

Server Driven UI

Utilizando Flutter

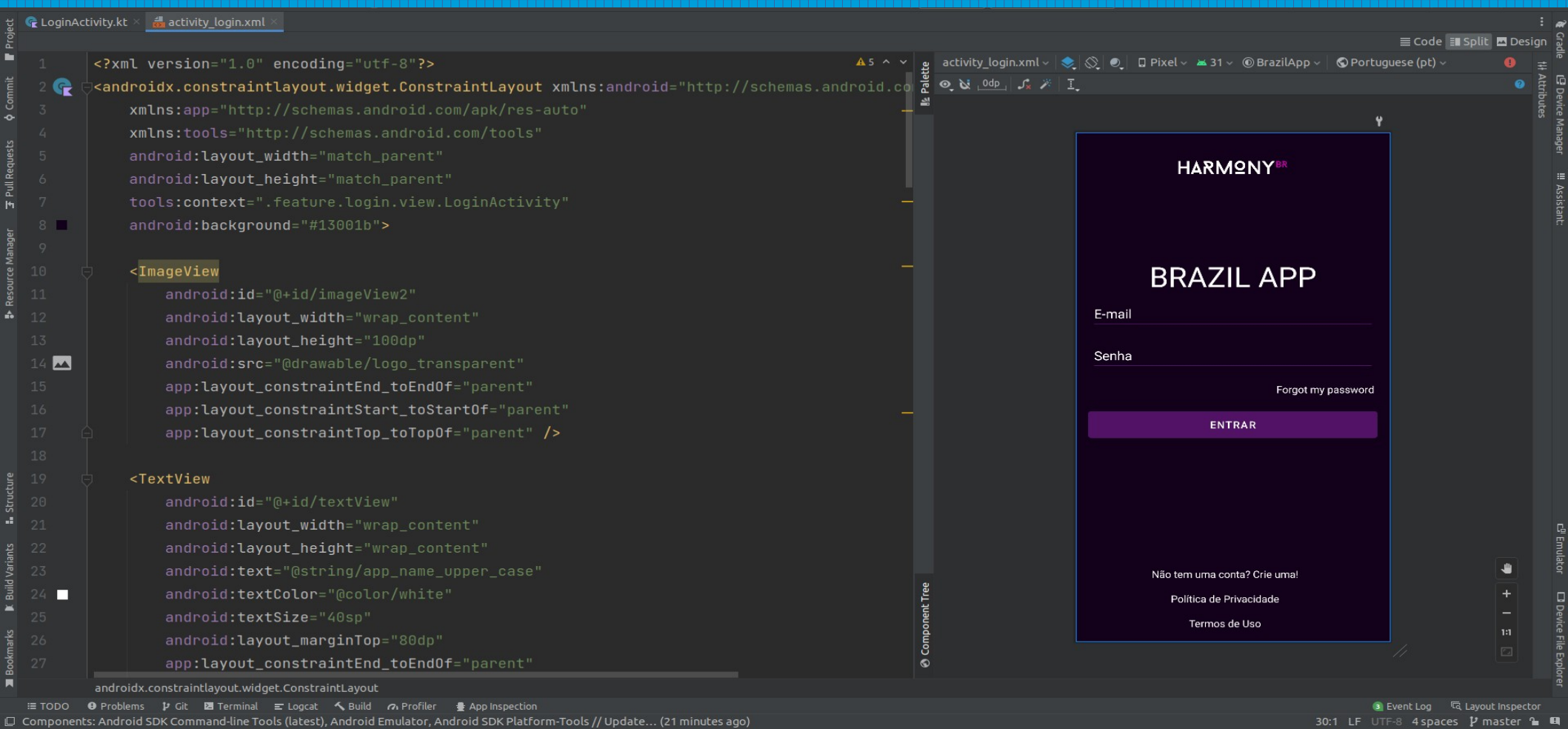
Agenda

- Entendendo a maneira tradicional de desenvolvimento
- O que é o Server Driven UI?
- Vantagens do Server Driven UI
- O que é o Flutter?
- Copiando o Netflix usando Flutter + Server Driven UI

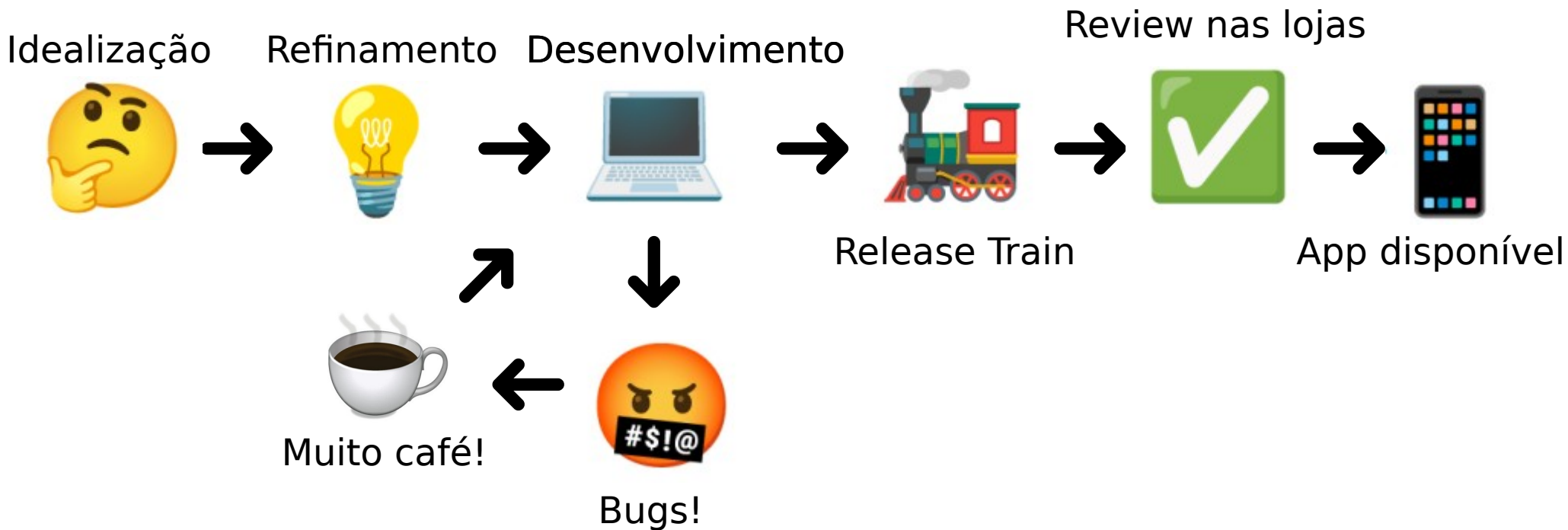
Entendendo a maneira tradicional de desenvolvimento

- Textos, imagens e estrutura da tela são definidas pela aplicação
- Todo conteúdo é embarcado na versão final do App
- Novas versões do app passam por uma análise das lojas
- Clientes precisam baixar a nova versão após ser aprovada

Entendendo a maneira tradicional de desenvolvimento



Entendendo a maneira tradicional de desenvolvimento



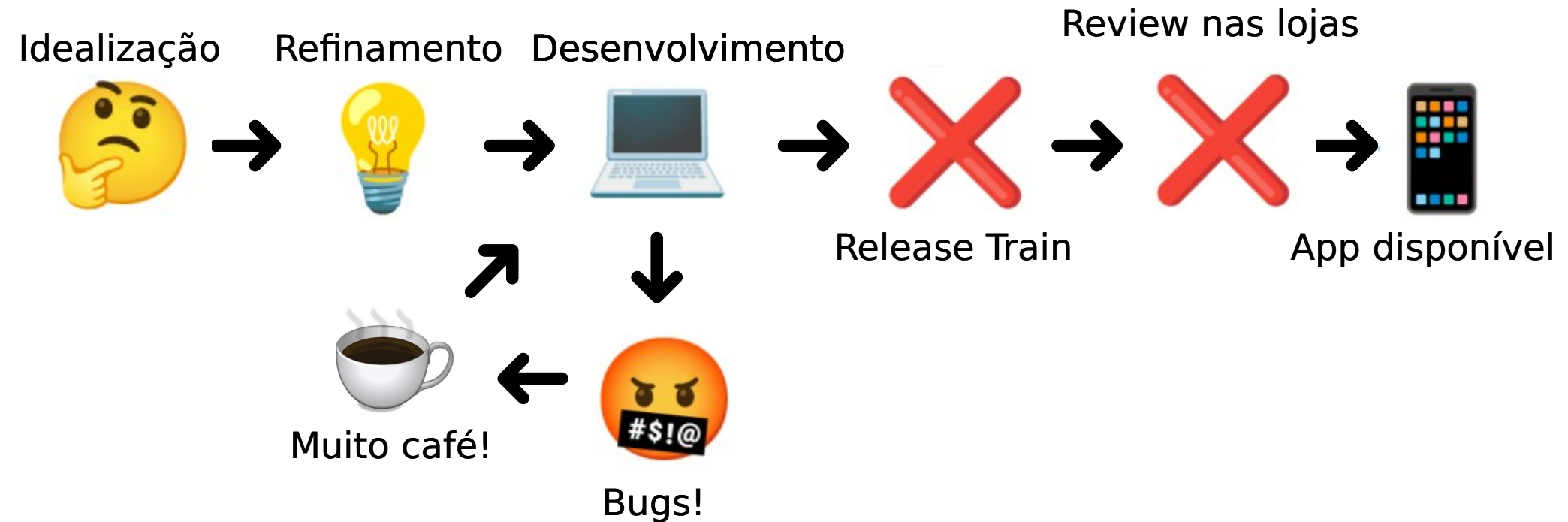
O que é o Server Driven UI

- Técnica de Desenvolvimento de Software
- O conteúdo da tela bem como o seu posicionamento é definido pelo Backend (Server)

Vantagens do Server Driven UI

- Aplicativos menores
- Mais dinamismo nas telas
- Testes A/B
- Desenvolvimento e Deploy mais rápido
- Localização (L18n)
- Internacionalização (i10n)

Vantagens do Server Driven UI



O que é o Flutter?

- Framework Open Source desenvolvido pela Google para criar apps híbridos (Android e iOS) com apenas uma code base
- UI Declarativa feita via código
- Utiliza o conceito de Widgets (componentes) para criar as telas



Criando um componente de Texto

```
class DumontHackerSpace extends StatelessWidget {  
  const DumontHackerSpace({Key? key}) : super(key: key);  
  
  @override  
  Widget build(BuildContext context) {  
    return const Scaffold(  
      body: Center(  
        child: Text(  
          'Dumont Hackerspace na Campus Party 2022',  
          style: TextStyle(fontSize: 24.0),  
        ), // Text  
      ), // Center  
    ); // Scaffold  
  }  
}
```

Dumont Hackerspace na Campus Party 2022

Criando um componente de Imagem

```
class DumontHackerSpace extends StatelessWidget {  
  const DumontHackerSpace({Key? key}) : super(key: key);  
  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      body: Center(  
        child: Image.asset('resources/dumont_hackerspace.jpg'),  
      ), // Center  
    ); // Scaffold  
  }  
}
```



Criando um componente composto

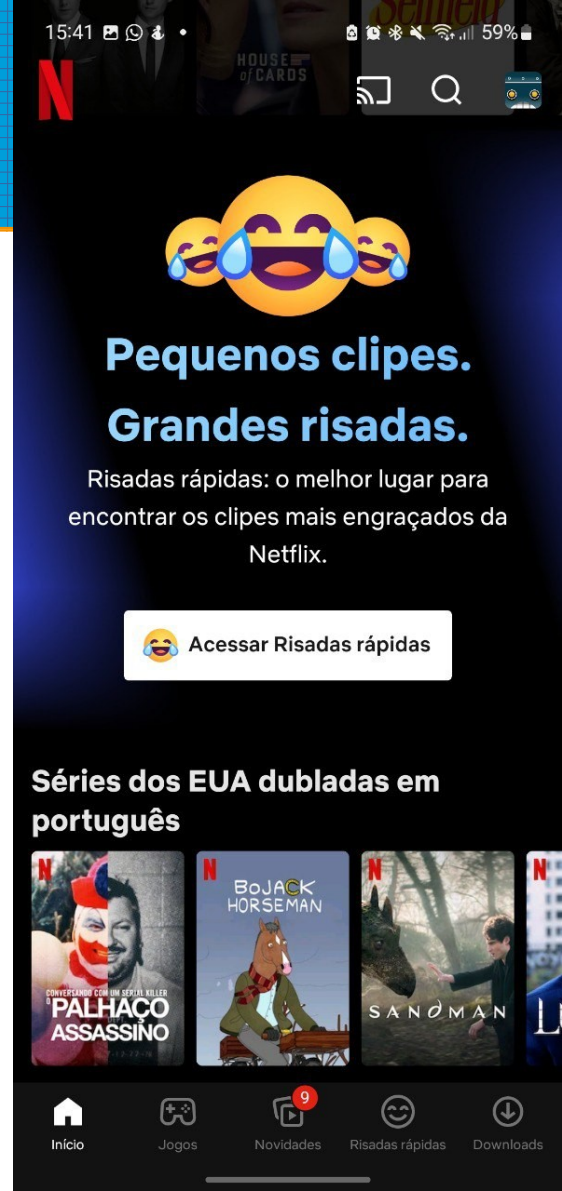
```
class DumontHackerSpace extends StatelessWidget {  
  const DumontHackerSpace({Key? key}) : super(key: key);  
  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      body: Column(  
        mainAxisAlignment: MainAxisAlignment.center,  
        crossAxisAlignment: CrossAxisAlignment.center,  
        children: [  
          Image.asset('resources/dumont_hackerspace.jpg'),  
          const Text(  
            'na Campus Party 2022',  
            style: TextStyle(fontSize: 24.0),  
          ) // Text  
        ],  
      ), // Column  
    ); // Scaffold  
  }  
}
```



na Campus Party 2022

Copiando o Netflix usando Flutter + Server Driven UI

- Separar a UI em Seções diferentes
- Criar Widgets (componentes) que se assemelham ao Netflix
- Criar um payload JSON que envie o Widget e os dados
- Renderizar a tela com base no payload JSON recebido





Criação dos Widgets

widgets

- artwork_card.dart
- artwork_list.dart
- banner.dart
- big_artwork_card.dart
- big_artwork_list.dart

```
class ArtworkCard extends StatelessWidget {  
  const ArtworkCard({Key? key, required this.imageUrl}) : super(key: key);  
  
  final String imageUrl;  
  
  @override  
  Widget build(BuildContext context) {  
    return SizedBox(  
      height: 220.0,  
      child: Card(  
        shape: const RoundedRectangleBorder(  
          borderRadius: BorderRadius.all(Radius.circular(24.0))  
        ), // RoundedRectangleBorder  
        child: Image.network(imageUrl),  
      ), // Card  
    ); // SizedBox  
  }  
}
```



```
final String? title;  
final List<String> urls;
```

```
@override
```

```
Widget build(BuildContext context) {  
  return Column(  
    crossAxisAlignment: CrossAxisAlignment.start,  
    mainAxisAlignment: MainAxisAlignment.start,  
    children: [  
      const SizedBox(  
        height: 8.0,  
      ), // SizedBox  
      title != null  
        ? Text(  
          title!,  
          style: const TextStyle(  
            color: Colors.white,  
            fontSize: 24.0,  
            fontWeight: FontWeight.bold), // TextStyle  
        ) // Text  
        : const SizedBox(),  
      SingleChildScrollView(  
        physics: const ScrollPhysics(),  
        scrollDirection: Axis.horizontal,  
        child: Row(  
          children: [  
            ...urls.map((url) {  
              return ArtworkCard(imageUrl: url);  
            })  
          ],  
        ), // Row  
      ) // SingleChildScrollView  
    ],  
  ); // Column  
}
```

- widgets
 - artwork_card.dart
 - artwork_list.dart
 - banner.dart
 - big_artwork_card.dart
 - big_artwork_list.dart

Payload

- Lista de Seções
 - Banner
 - Título
 - Url
 - Botão
 - Tamanho da Fonte
 - Categorias
 - Lista de Artwork (normal e big)
 - Título
 - Urls com as Artworks

```
{
  "sections": [
    {
      "banner": {
        "title": "The Flash",
        "url": "https://image.tmdb.org/t/p/original/jC1KqsFx8ZyqJyQa20hi7xgL7XC.jpg",
        "button": "Assistir",
        "fontSize": 40,
        "categories": ["Super-Herói", "Ação", "Suspense"]
      },
    },
    {
      "artwork_card_list": {
        "title": "Top Séries no Brasil",
        "artworks": [
          "https://image.tmdb.org/t/p/original/hgRMS0t7a1b8qyQR68vUixJPang.jpg",
          "https://image.tmdb.org/t/p/original/cvhnNj9eoRBe5SxjCbQTkh05UP5K.jpg",
          "https://image.tmdb.org/t/p/original/59SVNwLfomNZPPB6ukW6dLPxAdI.jpg",
          "https://image.tmdb.org/t/p/original/b5pl6GmQmTCHmZKEBhXPN0gmoAq.jpg",
          "https://image.tmdb.org/t/p/original/ruHPkmmAwBTCzNXtHotl8rs6ctN.jpg"
        ]
      },
    },
    {
      "artwork_card_list": {
        "title": "Filmes para toda Família",
        "artworks": [
          "https://image.tmdb.org/t/p/original/9z256FFPDsL7kSVJ9oyLELaN1ph.jpg",
          "https://image.tmdb.org/t/p/original/8G7EaPTocE0ok3YNxo972woo9EP.jpg",
          "https://image.tmdb.org/t/p/original/jTrXwK56EoLHHxfBkpwGdfmy2uh.jpg",
          "https://image.tmdb.org/t/p/original/71XnRvkadkWZzowCGcuBi4XAKdJ.jpg"
        ]
      },
    },
    {
      "big_artwork_card_list": {
        "title": "Só no Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/qI8jy4kXyQmIZWfvyjQ08nxIez4.jpg",
          "https://image.tmdb.org/t/p/original/ofBAZM79LltP7FIBRWJDMzyQGYG.jpg",
          "https://image.tmdb.org/t/p/original/rRKLIn0R9gYxpR33W7e4cxs5swI.jpg",
          "https://image.tmdb.org/t/p/original/zgu3p4NvisS8CI68cUfBKbvAvu8.jpg"
        ]
      },
    }
  ]
}
```

```

body: SingleChildScrollView(
  scrollDirection: Axis.vertical,
  child: Column(
    crossAxisAlignment: CrossAxisAlignment.start,
    mainAxisAlignment: MainAxisAlignment.start,
    children: [
      ...presentation.sections.map((section) {
        if (section is BannerSection) {
          return Banner(
            title: section.title!,
            bannerUrl: section.url!,
            buttonText: section.button,
            fontSize: section.fontSize!,
            categories: section.categories,
          ); // Banner
        } else if (section is ArtworkCardListSection) {
          return ArtworkList(
            title: section.title,
            urls: section.artworks!,
          ); // ArtworkList
        } else if (section is BigArtworkCardListSection) {
          return BigArtworkList(
            title: section.title!,
            urls: section.artworks!,
          ); // BigArtworkList
        } else {
          return Container();
        }
      }).toList(),
    ],
  ), // Column
), // SingleChildScrollView

```

```

{
  "sections": [
    {
      "banner": {
        "title": "The Flash",
        "url": "https://image.tmdb.org/t/p/original/jC1KqsFx8ZyqJyQa20hi7xgL7XC.jpg",
        "button": "Assistir",
        "fontSize": 40,
        "categories": ["Super-Herói", "Ação", "Suspense"]
      }
    },
    {
      "artwork_card_list": {
        "title": "Top Séries no Brasil",
        "artworks": [
          "https://image.tmdb.org/t/p/original/hgRMSOt7a1b8qyQR68vUixJPang.jpg",
          "https://image.tmdb.org/t/p/original/cvhNj9eoRBe5SxjCbQTkh05UP5K.jpg",
          "https://image.tmdb.org/t/p/original/59SVNwLfoMnZPPB6ukW6dLPxAdI.jpg",
          "https://image.tmdb.org/t/p/original/b5pl6GmQmTCHmZKEBhXPNgmoAq.jpg",
          "https://image.tmdb.org/t/p/original/ruHPkmmAwBTCzNXtHotl8rs6ctN.jpg"
        ]
      }
    },
    {
      "artwork_card_list": {
        "title": "Filmes para toda Família",
        "artworks": [
          "https://image.tmdb.org/t/p/original/9z256FFPDsL7kSVJ9oyLELaN1ph.jpg",
          "https://image.tmdb.org/t/p/original/8G7EaPTocE0ok3YNxo972wo09EP.jpg",
          "https://image.tmdb.org/t/p/original/jTrXwK56EoLHHxfBkpW6dfmy2uh.jpg",
          "https://image.tmdb.org/t/p/original/71XnRvkadkWZZowCGcuBi4XAKdJ.jpg"
        ]
      }
    },
    {
      "big_artwork_card_list": {
        "title": "Só no Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/qI8jy4kXyQmIZWFvyjQ08nxIez4.jpg",
          "https://image.tmdb.org/t/p/original/ofBAZM79LltP7FIBRWJDMzyQGYG.jpg",
          "https://image.tmdb.org/t/p/original/rRKLIn0R9gYxpR33W7e4cxs5swI.jpg",
          "https://image.tmdb.org/t/p/original/zgu3p4NvisS8CI68cUfBKbvAvu8.jpg"
        ]
      }
    }
  ]
}

```



The Flash

| Super-Herói || Ação || Suspense |

▶ Assistir

Top Séries no Brasil



```
{
  "sections": [
    {
      "banner": {
        "title": "The Flash",
        "url": "https://image.tmdb.org/t/p/original/jC1KqsFx8ZyqJyQa20hi7xgL7XC.jpg",
        "button": "Assistir",
        "fontSize": 40,
        "categories": ["Super-Herói", "Ação", "Suspense"]
      },
    },
    {
      "artwork_card_list": {
        "title": "Top Séries no Brasil",
        "artworks": [
          "https://image.tmdb.org/t/p/original/hgRMS0t7a1b8qyQR68vUixJPang.jpg",
          "https://image.tmdb.org/t/p/original/cvhNj9eoRBe5SxjCbQTkh05UP5K.jpg",
          "https://image.tmdb.org/t/p/original/59SVNwLf0MnZPPB6ukW6dLPxAdI.jpg",
          "https://image.tmdb.org/t/p/original/b5pl6GmQmTCHmZKEBhXPNgmoAq.jpg",
          "https://image.tmdb.org/t/p/original/ruHPkmmAwBTCzNXtHotl8rs6ctN.jpg"
        ]
      },
    },
    {
      "artwork_card_list": {
        "title": "Filmes para toda Família",
        "artworks": [
          "https://image.tmdb.org/t/p/original/9z256FFPDsL7kSVJ9oyLELaN1ph.jpg",
          "https://image.tmdb.org/t/p/original/8G7EaPTocE0ok3YNxo972wo09EP.jpg",
          "https://image.tmdb.org/t/p/original/jTrXwK56EoLHHxfBkpW6dfmy2uh.jpg",
          "https://image.tmdb.org/t/p/original/71XnRvkadkWZZowCGCuBi4XAKdJ.jpg"
        ]
      },
    },
    {
      "big_artwork_card_list": {
        "title": "Só no Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/qI8jy4kXyQmIZWFvyjQ08nxIez4.jpg",
          "https://image.tmdb.org/t/p/original/ofBAZM79LltP7FIBRWJDMzyQGYG.jpg",
          "https://image.tmdb.org/t/p/original/rRKLIn0R9gYxpR33W7e4cxs5swI.jpg",
          "https://image.tmdb.org/t/p/original/zgu3p4NvisS8CI68cUfBKbvAvu8.jpg"
        ]
      },
    }
  ]
}
```


Filmes para toda Família



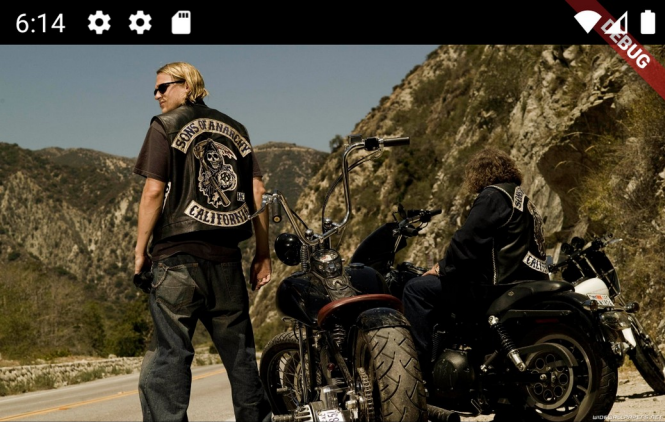
Só no Fakeflix



```
{
  "sections": [
    {
      "banner": {
        "title": "The Flash",
        "url": "https://image.tmdb.org/t/p/original/jC1KqsFx8ZyqJyQa20hi7xgL7XC.jpg",
        "button": "Assistir",
        "fontSize": 40,
        "categories": ["Super-Herói", "Ação", "Suspense"]
      },
    },
    {
      "artwork_card_list": {
        "title": "Top Séries no Brasil",
        "artworks": [
          "https://image.tmdb.org/t/p/original/hgRMS0t7a1b8qyQR68vUixJPang.jpg",
          "https://image.tmdb.org/t/p/original/cvhNj9eoRBe5SxjCbQTKh05UP5K.jpg",
          "https://image.tmdb.org/t/p/original/59SVNwLf0mNzPPB6ukW6dLPxAdI.jpg",
          "https://image.tmdb.org/t/p/original/b5pl6GmQmTCHmZKEBhXPN0gmoAq.jpg",
          "https://image.tmdb.org/t/p/original/ruHPkmmAwBTCzNXtHotl18rs6ctN.jpg"
        ]
      },
    },
    {
      "artwork_card_list": {
        "title": "Filmes para toda Família",
        "artworks": [
          "https://image.tmdb.org/t/p/original/9z256FFPDsL7kSVJ9oyLELaN1ph.jpg",
          "https://image.tmdb.org/t/p/original/8G7EaPTocE0ok3YNxo972wo09EP.jpg",
          "https://image.tmdb.org/t/p/original/jTrXwK56EoLHHxfBkpWgdfmy2uh.jpg",
          "https://image.tmdb.org/t/p/original/71XnRvkadkWZ2owCGcuBi4XAKdJ.jpg"
        ]
      },
    },
    {
      "big_artwork_card_list": {
        "title": "Só no Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/qI8jy4kXyQmIZWFvyjQ08nxIez4.jpg",
          "https://image.tmdb.org/t/p/original/ofBAZM79LlTP7FIBRWJDMzyQGYG.jpg",
          "https://image.tmdb.org/t/p/original/rRKLIn0R9gYxpR33W7e4cxs5swI.jpg",
          "https://image.tmdb.org/t/p/original/zgu3p4NvisS8CI68cUfBKbvAvu8.jpg"
        ]
      },
    }
  ]
}
```



```
{
  "sections": [
    {
      "artwork_card_list": {
        "title": "Top Séries no Brasil",
        "artworks": [
          "https://image.tmdb.org/t/p/original/hgRMS0t7a1b8qyQR68vUixJPang.jpg",
          "https://image.tmdb.org/t/p/original/cvHnJ9eoRBe5SxjCbQTKh05UP5K.jpg",
          "https://image.tmdb.org/t/p/original/59SVNwLf0MnZPPB6ukW6dLPxAdI.jpg",
          "https://image.tmdb.org/t/p/original/b5pl6GmQmTCHmZKEBhXPN0gmoAq.jpg",
          "https://image.tmdb.org/t/p/original/ruHPkmmAwBTCzNXtHotl8rs6ctN.jpg"
        ]
      },
      {
        "banner": {
          "title": "The Flash",
          "url": "https://image.tmdb.org/t/p/original/jC1KqsFx8ZyqJyQa20hi7xgL7XC.jpg",
          "button": "Assistir",
          "fontSize": 40,
          "categories": ["Super-Herói", "Ação", "Suspense"]
        }
      },
      {
        "artwork_card_list": {
          "title": "Filmes para toda Família",
          "artworks": [
            "https://image.tmdb.org/t/p/original/9z256FFPDsL7kSVJ9oyLELaN1ph.jpg",
            "https://image.tmdb.org/t/p/original/8G7EaPTocE0ok3YNxo972woo9EP.jpg",
            "https://image.tmdb.org/t/p/original/jTrXwK56EoLHHxfBkpwGdfmy2uh.jpg",
            "https://image.tmdb.org/t/p/original/71XnRvkadkWWZowCGcuBi4XAKdJ.jpg"
          ]
        }
      },
      {
        "big_artwork_card_list": {
          "title": "Só no Fakeflix",
          "artworks": [
            "https://image.tmdb.org/t/p/original/qI8jy4kXyQmIZWFvyjQ08nxIez4.jpg",
            "https://image.tmdb.org/t/p/original/ofBAZM79LlTP7FIBRWJDMzyQGYG.jpg",
            "https://image.tmdb.org/t/p/original/rRKLIn0R9gYxpR33W7e4cxs5swI.jpg",
            "https://image.tmdb.org/t/p/original/zgu3p4NvisS8CI68cUfBKbvAvu8.jpg"
          ]
        }
      }
    ]
  ]
}
```

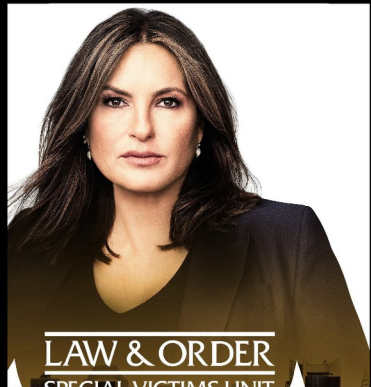



Sons of Anarchy

| Violence || Motorcycle || Ace of Spades |

▶ Watch

Recently added on Fakeflix



```
{
  "sections": [
    {
      "banner": {
        "title": "Sons of Anarchy",
        "url": "https://www.themoviedb.org/t/p/original/m97x6kmDyJGvqiJH4gPEC7NMAcG.jpg",
        "button": "Watch",
        "fontSize": 40,
        "categories": ["Violence", "Motorcycle", "Ace of Spades"]
      }
    },
    {
      "big_artwork_card_list": {
        "title": "Recently added on Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/ywBt4WKADdMVgxTR1rS2uFwMYTH.jpg",
          "https://image.tmdb.org/t/p/original/nz5fAg10omLZ7fxiM4RnLbJxppc.jpg",
          "https://image.tmdb.org/t/p/original/xf9wuDcqlUPWABZNeDKPbZUjWx0.jpg"
        ]
      }
    },
    {
      "artwork_card_list": {
        "title": "Top 5 in the US Today",
        "artworks": [
          "https://image.tmdb.org/t/p/original/7ze7YNmUaX81ufctGqt0AgHxRtL.jpg",
          "https://image.tmdb.org/t/p/original/ekZobS8isE6mA53RAiGDG93hBxL.jpg",
          "https://image.tmdb.org/t/p/original/u3bZgnGQ9T01sWNhyveQz0wH0Hl.jpg",
          "https://image.tmdb.org/t/p/original/kY0BogCM8SkNJ0MNIHB3VTM86Tz.jpg"
        ]
      }
    }
  ]
}
```



```
{
  "sections": [
    {
      "banner": {
        "title": "Sons of Anarchy",
        "url": "https://www.themoviedb.org/t/p/original/m97x6kmDyJGvqiJH4gPEC7NMAcG.jpg",
        "button": "Watch",
        "fontSize": 40,
        "categories": ["Violence", "Motorcycle", "Ace of Spades"]
      },
    },
    {
      "big_artwork_card_list": {
        "title": "Recently added on Fakeflix",
        "artworks": [
          "https://image.tmdb.org/t/p/original/ywBt4WKADdMVgxTR1rS2uFwMYTH.jpg",
          "https://image.tmdb.org/t/p/original/nz5fAg10omLZ7fxiM4RnLbJxppc.jpg",
          "https://image.tmdb.org/t/p/original/xf9wuDcqlUPWABZNeDKPbZUjWx0.jpg"
        ]
      },
    },
    {
      "artwork_card_list": {
        "title": "Top 5 in the US Today",
        "artworks": [
          "https://image.tmdb.org/t/p/original/7ze7YNmUaX81ufctGqt0AgHxRtL.jpg",
          "https://image.tmdb.org/t/p/original/ekZobS8isE6mA53RAiGDG93hBxL.jpg",
          "https://image.tmdb.org/t/p/original/u3bZgnGQ9T0lsWNhyveQz0wH0Hl.jpg",
          "https://image.tmdb.org/t/p/original/kY0BogCM8SkNJ0MNIHB3VTM86Tz.jpg"
        ]
      },
    }
  ]
}
```


Dúvidas?



Obrigado!



<https://github.com/pedro-teles>



<https://www.linkedin.com/in/pedro-teles-developer/>



<https://pedroteles.dev>



Pedro Teles
Software Engineer
Nubank