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# Flutter

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# WHAT IS THE FLUTTER?

- Flutter **is Google’s mobile app SDK** for crafting high-quality native interfaces on **iOS** and **Android** in record time. Flutter works with existing code, is used by developers and organizations around the world, and is **free** and **open source**.

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# WHAT IS THE FLUTTER?

- Flutter's ***hot reload*** helps you quickly and easily experiment, build UIs, add features, and fix bugs **faster**.

- With Flutter, you won’t be able to develop apps in Java,  Kotlin,  Swift etc. instead you’ll have to learn **Dart** which is another language **by Google.**

# MOBILE ARCHITECTURE

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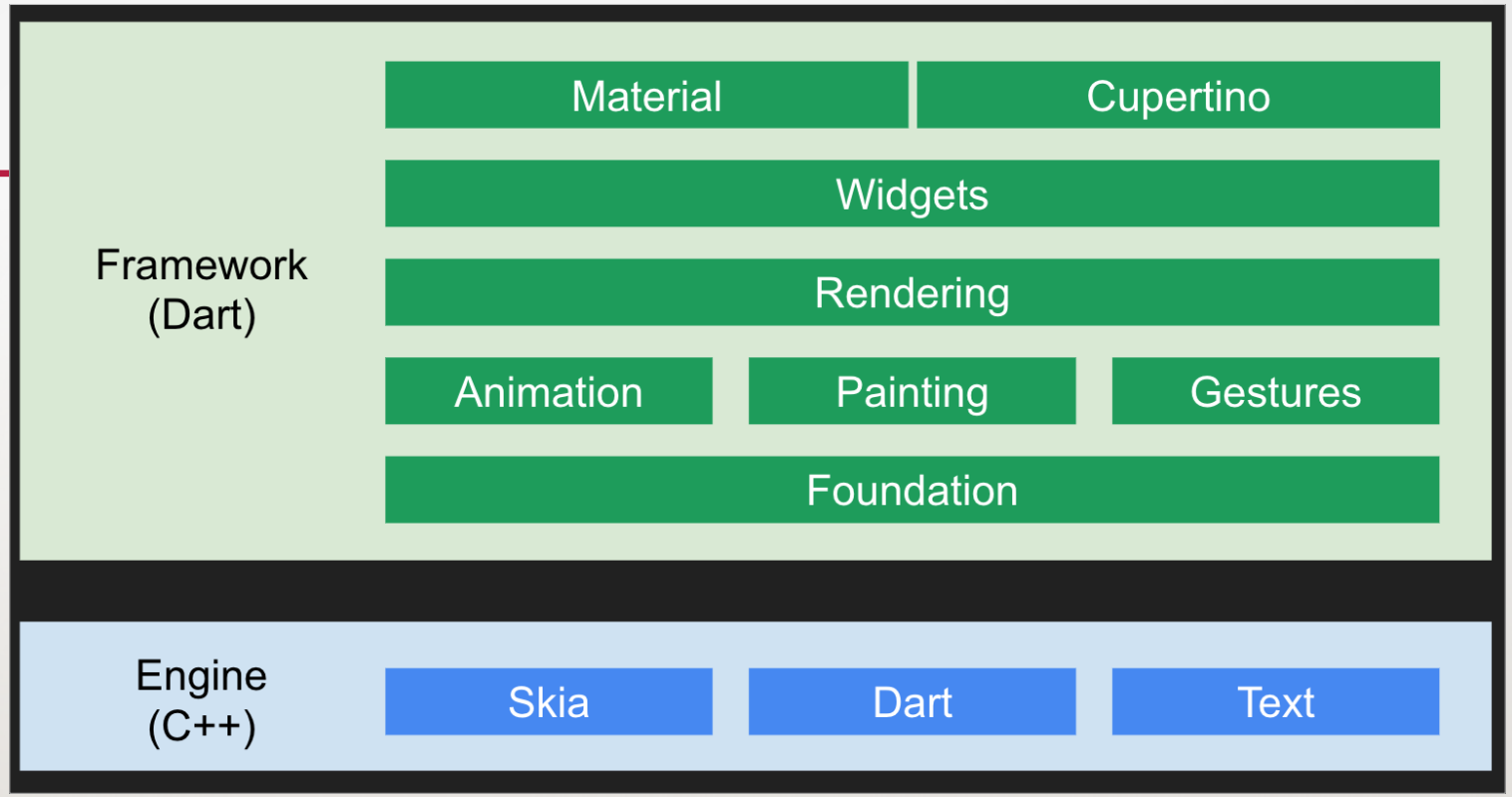

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# WIDGETS

- Widgets are used for both **layout** and **UI** elements.
- The core of Flutter’s layout mechanism is widgets. In Flutter, **almost everything is a widget**—even layout models are widgets. The **images**, **icons**, and **text** that you see in a **Flutter app are all widgets**. But things you don’t see are also widgets, such as the rows, columns, and grids that arrange, constrain, and align the visible widgets.
- **Even the app itself is a widget.**

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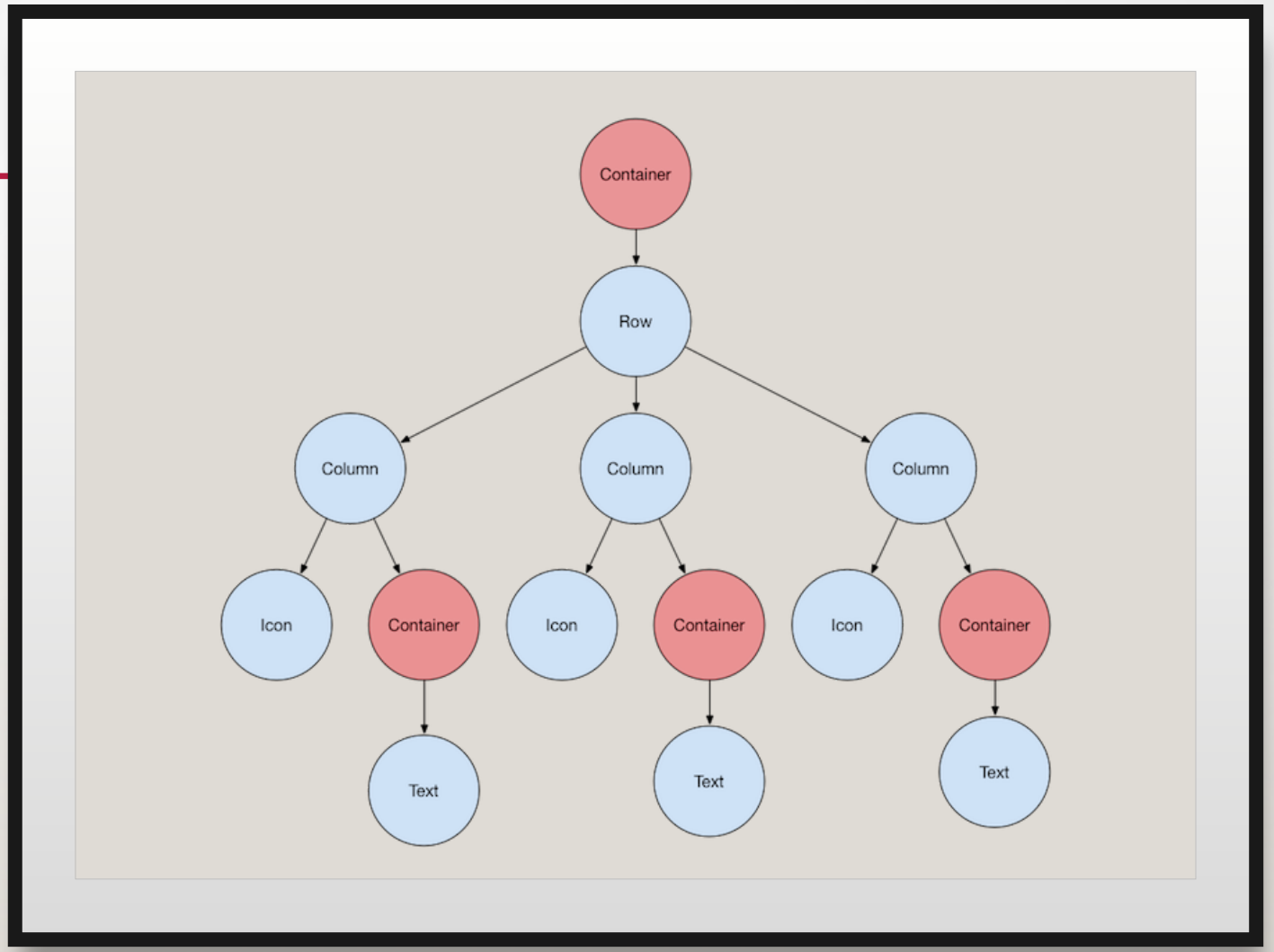
# WIDGETS



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# HOT RELOAD

- One of the most popular features of Flutter is its fast, stateful **hot reload**.
- You can make a change to a Flutter app **while it is running**, and it will reload the app’s code that has changed and let it continue from where it left off, often in less than a second.
- **No need restart the app.**

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# FLUTTER ON THE WEB

- In order to run Flutter on the Web,
  - **Dart code** must be **compiled** on the web
    - Dart has been **compiling to JavaScript** for as long as the language has existed.
    - Flutter’s compilation strategy relies on this infrastructure.
  - **A subset of Flutter** must be chosen to run on the web
  - **A sufficient subset of Web features** must be chosen like Html+Css, SVG, Canvas and WebGL.

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# FLUTTER ON THE WEB

- Flutter Developers has decided to use **Flutter Web Engine** way to deploy Flutter application on the Web, since this would allow the highest framework-level **code reuse between platforms**.
  - **Flutter Web Engine** retained all layers above **dart:ui** and provided a dart:ui implementation that runs in the browser
  - The developers must implement the entire dart:ui API for Web Technologies.
- Flutter renders UI one frame at a time. Within each frame Flutter **builds widgets (dart2js)**, **performs layout,** and finally **paints them on the screen.**

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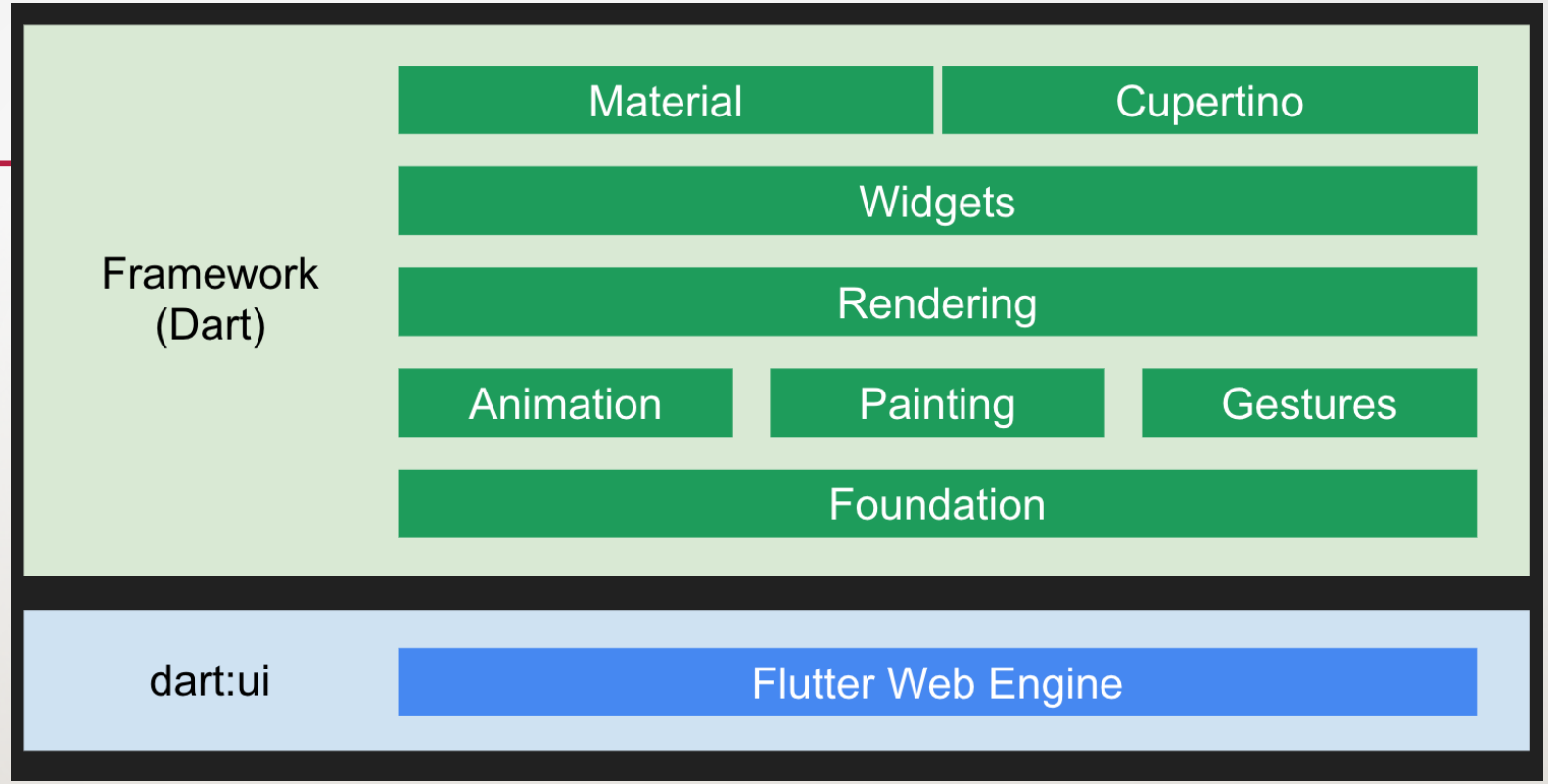
# WEB ARCHITECTURE (HUMMINGBIRD)



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# FLUTTER VS XAMARIN VS REACT NATIVE

| | Flutter | Xamarin | React Native |
|---|---|---|---|
| Language | Dart | C# | JavaScript |
| Supported Platforms | iOS, Android, **Wep apps(in process)** | iOS, Android, UWP, WPF, macOS | iOS, Android, Web apps |
| Hot Reload | Yes | No | Yes |
| Application Performance | 9 / 10 | 4 / 10 | 5 / 10 |
| Third-Party Support | 5 /10 | 6 / 10 | 9 / 10 |
| UI | 9 / 10 | 4 / 10 | 7 / 10 |
| Libraries and Tooling | 5 / 10 | 6 / 10 | 7 / 10 |
| Community | 8 / 10 | 7 / 10 | 8 / 10 |
| Architecture patterns | MVP, MVC, MVI, MVVM, Redux | MVC, MVVM | MVP, MVC, MVVM, Redux |

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# WHY USE FLUTTER?

- Develop for iOS and Android from a single codebase
  - The advantages of reactive views with **Dart bridge** instead of **JavaScript bridge**
- The developer has full control over the widgets and layout
  - Beautiful and customizable widgets
- Great developer tools, with amazing **hot reload**
  - Experiment by changing code and reloading as your app runs
- **More performance**, more compatibility
- **Flare** currently supports exporting for Flutter and for websites. Thanks to this support, **Animations** built with Flare can be embedded into an existing Flutter app **as a widget**.
  - Flare is new vector design and **animation tool**.

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# IS FLUTTER HAS FUTURE?

- The framework **has** just reached Flutter 1.0, with which it can be said that the framework **has** a brighter **future**.
- Google's **Flutter has** been released last year and **has** yet to achieve the mass adoption of **Facebook's React Native.**
- So I think it's safe to say that **Flutter has** a very **bright future**.

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# HOW TO CREATE/RUN FLUTTER APP?

- First of all, you need  Flutter SDK, emulator/simulator.
- You can simply use **IntelliJ**, **Visual Studio Code**, **Android Studio** to run your app.
- Or you can use terminal which is fancy way ☺️
  - $ flutter create <Application Name>
    #To create a Flutter project.
  - $ flutter run
    #if there is single device.
  - $ flutter run –d <Device ID>
    #if there are more than one device .

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# THANKS FOR LISTENING

BURAK AKTEN