

Cours 6. Les Widgets Flutter

[O.R. Merad Boudia](#)

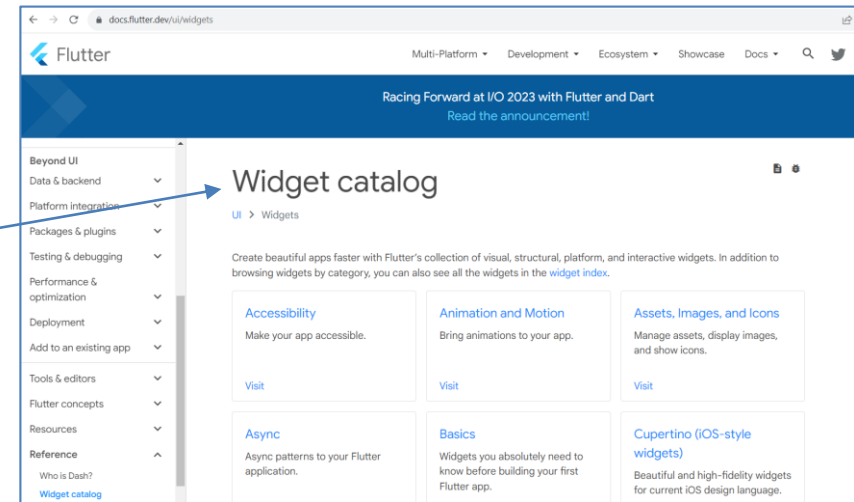
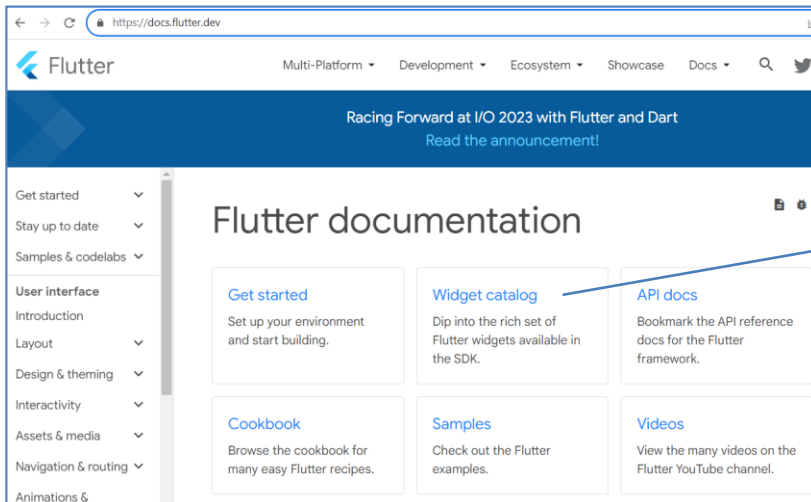
Université d'Oran 1, Ahmed Ben Bella

M1 GBM : 2023/2024

Les widgets basiques de Flutter

Se documenter

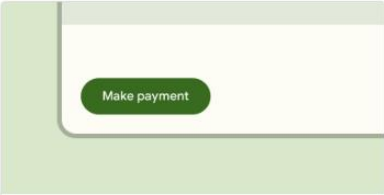
- ❑ Pour n'importe quel SDK ou langage de programmation, il est très important voire indispensable de savoir lire la documentation et de savoir s'en servir.
- ❑ Pour les **Widgets** par exemple allez sur : <https://docs.flutter.dev/>
- ❑ Puis cliquez sur **Widget catalog**



Se documenter : Exemple

Si je cherche l'[ElevatedButton](#) par exemple :

Actions



Common buttons

Clickable blocks that start an action, such as sending an email, sharing a document, or liking a comment.

Material 3 button types

Material Design 3 specifies five types of common

Type	Flutter implementation
Elevated	ElevatedButton
Filled	FilledButton
Filled Tonal	FilledButton.tonal
Outlined	OutlinedButton
Text	TextButton

Properties

[autofocus](#) → bool
True if this widget will be selected.
[final](#) [inherited](#)

[child](#) → Widget?
Typically the button's label.
[final](#) [inherited](#)

[clipBehavior](#) → Clip
The content will be clipped (or not).
[final](#) [inherited](#)

[enabled](#) → bool
Whether the button is enabled.
[read-only](#) [inherited](#)

[focusNode](#) → FocusNode?
An optional focus node to use for this widget.
[final](#) [inherited](#)

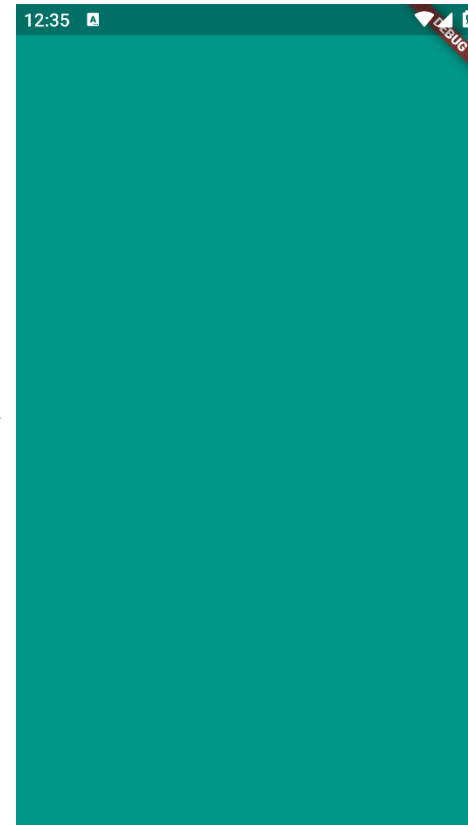
[hashCode](#) → int
The hash code for this object.
[read-only](#) [inherited](#)

[key](#) → Key?
Controls how one widget replaces another.

Scaffold

- ✓ **Scaffold** est une classe Flutter très importante qui implémente la structure de mise en page visuelle **material design**.
- ✓ Ce widget encapsule de nombreux widgets comme **AppBar**, **Drawer**, **BottomNavigationBar**, **FloatingActionButton**, **SnackBar**, etc.

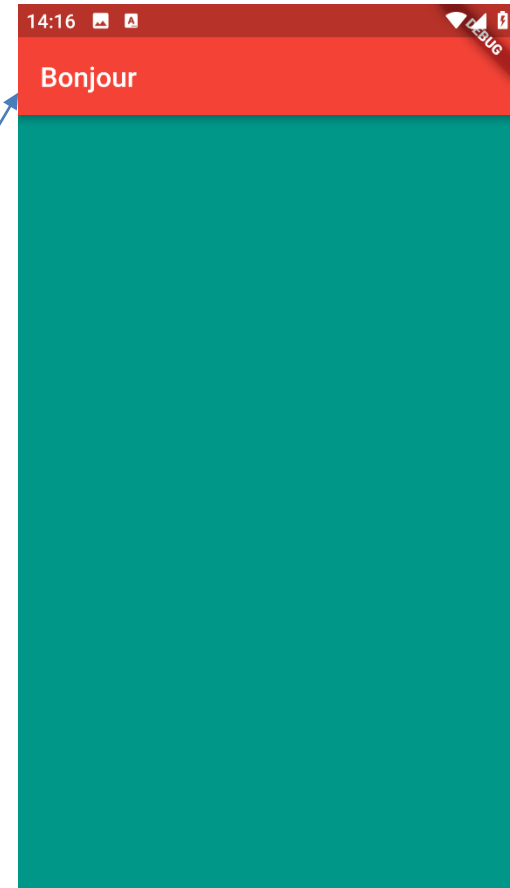
```
import 'package:flutter/material.dart';  
void main() {  
  runApp(const MyApp());  
}  
class MyApp extends StatelessWidget {  
  const MyApp({super.key});  
  
  @override  
  Widget build(BuildContext context) {  
    return MaterialApp(  
      title: 'Les Widgets Basiques',  
      theme: ThemeData(primarySwatch: Colors.red),  
      home: const Home(),  
    ); // MaterialApp  
  }  
}  
class Home extends StatefulWidget {  
  const Home({super.key});  
  
  @override  
  State<StatefulWidget> createState() {  
    return _Home();  
  }  
}  
class _Home extends State<Home> {  
  @override  
  Widget build(BuildContext context) {  
    return const Scaffold(  
      backgroundColor: Colors.teal,  
    );  
  }  
}
```



Scaffold (AppBar : title)

```
import 'package:flutter/material.dart';
void main() {
  runApp(const MyApp());
}
class MyApp extends StatelessWidget {
  const MyApp({super.key});
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Les Widgets Basiques',
      theme: ThemeData(primarySwatch: Colors.red),
      home: const Home(),
    ); // MaterialApp
  }
}
class Home extends StatefulWidget {
  const Home({super.key});

  @override
  State<StatefulWidget> createState() {
    return _Home();
  }
}
class _Home extends State<Home> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text("Bonjour"),
      ), // AppBar
      backgroundColor: Colors.teal,
    ); // Scaffold
  }
}
```

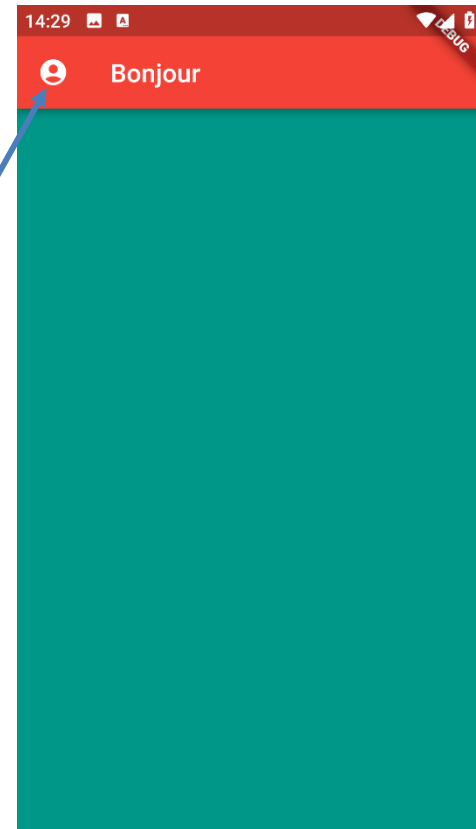


Scaffold (AppBar : leading)

```
class Home extends StatefulWidget {
  const Home({super.key});

  @override
  State<StatefulWidget> createState() {
    return _Home();
  }
}

class _Home extends State<Home> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text("Bonjour"),
        leading: const Icon(Icons.account_circle),
      ), // AppBar
      backgroundColor: Colors.teal,
    ); // Scaffold
  }
}
```



Scaffold (AppBar : actions)

```
class Home extends StatefulWidget {
  const Home({super.key});

  @override
  State<StatefulWidget> createState() {
    return _Home();
  }
}

class _Home extends State<Home> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text("Bonjour"),
        leading: const Icon(Icons.account_circle),
        actions: const <Widget> [
          Icon(Icons.search),
          Icon(Icons.refresh),
          Icon(Icons.access_alarm),
        ], // <Widget>[]
      ), // AppBar
      backgroundColor: Colors.teal,
    ); // Scaffold
  }
}
```



```
return MaterialApp(
  title: 'Les Widgets Basiques',
  theme: ThemeData(primarySwatch: Colors.red),
  debugShowCheckedModeBanner: false,
  home: const Home(),
); // MaterialApp
```

Enlever la bannière DEBUG

Scaffold (AppBar : centerTitle)

```
class Home extends StatefulWidget {
  const Home({super.key});

  @override
  State<StatefulWidget> createState() {
    return _Home();
  }
}

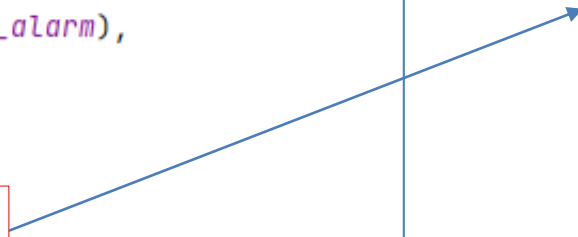
class _Home extends State<Home> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text("Bonjour"),
        leading: const Icon(Icons.account_circle),
        actions: const <Widget> [
          Icon(Icons.search),
          Icon(Icons.refresh),
          Icon(Icons.access_alarm),
        ], // <Widget>[]
        centerTitle: true,
      ), // AppBar
      backgroundColor: Colors.teal,
    ); // Scaffold
  }
}
```



Bannière DEBUG enlevée

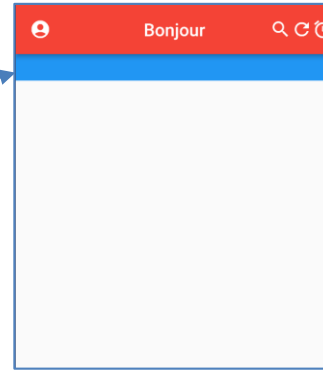
Scaffold (Body : container)

```
class _Home extends State<Home> {  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      appBar: AppBar(  
        title: const Text("Bonjour"),  
        leading: const Icon(Icons.account_circle),  
        actions: const <Widget> [  
          Icon(Icons.search),  
          Icon(Icons.refresh),  
          Icon(Icons.access_alarm),  
        ], // <Widget>[]  
        centerTitle: true,  
      ), // AppBar  
      body: Container(  
        color: Colors.blue,  
      ), // Container  
    ); // Scaffold  
  }  
}
```



Scaffold (Body : height)

```
body: Container(  
  color: Colors.blue,  
  height:30.0,
```



```
body: Container(  
  color: Colors.blue,  
  height: MediaQuery.of(context).size.height/2,
```



Scaffold (Body : width)

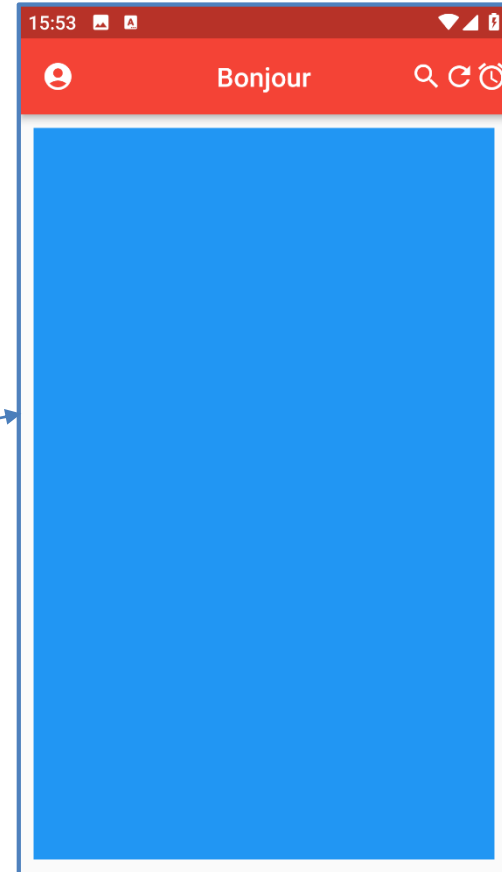
```
body: Container(  
  color: Colors.blue,  
  height: MediaQuery.of(context).size.height/2,  
  width: MediaQuery.of(context).size.height/3,
```



Scaffold (Body : margin)

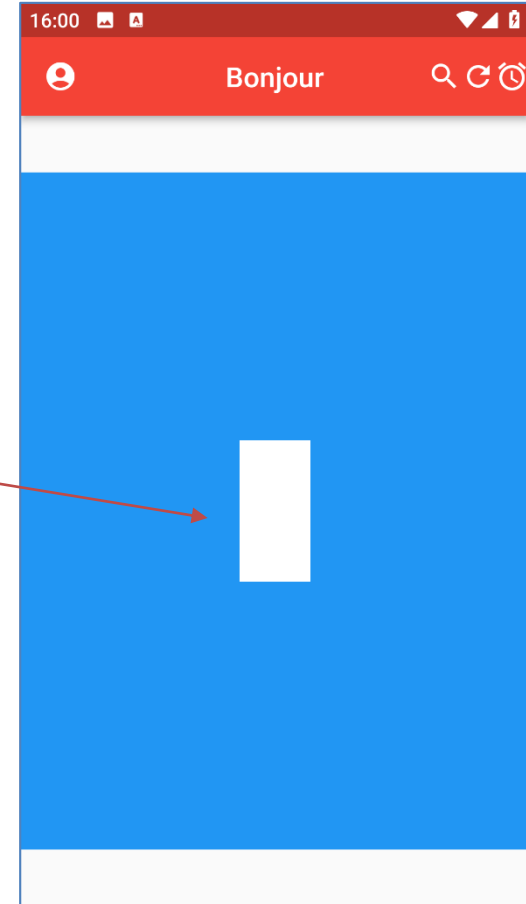
```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.all(10.0),
```

On peut aussi utiliser l'instruction suivante :
margin: EdgeInsets.only(top:40.0, bottom: 40.0),



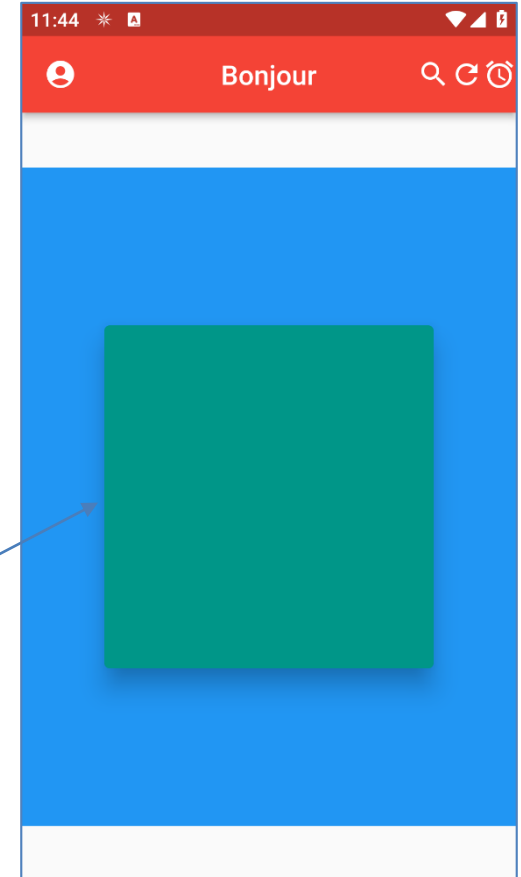
Scaffold (Body : Center)

```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.only(top:40.0, bottom: 40.0),  
  child: Center(  
    child: Container(  
      width: 50.0,  
      height: 100.0,  
      color: Colors.white,  
    ), // Container  
  ), // Center  
), // Container
```



Scaffold (Body : Card)

```
class _Home extends State<Home> {  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      appBar: AppBar(  
        title: const Text("Bonjour"),  
        leading: const Icon(Icons.account_circle),  
        actions: const <Widget> [  
          Icon(Icons.search),  
          Icon(Icons.refresh),  
          Icon(Icons.access_alarm),  
        ], // <Widget>[]  
        centerTitle: true,  
      ), // AppBar  
      body: Container(  
        color: Colors.blue,  
        margin: const EdgeInsets.only(top:40.0, bottom: 40.0),  
        child: Center(  
          child: Card(  
            elevation: 15.0,  
            color: Colors.teal,  
            child: Container(  
              width: MediaQuery.of(context).size.width/1.5,  
              height: 250.0,  
            ) // Container  
          ) // Card  
        ), // Center  
      ), // Container  
    ); // Scaffold  
  }  
}
```



Scaffold (Body : Image.network)

```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.only(top:40.0, bottom: 40.0),  
  child: Center(  
    child: Card(  
      elevation: 15.0,  
      color: Colors.teal,  
      child: Container(  
        width: MediaQuery.of(context).size.width/1.5,  
        height: 130.0,  
        child: Image.network(  
          'https://www.univ-oran1.dz/images/Logo/Logo_Univ_Oran1_MAJ-min.jpg'  
        ), // Image.network  
      ), // Container  
    ), // Card  
  ), // Center  
), // Container
```

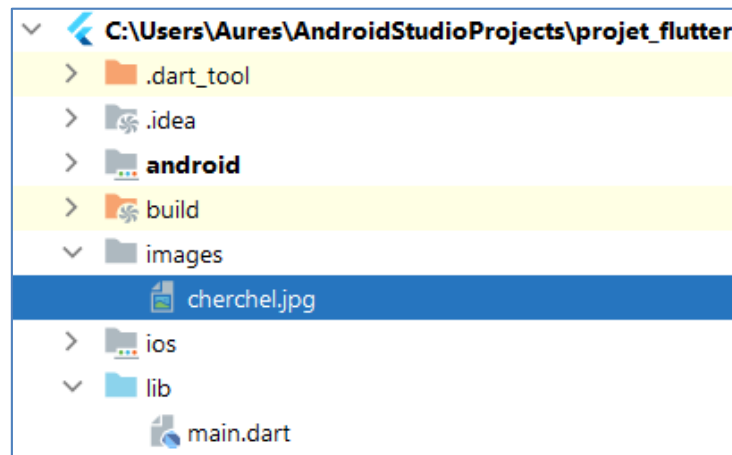


Scaffold (Body : Image.asset)

- ✓ Téléchargez des images libres de droit, Exemple: <https://pixabay.com/fr/>.



- ✓ Ensuite créez un dossier **images** puis mettre l'image dedans:



Scaffold (Body : Image.asset)

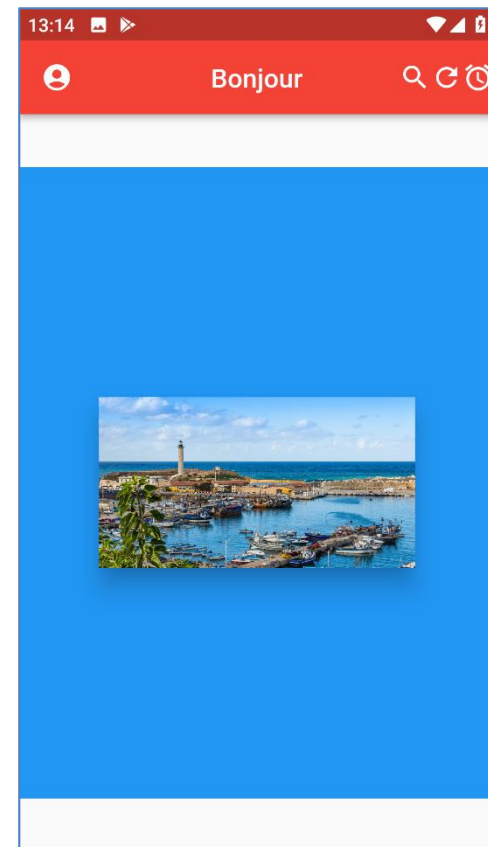
- ✓ Ensuite, allez au fichier **pubspec.yaml**, et ajouter ces deux lignes:

```
assets:  
- images/cherchel.jpg
```

- ✓ Modifiez le fichier **main.dart**:

```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.only(top:40.0, bottom: 40.0),  
  child: Center(  
    child: Card(  
      elevation: 15.0,  
      color: Colors.teal,  
      child: Container(  
        width: MediaQuery.of(context).size.width/1.5,  
        height: 130.0,  
        child: Image.asset('images/cherchel.jpg',  
          fit: BoxFit.cover,  
        ) // Image.asset  
      ) // Container  
    ) // Card  
  ), // Center  
), // Container
```

Pour couvrir toute la zone



Scaffold (Body : Text)

```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.only(top: 40.0, bottom: 40.0),  
  child: const Center(  
    child: Text('Apprentissage des Widgets'),  
  ), // Center  
), // Container
```

```
child: Text(  
  'Apprentissage des Widgets',  
  textScaleFactor: 2.0,  
), // Text
```



Apprentissage des Widgets

Taille du texte x2



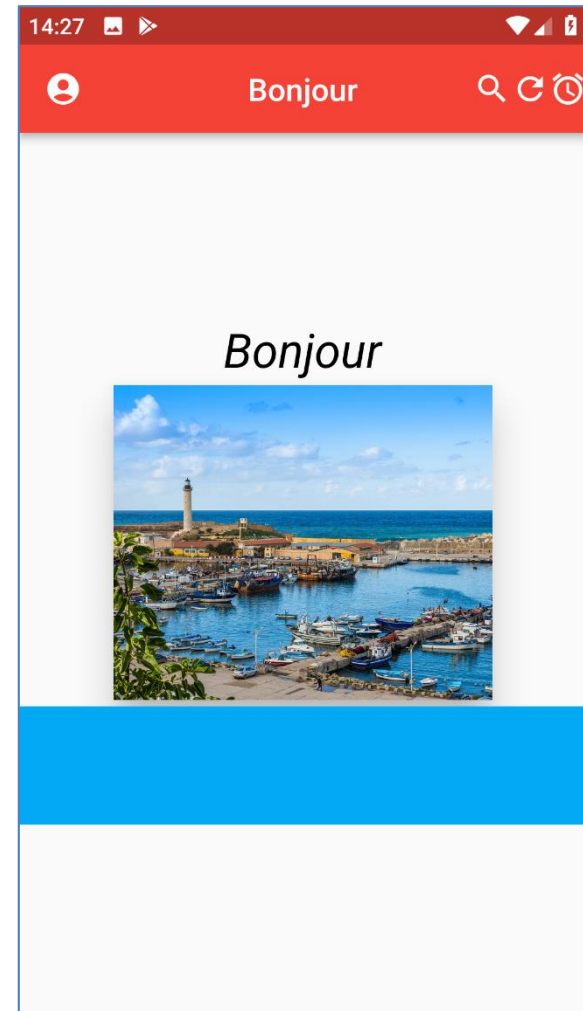
Scaffold (Body : Text)

```
body: Container(  
  color: Colors.blue,  
  margin: const EdgeInsets.only(top: 40.0, bottom: 40.0),  
  child: const Center(  
    child: Text(  
      'Apprentissage des Widgets',  
      textAlign: TextAlign.center,  
      textScaleFactor: 2.0,  
      style: TextStyle(  
        color: Colors.white,  
        fontSize: 20.0,  
        fontStyle: FontStyle.italic,  
      ), // TextStyle  
    ), // Text  
  ), // Center  
), // Container
```



Scaffold (Body : Column)

```
body: Center(  
  child: Column(  
    mainAxisAlignment: MainAxisAlignment.center,  
    children: <Widget>[  
      const Text(  
        "Bonjour",  
        style: TextStyle(  
          color: Colors.black,  
          fontSize: 30.0,  
          fontStyle: FontStyle.italic,  
        ), // TextStyle  
      ), // Text  
      Card(  
        elevation: 20.0,  
        child: Container(  
          width: MediaQuery.of(context).size.width / 1.5,  
          height: 200.0,  
          child: Image.asset(  
            "images/cherchel.jpg",  
            fit: BoxFit.cover,  
          ), // Image.asset  
        ), // Container  
      ), // Card  
      Container(  
        height: 75.0,  
        color: Colors.lightBlue,  
      ) // Container  
    ], // <Widget>[]  
  ), // Column  
); // Center, Scaffold
```



Scaffold (Body : Row)

```
Container(  
  height: 75.0,  
  color: Colors.LightBlue,  
  margin: const EdgeInsets.only(left:20.0, right:20.0),  
  child: Row(  
    mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
    children: <Widget> [  
      Container(  
        height: 65.0,  
        width: 65.0,  
        color: Colors.yellow,  
      ), // Container  
      Container(  
        height: 65.0,  
        width: 65.0,  
        color: Colors.pink,  
      ), // Container  
      Container(  
        height: 65.0,  
        width: 65.0,  
        color: Colors.red,  
      ), // Container  
      Container(  
        height: 65.0,  
        width: 65.0,  
        color: Colors.teal,  
      ), // Container  
    ], // <Widget>[]  
  ), // Row  
) // Container
```



Scaffold (Body : IconButton)

```
Card(  
  elevation: 20.0,  
  child: Container(  
    width: MediaQuery.of(context).size.wi  
    height: 200.0,  
    child: Image.asset(  
      "images/cherchel.jpg",  
      fit: BoxFit.cover,  
    ), // Image.asset  
  ), // Container  
), // Card  
  
IconButton(  
  onPressed:(){  
    print('Tu as appuyé sur le bouton');  
  }, icon: const Icon(Icons.delete)  
), // IconButton  
  
Container(  
  height: 75.0,  
  color: Colors.lightBlue.
```

Run: main.dart (SM S901N) ×

Console

Performing hot reload...
Syncing files to device SM S901N...
Reloaded 1 of 665 libraries in 275ms (compile: 14 ms, reload: 86 ms, reassemble: 12 ms)
I/flutter (14092): Tu as appuyé sur le bouton

```
Icon(  
  Icons.thumb_up,  
  color: Colors.white,  
  size: 40.0,  
), // Icon  
Icon(  
  Icons.thumb_down,  
  color: Colors.white,  
  size: 40.0,  
), // Icon  
Icon(  
  Icons.share,  
  color: Colors.white,  
  size: 40.0,  
), // Icon  
Icon(  
  Icons.heart_broken,  
  color: Colors.white,  
  size: 40.0,
```

Scaffold (Body : floatingActionButton)

```
main.dart 100
> linux    101
> macos    102
> test     103
> web      104
> windows  105
.gitignore 106
.metadata  107
analysis_options.yaml 108
projct_flutter.iml 109
pubspec.lock 110
pubspec.yaml 111
README.md  112
113
114
```

```
    ) // Container
    ], // <Widget>[]
  ), // Column
), // Center
floatingActionButton: FloatingActionButton(
  onPressed:() {
    print('Tu as appuyé sur le bouton');
  },
  elevation: 10.0,
  child: const Icon(Icons.add),
), // FloatingActionButton
); // Scaffold
}
```

Run: main.dart (SM S901N) x

Console

```
Performing hot reload...
Syncing files to device SM S901N...
Reloaded 1 of 665 libraries in 254ms (compile: 15 ms, reload: 100 ms, reassemble
I/1.raster(14092): type=1400 audit(0.0:1627): avc: denied { ioctl } for path="/c
dev="tmpfs" ino=1105 ioctlcmd=6867 scontext=u:r:untrusted_app:s0:c68,c256,c512,
tcontext=u:object_r:device:s0 tclass=chr_file permissive=1
I/flutter (14092): Tu as appuyé sur le bouton
```



Pour le centrer, on utilise:

```
), // FloatingActionButton
floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,
```


Références

- ✓ **Sanjib Sinha**. Beginning Flutter with Dart: A Step by Step Guide for Beginners to Build an Android or iOS Mobile Application (Flutter, Dart and Algorithm), 2021.
- ✓ **Mike Katz et al**. Flutter Apprentice Learn to Build Cross-Platform Apps, 2nd Edition, 2021.
- ✓ **Dieter Meiller**. Modern App Development with Dart and Flutter 2. 2021

