



Royal University of Bhutan

Unit IV:

Cross-Platform App Development

(Flutter Fundamentals)

Flutter

CTE308- AS2025

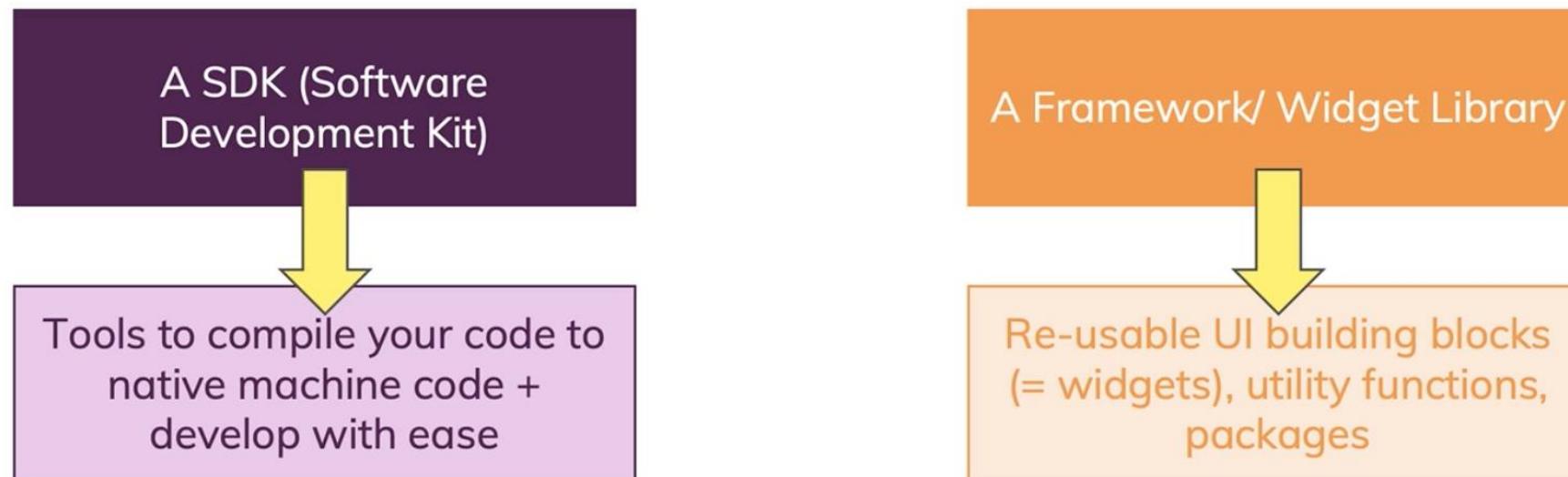
Tutor: Pema Galey
#17682761

Outlines

- What is Flutter?
- What is Dart?
- Architecture

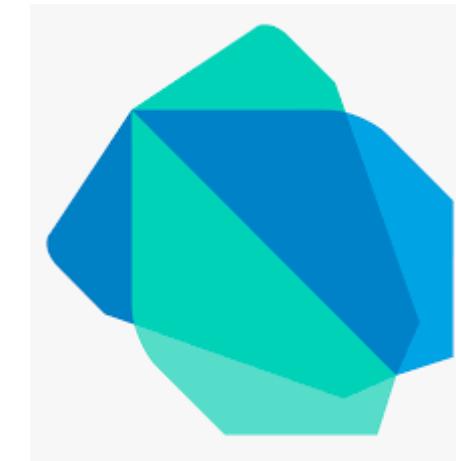
What is Flutter?

- A "tool" that allow you to build native cross-platform (iOS, Android) apps with one programming language and codebase.

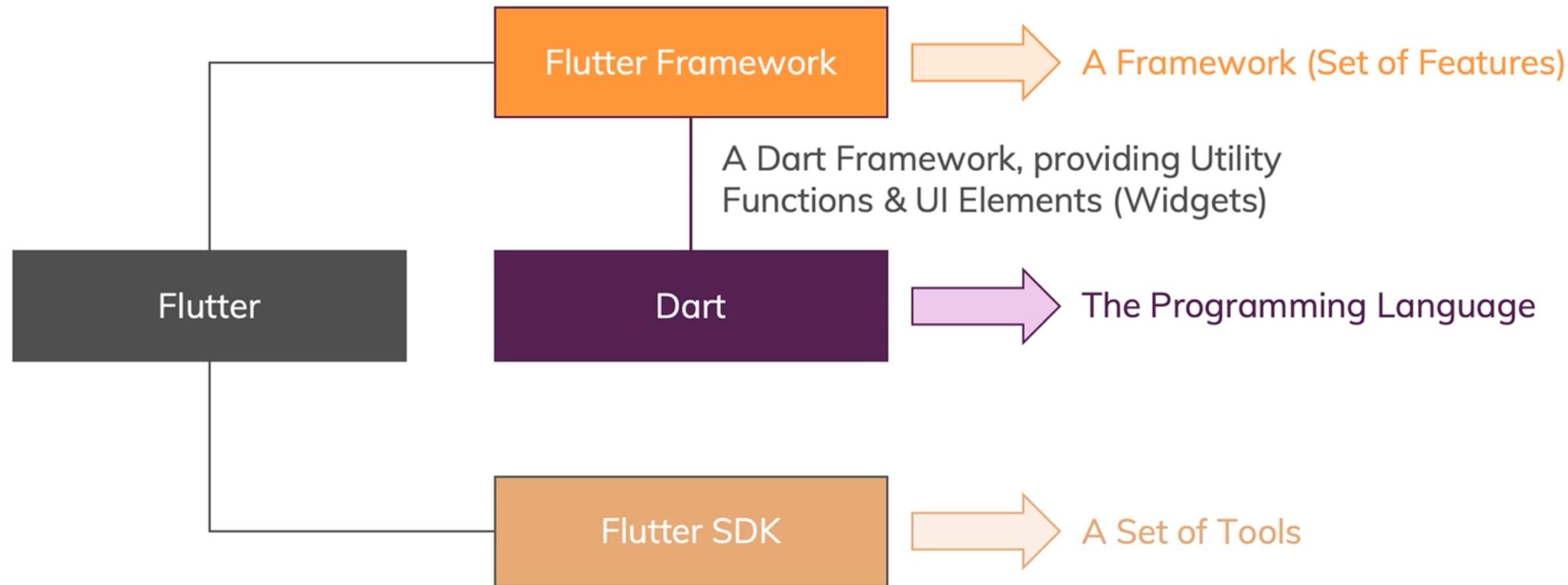


What is Dart?

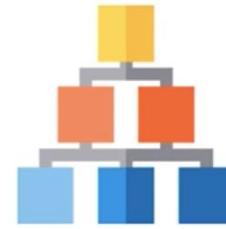
- Focused on Frontend (mobile apps, web) user interface (UI) development.
- Programming language developed by Google
- Dart is Object Oriented Programming
- Dart has mixture syntax of JavaScript, Java, C#



Flutter vs Dart?



Flutter Architecture



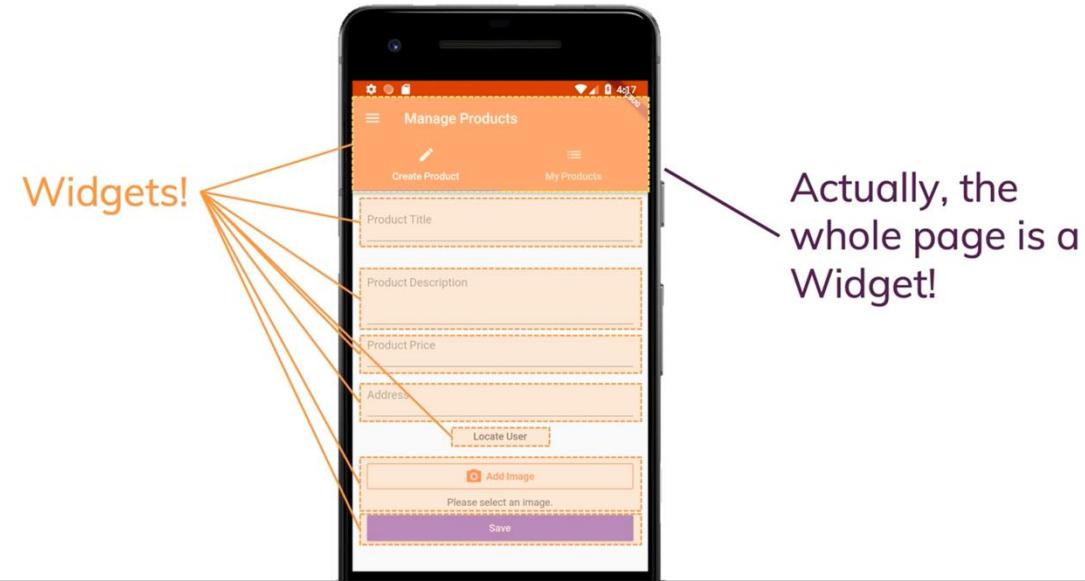
UI as Code: Build a
Widget Tree



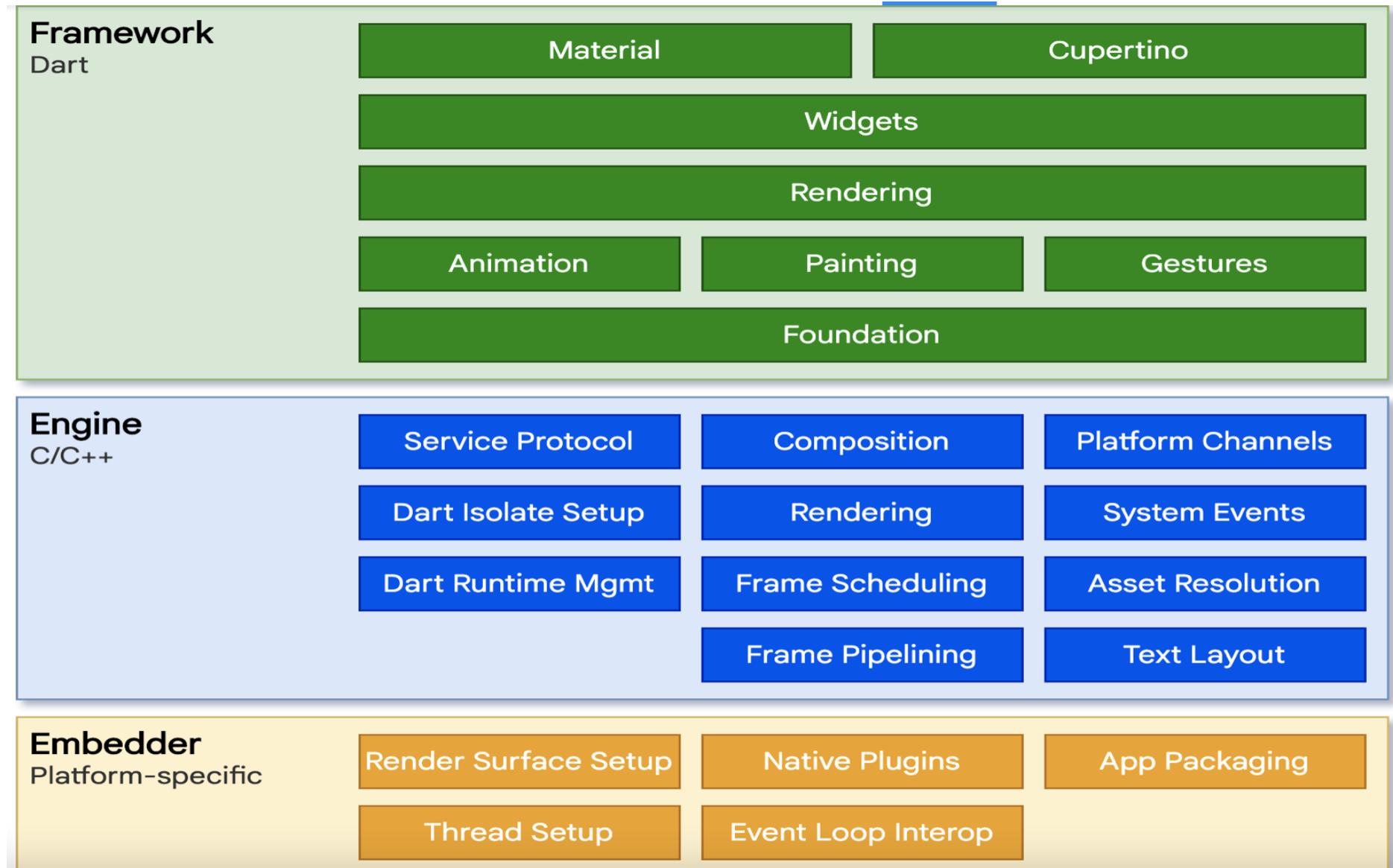
Embrace Platform Differences



One Codebase



Flutter Architecture



“UI as Code”

No Drag & Drop

No Visual Editor

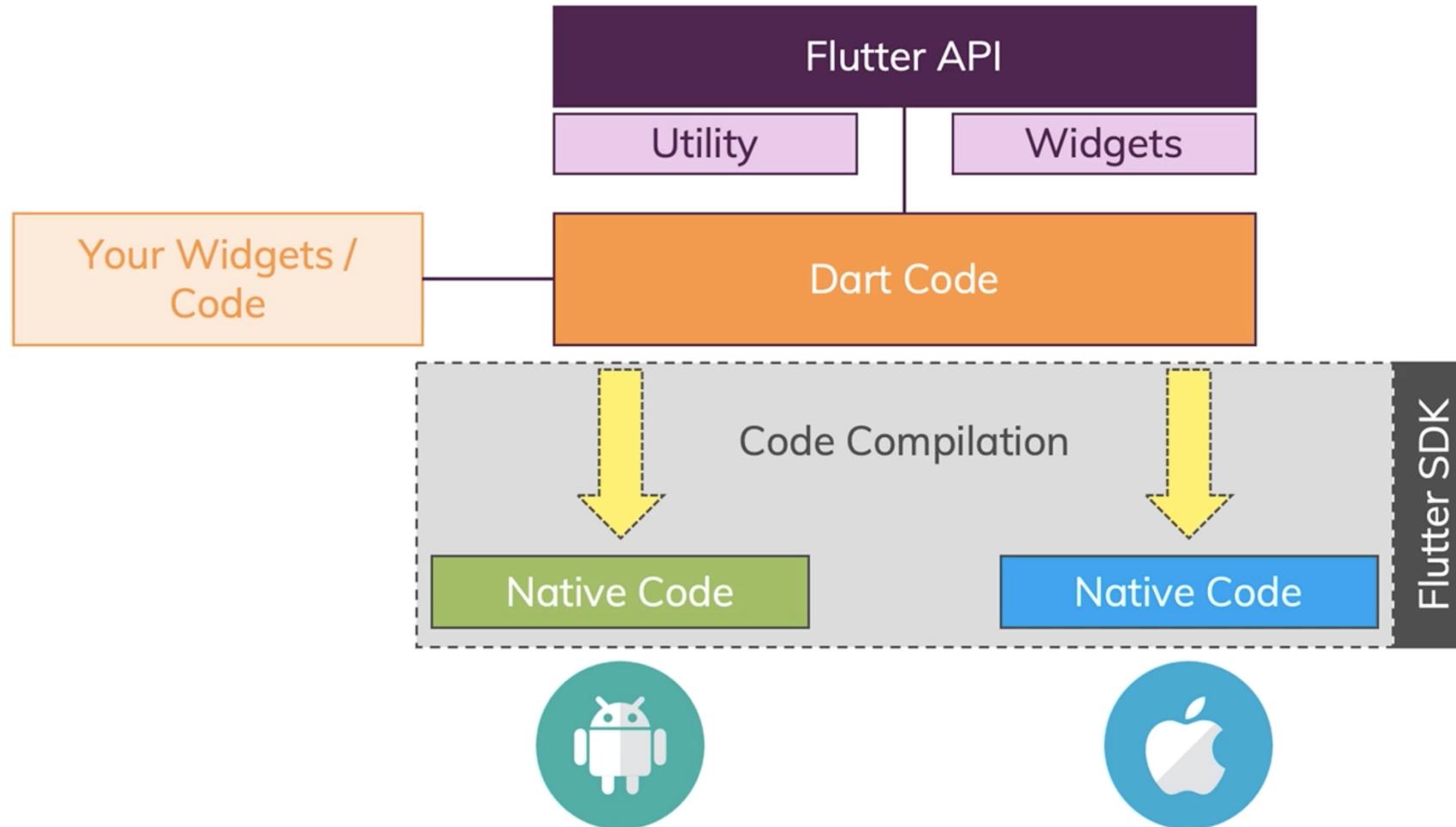
Code only

But extremely straightforward

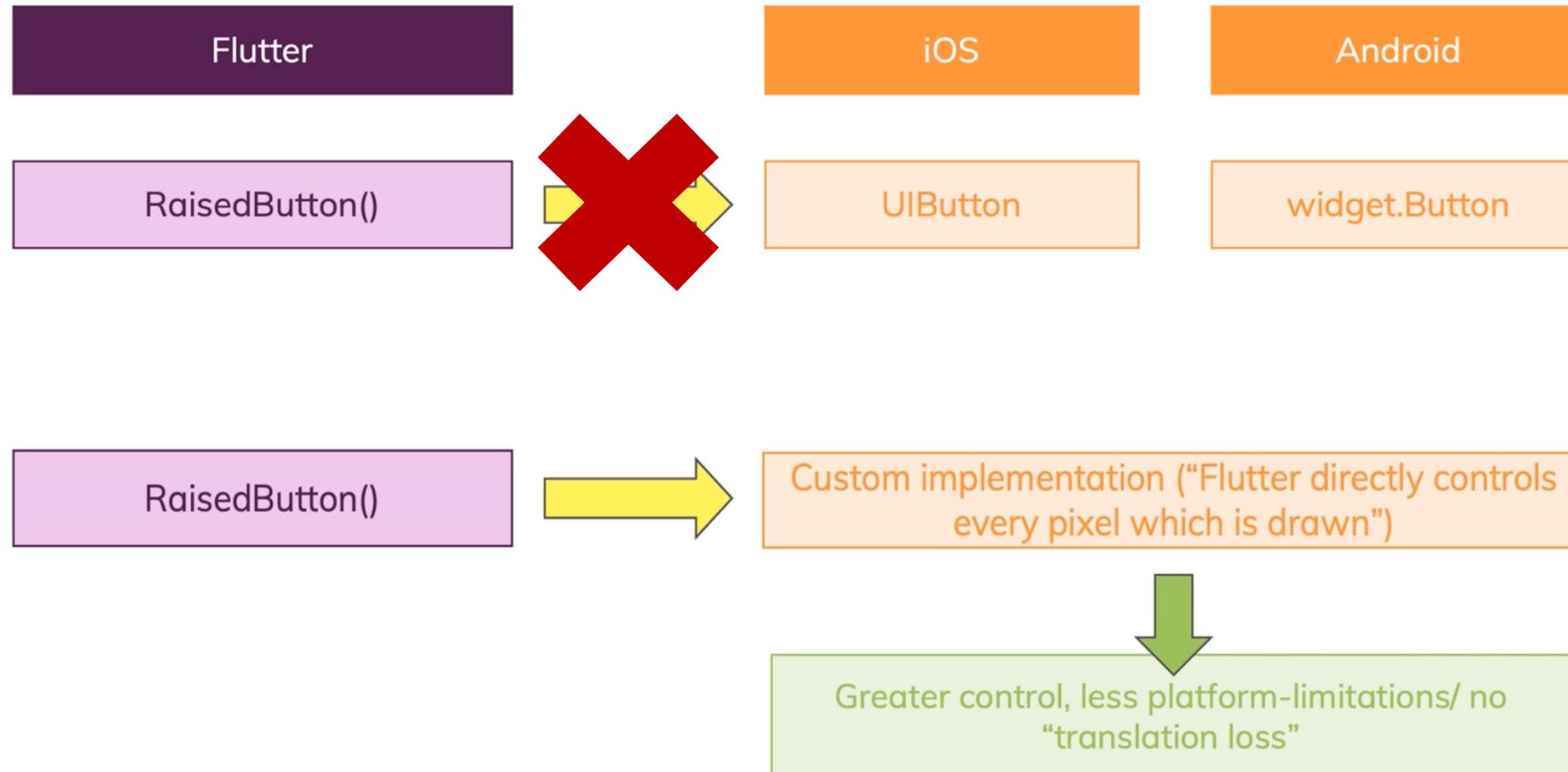


```
body: Stack(
  children: <Widget>[
    Container(
      decoration: BoxDecoration(
        image: DecorationImage(
          image: AssetImage('assets/images/store.jpg'),
          fit: BoxFit.cover,
          alignment: Alignment.center,
        ), // DecorationImage
      ), // BoxDecoration
    ), // Container
    Container(
      // width: double.infinity,
      // height: double.infinity,
      decoration: BoxDecoration(
        gradient: LinearGradient(
          colors: [
            Color.fromRGBO(215, 117, 255, 1).withOpacity(0.5),
            Color.fromRGBO(255, 188, 117, 1).withOpacity(0.9),
          ],
          begin: Alignment.topLeft,
          end: Alignment.bottomRight,
          stops: [0, 1],
        ), // LinearGradient
      ), // BoxDecoration
    ), // Container
    SingleChildScrollView(
```

How Flutter/Dart is Transformed to Native App?



Flutter Does Not Use Platform Primitives



Installation Demo

- **Flutter Installation Demo:**

<https://flutter.dev/docs/get-started/install>

- ✓ **Flutter SDK**
- ✓ **Update the Flutter Path in the System**
- ✓ **Platform Setup (iOS / Android Setup)**

Reference

- <https://flutter.dev>
- <https://www.youtube.com/watch?v=x0uinJvhNxI>
- <https://dit.udemy.com/course/learn-flutter-dart-to-build-ios-android-apps/>

Thank you!