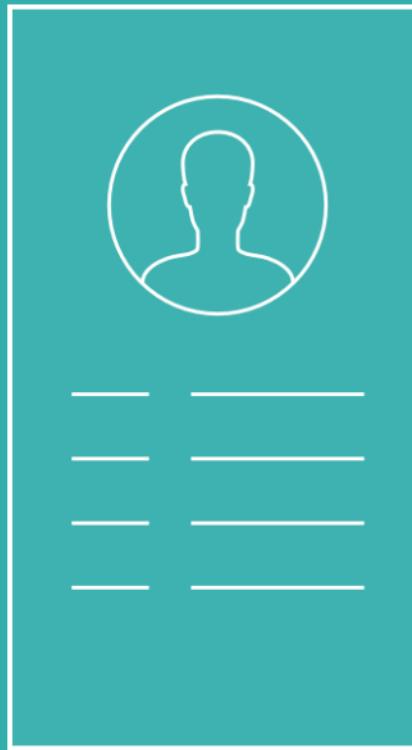
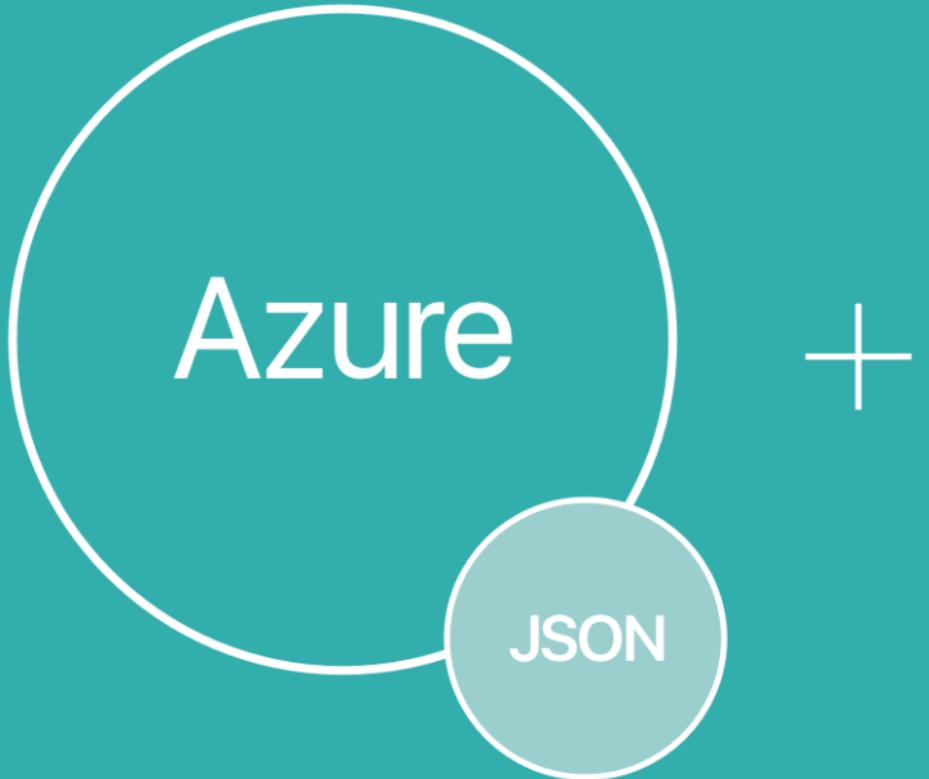
The left side shows the XAML code for the page:

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <ContentPage
3   xmlns="http://xamarin.com/schemas/2014/forms"
4   xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
5   xmlns:local="clr-namespace:CoffeeCups;assembly=CoffeeCups"
6   xmlns:controls="clr-namespace:ImageCircle.Forms.Plugin.Abstractions;assembly=ImageCircle.Forms.Plugin.Abstractions"
7   x:Class="CoffeeCups.CoffeesPage"
8   Title="Cups Of Coffee">
9     <AbsoluteLayout HorizontalOptions="FillAndExpand" VerticalOptions="FillAndExpand">
10       <Grid AbsoluteLayout.LayoutFlags="All"
11         AbsoluteLayout.LayoutBounds="0,0,1,1"
12         RowSpacing="0">
13           <Grid.RowDefinitions>
14             <RowDefinition Height="Auto"/>
15             <RowDefinition Height="*"/>
16             <RowDefinition Height="Auto"/>
17           </Grid.RowDefinitions>
18           <StackLayout Orientation="Horizontal" Padding="16" Spacing="16" BackgroundColor="White">
19             <Label Text="Made at Home?">
20               TextColor="White"
21               VerticalOptions="Center"
22               HorizontalOptions="Start"
23               FontSize="16">
24                 <Label.FontColor>
```

URL Navigation



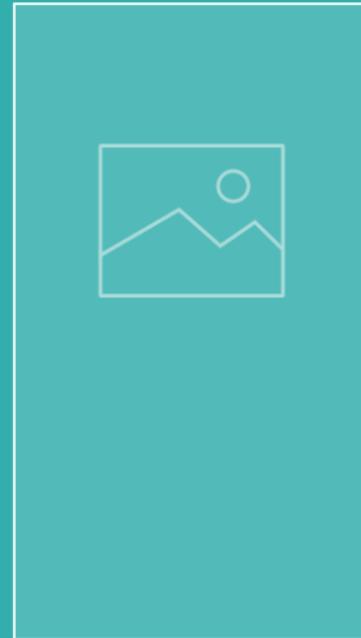
DataPages



Contacts



Events

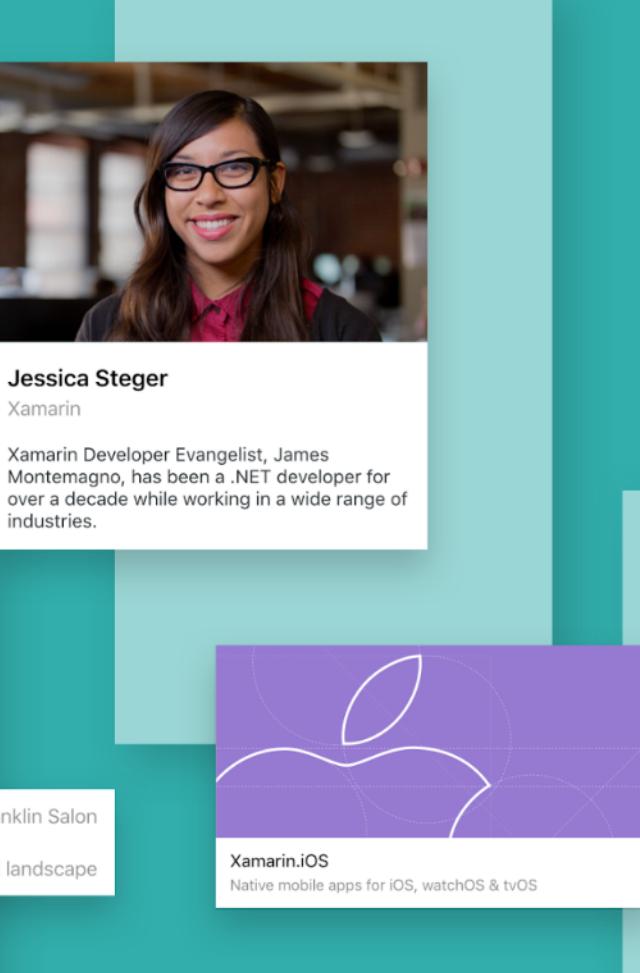
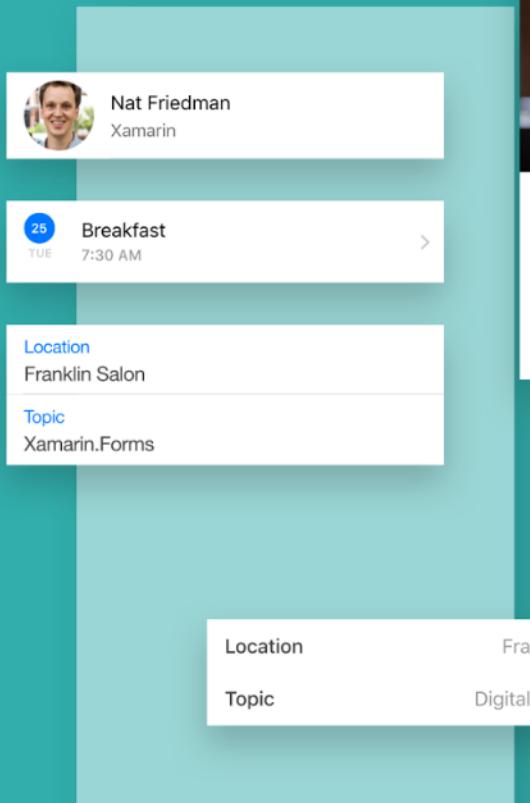


Photo

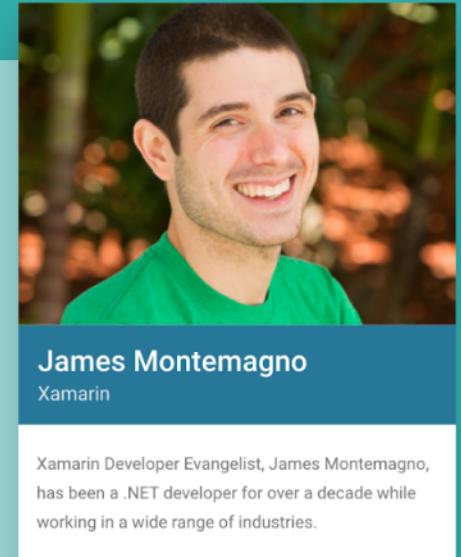
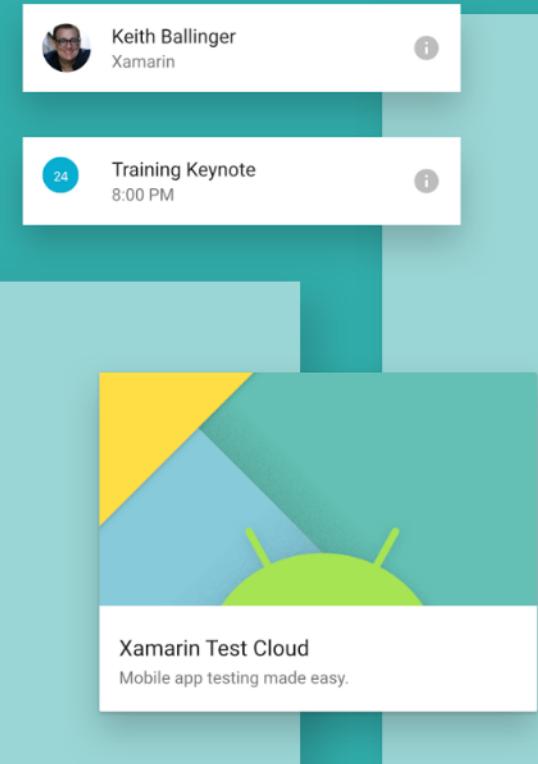
<https://developer.xamarin.com/guides/xamarin-forms/datapages/>

Themes

iOS

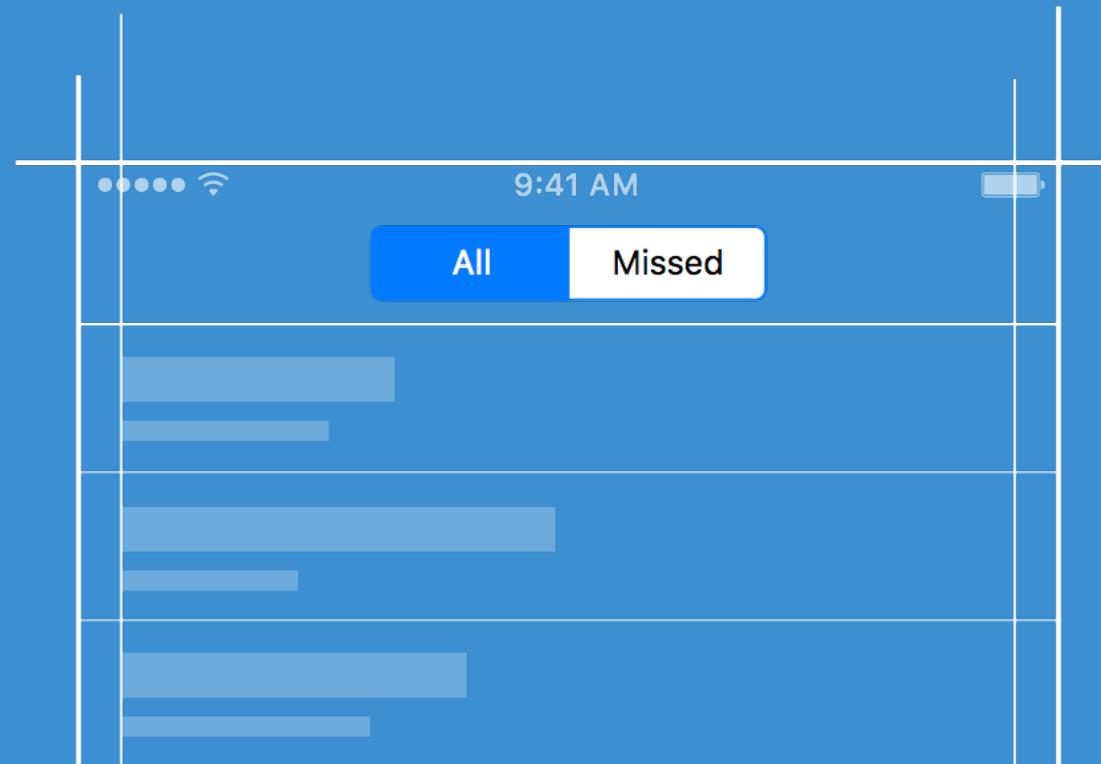
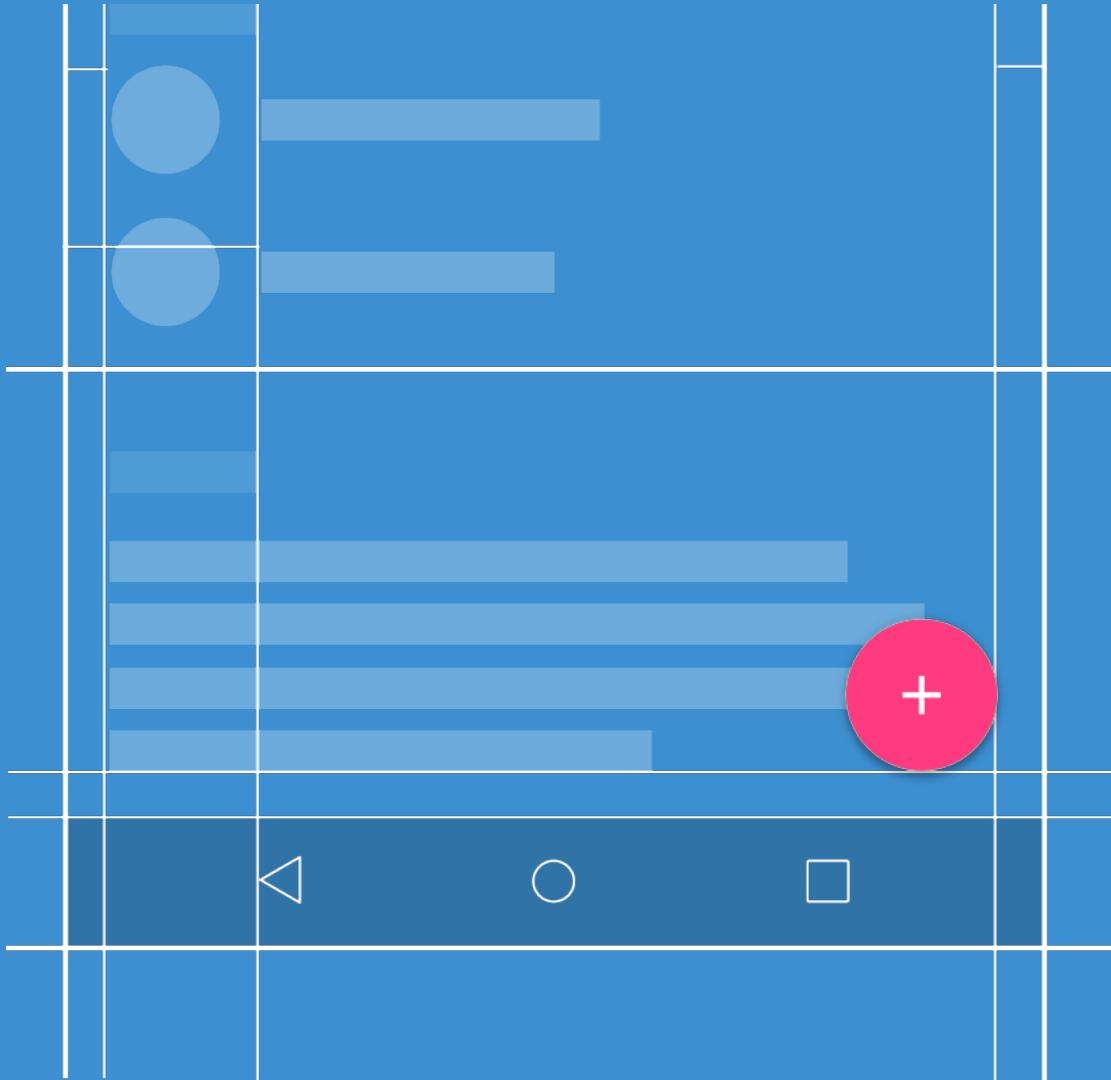


Android



<https://developer.xamarin.com/guides/xamarin-forms/themes/>

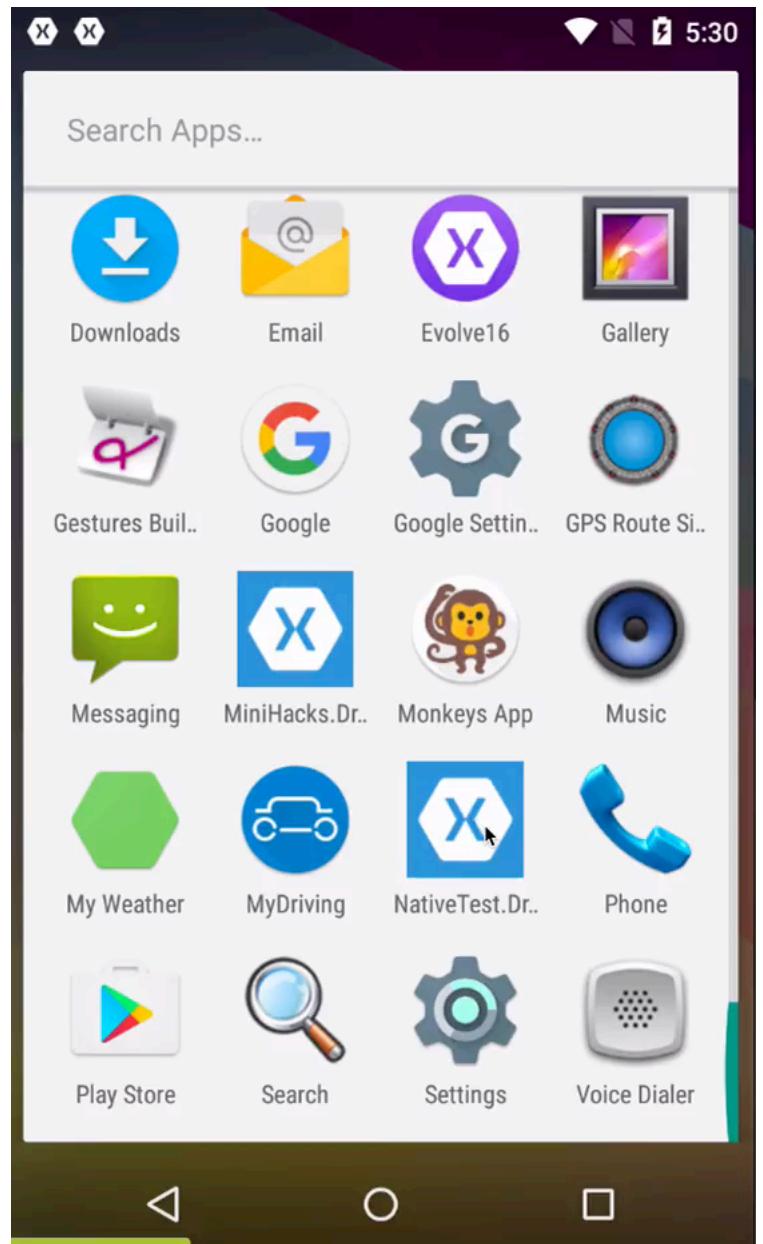
Native Embedding



Native Embedding

```
var stack = new StackLayout
{
    Padding = 50,
    HorizontalOptions = LayoutOptions.Center,
};

#if __ANDROID__
var fab = new CheckableFab(Forms.Context);
fab.SetImageResource(Droid.Resource.Drawable.ic_fancy_fab_icon);
fab.Click += async (sender, e) =>
{
    await MainPage.DisplayAlert("Native FAB clicked",
        "Whoa!!!!!!", "OK");
};
stack.Children.Add(fab);
#endif
```



20 Minute Break

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