



Android Makers
Paris 2019

Codelab Flutter Android Makers 2019



Romain Rastel - Horacio Gonzalez - Pierre Tibulle



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Business
Services



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Who are we?

And what's that Breizh thing?



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Romain Rastel



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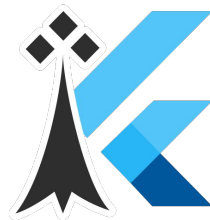
Flutter Lead Expert

<https://github.com/letsar>

<https://medium.com/@lets4r>



**Business
Services**



Flutter
RENNES



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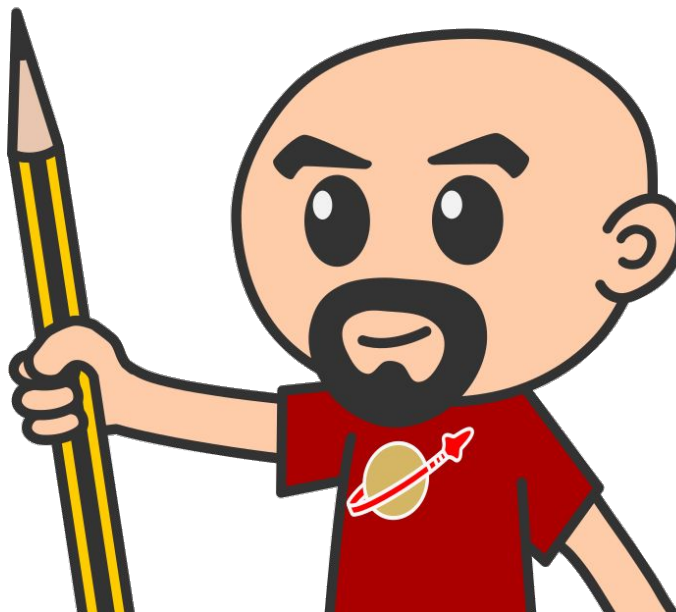


Horacio Gonzalez



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Spaniard lost in Brittany, developer,
dreamer and all-around geek



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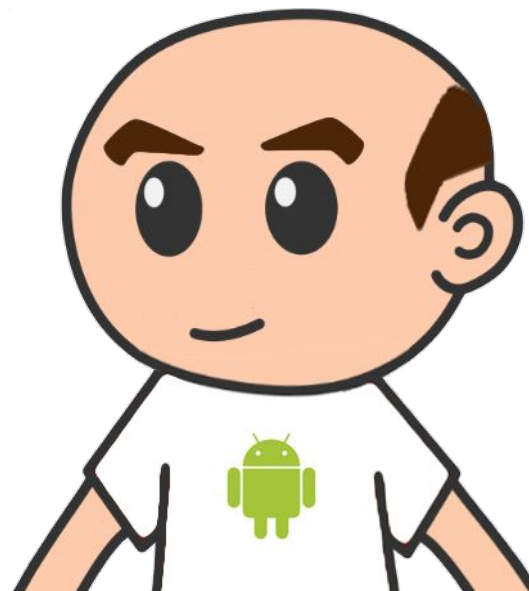


Pierre Tibulle



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Developer, Jobcrafter and Maker



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Before we begin...

Did you follow the instructions?



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Before we begin



For this codelab, you need a laptop with an operational Flutter environment :

- <https://flutter.io/docs/get-started/install>
- <https://flutter.io/docs/get-started/editor>
- <https://flutter.io/docs/get-started/test-drive>

If you get this =>
It's OK 🙌

If you don't, find a pair !!!



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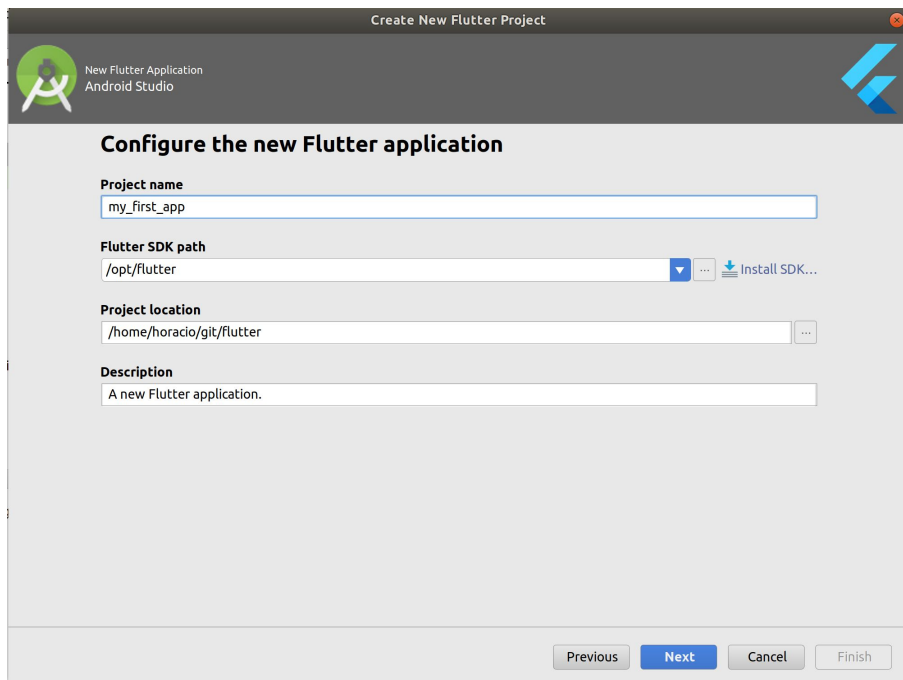
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Testing your install



Create and test your first app

<https://flutter.io/get-started/test-drive/>



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What's Flutter?

Yet another mobile solution?



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Flutter



Flutter is Google's new
open-source mobile UI toolkit,
helping developers to craft high-quality
native experiences across mobile
platforms in record time



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Looking back

Diving into the history of mobile app development



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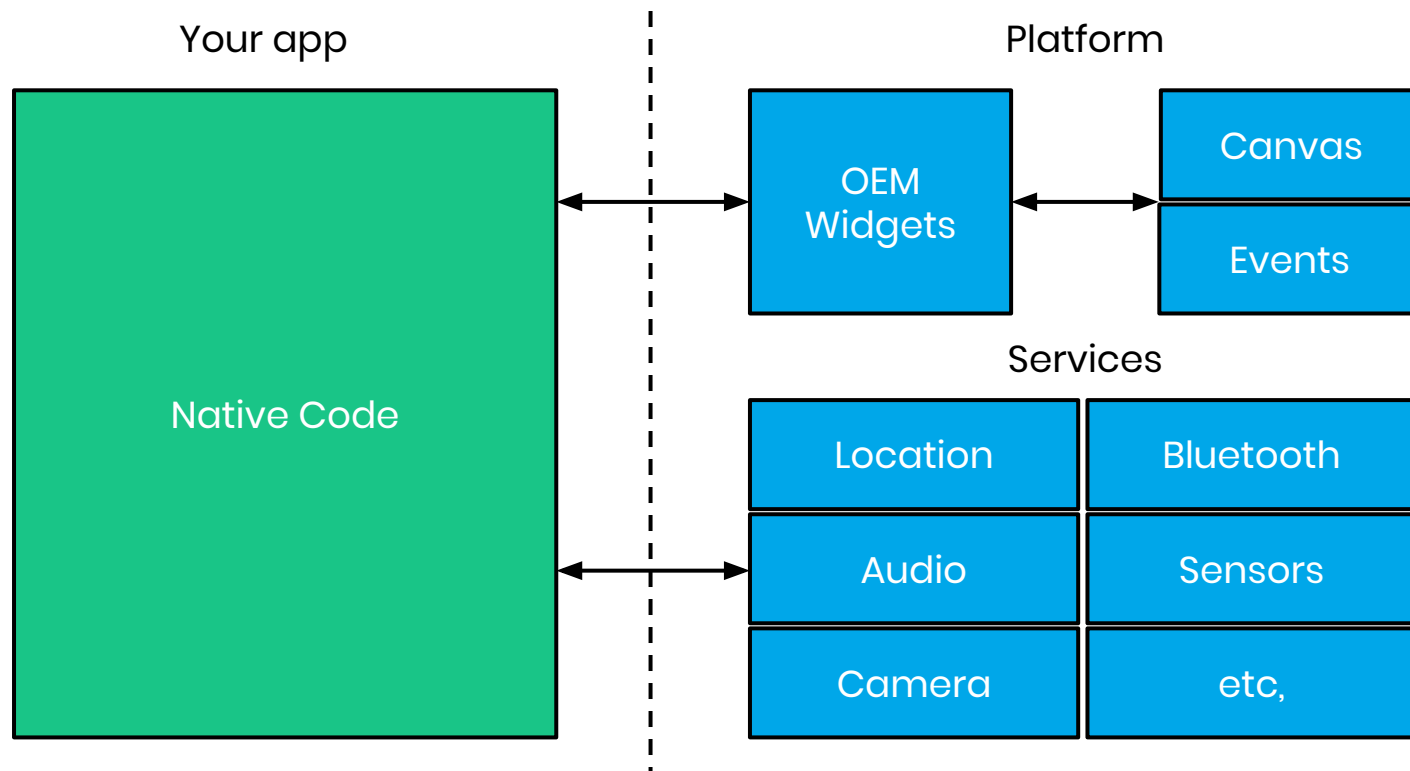
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At the beginning there were the SDKs



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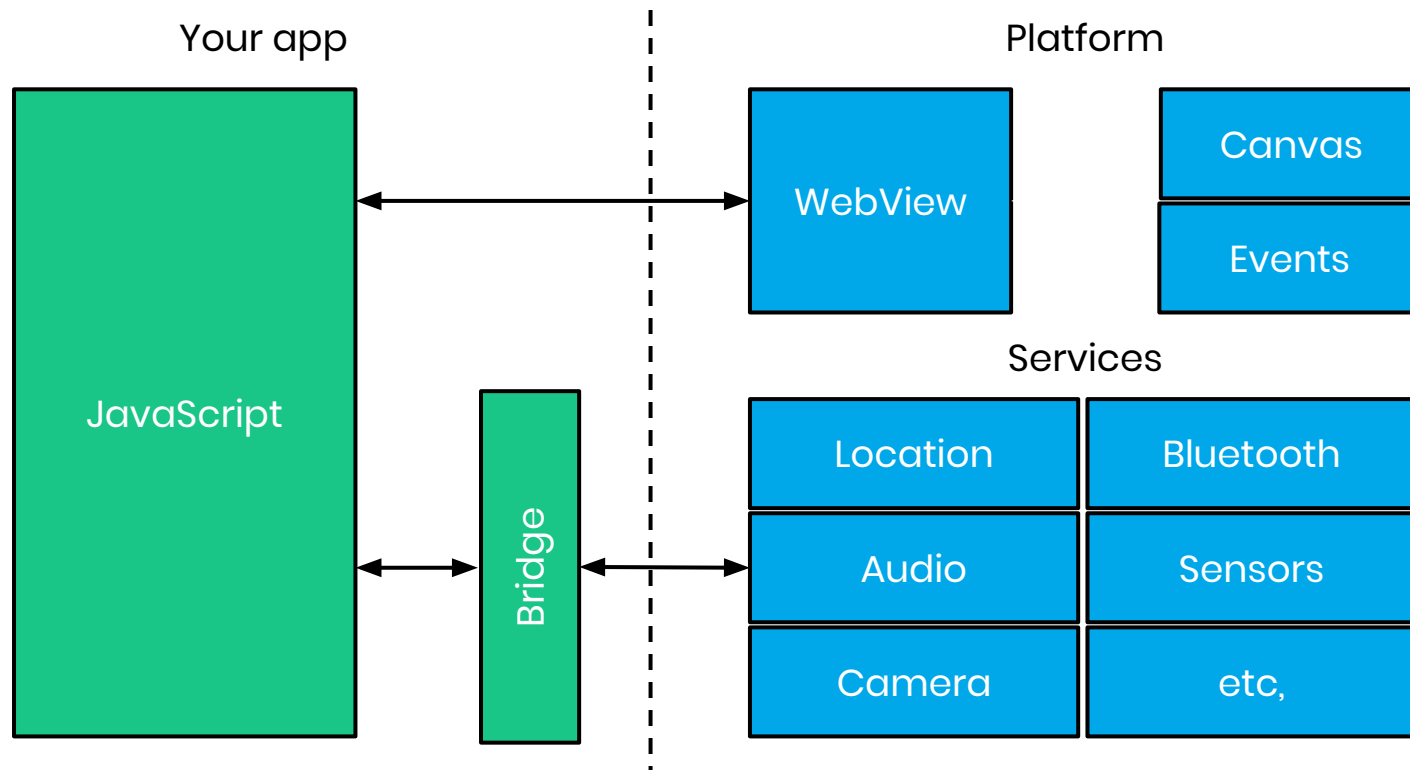
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Then the Webviews...



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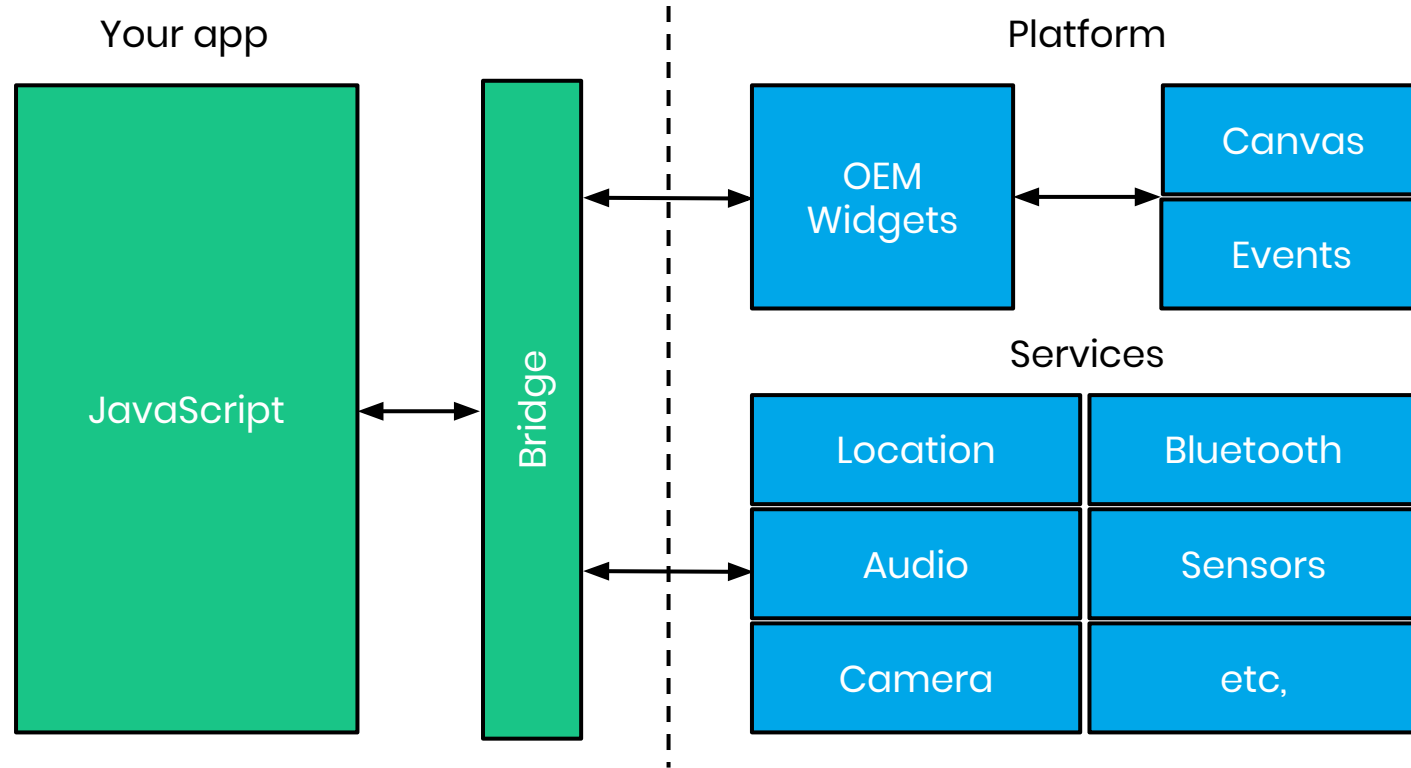
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And the Reactive views



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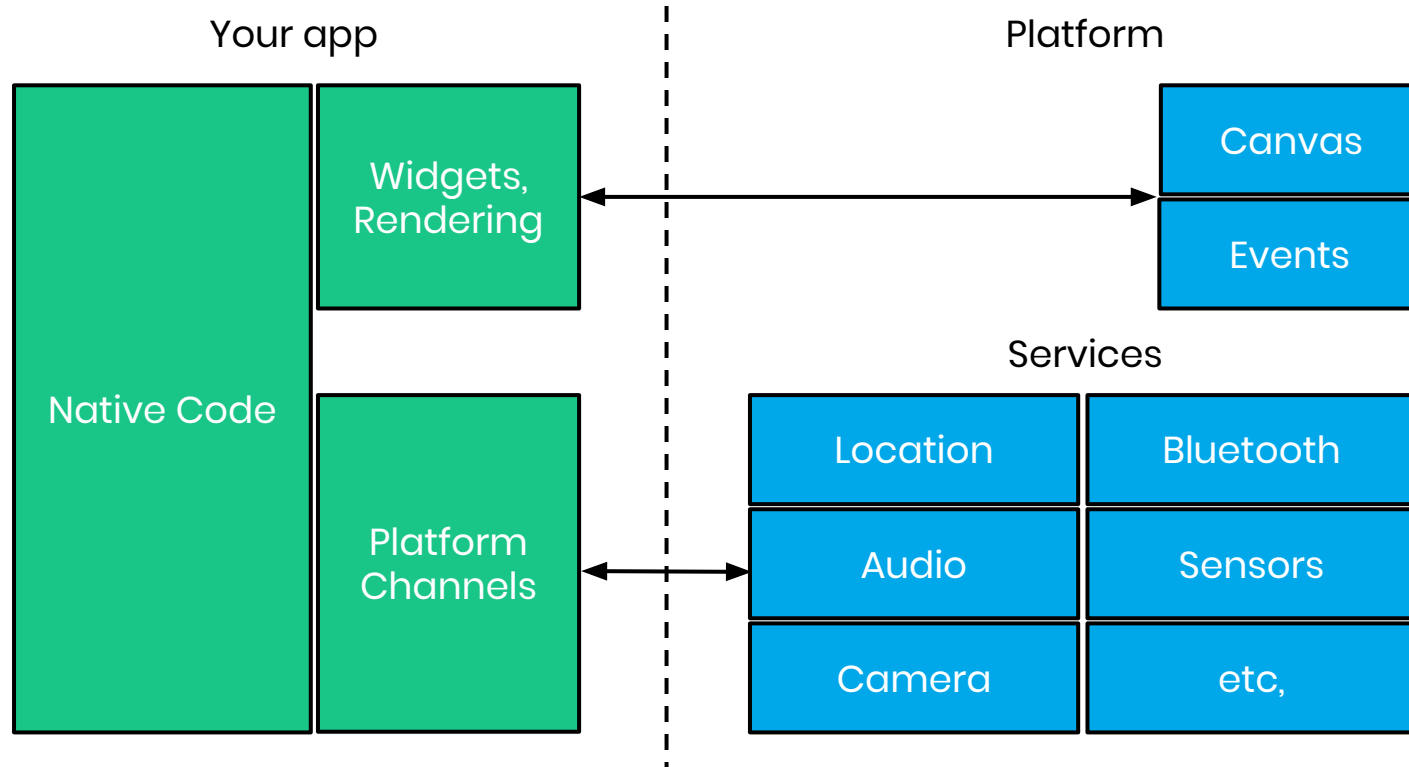
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Enter Flutter



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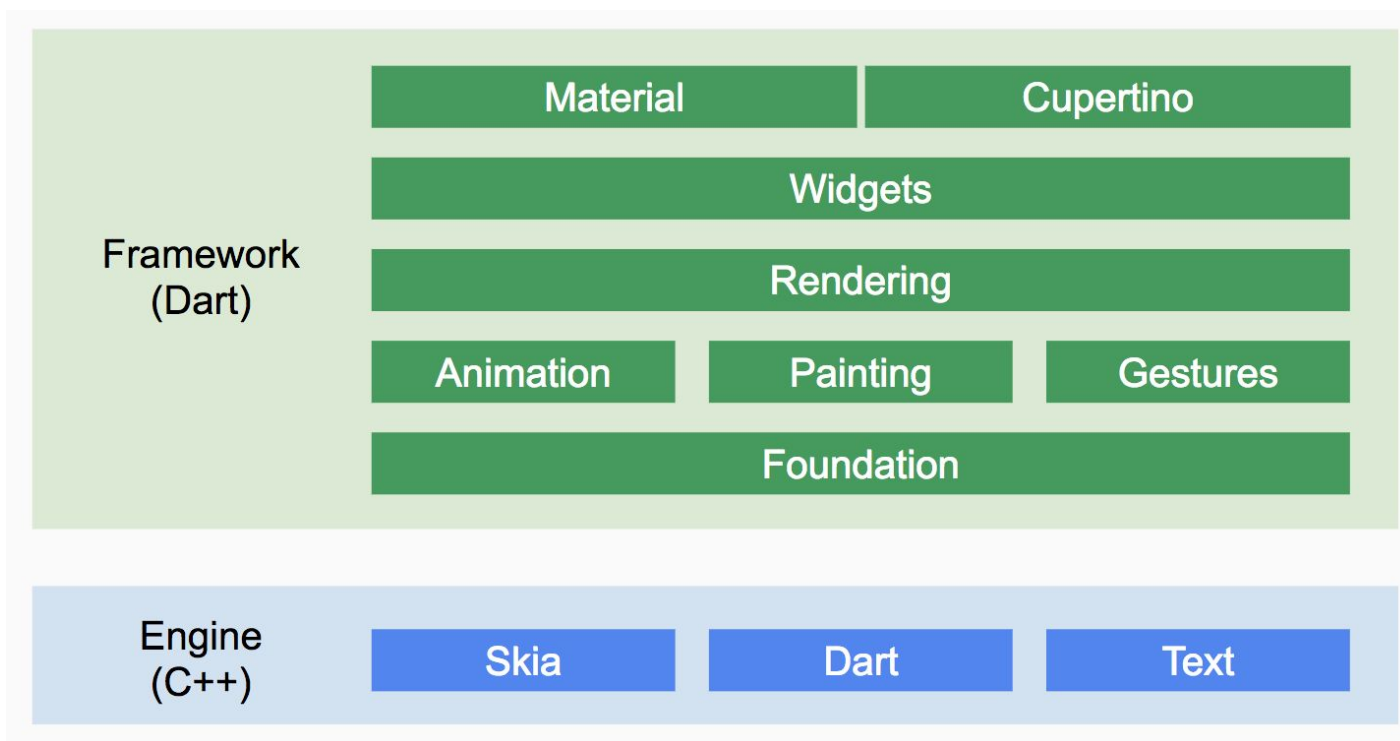
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Flutter architecture



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But why Dart?

**Because Google, duh!
...or maybe there are good reasons?**



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Dart can be compiled AOT or JIT



Development builds:

Custom **VM** offers
super fast hot reload
change cycle

Release builds:

Full AOT-compilation to **native machine code** offers **super fast startup and execution**



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Dart's allocation and GC



- Many new objects:
 - Lock-free, fast allocation
- Short-lived objects:
 - Precise, generational garbage collection



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Dart is an easy, familiar language



An easy language:

- No exotic syntax
- Easy to read, easy to write
- Very expressive

A familiar language:

- JavaScript devs find it easy to learn
- Java / C# devs even more



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Layout

**How Flutter does layout?
CSS like? XML like?**



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Traditional rule based layouts



Large set of rules

- Fixed
- Applied to all the widgets

Cascading application

- Interactions & conflicts
- Low performance



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Chrome team experiment



Could a different layout model allow faster rendering?

- Each widget specifies its own simple layout model
- Less rules, heavily optimized
- Complex layouts are turned into widgets



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Everything is a widget



Layouts

Margin

Padding

Themes

Application

Navigation

are widgets

even scrolling is a widget!



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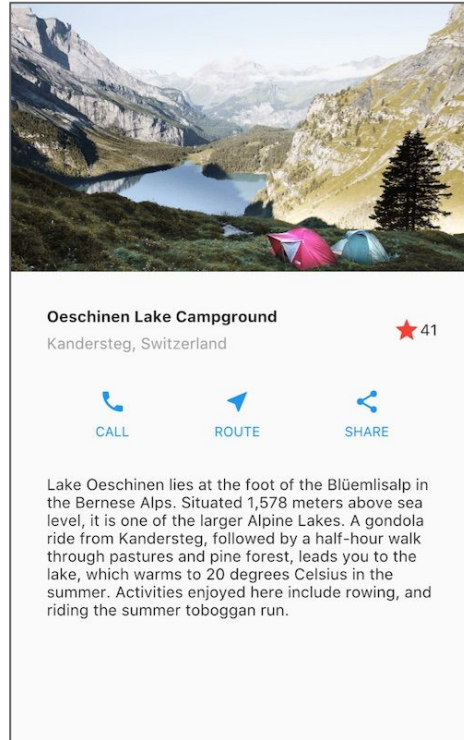
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Le Layout



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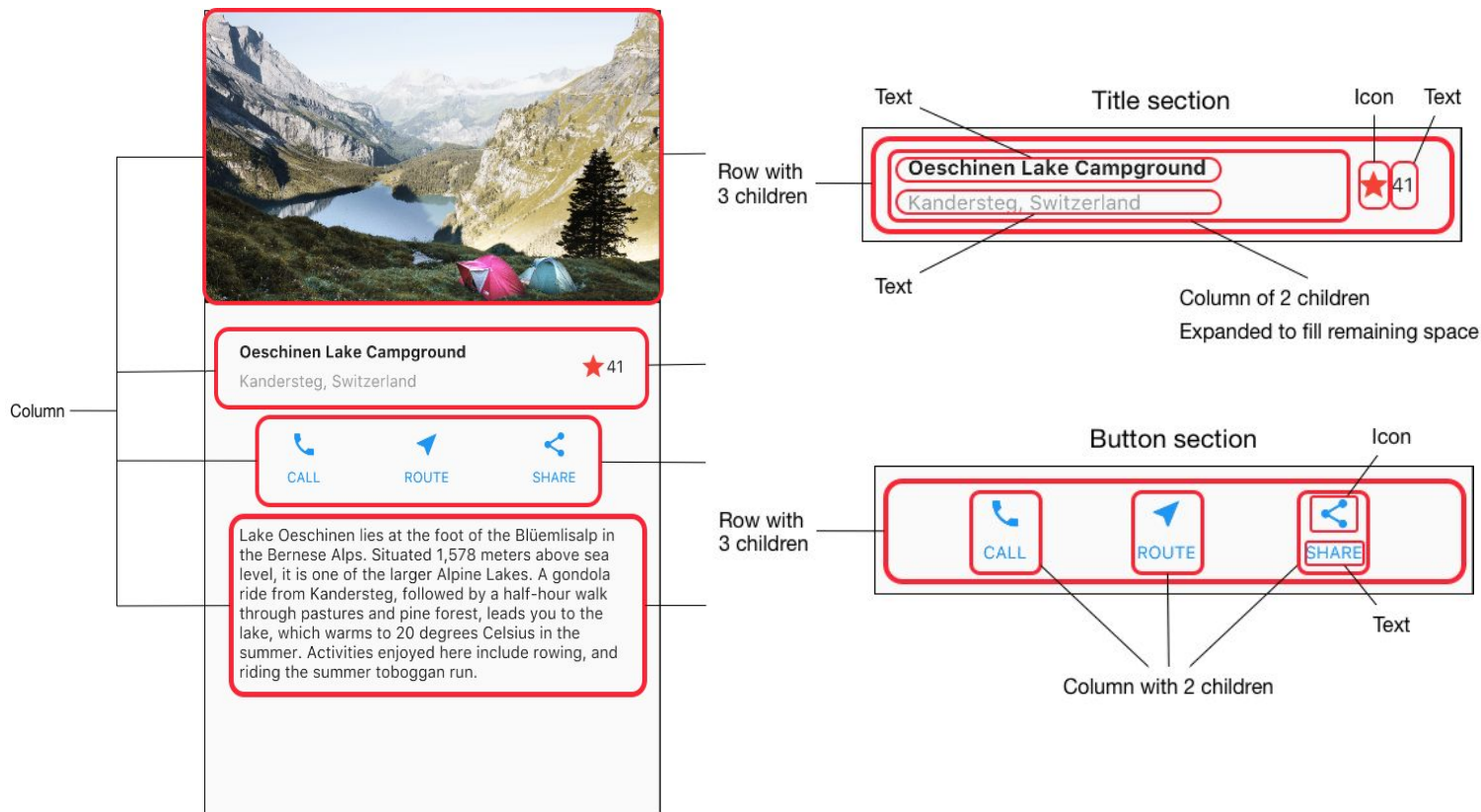


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Le Layout



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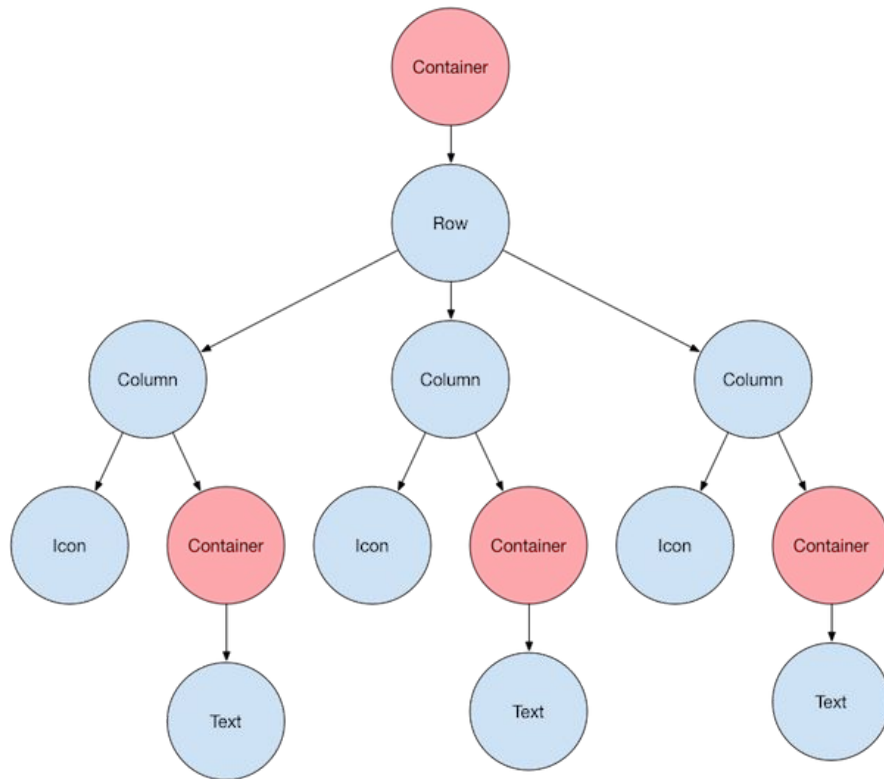
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Le Layout



```
class MyApp extends StatelessWidget {  
  @override  
  Widget build(BuildContext context) {  
    Widget titleSection = new Container(  
      padding: const EdgeInsets.all(32.0),  
      child: new Row(  
        children: [  
          new Expanded(  
            child: new Column(  
              crossAxisAlignment: CrossAxisAlignment.start,  
              children: [  
                new Container(  
                  padding: const EdgeInsets.only(bottom: 8.0),  
                  child: new Text(  
                    'Oeschinen Lake Campground',  
                    style: new TextStyle(  
                      fontWeight: FontWeight.bold,  
                    ),  
                  ),  
                new Text(  
                  'Kandersteg, Switzerland',  
                  style: new TextStyle(  
                    color: Colors.grey[500],  
                  ),  
                ),  
              ],  
            ),  
          ),  
          new Icon(  
            Icons.star,  
            color: Colors.red[500],  
          ),  
          new Text('41'),  
        ],  
      ),  
    ),  
  ),  
};
```



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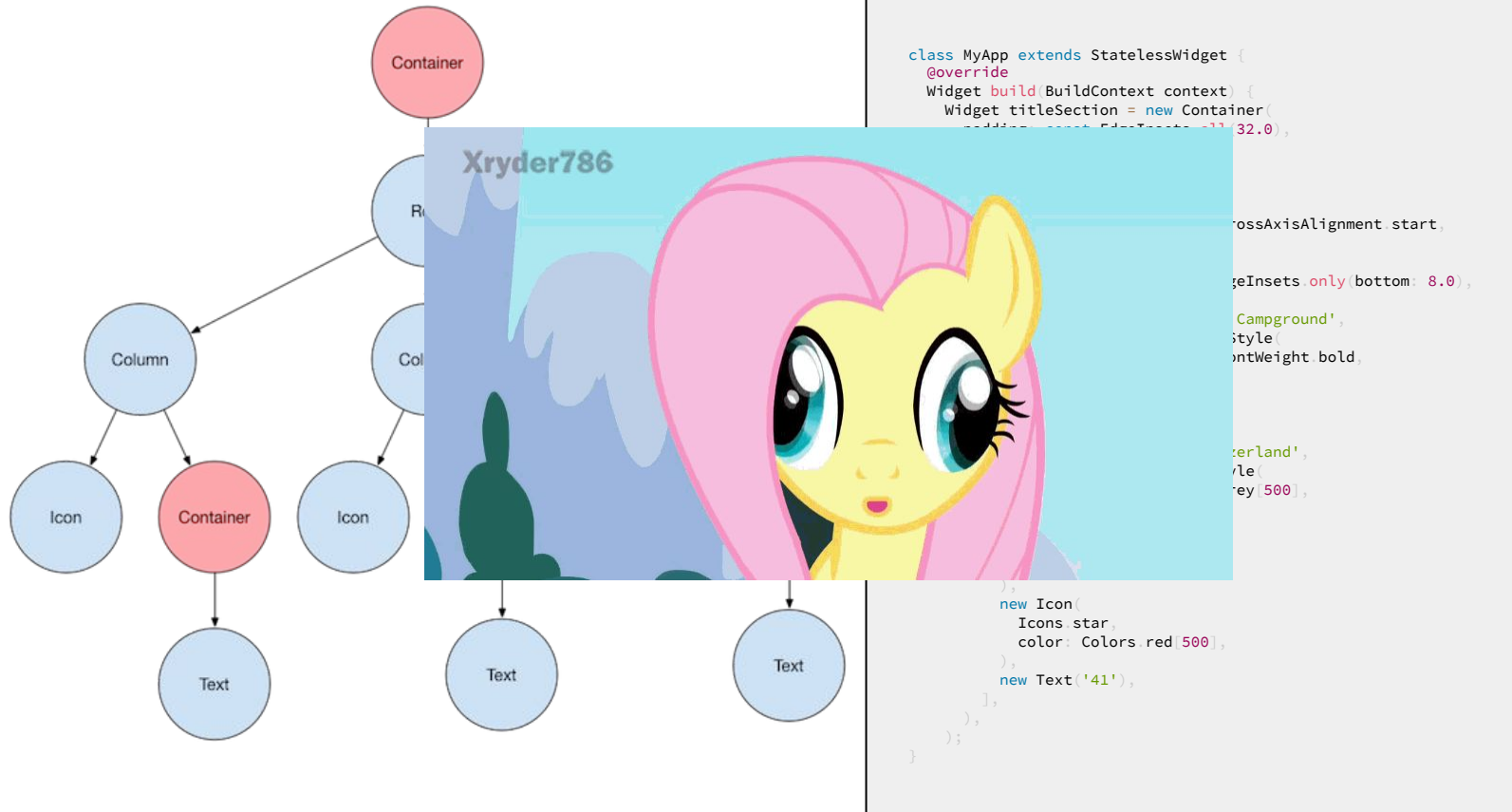
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Le Layout



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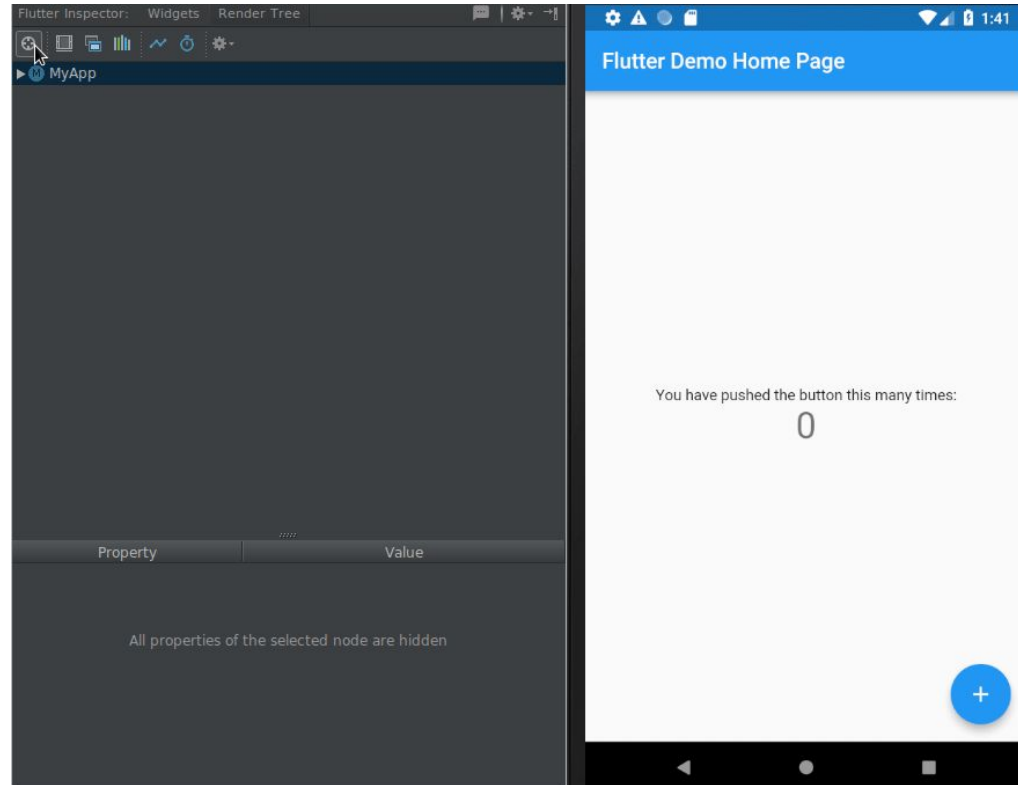


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Widget Inspector



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Responsive ?



MediaQuery

Establishes a subtree in which media queries resolve to the given data.



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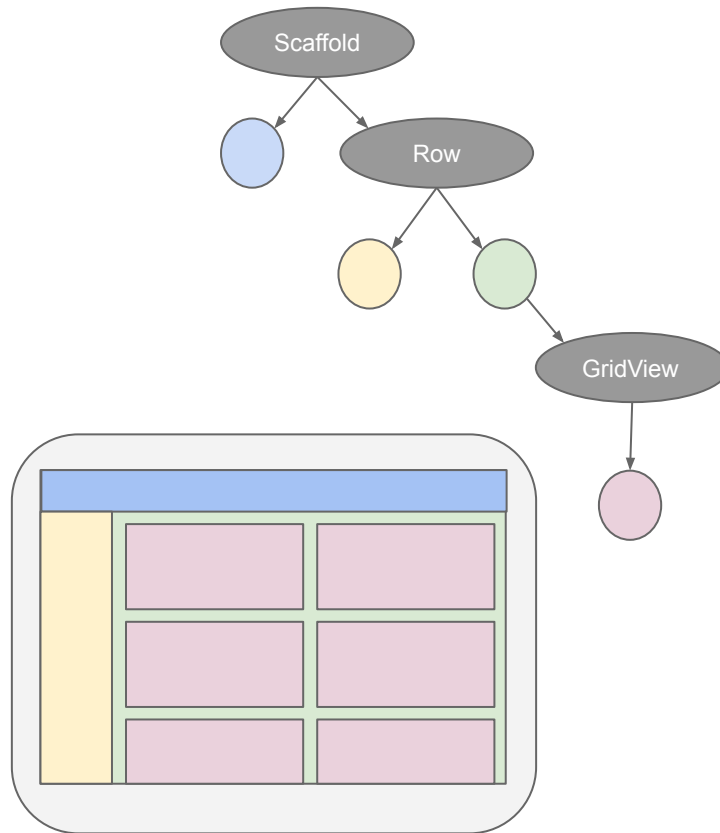
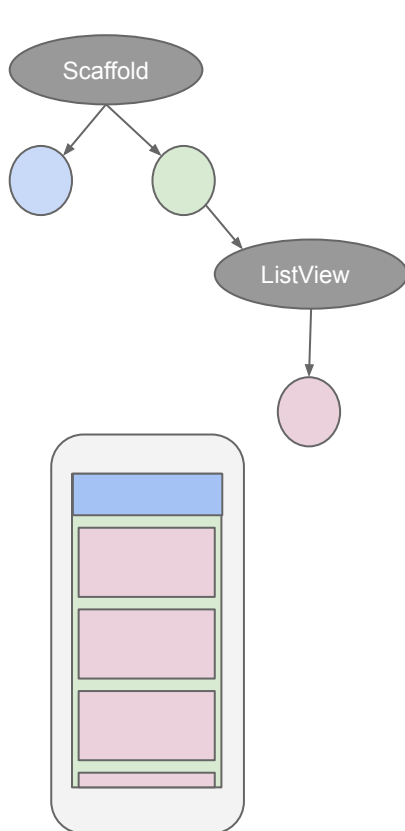


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Responsive !



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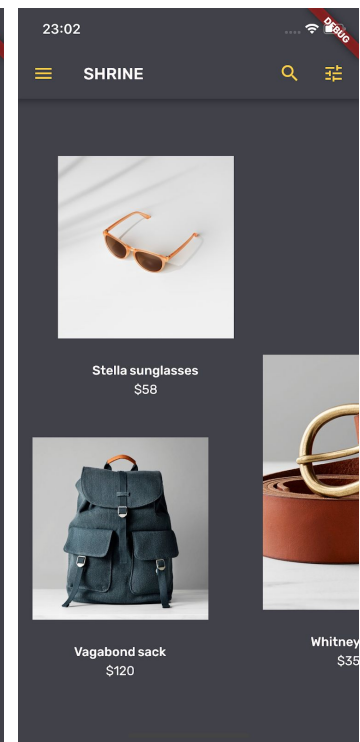
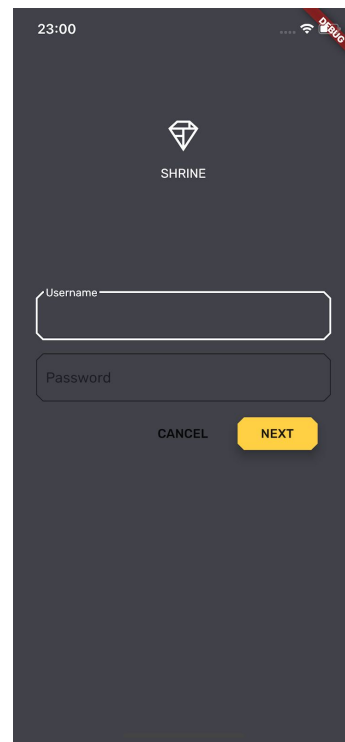
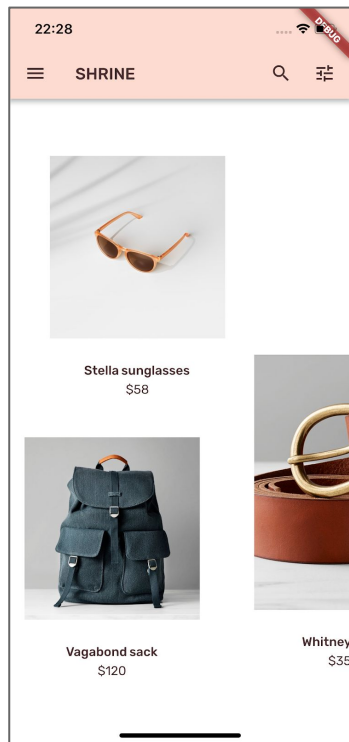
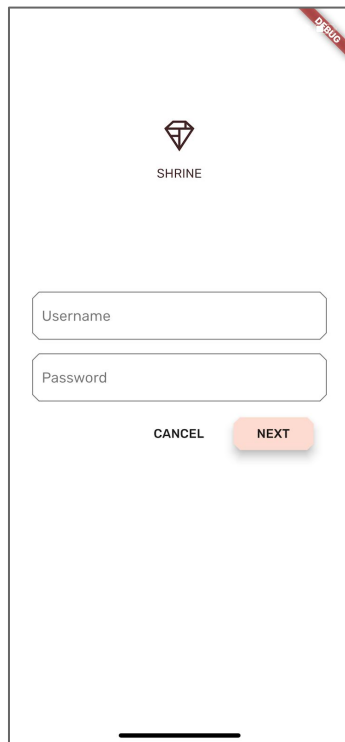


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Gestion des thèmes



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Material Design 2.0



Buttons



RaisedButton

A Material Design raised button. A raised button consists of a rectangular piece of material that hovers over the interface.

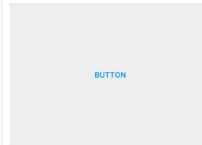
[Documentation](#)



FloatingActionButton

A floating action button is a circular icon button that hovers over content to promote a primary action in the application. Floating action buttons are...

[Documentation](#)



FlatButton

A flat button is a section printed on a Material Components widget that reacts to touches by filling with color.

[Documentation](#)



IconButton

An icon button is a picture printed on a Material widget that reacts to touches by filling with color (ink).

[Documentation](#), [Samples](#)



PopupMenuButton

Displays a menu when pressed and calls onSelected when the menu is dismissed because an item was selected.

[Documentation](#), [Samples](#)



AppBar

A horizontal arrangement of buttons.

[Documentation](#)

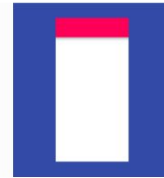
App structure and navigation



Scaffold

Implements the basic Material Design visual layout structure. This class provides APIs for showing drawers, snack bars, and bottom sheets.

[Documentation](#), [Samples](#)



AppBar

A Material Design app bar. An app bar consists of a toolbar and potentially other widgets, such as a TabBar and a FlexibleSpaceBar.

[Documentation](#), [Samples](#)



BottomNavigationBar

Bottom navigation bars make it easy to explore and switch between top-level views in a single tap. The BottomNavigationBar widget implements...

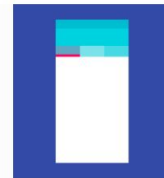
[Documentation](#)



TabBar

A Material Design widget that displays a horizontal row of tabs.

[Documentation](#), [Samples](#)



TabBarView

A page view that displays the widget which corresponds to the currently selected tab. Typically used in conjunction with a TabBar.

[Documentation](#), [Samples](#)



MaterialApp

A convenience widget that wraps a number of widgets that are commonly required for applications implementing Material Design.

[Documentation](#)



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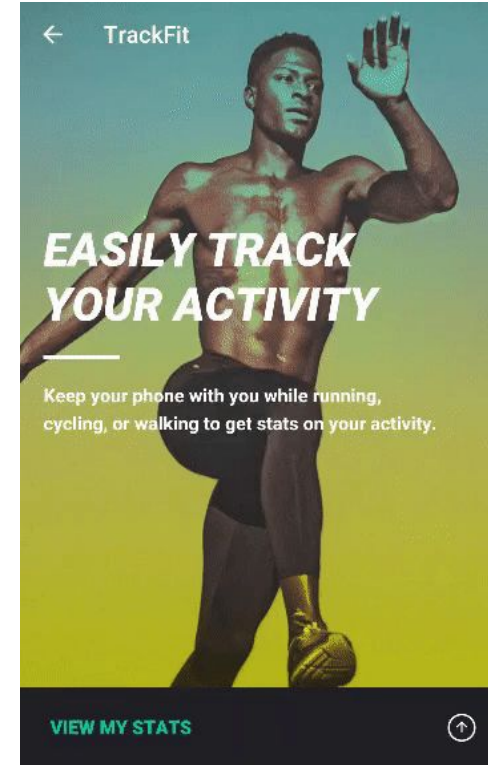
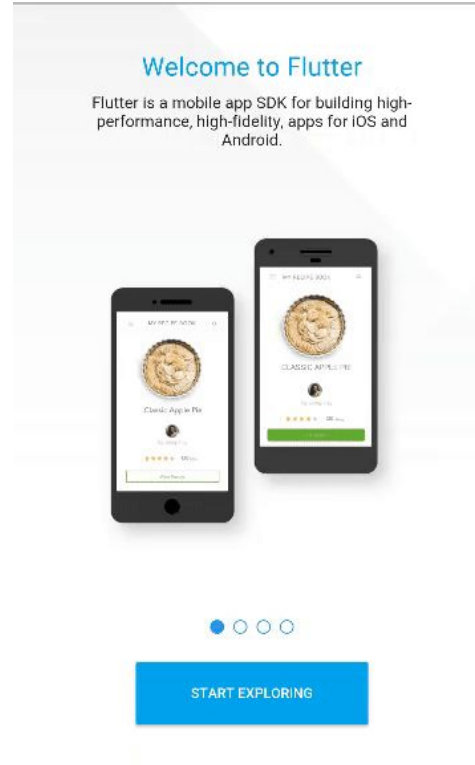


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Blazing fast and flexible layouts



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Why to choose Flutter?

**OK, so it's a new technology to build mobile apps,
rather cool, yeah... but why should I choose it?**



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Why choose Flutter?



Beautiful



Fast



Flutter

Productive



Extensible



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Beautiful



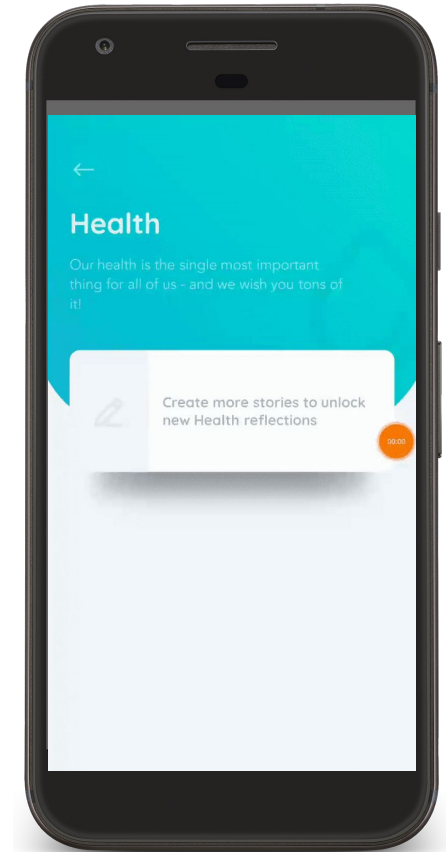
Control every pixel on the screen

Make your brand come to life

Never say "no" to your designer

Stand out in the marketplace

Win awards with beautiful UI



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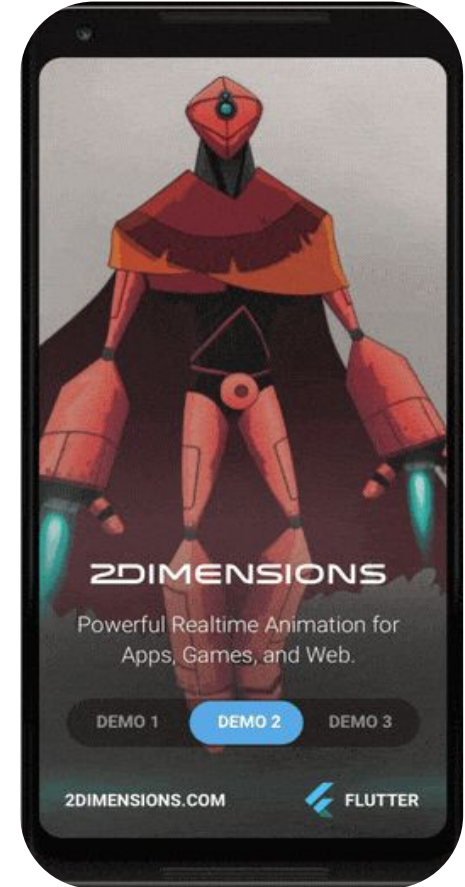
Fast



Brings the power of a games engine to user experience development

60fps, GPU accelerated

Compiled to native machine code



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Productive



Sub-second reload times

Paint your app to life

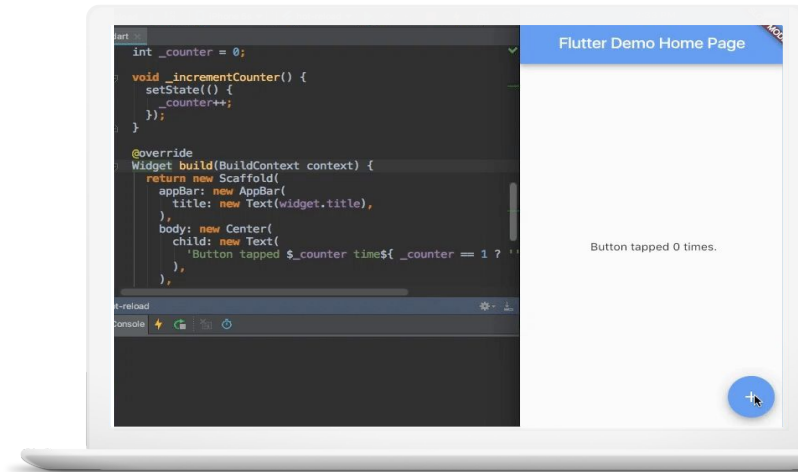
Iterate rapidly on features

Test hypotheses quicker than ever

More time to experiment & test features

Single-codebase for faster collab

3X Productivity Gains



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Extensible

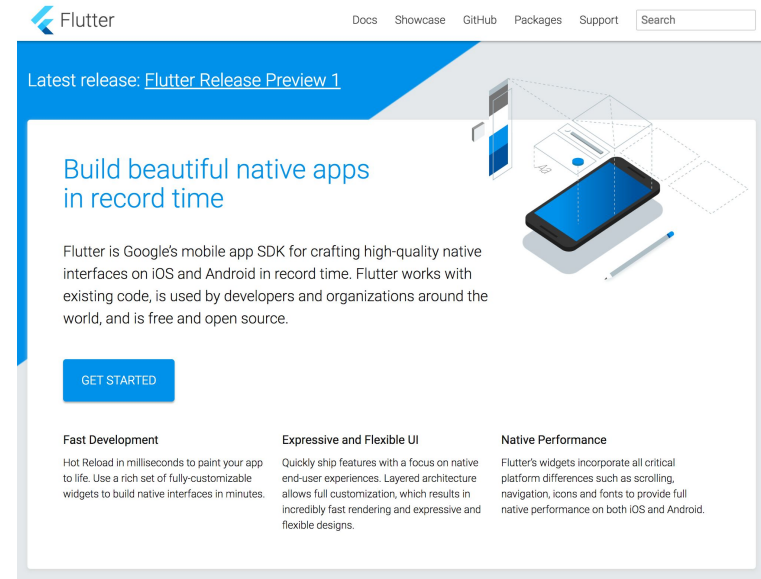


Everything is free and open source

Layered architecture: easy to extend

Deep platform integrations

Hundreds of third-party packages (ads, videos, database, cloud etc.)



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A wonderful time to begin with Flutter



Flutter is getting momentum!



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Flutter is on the starting blocks



Version 1.0 released last December



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Getting momentum



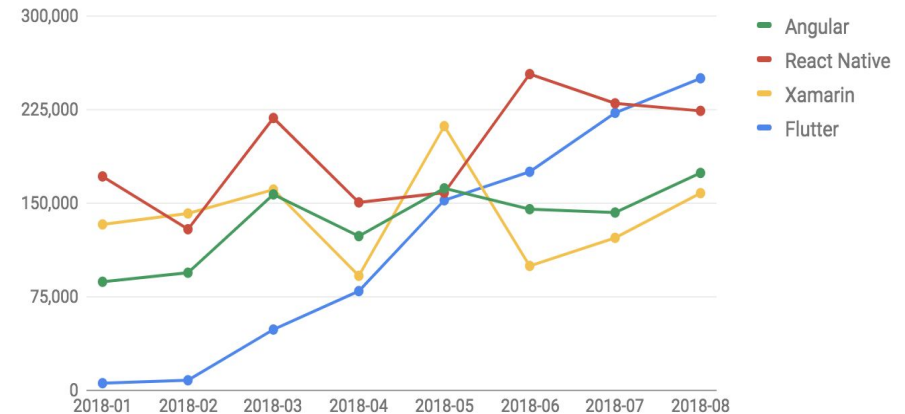
Top Active Software Repos on GitHub

Rank	Repo	Stars
1	twbs/bootstrap	127,344
2	vuejs/vue	113,839
3	facebook/react	111,154
4	tensorflow/tensorflow	109,412
5	d3/d3	78,734
...		
40	pallets/flask	38,739
41	moment/moment	38,562
42	GoogleChrome/puppeteer	38,118
43	getlantern/lantern	37,487
44	jakubroztocil/httpie	37,319
45	flutter/flutter	37,099
46	trekhleb/javascript-algorithms	36,776
47	django/django	36,369
48	jekyll/jekyll	35,402
49	ReactiveX/RxJava	35,356
50	ionic-team/ionic	35,309

Source: GitHub
<https://github.com/timsneath/github-tracker>



StackOverflow Question Views



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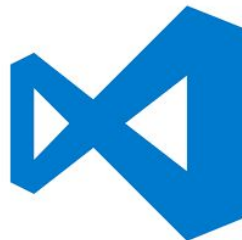
Integration with popular tools



Android Studio



Xcode



VS Code



Firebase



Android APIs



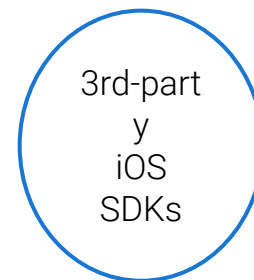
iOS APIs



Material Design



Redux





And now, let's code!

**TL;DR: We have spoken too much,
now it's your turn**



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Let's go !



Wifi :

Devovxfr-hol / hola#4321

Codelab :

<https://ptibulle.github.io/#0>

Sources :

https://github.com/ptibulle/flutter_breizh



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