

Flutter

The game changer in cross-platform development

**I am
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- **Not a Singer** 🗣️
- **Father**
- **Techlead/Team Lead**
- **Head of Mobile Practice @ Tigris**
- **Event Host** @ [Colombo Mobile Meetup](#)
- **Speaker**



Agenda

- **Introduce the Flutter**
- **Show the potential**
- **Do the Demo**
- **Q & A**

Flutter

- **Simply Flutter is Google's answer for cross platform development**
- **Introduce on May 2017**
- **Flutter 1.9.1 (latest)**
- **Influenced from game development and React Native**
- **Not only Mobile but also Desktop, Web and other smart devices (TV)**

Architecture

Framework
(Dart)

Material

Cupertino

Widgets

Rendering

Animation

Painting

Gestures

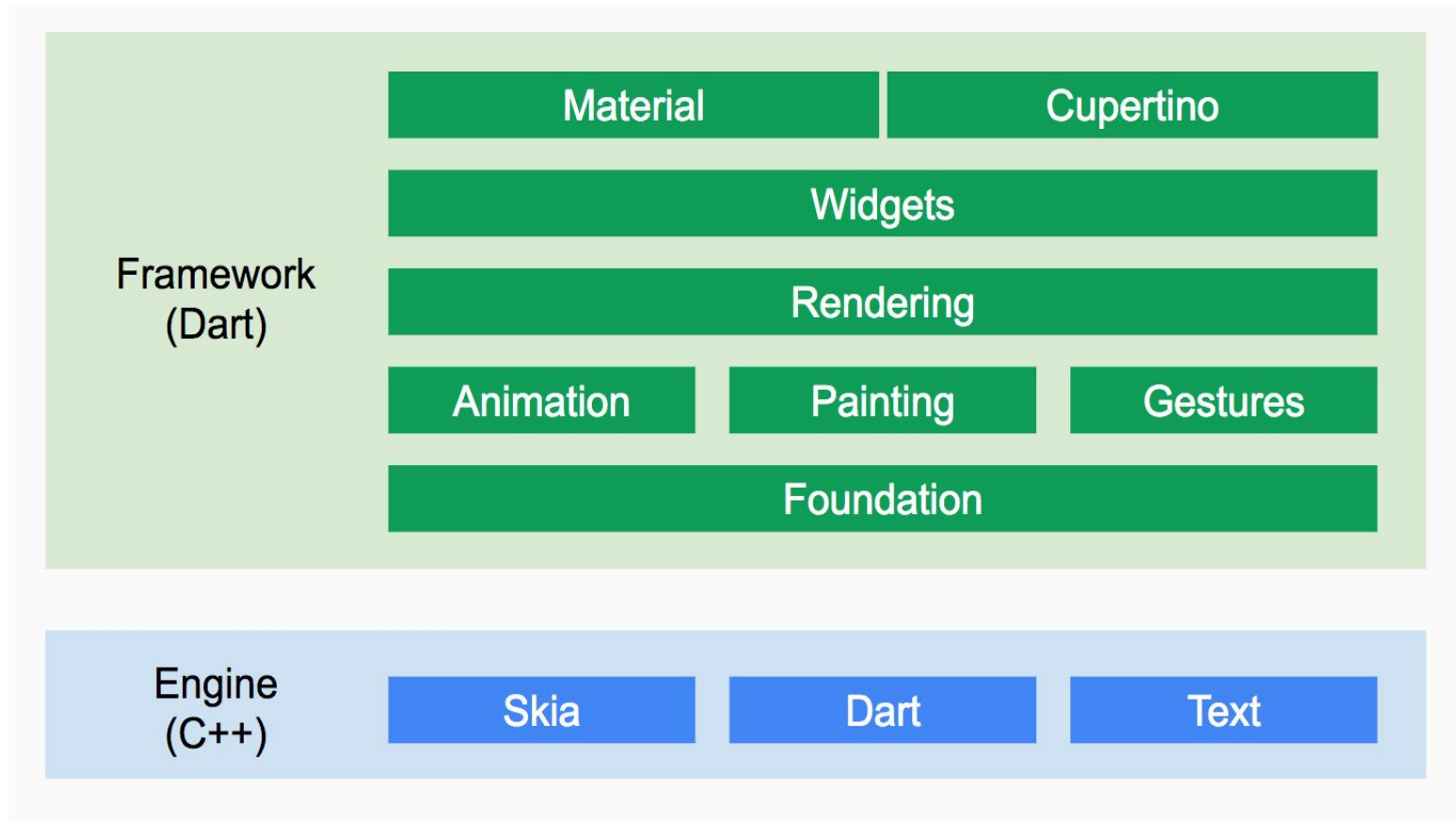
Foundation

Engine
(C++)

Skia

Dart

Text



**Why it is so
promising
than others,
like React
Native**

Application

OS

React Native

JavaScript

Bridge

OEM
Widgets

Canvas

Events

System Services
(Location,BT
Audio,Camera,Sensors,etc...)

Flutter

Native Dart Code

Widgets
Rendering

Platform
Channel

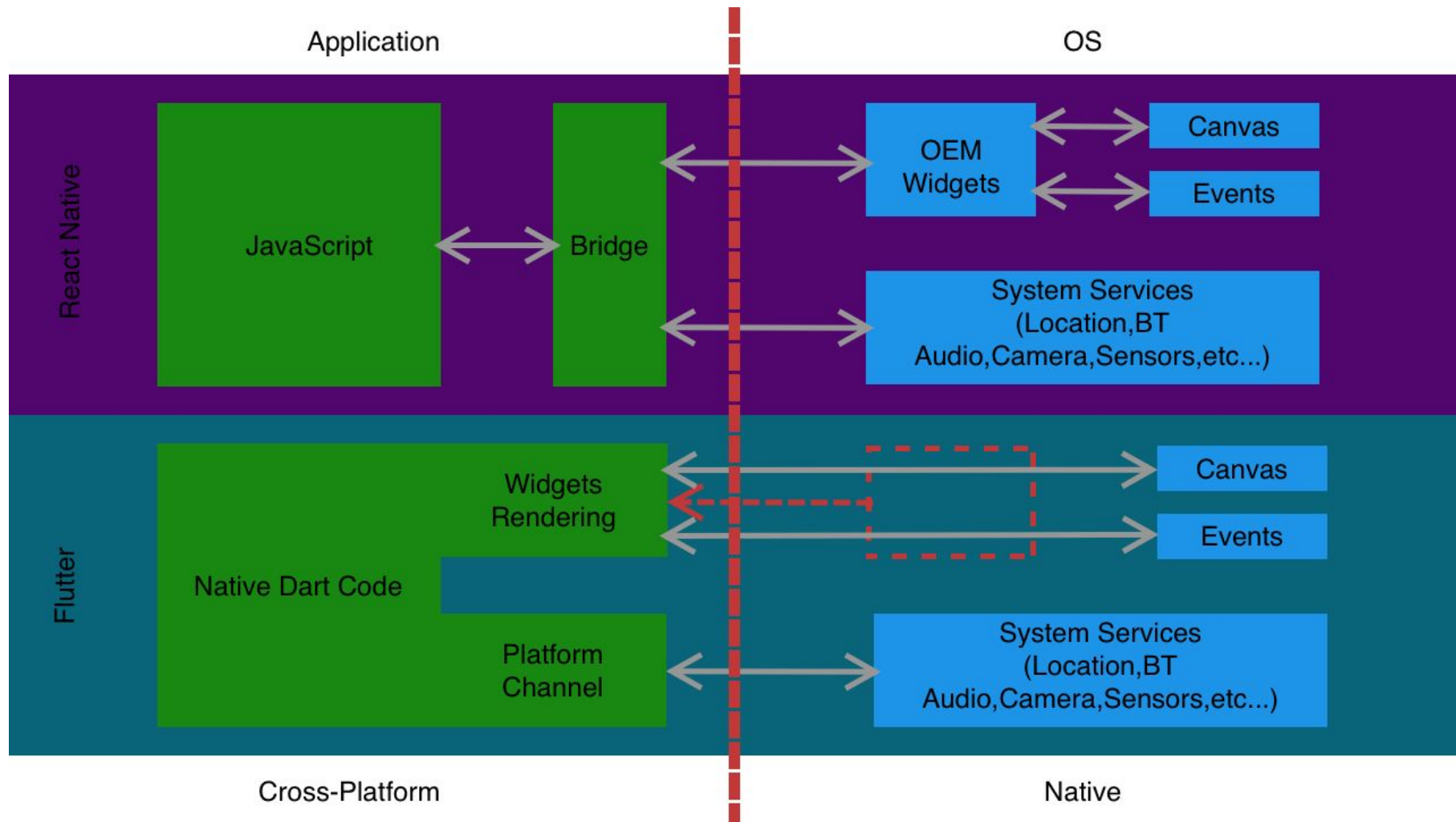
Canvas

Events

System Services
(Location,BT
Audio,Camera,Sensors,etc...)

Cross-Platform

Native



Dart

- **Dart is a client-optimized language for fast apps on any platform**
- **Most likely Java and C#**
- **Support Hot-Reloading**
- **Compile to ARM & x64 for Mobile and Desktop**
- **Compile to JavaScript for Web**
- **~Zero effort in learning**
- **Latest version 2.6**
- **Experiment** <https://dartpad.dartlang.org/>

VM / Runtime

Develop

Deploy



JIT + VM

AOT + runtime

Native
x64/ARM



dartdevc

dart2js

Web
JavaScript


















Importance for Developers

- **Easy to do rapid prototyping**
- **Can implement any design**
- **Reduce code maintenance overhead**
- **Reduce testing effort**
- **Easy to learn**
- **Can utilize functional programming**
- **Less bug fixing effort**
- **Modern Reactive style development**
- **Robust tool chain**
- **Etc...**

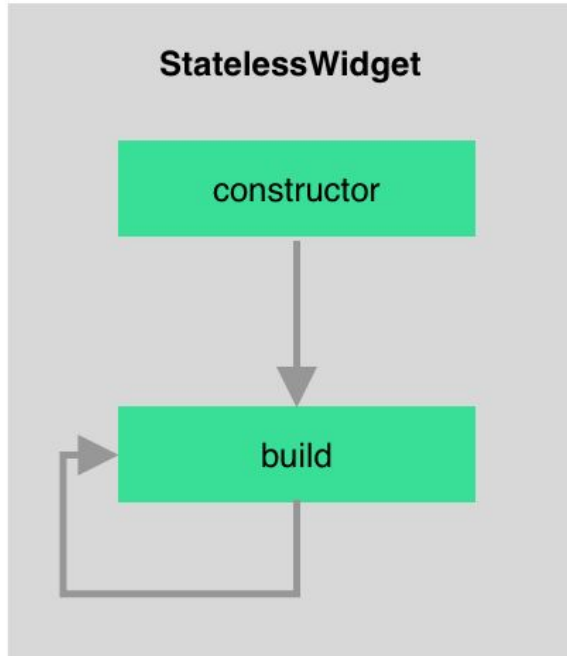
Importance for Client

- **Reduce cost of development**
- **Reduce the cost of design**
- **Design consistency on all the platform versions (especially android)**
- **Parallel release cycle for every platform**
- **Reduce bug fixing time**
- **Less impact on performance**
- **Less time to market**
- **Etc...**

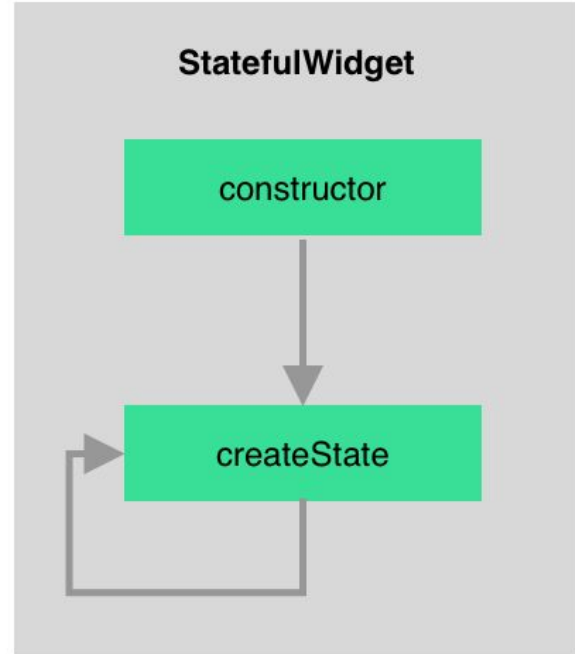
Flutter App Structure

- >  .dart_tool
- >  .vscode
- >  android
- ✓  fonts
 - | Aa Roboto-Regular.ttf
- >  ios
- ✓  lib
 - |  common.dart
 - |  details_screen.dart
 - |  home_screen.dart
 - |  main.dart
- >  test
-  .gitignore
-  .metadata
-  .packages
-  pubspec.lock
-  pubspec.yaml
-  README.md

**“Everything is a
Widget”**

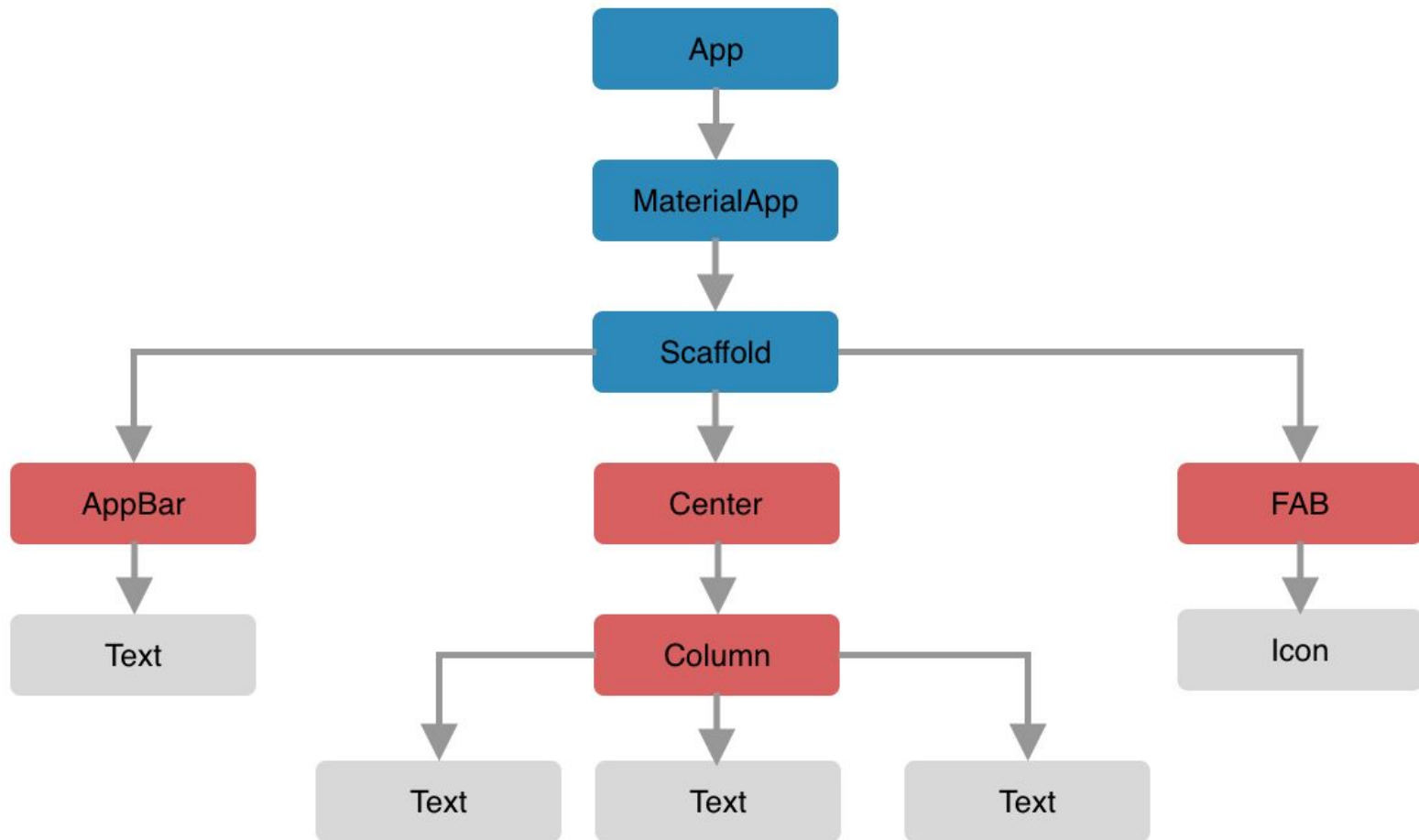


A single StatelessWidget can build in many different BuildContexts



A StatelessWidget can creates a new State object for each BuildContexts

Widget Tree



State

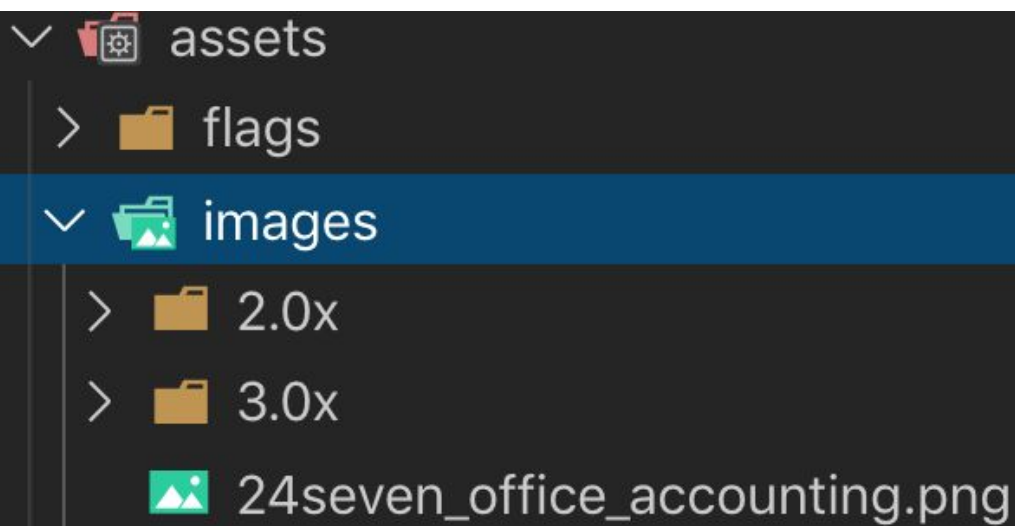
- **SetState (will cover this)**
- **Scope Model**
- **BLoC Pattern**
- **Redux**
- **etc...**

Navigation

```
17     initialRoute: "/",
18     routes: {
19         "/": (context) => HomeScreen(),
20         "/details": (context) => DetailsScreen(),
21     },
```

```
31
32     Navigator.pushNamed(
33         context, You, 2 hours
34         "/details",
35         arguments: Details(
36             time,
37             counter,
38             ), // Details
39     );
```

Assets



```
69 assets:
70   - assets/images/capassa_logo.png
71   - assets/images/onboard_background.png
72   - assets/countries.json
73
74 fonts:
75   - family: NunitoSans
76     fonts:
77       - asset: fonts/NunitoSans-Black.ttf
78       - asset: fonts/NunitoSans-ExtraBold.ttf
79       - asset: fonts/NunitoSans-SemiBold.ttf
```

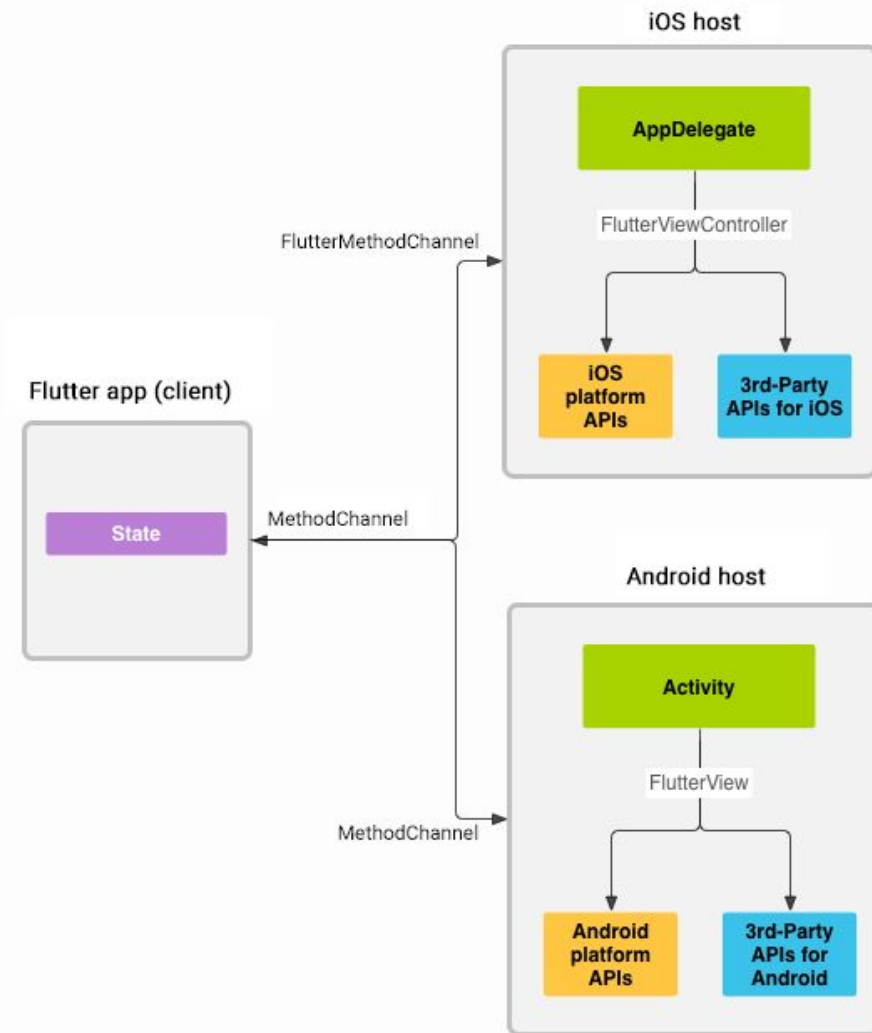
Plugins

- **Flutter/Dart Plugin**
- **Native API Plugin**
- **pubspec.yaml**
- **Plugins hosted @ <https://pub.dev/>**

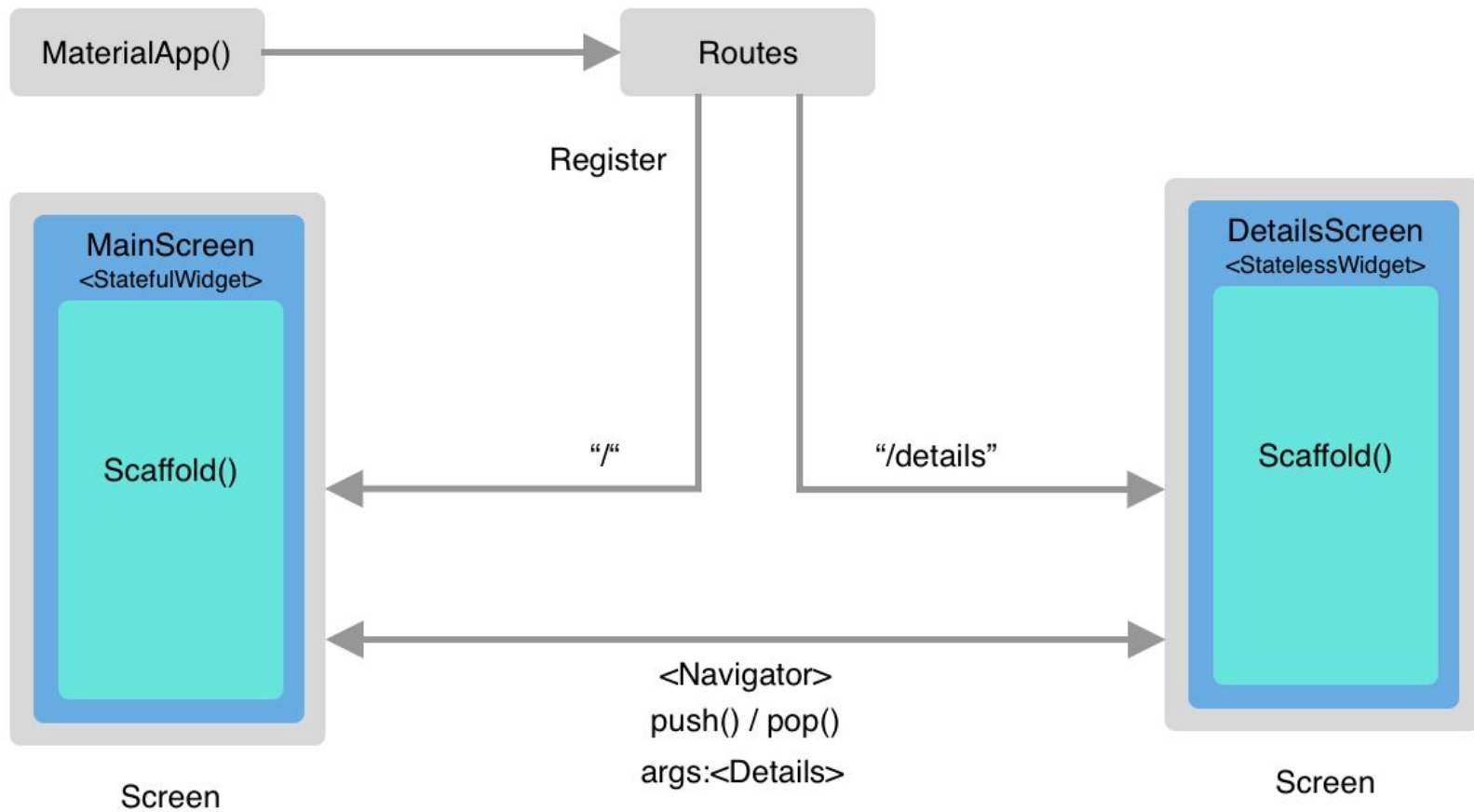
```
15 dependencies:
16   flutter:
17     sdk: flutter
18   http: ^0.12.0+2
19   flutter_appauth: ^0.4.0
20   cupertino_icons: ^0.1.2
21   dio: 2.1.16
22   rxdart: ^0.22.2
23   bloc: ^1.0.0
24   flutter_bloc: ^1.0.0
25   meta: ^1.1.6
26   equatable: ^0.6.1
27   image_crop: ^0.3.1
28   image_picker: ^0.6.1+4
29   intl: ^0.16.0
30   firebase_core: ^0.4.0+9
31   firebase_messaging: 5.1.6
32   flutter_html: ^0.10.4
33   flutter_secure_storage: ^3.2.1+1
34   shared_preferences: ^0.5.3+4
35   uuid: 2.0.2
36   url_launcher: ^5.1.2
37   path_provider: ^1.2.0
38   flutter_cache_manager: ^1.1.1
39   dots_indicator: ^1.0.0
40   flutter_slidable: ^0.5.3"
41   timeago: ^2.0.18
42   uni_links: ^0.2.0
```

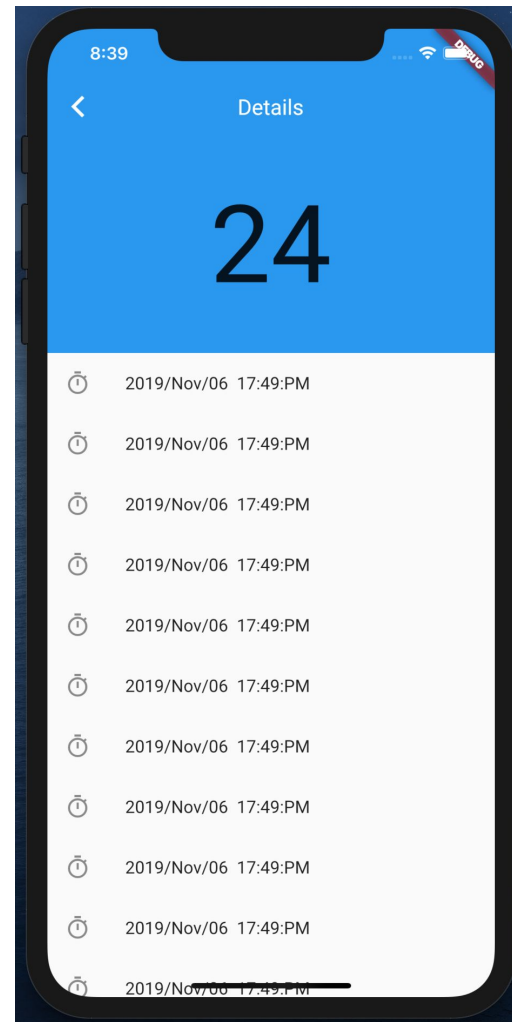
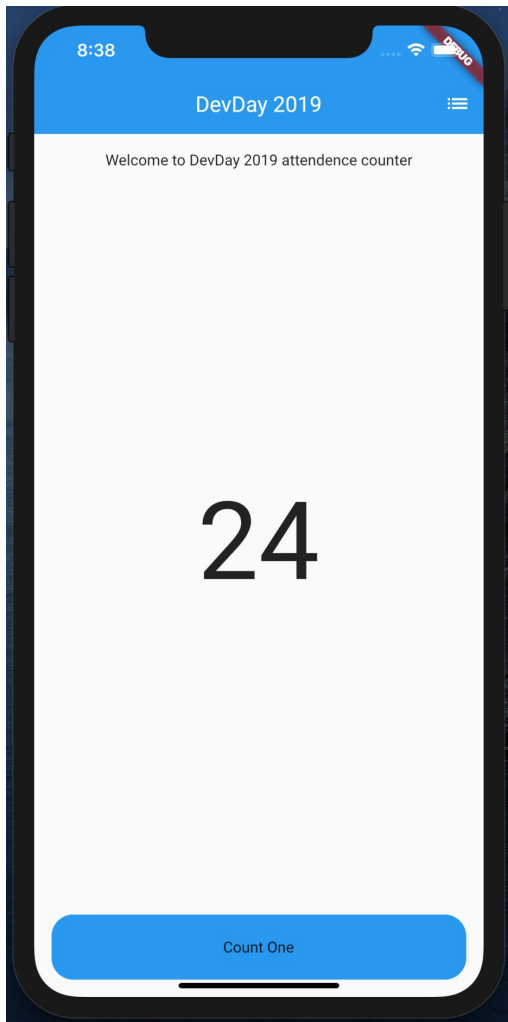
Native API Access

- **Powerful plugin mechanism**
- **Can utilize platform APIs**
- **3rd party APIs**



**Show us
a real thing**





Learning

- <https://flutter.dev/>
- <https://dart.dev/>
- <https://pub.dev/>
- <https://dartpad.dartlang.org/>
- <https://www.youtube.com/channel/UCwXdFgeE9KYzIDdR7TG9cMw>
- <https://medium.com/search?q=Flutter>

Q & A

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for queries.

**Thank you very
much**