



Desenvolvimento de Software para Dispositivos Móveis

Aula 17 - Flutter - Widgets

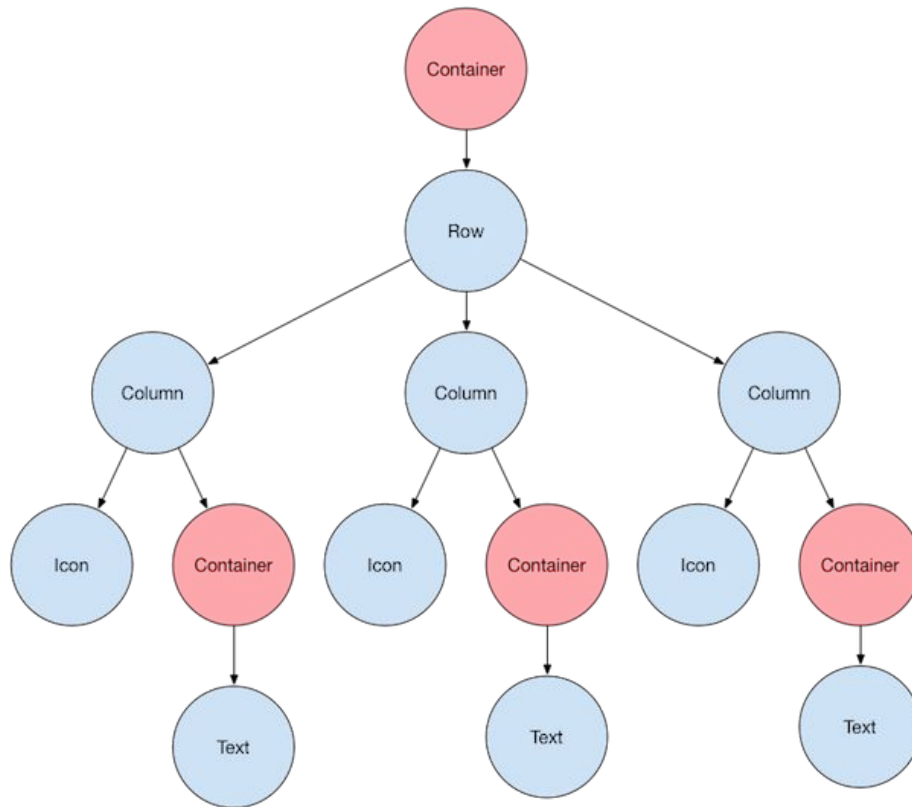


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Widgets

- Tudo no Flutter são widgets
 - AppBar
 - Container
 - Scaffold
 - Text
 - RaisedButton
 - FloatingActionButton
 - ...

Widgets



Stateless X Stateful

- Os widgets criados podem ser de duas formas
 - Não guarda estado (stateless)
 - Texto estático, Cor padrão, ...
 - Guarda estado (stateful)
 - Altera o valor de número e mostra no texto

Stateless

```
class Hello extends StatelessWidget {  
    @override  
    Widget build(BuildContext context) {  
        return Container(  
  
        );  
    }  
}
```

O método **build** funciona como o onCreate do Android nativo, em que renderiza toda a parte gráfica do widget

Stateful

```
class Hello2 extends StatefulWidget {  
  @override  
  _Hello2State createState() => _Hello2State();  
}
```

```
class _Hello2State extends State<Hello2> {  
  @override  
  Widget build(BuildContext context) {  
    return Container(  
  
    );  
  }  
}
```

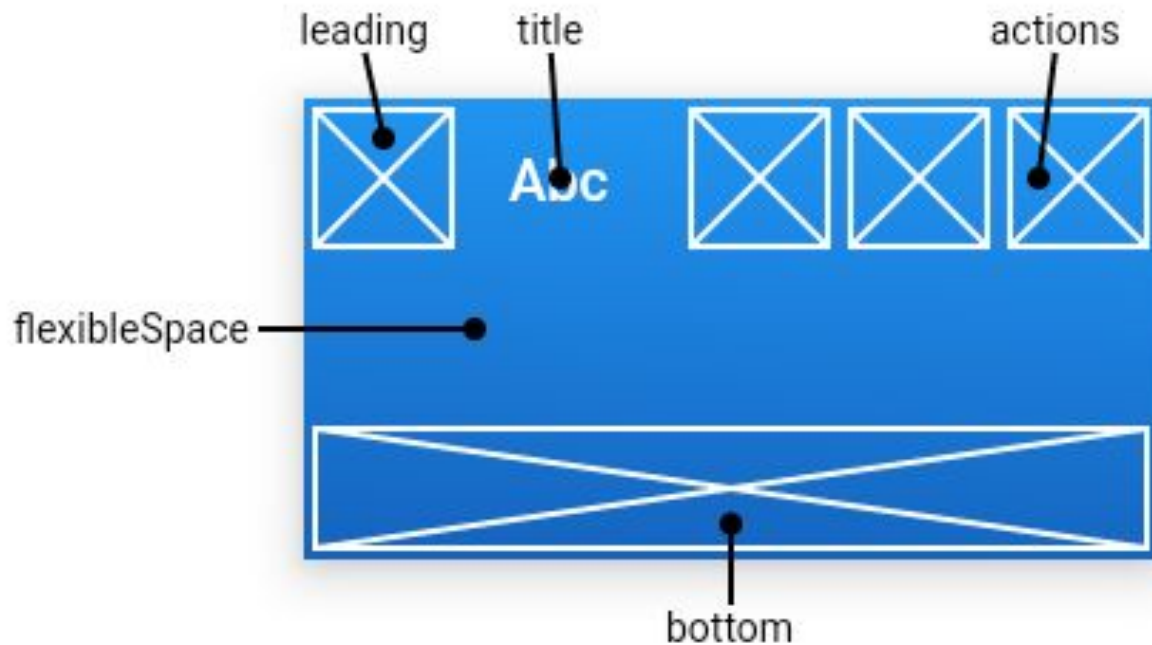
Nesse widget pode existir a mudança de estado. O método **createState** chama a inicialização da classe que estende o State

Scaffold

- appBar
- body
- floatingActionButton
- backgroundColor

<https://api.flutter.dev/flutter/material/Scaffold-class.html>

Scaffold



Scaffold

```
appBar: AppBar(  
  title: Text("Hello World"),  
),
```

<https://api.flutter.dev/flutter/material/AppBar-class.html>

Scaffold

```
appBar: AppBar(  
  title: const Text('AppBar Demo'),  
  actions: <Widget>[  
    IconButton(  
      icon: const Icon(Icons.add_alert),  
      tooltip: 'Show SnackBar',  
      onPressed: () {  
        print("show");  
      },  
    ),  
  ],  
)
```

Layouts

- Todos os widgets de layout têm um dos seguintes:
 - **Child:** se eles tiverem um filho único
 - Center ou Container
 - **Children:** se eles fizerem uma lista de widgets
 - Row, Column, ListView, or Stack.

Scaffold

```
body: Center(  
  child: Text('Hello World'),  
),
```

Scaffold

```
body: Column(  
  mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
  children: [  
    Text('Texto 1'),  
    Text('Texto 2'),  
    Text('Texto 3')  
  ],  
)
```

ScrollView

- Vamos utilizar de imagens para a exemplificação
- Para isso, vamos utilizar de **assets**
 - Altere o arquivo **pubspec.yaml** (descomente)
 - `flutter:`
`assets`
 - Insira todas as imagens necessárias na raiz do projeto e no **pubspec.yaml**
 - - `images/carrol.jpg`

Scaffold

```
body: SingleChildScrollView (
  child: Stack(children: <Widget>[
    Column(
      mainAxisAlignment: MainAxisAlignment.spaceEvenly,
      children: [
        Image.asset('images/carro1.jpg'),
        Image.asset('images/carro2.jpeg'),
        Image.asset('images/carro3.jpeg'),
      ],
    )
  ])),
```

Scaffold

```
body: SingleChildScrollView (
  child: Stack(children: <Widget>[
    Column(
      mainAxisAlignment: MainAxisAlignment.spaceEvenly,
      children: [
        Row(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: <Widget>[
            Text("ok2"),
            Text("ok1"),
          ],
        ),
        Image.asset('images/carrol.jpg'),
        ...
      ],
    ),
  ],
)
```


RelativeLayout

```
Stack(
```

```
  children: <Widget>[
```

```
    Align(alignment: Alignment.center, child: Text("Center")),
```

```
    Align(alignment: Alignment.topRight, child: Text("Top\nRight")),
```

```
    Align(alignment: Alignment.centerRight, child: Text("Center\nRight")),
```

```
    Align(alignment: Alignment.bottomRight, child: Text("Bottom\nRight")),
```

```
    Align(alignment: Alignment.topLeft, child: Text("Top\nLeft")),
```

```
    Align(alignment: Alignment.centerLeft, child: Text("Center\nLeft")),
```

```
    Align(alignment: Alignment.bottomLeft, child: Text("Bottom\nLeft")),
```

```
    Align(alignment: Alignment.topCenter, child: Text("Top\nCenter")),
```

```
    Align(alignment: Alignment.bottomCenter, child: Text("Bottom\nCenter")),
```

```
    Align(alignment: Alignment(0.0, 0.5), child: Text("Custom\nPosition", style: TextStyle(color: Colors.red, fontSize: 20.0, fontWeight: FontWeight.w800))),
```

```
  ],
```

```
);
```

ListView

```
ListTile _tile(String title, String subtitle, IconData icon) => ListTile(  
  title: Text(title,  
    style: TextStyle(  
      fontWeight: FontWeight.w500,  
      fontSize: 20,  
    )),  
  subtitle: Text(subtitle),  
  leading: Icon(  
    icon,  
    color: Colors.blue[500],  
  ),  
);
```

ListView

```
body: ListView(  
  scrollDirection: Axis.vertical,  
  shrinkWrap: true,  
  children: [  
    _tile('CineArts at the Empire', '85 W Portal Ave', Icons.theaters),  
    Divider(),  
    _tile('Kescaped_code#39;s Kitchen', '757 Monterey Blvd',  
      Icons.restaurant),  
    _tile('Emmyescaped_code#39;s Restaurant', '1923 Ocean Ave',  
      Icons.restaurant),  
  ],  
)
```

RaisedButton

```
RaisedButton (  
  child: Text ("Add" ),  
),
```

Botão: Desabilitado

<https://api.flutter.dev/flutter/material/RaisedButton-class.html>

RaisedButton

```
RaisedButton (  
  onPressed: () {},  
  child: Text("Add"),  
),
```

Botão: habilitado

<https://api.flutter.dev/flutter/material/RaisedButton-class.html>

FloatActionButton

```
floatingActionButton: FloatingActionButton (  
  onPressed: () {},  
  tooltip: 'Increment',  
  child: Icon(Icons.add),  
  backgroundColor: Colors.amber,  
));
```

<https://api.flutter.dev/flutter/material/RaisedButton-class.html>

TextField

```
Row(  
  children: <Widget>[  
    Text("Number1:"),  
    Container(  
      width: 100,  
      child: TextField(  
        controller: number1Controller,  
        keyboardType: TextInputType.number,  
      ))  
    ],  
),
```

TextField

```
class _MyHomePageState extends State<MyHomePage> {  
  int _counter = 0;  
  double result = 0;  
  
  var number1Controller = new TextEditingController();  
  var number2Controller = new TextEditingController();  
}
```


TextField

```
RaisedButton (
  onPressed: () {
    setState (() {
      result = double.parse(number1Controller.text) +
               double.parse(number2Controller.text);
    });
  },
  child: Text("Add"),
),
Text("$result")
```

Exercício

- Crie uma calculadora com dois campos e as quatro operações básicas

Navegação entre telas

```
import 'package:flutter/material.dart';

class Second extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        ),
      debugShowCheckedModeBanner: false,
    );
  }
}
```

**Crie um arquivo chamado
second.dart**

Navegação entre telas

```
import 'package:flutter/material.dart';  
import 'second.dart';
```

Realize o import do arquivo

```
void main() => runApp(MyApp());
```

```
class MyApp extends StatelessWidget {
```

Navegação entre telas

```
RaisedButton (  
    onPressed: () {  
        Navigator.push(  
            context, MaterialPageRoute (builder: (context) => Second()));  
        },  
    child: Text ("Next"),  
),
```

Navegação entre telas

- Para enviar dados entre as telas, basta utilizar o construtor das classes.
- Altere o Second para

```
class Second extends StatelessWidget {  
  String data;  
  
  Second({@required this.data});  
}
```

Navegação entre telas

```
RaisedButton (  
  onPressed: () {  
    Navigator.push(  
      context, MaterialPageRoute (builder: (context) => Second (data:  
        result.toString())));  
  },  
  child: Text ("Next"),  
)
```

Links importantes

- <https://flutter.dev/>



Dúvidas??

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