INTRODUCTION TO FLUTTER
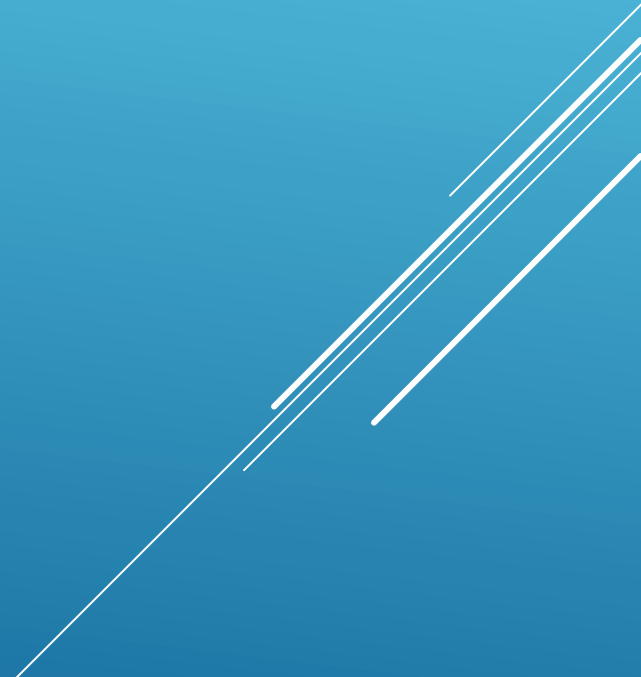
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AGENDA

- What is Flutter?
- Flutter vs Xamarin
- Demo
- Q&A?

WHAT IS FLUTTER?

- Made by Google
- Cross platform Mobile framework (iOS & Android)
  - Future Roadmap: Web, Desktop & Embedded devices
- Open source
- Initial release in May 2017
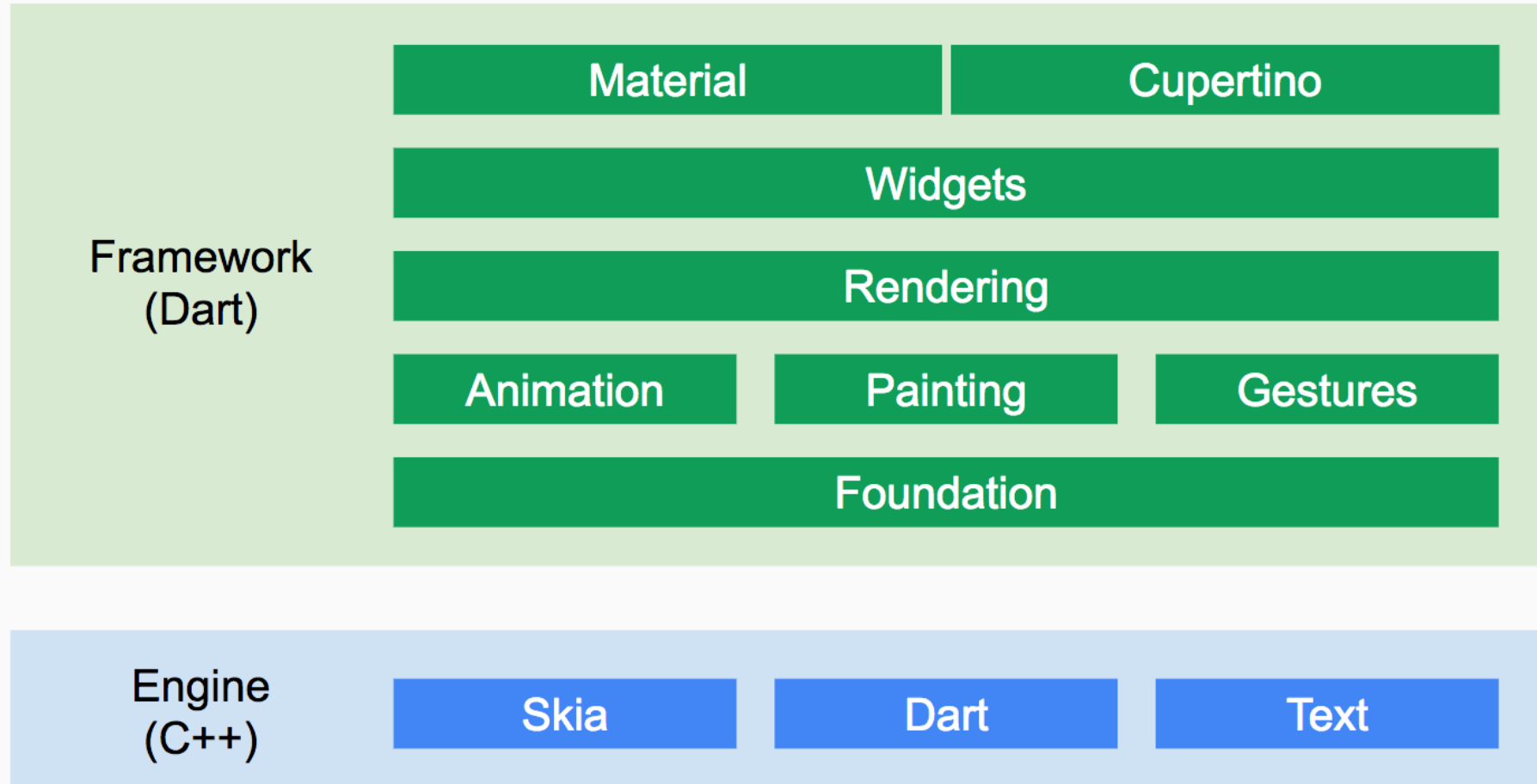- Written in Dart

WHAT IS DART?

▶ Dart is an <u>object-oriented</u>, class defined, garbage-collected language using a <u>C-style syntax</u> created by Google.

```dart
import 'dart:math' as math;
class Point {
  final num x, y;
  Point(this.x, this.y);
  Point.origin(): x = 0, y = 0;
  num distanceTo(Point other) {
    var dx = x - other.x;
    var dy = y - other.y;
    return math.sqrt(dx * dx + dy * dy);
  }
  Point operator +(Point other) => Point(x + other.x, y + other.y);
}

void main() {
  var p1 = Point(10, 10);
  var p2 = Point.origin();
  var distance = p1.distanceTo(p2);
  print(distance);
}
```

FLUTTER SYSTEM OVERVIEW

Framework (Dart)

Material	Cupertino
Widgets	
Rendering	

Animation	Painting	Gestures

Foundation

Engine (C++)

Skia	Dart	Text

WHAT IS WIDGETS?

▶ In Flutter, *everything* is a widget.

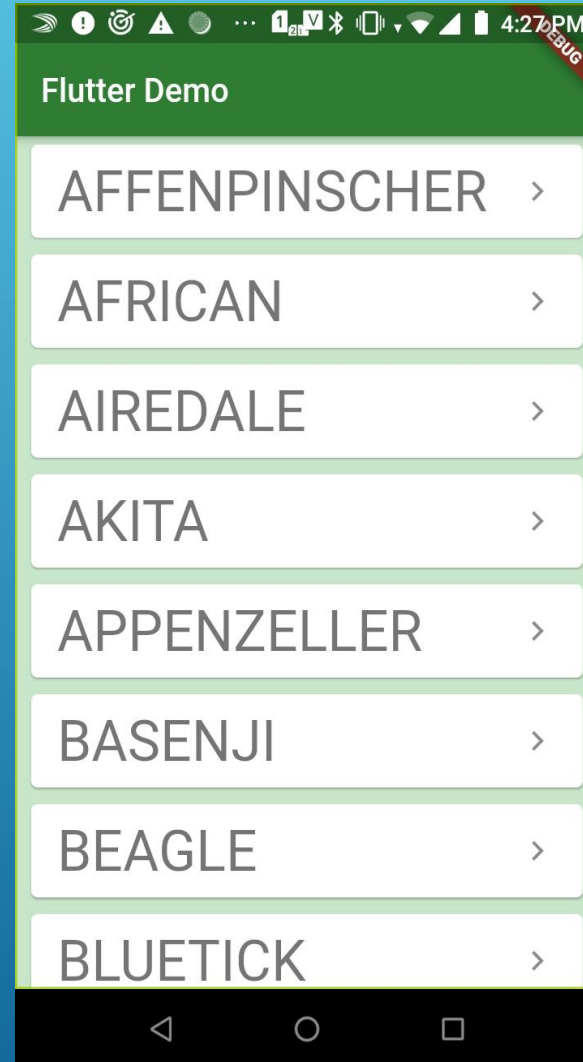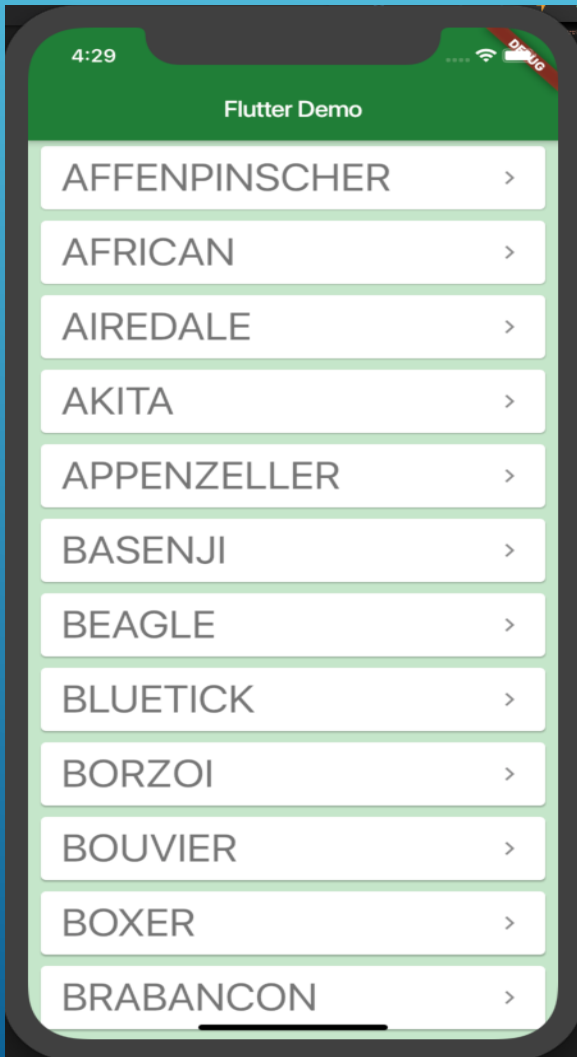▶ 2 classes of widgets: *StatelessWidget* and *StatefulWidget*

```
class BigText extends StatelessWidget {

  Widget build(context) {
    return new Text('text');
  }
}
```

```
class Counter extends StatefulWidget {
  Counter({Key key, this.title}) : super(key: key);
  @override
  _MyHomePageState createState() => new _MyHomePageState();
}

class _MyHomePageState extends State<MyHomePage> {
  int counter = 0;
  void increaseCount() {
    setState(() {
      this.counter++;
    }
  }
  Widget build(context) {
    return new RaisedButton(
      onPressed: increaseCount,
      child: new Text('Tap to Increase'),
    );
  }
}
```

	Xamarin	Flutter
Code	C#	Dart
Compilation	iOS:AOT, Android:JIT	AOT + Dart VM
Portability	iOS, Android, Windows, MacOS	Current: IOS, Android Future: Web, Desktop and Embedded
Code Reuse	Xamarin Native: Moderate Xamarin Form: High	High
UI	Native components	Customize UI Widgets
Price	Free, Open Source	Free, Open Source
Community	Large	Growing
App Size	Relatively Big	Relatively Big
Graphics handling	Poor	Moderate (60 fps)

FLUTTER VS XAMARIN

DEMO

Q&A

- Demo Source Code: http://bit.ly/2LHyg4r
- Flutter: http://flutter.dev