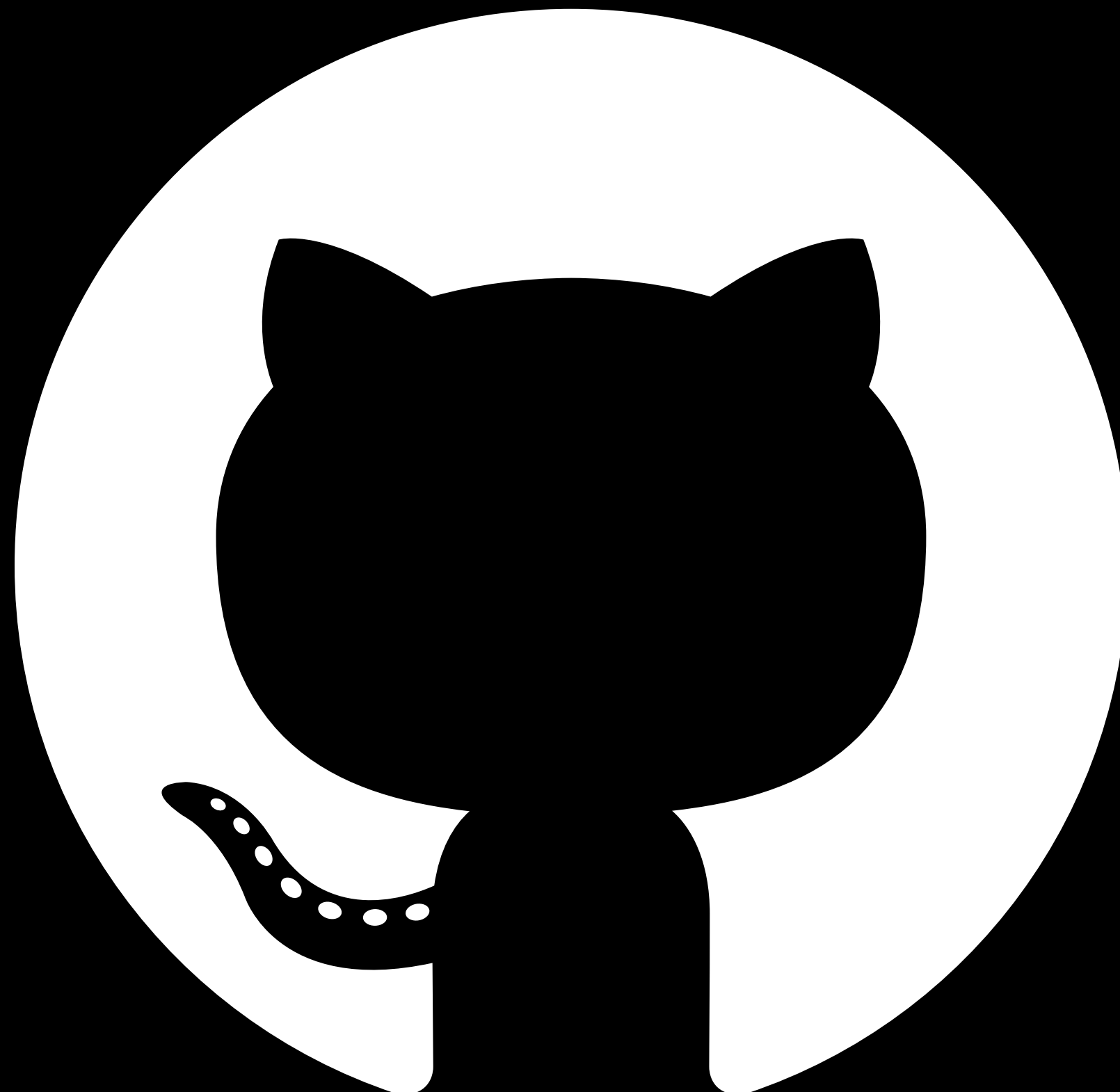




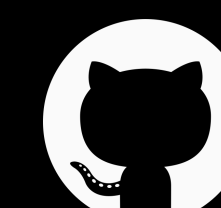
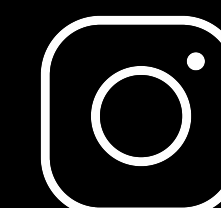
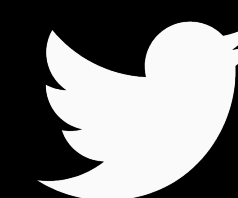
+



Javier de Pedro López

@droidpl

Solution Architect



 Universidad de León / GitHub

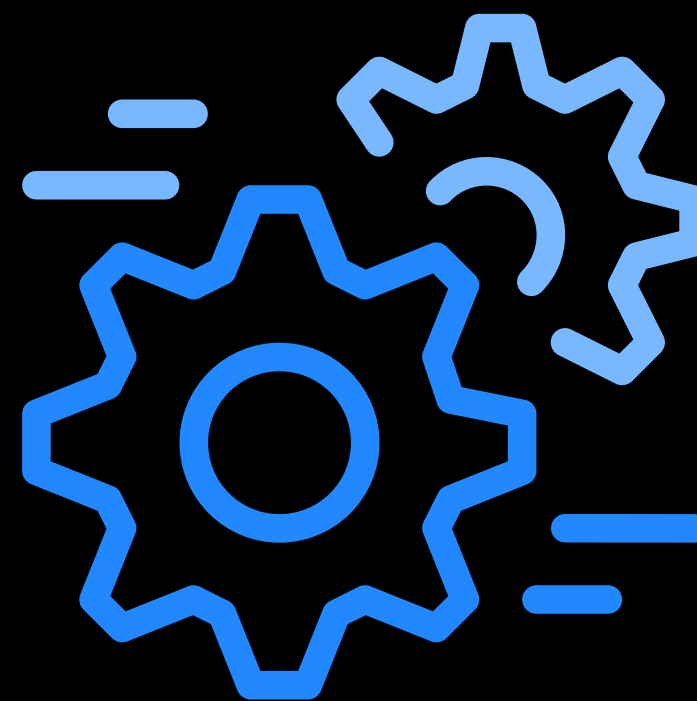
The future of mobile development is here

@droidpl

What are we talking about?



Why flutter



**How it
works?**



Workshop





Why flutter



Mobile Ecosystem



Native



**Hybrid/
Native**



Hybrid



Flutter is **Google's portable UI toolkit** for crafting beautiful, **natively compiled applications** for **mobile, web, and desktop** from a **single codebase**. Flutter works with existing code, is used by developers and organizations around the world, and is **free and open source**.

Flutter.dev



Some numbers on github.com/flutter/flutter

Repository stars

81K

Closed issues

+21K

Pull requests

+17K

Avg contributors

100

different people month



Flutter

Community driven

UI Toolkit

Real multiplatform

Dart

Google backed

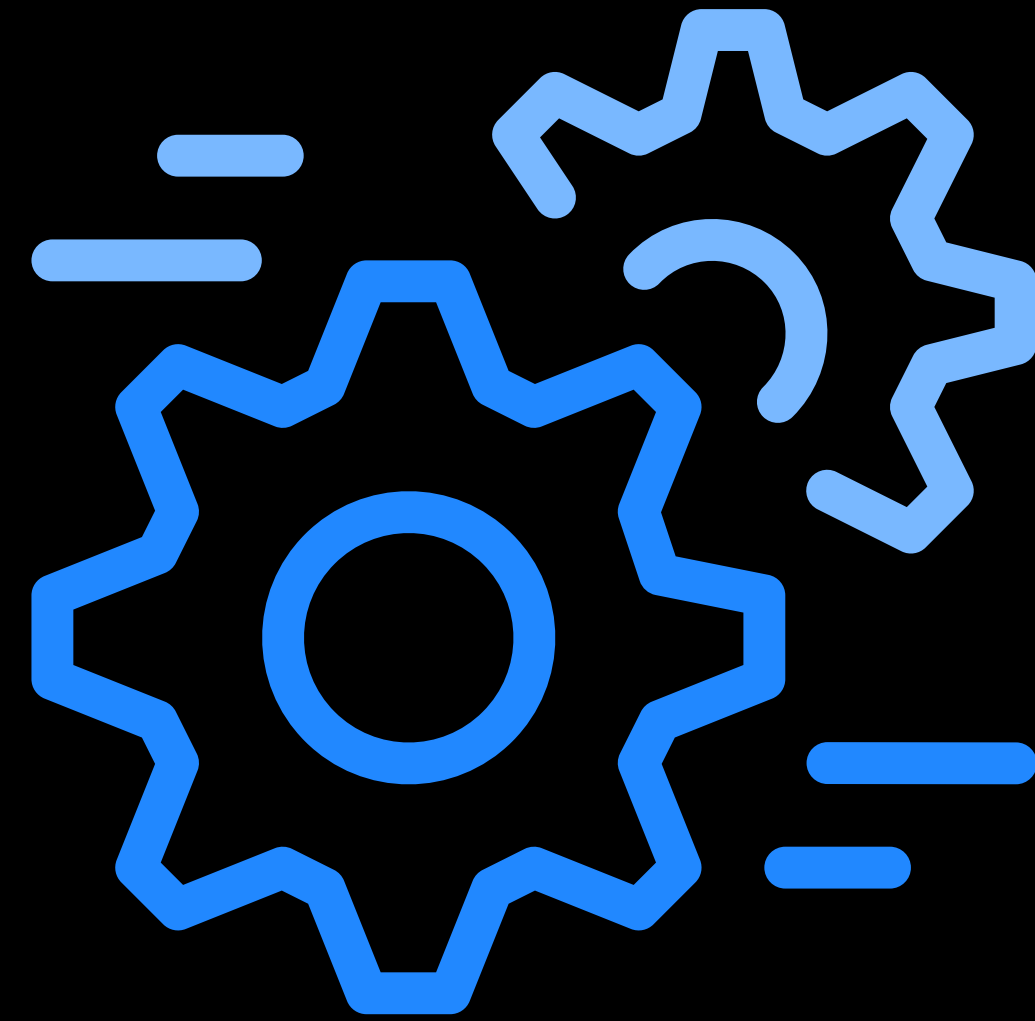
Open source

Fuchsia toolkit

Free

Runs in Android + iOS + web with 1 codebase





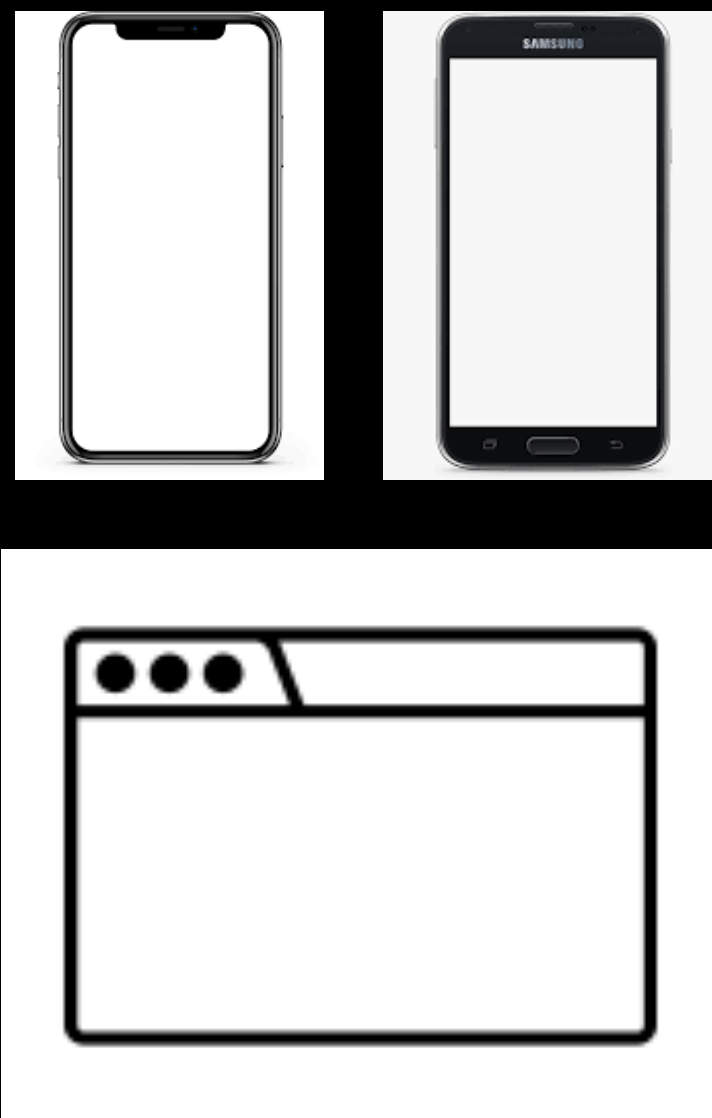
But how it works?



Modern app development

Frontend

Consumer applications



Backend

Cloud platforms and on premise



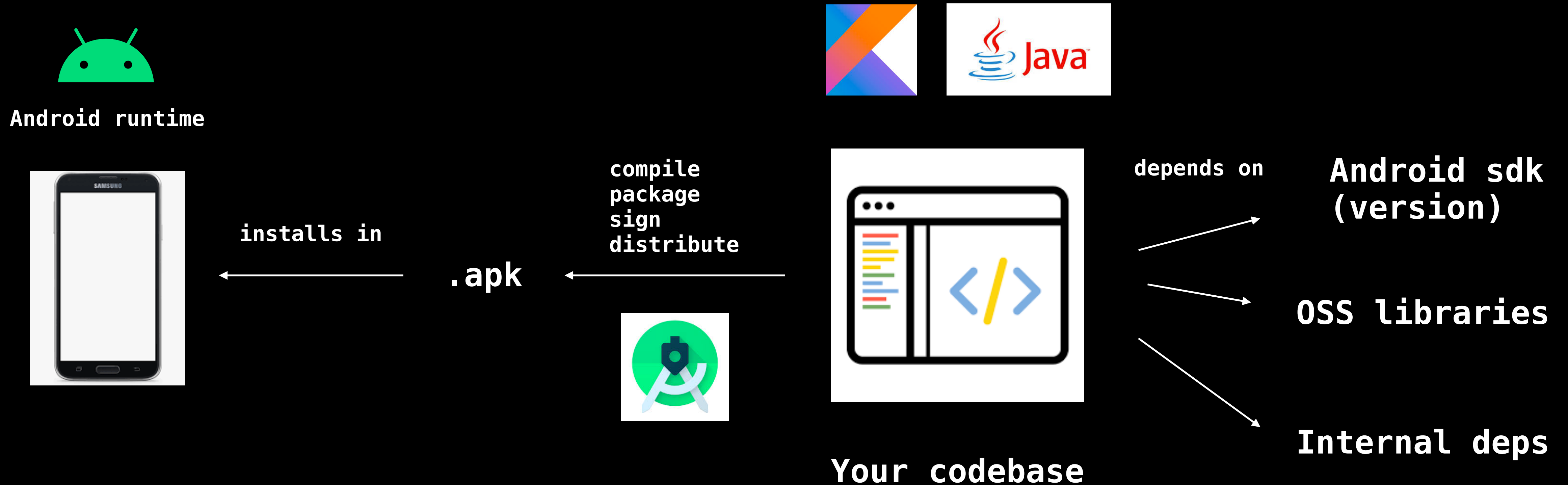
tcp/udp
connections

http
protocol

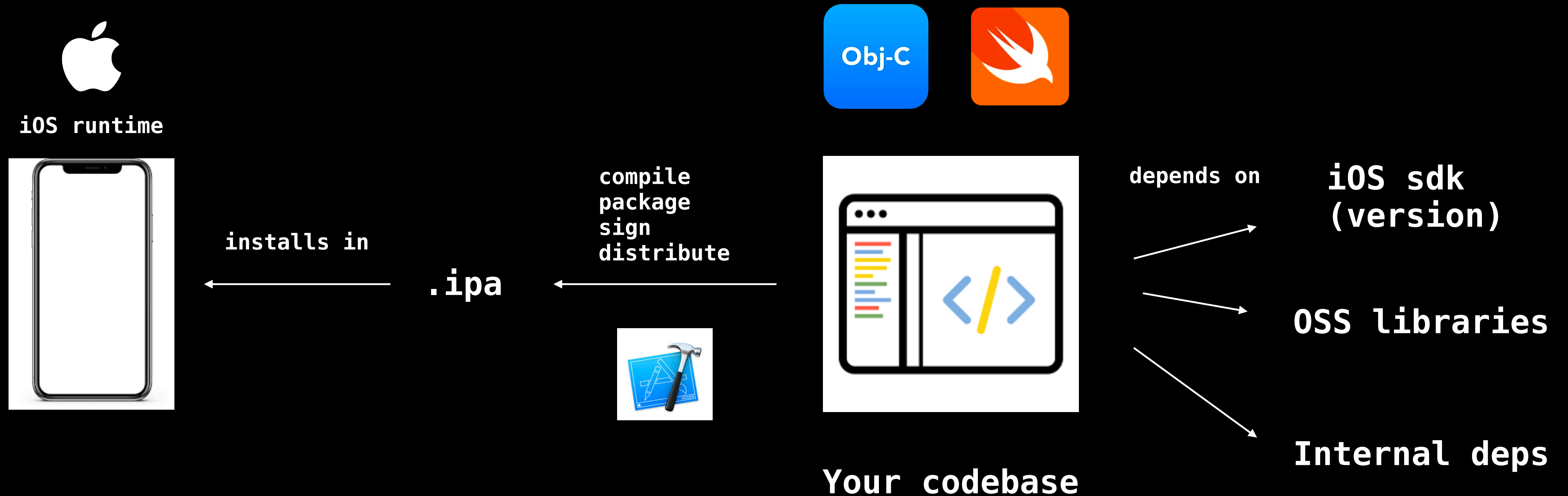
REST/GraphQL



How android works



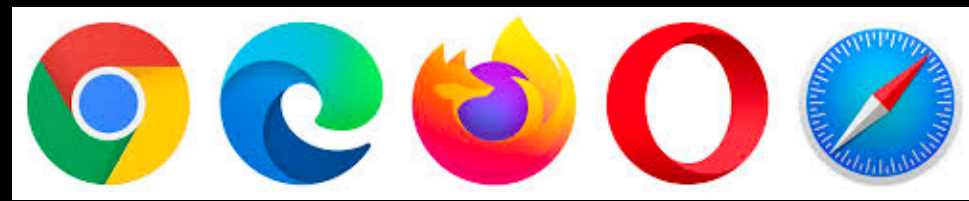
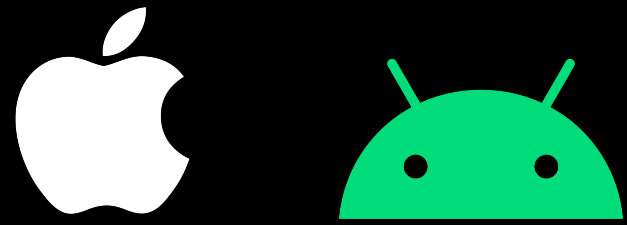
How iOS works



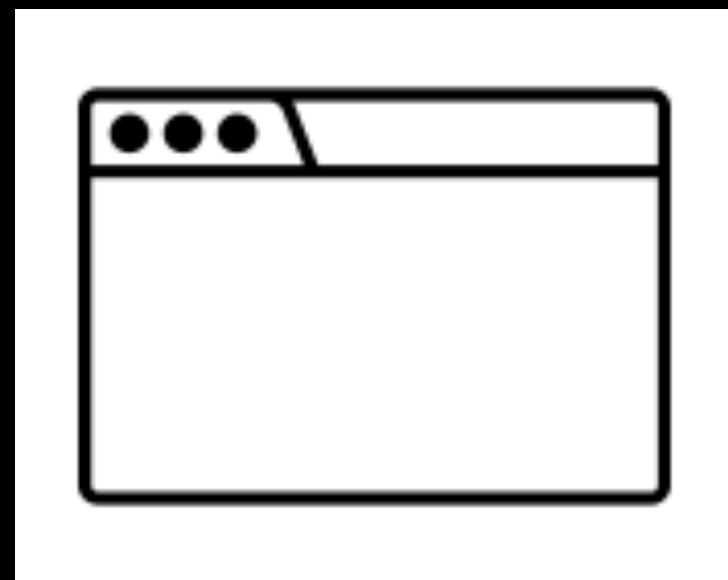
How web works



How flutter works



Platform compiled
flutter runner



Your codebase

depends on

flutter sdk
(version)

OSS libraries

Internal deps

Native bindings

compile
traspile
package
sign
distribute
analyze

.ipa

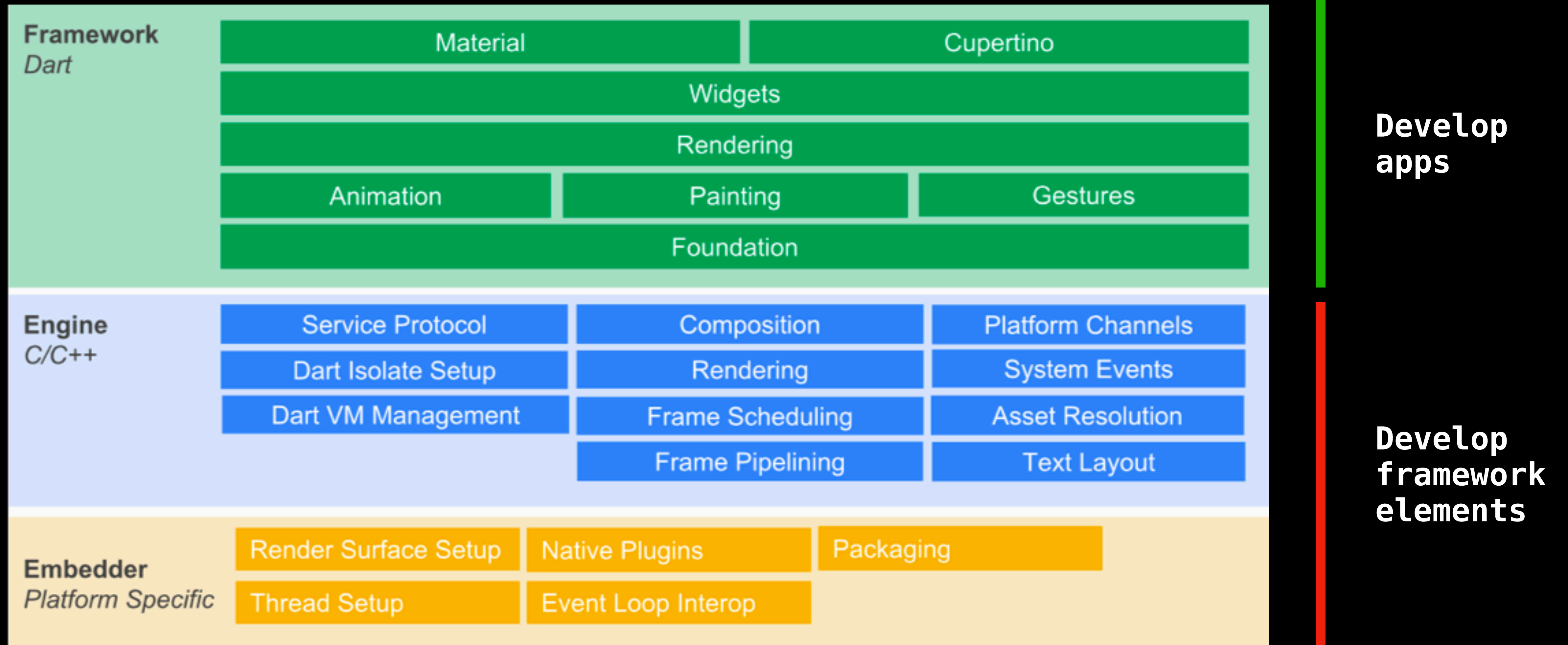
.apk

.js + html

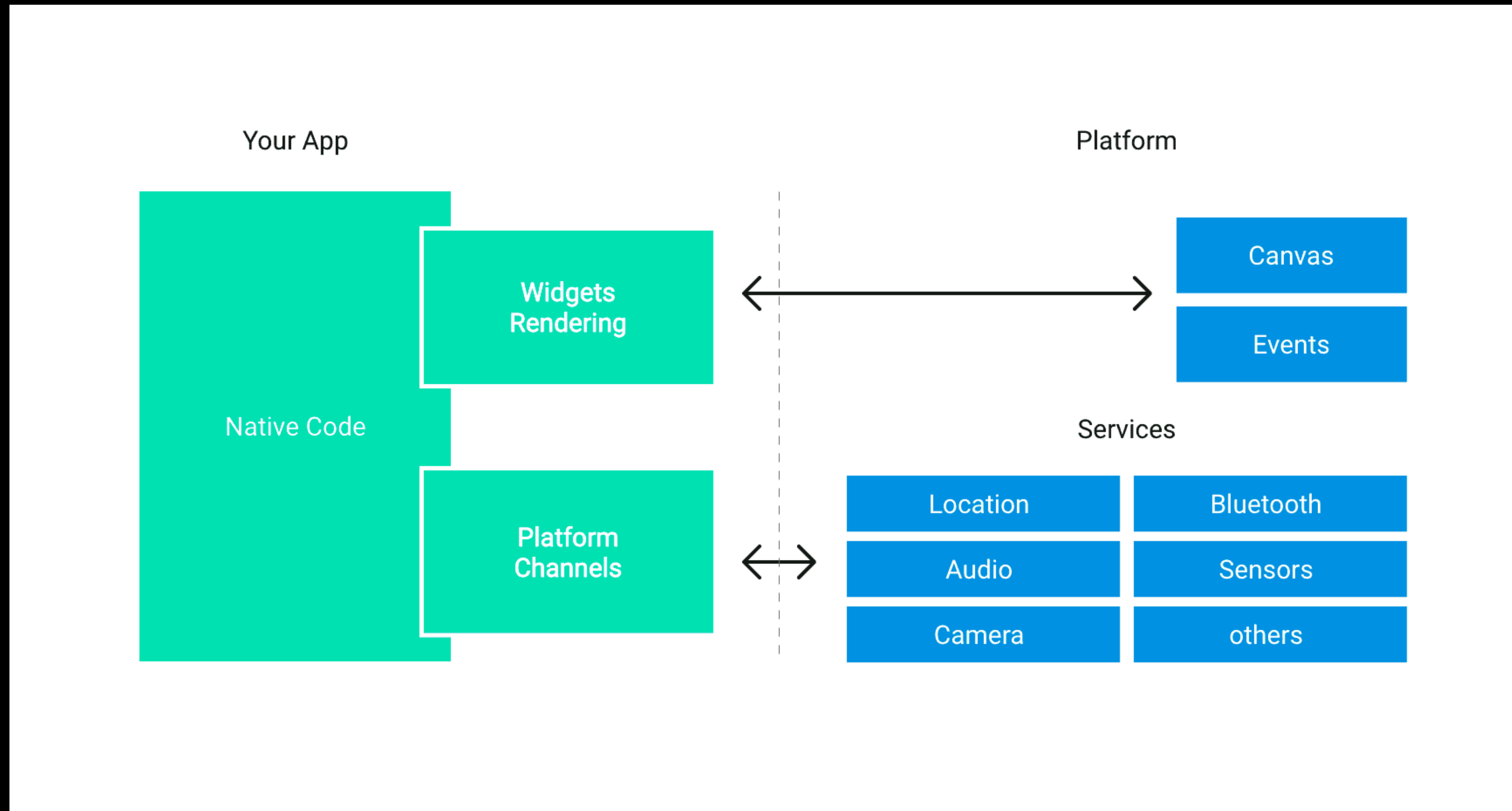
runs in platform



Flutter architecture

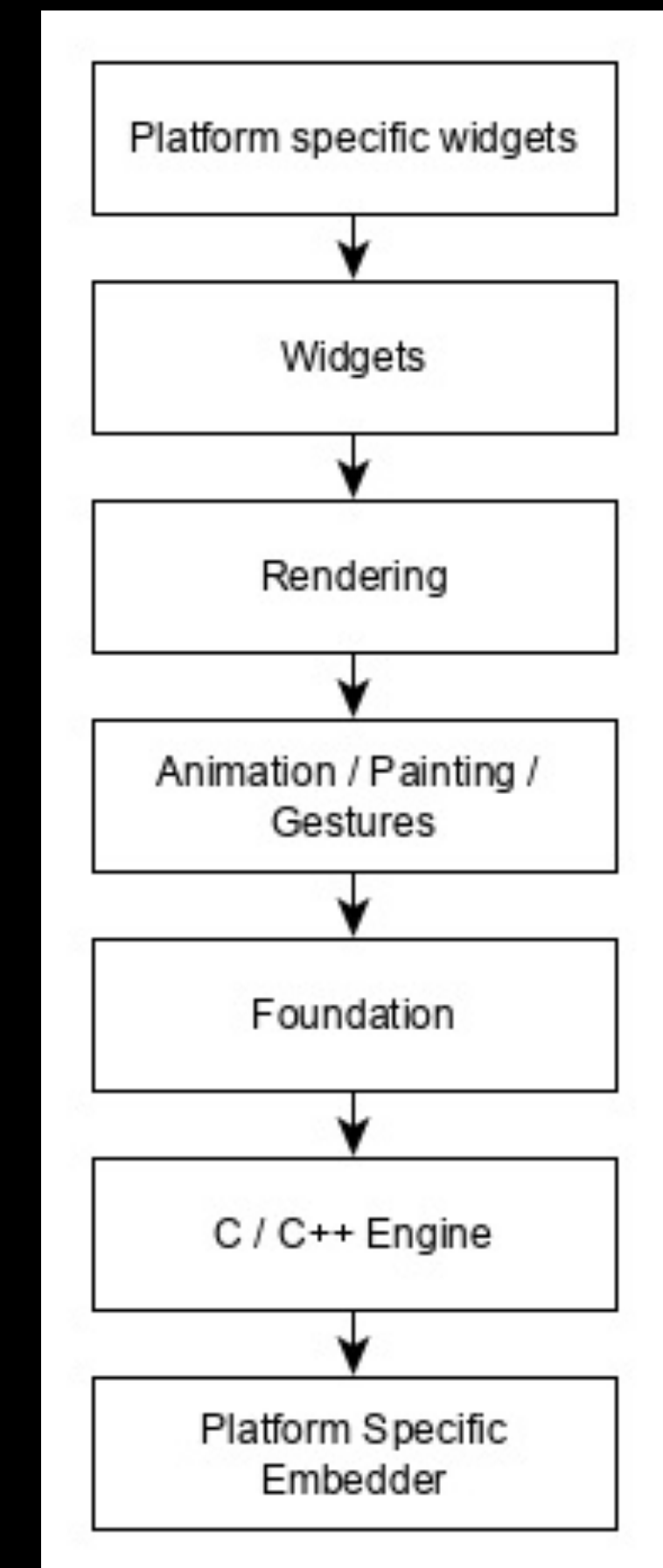
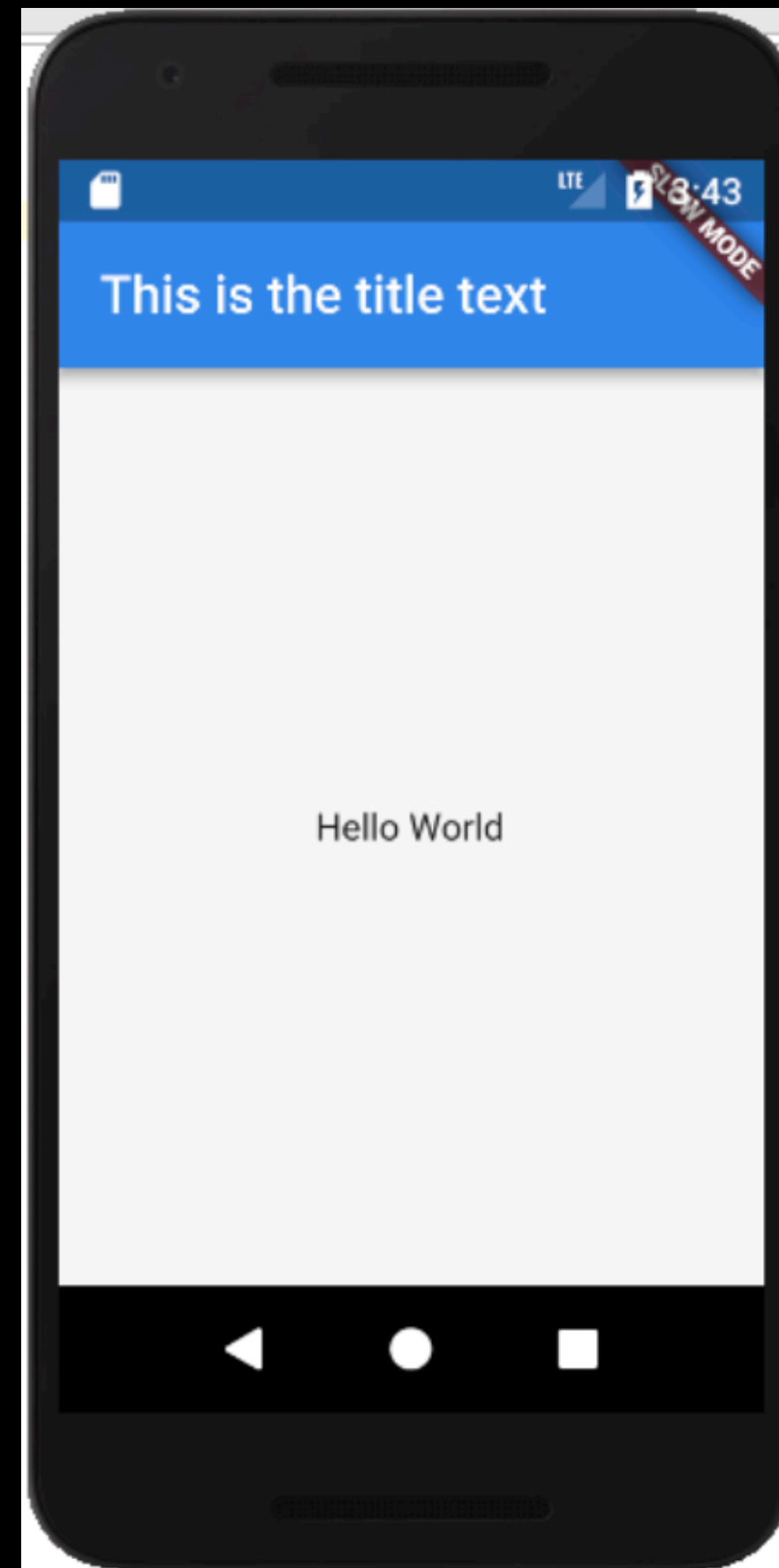
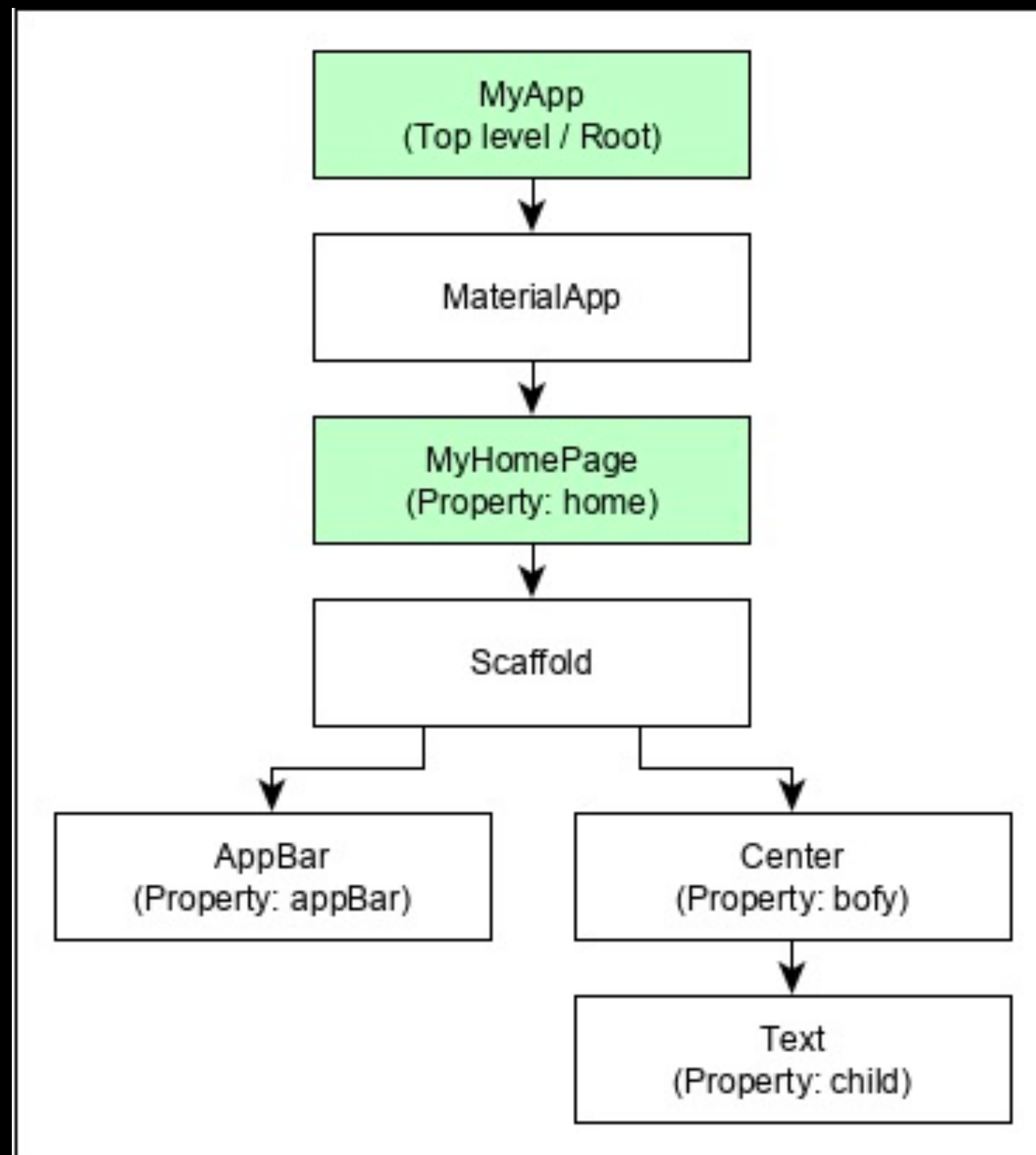


Flutter architecture



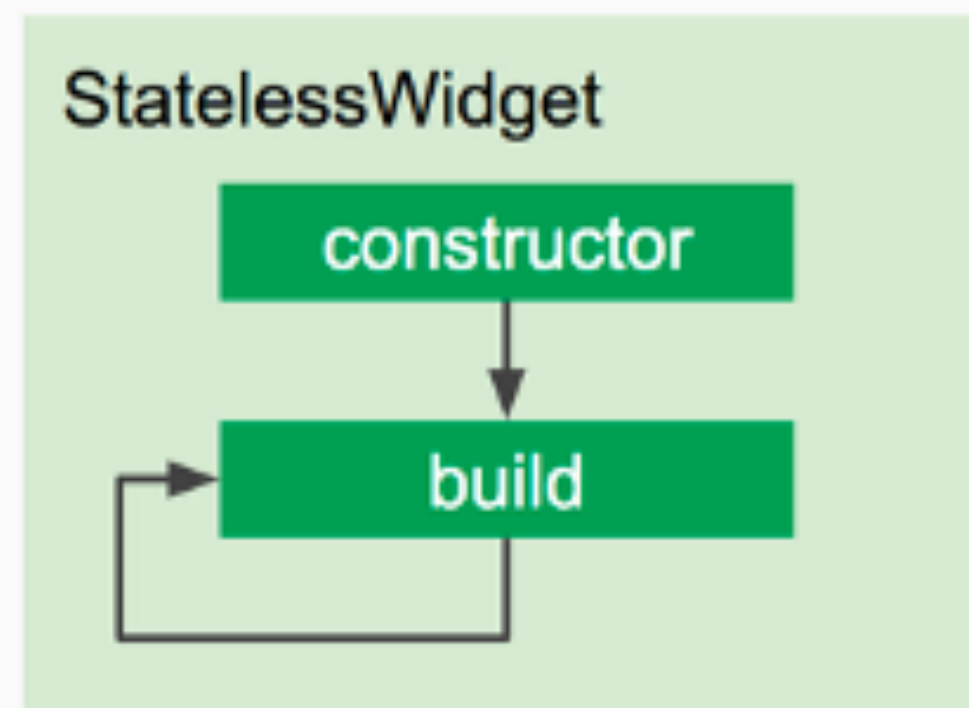
Lets paint in the UI, lets build widgets

All, ALL, really, all is a widget (if it's rendered by Flutter)
And an app is a tree of composable widgets



Stateful vs stateless

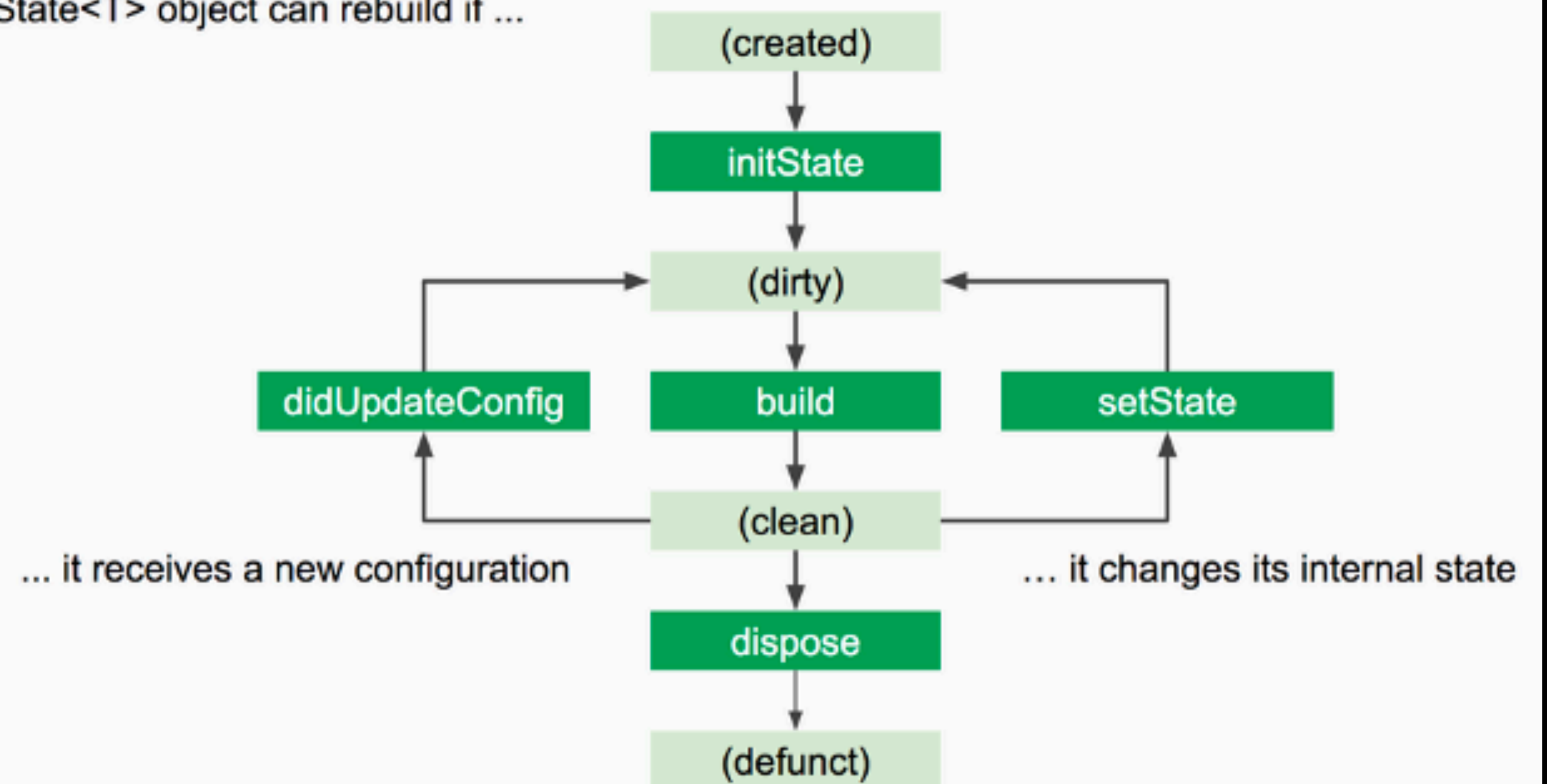
Stateless



A single StatelessWidget can build in many different BuildContexts

Stateful

A State<T> object can rebuild if ...



Stateless widget code



```
class StatelessApp extends StatelessWidget {  
  
  @override  
  
  Widget build(BuildContext context) {  
  
    return Center(  
  
      child: DecoratedBox(  
  
        decoration: BoxDecoration(color: Colors.lightBlueAccent),  
  
        child: Text('Rocky'),  
  
      ),  
  
    );  
  
  }  
  
}
```



Stateful widget code



```
class StatefulWidgetExample extends StatefulWidget {  
  
    final String _appBarTitle;  
  
    StatefulWidgetExample(this._appBarTitle) : super();  
  
    @override  
  
    _StatefulWidgetExampleState createState() => _StatefulWidgetExampleState(_appBarTitle);  
  
}
```



```
class _StatefulWidgetExampleState extends State<StatefulWidgetExample> {  
    final String _appBarTitle;  
  
    int _counter = 0;  
  
    _StatefulWidgetExampleState(this._appBarTitle);  
  
    void _incrementCounter() {  
        setState(() {  
            _counter++;  
        });  
    }  
  
    . . .  
}
```



```
@override

Widget build(BuildContext context) {

  return Scaffold(

    appBar: AppBar(

      title: Text(this._appBarTitle)

    ),

    body: Center(

      child: Text('Button tapped $_counter time${ _counter == 1 ? '' : 's' }.')

    ),

    floatingActionButton: FloatingActionButton(

      onPressed: _incrementCounter,

      tooltip: 'Increment',

      child: Icon(Icons.add)

    )

  );
}
```



Built-in widgets

<https://flutter.dev/docs/development/ui/widgets>



Positioning

- Container
- Align
- Padding
- SizedBox
- Row/Column (Flexbox)
- GridView
- ListView
- Stack

Other widgets

- Text
- Gesture detector
- Scaffold/Appbar/RaisedButton (material)
- Form
- Image/Icon/AssetBundle
- FutureBuilder/StreamBuilder
- AnimatedContainer/Animated*



What do I need to learn?

- Dart (you will write in that language)
- When to create a stateless or stateful widget
- 1 architecture of your preference for more sophisticated use cases (BLoC)
- Know some available widgets (container, stack, list...)





Questions? Concerns? Comments?

Feel free to write me on
social networks or GitHub
@droidpl



Workshop

What will we build?

Web service (backend)



Service listening
localhost (127.0.0.0) on
port 3000

GET /characters

http protocol

json format

Client app (frontend)

Web / Android / iOS



An app that shows the characters of game of thrones in our app made with flutter.
This information will be obtained from an API

https://github.com/droidpl/flutter_of_thrones



GitHub

We are hiring