Desenvolvimento Cross-Platform com Xamarin

Uma alternativa para o desenvolvimento Mobile

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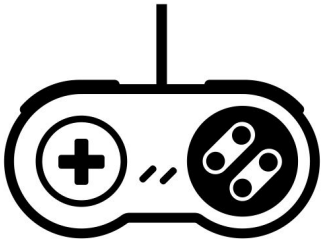
TEKANN
MOBILE SOLUTIONS

DBSERVER

TotalCross

Microsoft
.NET



O que é o Xamarin?

Xamarin é um conjunto de ferramentas para desenvolvimento Cross-Platform

Compiladores

ARM (iOS)

IL ⟶ Native assembly (Android)

Xamarin.Android ⟶ Android Sdk

Xamarin.iOS ⟶ CocoaTouch Sdk

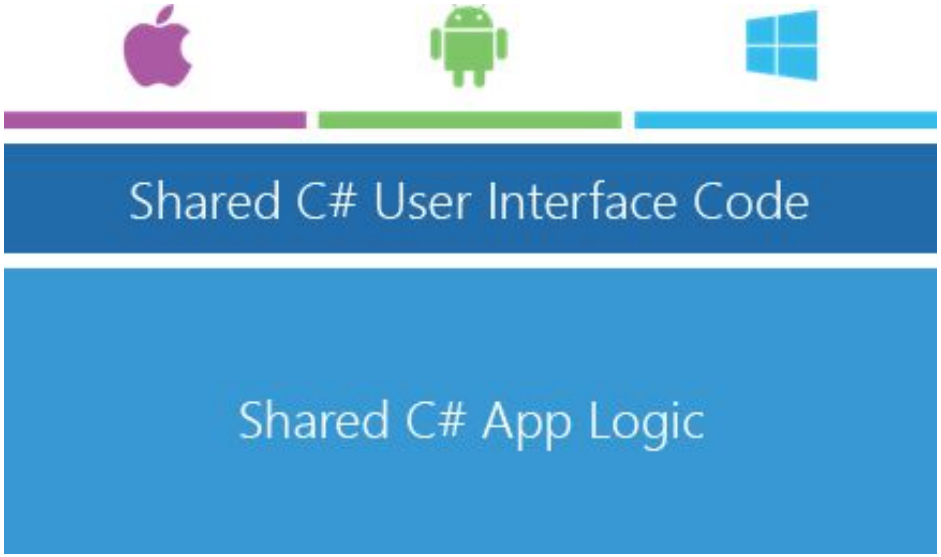
Xamarin “Nativo”
x
Xamarin Forms

Xamarin “Nativo”

UI nativa

Regra de negócio, acesso a dados, comunicação de rede, etc.

Xamarin Forms



Operações específicas da plataforma

Xaml

Regra de negócio, acesso a dados, comunicação de rede, etc.

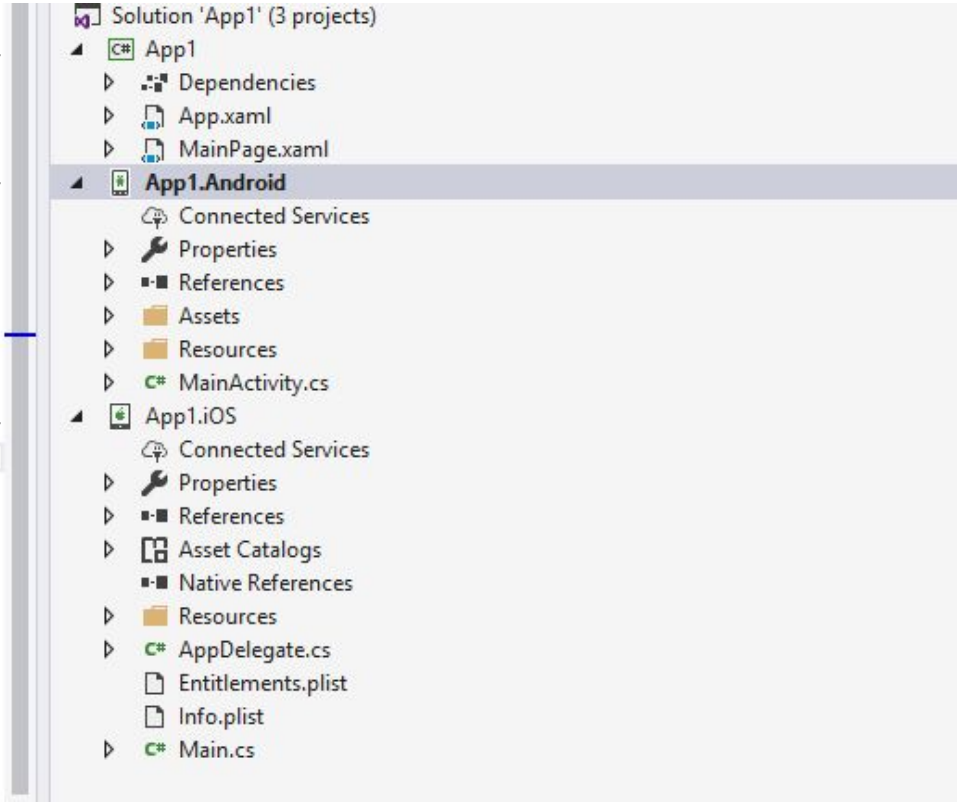
Xamarin Forms

Estrutura do projeto

Código/UI compartilhado

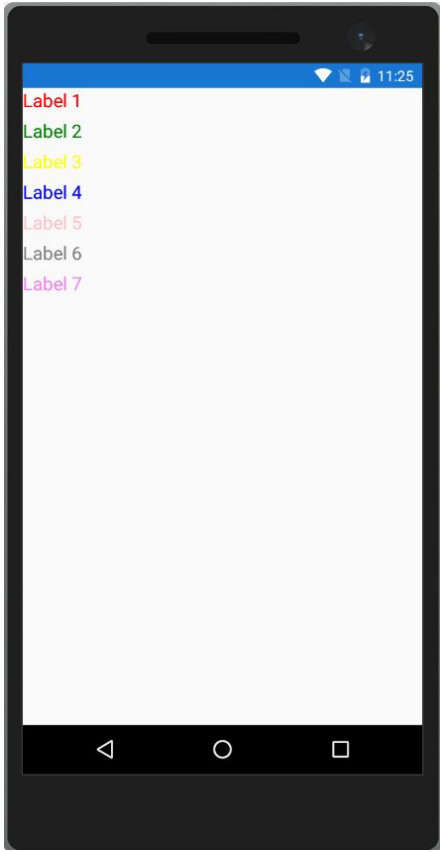
Projeto Android

Projeto iOS



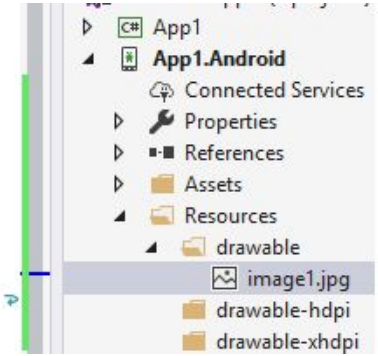
Stack

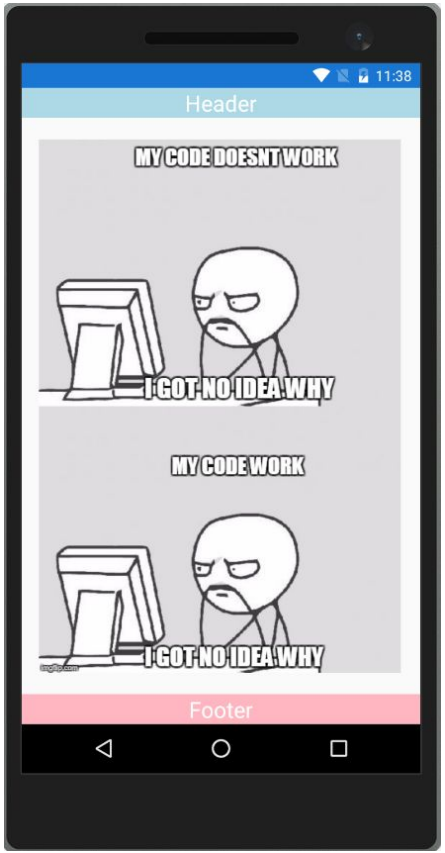
```
<?xml version="1.0" encoding="utf-8" ?>
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
             xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
             xmlns:local="clr-namespace:App1"
             x:Class="App1.MainPage">

    <StackLayout>
        <Label Text="Label 1" TextColor="Red" FontSize="Medium"></Label>
        <Label Text="Label 2" TextColor="Green" FontSize="Medium"></Label>
        <Label Text="Label 3" TextColor="Yellow" FontSize="Medium"></Label>
        <Label Text="Label 4" TextColor="Blue" FontSize="Medium"></Label>
        <Label Text="Label 5" TextColor="Pink" FontSize="Medium"></Label>
        <Label Text="Label 6" TextColor="Gray" FontSize="Medium"></Label>
        <Label Text="Label 7" TextColor="Violet" FontSize="Medium"></Label>
    </StackLayout>

</ContentPage>
```



Grid

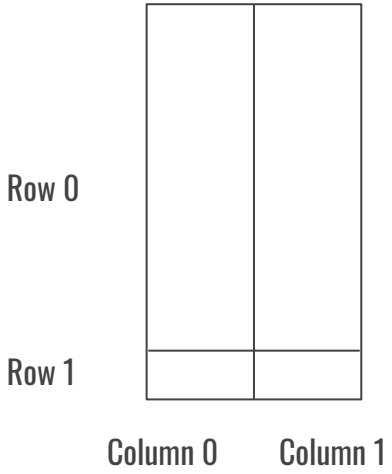
```
nage1.jpg)                                                    Margin
<?xml version="1.0" encoding="utf-8" ?>
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
             xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
             xmlns:local="clr-namespace:App1"
             x:Class="App1.MainPage">

    <Grid>
        <Grid.RowDefinitions>
            <RowDefinition Height="Auto"></RowDefinition>
            <RowDefinition Height="*"></RowDefinition>
            <RowDefinition Height="Auto"></RowDefinition>
        </Grid.RowDefinitions>

        <Label Grid.Row="0" Text="Header" FontSize="Large" HorizontalTextAlignment="Center" VerticalTextAlignment="Center"
          BackgroundColor="LightBlue" TextColor="White"></Label>

        <Image Grid.Row="1" Source="image1.jpg" VerticalOptions="Center" HorizontalOptions="Center" Margin="15"></Image>

        <Label  Grid.Row="2" Text="Footer" FontSize="Large" HorizontalTextAlignment="Center" VerticalTextAlignment="Center"
          BackgroundColor="LightPink" TextColor="White"></Label>
    </Grid>

</ContentPage>
```





Grid e Animação

```
<?xml version="1.0" encoding="utf-8" ?>
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
             xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
             xmlns:local="clr-namespace:App1"
             x:Class="App1.MainPage">

    <Grid>
        <Grid.RowDefinitions>
            <RowDefinition Height="*"></RowDefinition>
            <RowDefinition Height="Auto"></RowDefinition>
        </Grid.RowDefinitions>

        <Grid.ColumnDefinitions>
            <ColumnDefinition Width=".5*"></ColumnDefinition>
            <ColumnDefinition Width=".5*"></ColumnDefinition>
        </Grid.ColumnDefinitions>

        <Image x:Name="img" Grid.Row="0" Grid.ColumnSpan="2" Source="image1.jpg" VerticalOptions="Center"
          HorizontalOptions="Center" Margin="15"></Image>

        <Button x:Name="btnEsquerda" Text="Esquerda" Grid.Row="1" Grid.Column="0" Clicked="ButtonEsquerda_Clicked"></Button>
        <Button x:Name="btnDireita" Text="Direita" Grid.Row="1" Grid.Column="1" Clicked="ButtonDireita_Clicked"></Button>
    </Grid>

</ContentPage>
```



Grid e Animação

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using Xamarin.Forms;

namespace App1
{
    public partial class MainPage : ContentPage
    {
        private double currentRotation = 0;
        private double angle = 90;

        public MainPage()
        {
            InitializeComponent();
        }

        private void ButtonEsquerda_Clicked(object sender, EventArgs e)
        {
            this.currentRotation -= angle;
            this.img.RotateTo(currentRotation);
        }

        private void ButtonDireita_Clicked(object sender, EventArgs e)
        {
            this.currentRotation += angle;
            this.img.RotateTo(currentRotation);
        }
    }
}
```

Obtendo a versão do SO

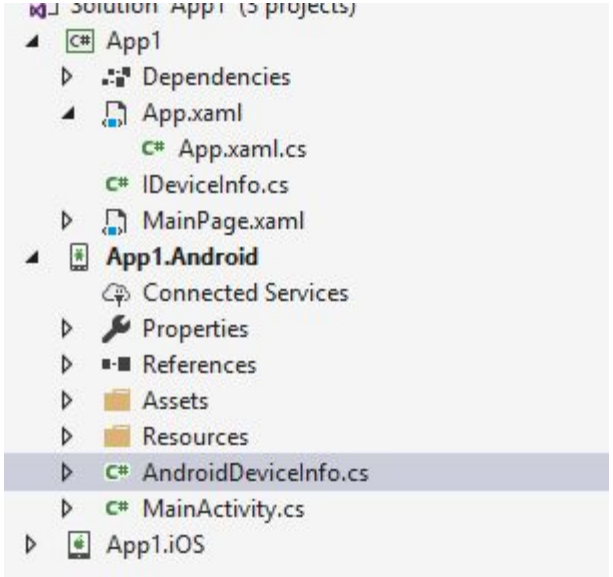
```xml
<?xml version="1.0" encoding="utf-8" ?>
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
             xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
             xmlns:local="clr-namespace:App1"
             x:Class="App1.MainPage">

    <Grid>
        <Grid.RowDefinitions>
            <RowDefinition Height="*"></RowDefinition>
            <RowDefinition Height="Auto"></RowDefinition>
        </Grid.RowDefinitions>

        <Label x:Name="lblText" Grid.Row="0" FontSize="Large" HorizontalOptions="Center" VerticalOptions="Center"></Label>
        <Button Text="Hey!" Grid.Row="1" Clicked="ButtonGetOSVersion_Clicked"></Button>
    </Grid>

</ContentPage>
```

Obtendo a versão do SO

App1

```
1   namespace App1
2   {
3       public interface IDeviceInfo
4       {
5           string GetOsVersion();
6       }
7   }
```

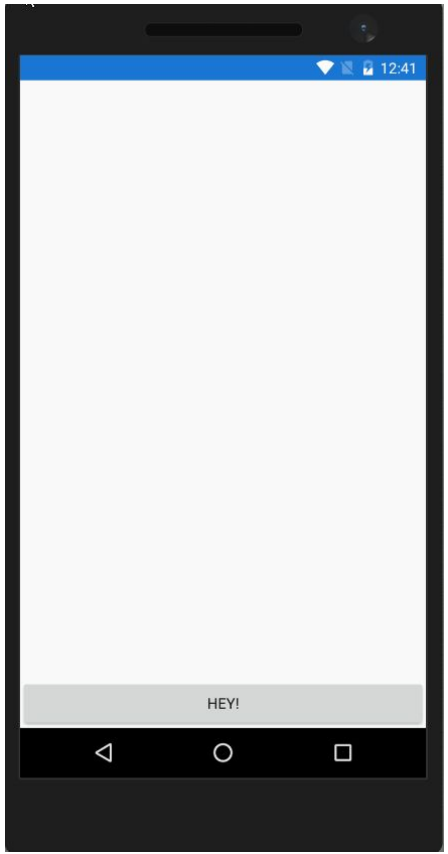
```
using App1.Droid;

[assembly: Xamarin.Forms.Dependency(typeof(AndroidDeviceInfo))]
namespace App1.Droid
{
    public class AndroidDeviceInfo : IDeviceInfo
    {
        public string GetOsVersion()
        {
            return $"Android {Android.OS.Build.VERSION.Release}";
        }
    }
}
```



Obtendo a versão do SO

```
namespace App1
{
    public partial class MainPage : ContentPage
    {
        public MainPage()
        {
            InitializeComponent();
        }

        private void ButtonGetOSVersion_Clicked(object sender, EventArgs e)
        {
            var deviceInfoImplementation = DependencyService.Get<IDeviceInfo>();

            this.lblText.Text = deviceInfoImplementation.GetOsVersion();
        }
    }
}
```

Obtendo a versão do SO



Prós

- C#, .Net Framework
- Tempo de desenvolvimento
- 96% de reutilização de código
- Desempenho
- Não requer profundo conhecimento das plataformas

Contras

- UI Complexas
- Custom Renderers
- Tamanho dos arquivos gerados (.apk, .ipa)
- Inicialização da app
- Designers

Referências

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