bytecraft

Welcome to the Flutter Workshop

Workshop Plan :

1. Installation
2. Introduction
3. Dart & OOP
4. Flutter in hand
5. Flutter Widgets
6. Lets Code

Introduction

What is Flutter ?

Flutter is an open source UI framework by Google for building multi-platform applications from a single codebase.

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FrontEnd

Used technologies:

ReactJs , AnuglarJs....(web)

Java/kotlin (Android)

Flutter (crossPlatform)

....

BackEnd

Used technologies:

Django (python)

Node js (java script)

Laravel (php)

....

What is a Framework ?

A framework is a structure that you can build software on. It serves as a foundation, so you're not starting entirely from scratch. Frameworks are typically associated with a specific programming language and are suited to different types of tasks.

How multi-platform ?

Native

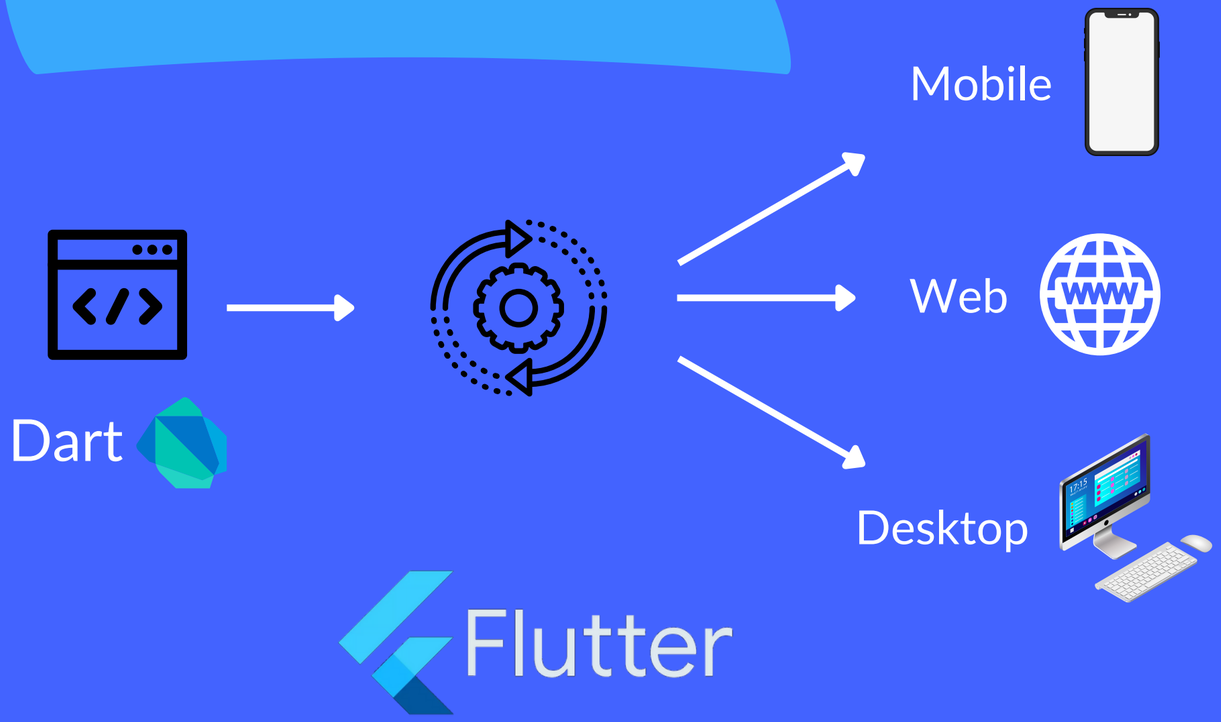
Android

java / kotlin

iOS

swift

Multi-Platforme



What makes Flutter Unique ?

Fast Development

Flexible Toolkit

Native Performance

What should I know to start learning Flutter?

- Basic programming skills
- Dart Language
- Some understanding of Object-Oriented Programming (oop)

Introductio to Dart Language

Variables and Types

```dart
bool clicked = false;  // boolean type can be true or false
const double pi = 3.14159265359; // const keyword
int cpt = 34;
double height = 21.75;
String name = "Yazid";
List<int> numbers = [12, 16, 21, 39];
Map<String,int> ages= {"Yacine": 20, "Mazene": 21};//stores key-value pairs
```

Loops and Conditional statements

//For loop

```
for ( int i = 0 ; i<10 ; i++){
  print(i);
}
```

//If else statement

```
for ( int i = 0 ; i<10 ; i++){
  if (i % 2 ==0)
  {
    print("$i est pair");
  }
  else {
     print("$i est impair");
  }
}
```

//For in loop

```
List nombrePair= [0,2,4,6,8];

for (int i in nombrePair){
  print(i);
}
```

//While loop

```
int i=0;
 while (i < 10){
    print(i);
    i++;
 }
```

Ternary operator

Condition ? action if true : action if false;

```
for ( int i = 0 ; i<10 ; i++){
  if (i % 2 ==0)
  {
    print("$i est pair");
  }
  else {
     print("$i est impair");
  }
}
```

```
for ( int i = 0 ; i<10 ; i++){
  i % 2 == 0 ? print("$i est pair") : print("$i est impair");

}
```

Fucntion and Arrow Syntaxe

```
bool  isImpair(int n){
  if(n % 2 == 0){
    return false;
  }
  else{
    return true;
  }
}

bool  isImpairArrow(int n) => n % 2 != 0 ;
```

Null Safety

Null Safety in simple words means a variable cannot contain a 'null' value unless you initialized with null to that variable

OOP

Object Oriented programming (OOP) is a programming paradigm that relies on the concept of classes and objects rather than functions and logic

oop principals

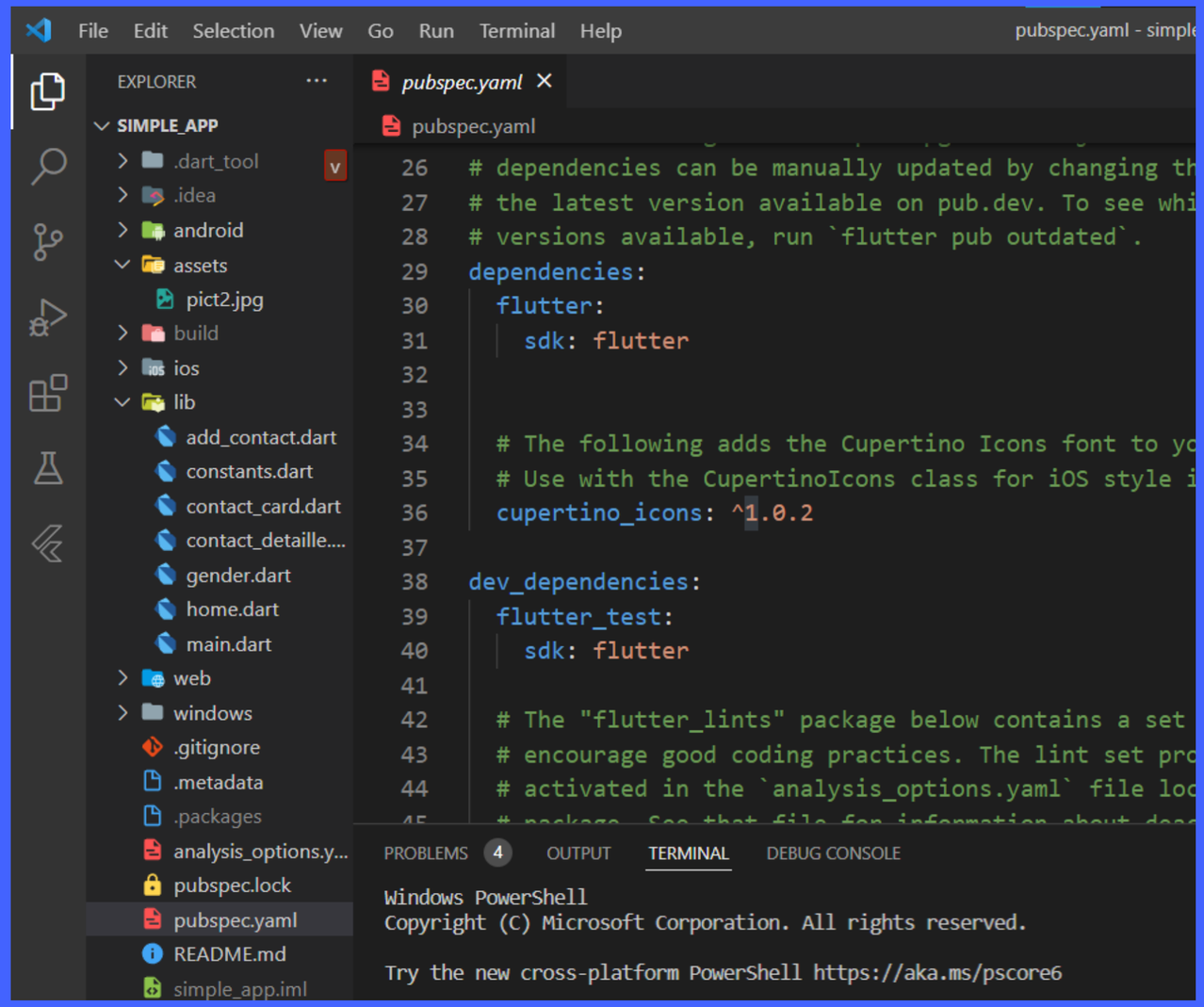
- Abstraction
- Encapsulation
- Inheritance
- Polymorphism

Flutter in hand

```
$ flutter create my_project
```

pubspec.yaml

contains metadata about the project that the Dart and Flutter tooling needs to know.



Pubdev

It is the package manager for the Dart programming language, containing reusable libraries & packages for Flutter,

StatelessWidget vs StatefulWidget

```dart
class Example extends StatefulWidget {
  const Example({ Key? key }) : super(key: key);

  @override
  State<Example> createState() => _ExampleState();
}

class _ExampleState extends State<Example> {
  @override
  Widget build(BuildContext context) {
    return Container(

    );
  }
}
```

```dart
class Exaplme extends StatelessWidget {
  const Exaplme({ Key? key }) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Container(

    );
  }
}
```

Flutter Widgets

The most important ones

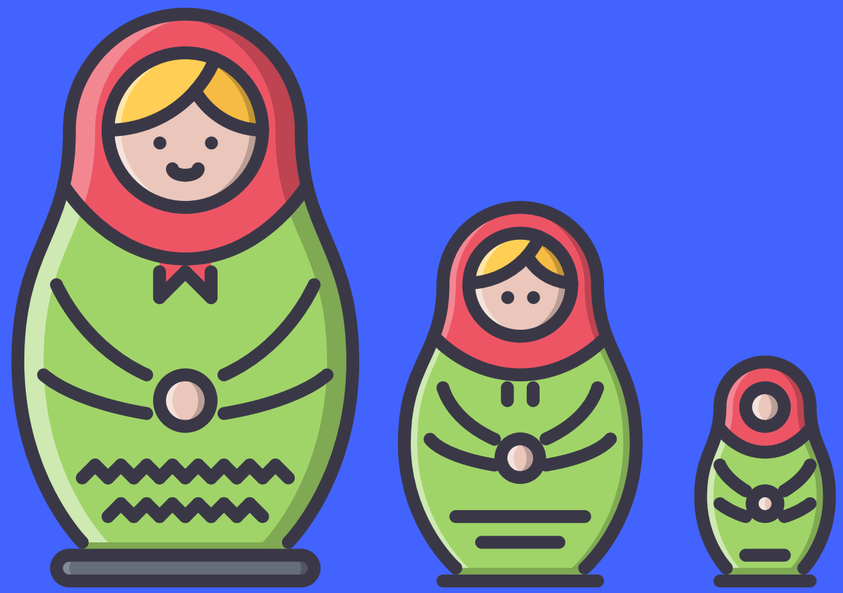
& CSH

Basic Widgets

- **Text**
- **Icon**
- **Image**
- **Container**
- **Center**
- **Padding**
- **SizedBox**

Child property

```
return Container(
    child: Text("Hello world"),
); // Container
```



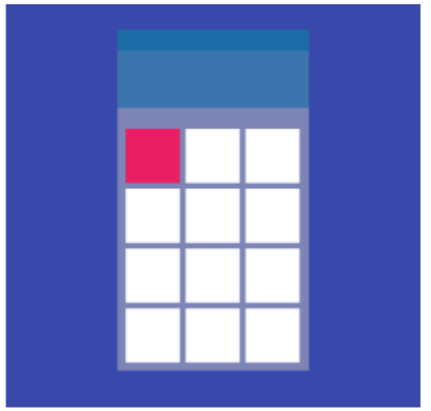
Multi-child layout widgets

Column

Layout a list of child widgets in the vertical direction.

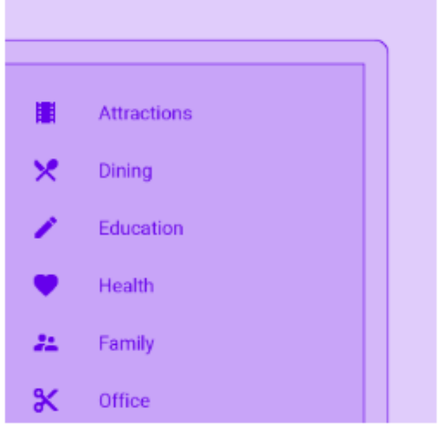
Row

Layout a list of child widgets in the horizontal direction.



GridView

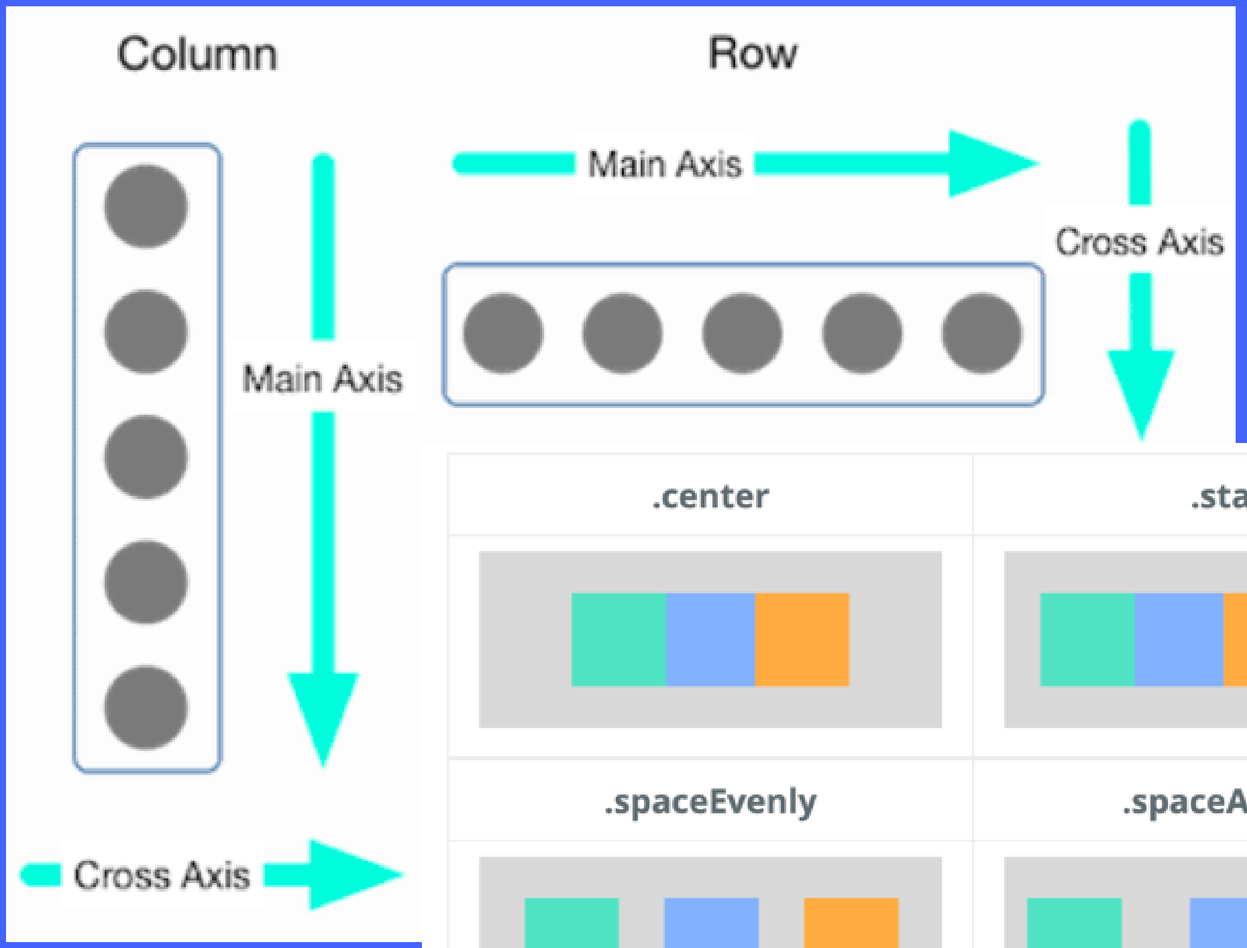
A grid list consists of a repeated pattern of cells arrayed in a vertical and horizontal layout. The GridView widget implements this component.

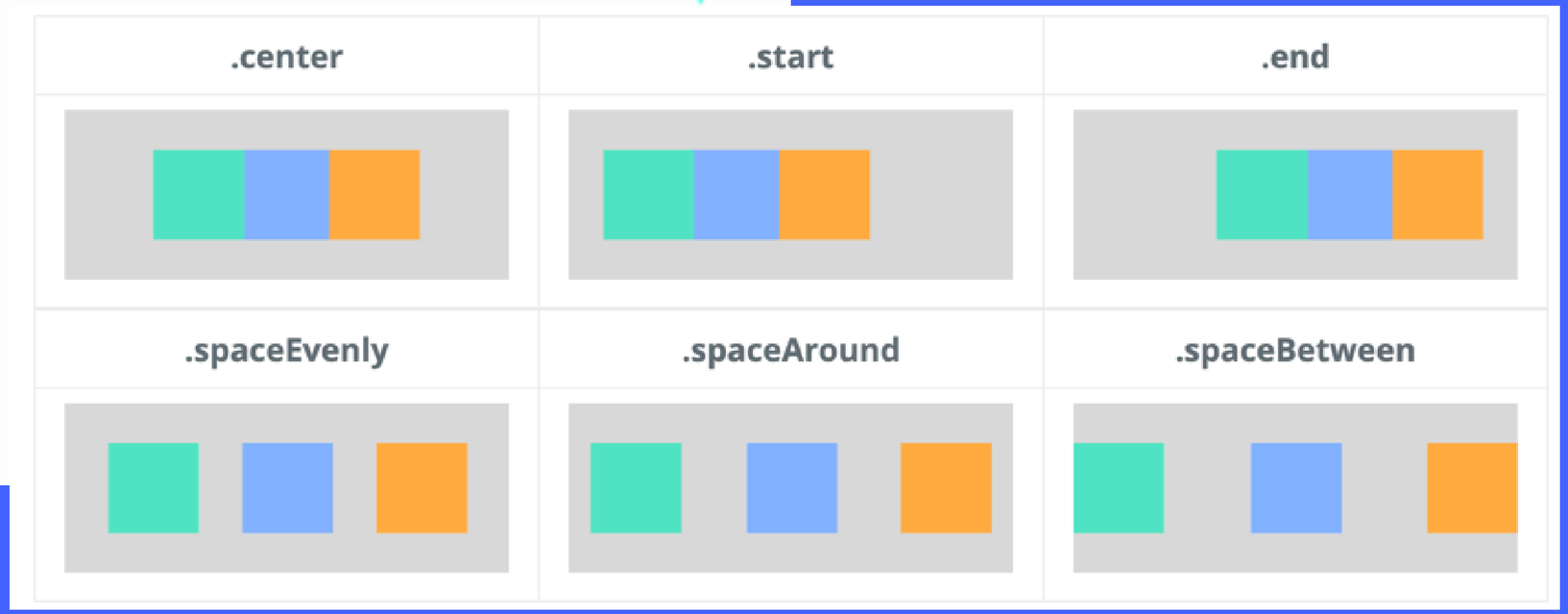


ListView

A scrollable, linear list of widgets. ListView is the most commonly used scrolling widget. It displays its children one after another in the scroll direction....

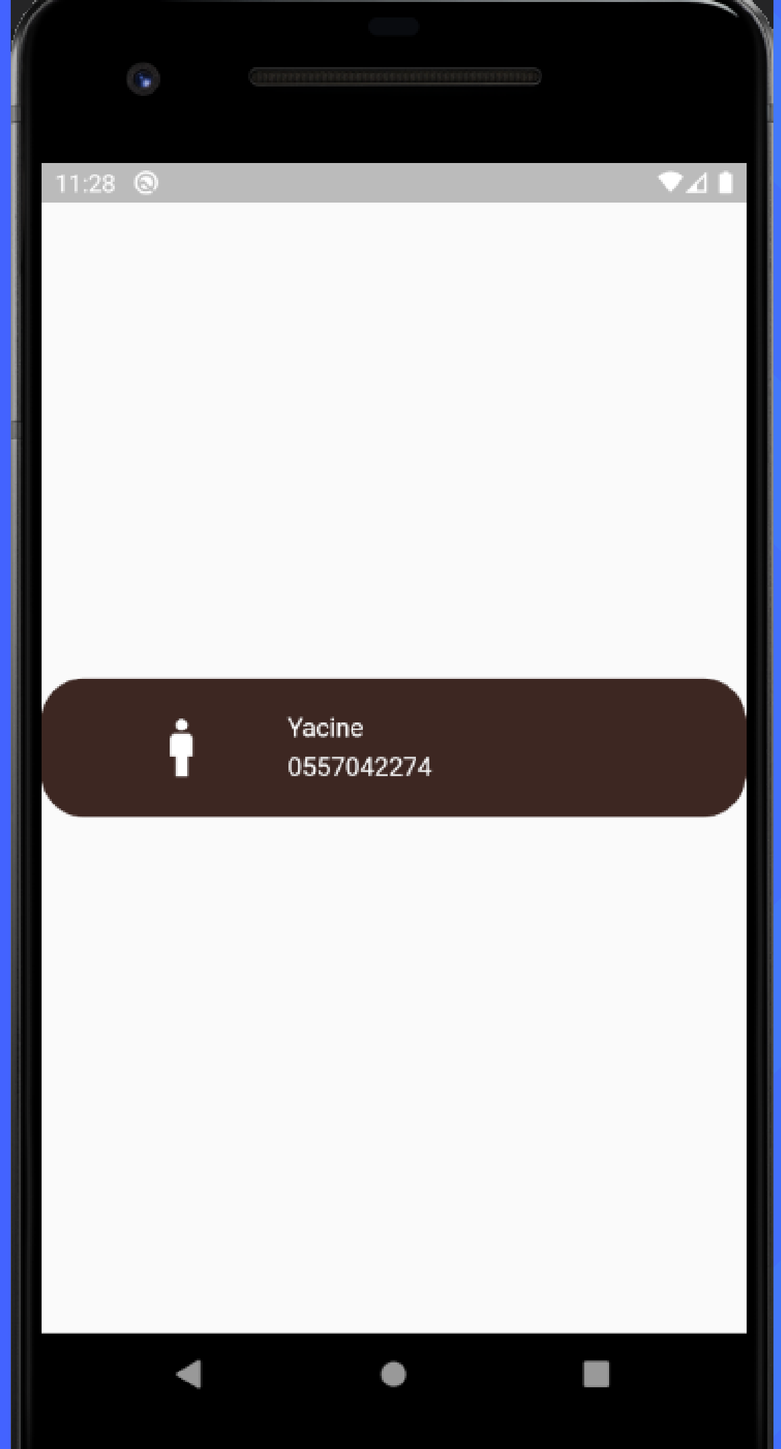
Alignment in Column & Row





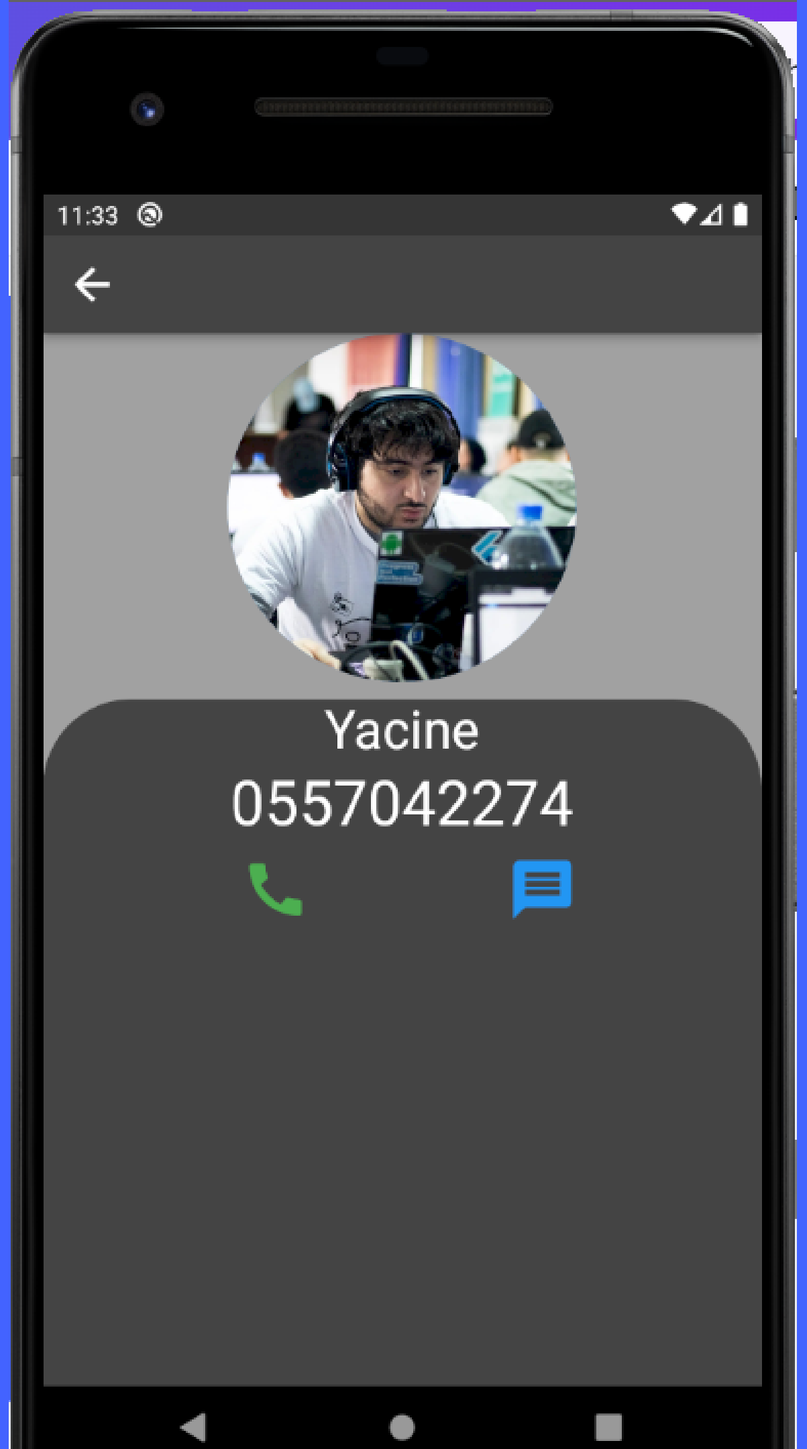
Exercice 1

1. **Which widgets are used in this screen?**
2. **Draw the widget tree.**



Exercice 2

1. **Which widgets are used in this screen?**
2. **Draw the widget tree.**



Exercice 3

1. **Which widgets are used in this screen?**
2. **Draw the widget tree.**

Resources

- Flutter official documentation
- The NetNinja (Youtube)
- Reso Coder (Youtube)
- Flutter Widget of the Week (Youtube)

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Thank You

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