Mobile App

SESSION 6

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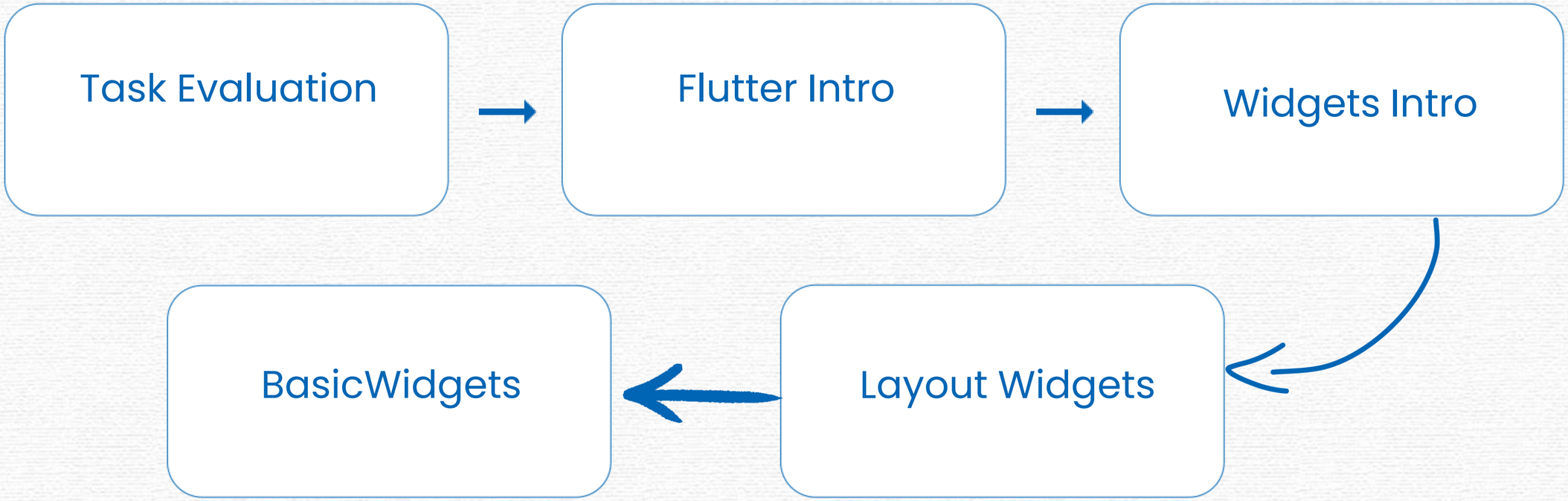


Task

Task Evaluation

Intro to Flutter

Flutter is an open-source UI toolkit created by Google for building natively compiled applications for:

- Mobile (Android & iOS)
- Web
- Desktop
- Embedded devices

...all from a single codebase.

Intro to Flutter

Why Flutter?

Fast Development : Hot Reload lets you see changes instantly.

Beautiful UIs : Comes with rich set of customizable widgets.

Single Codebase : Write once, run anywhere.

Flexible & Powerful : Easily build complex layouts.

Backed by Google : Strong community & support.

Intro to Flutter

Flutter Is Made Of:

- **Dart** Programming Language
- **Flutter Engine** : Handles rendering, animation, etc.
- **Widgets** : The building blocks of UI

Task

Environment Setup

Intro to Flutter

Flutter Project:

Key Files and Folders in a Flutter Project:

1. **lib/main.dart** (The Entry Point of the App)

This file contains the **main()** function, which is the starting point of a Flutter app.

Inside main(), we use the **runApp() function** to launch the app's UI.

```
void main() {
  runApp(const MyApp());
}
```

Intro to Flutter

2.pubspec.yaml (Dependency & Asset Management)

This file is used to manage:

- Dependencies.
- Assets (images, fonts, icons).
- App metadata (like app name and version).

```yaml
dependencies:
  flutter:
    sdk: flutter

  # The following adds the Cupertino Icons font to your application.
  # Use with the CupertinoIcons class for iOS style icons.
  cupertino_icons: ^1.0.8
```

Intro to Flutter

3.assets/ (Images, Fonts, and Icons)

- This folder stores local images, fonts, and other assets.
- You need to declare them in **pubspec.yaml**

```
assets:
    - images/a_dot_burr.jpeg
    - images/a_dot_ham.jpeg
```

intro to widgets

1.runApp() : (The Starting Function)

This function launches the app by passing a widget (**usually MaterialApp or CupertinoApp).**

```dart
void main() {
  runApp(MaterialApp(
    home: Scaffold(
      appBar: AppBar(title: Text("Hello Flutter!")),
      body: Center(child: Text("Welcome to Flutter!")),
    ),  // Scaffold
  ));  // MaterialApp
}
```

intro to widgets

2.Material vs. Cupertino (Android vs. iOS UI Design):

Flutter provides two main UI styles:

Material Design (Android Style)

- Uses MaterialApp
- Provides Google’s Material Design components (e.g., AppBar, FloatingActionButton, Snackbar).

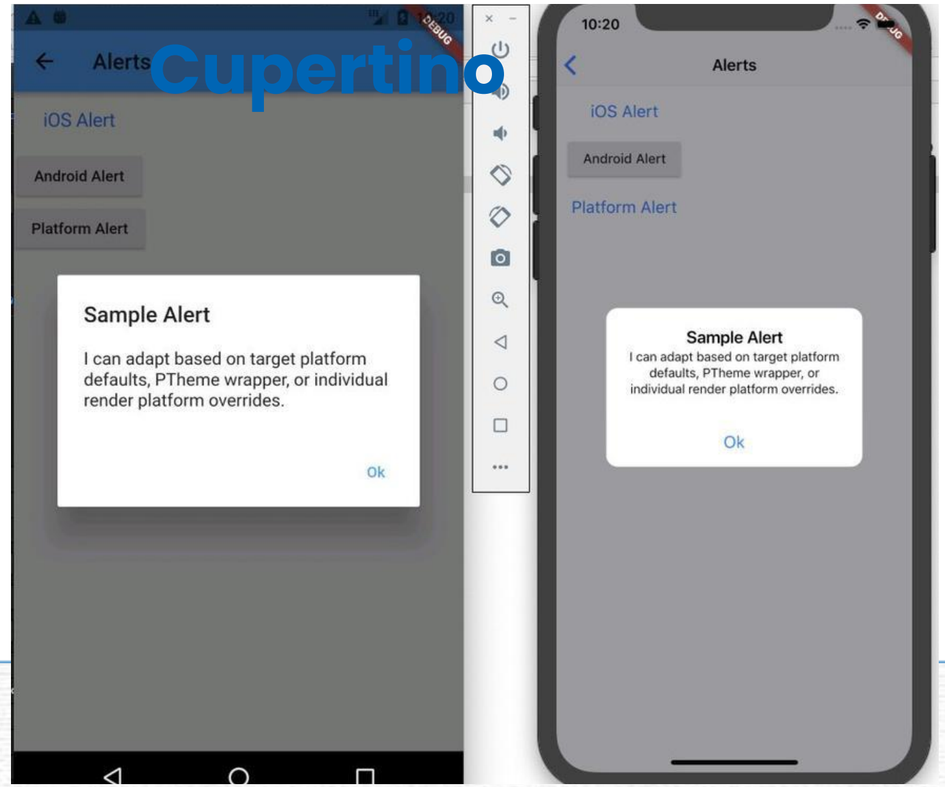
intro to widgets

Cupertino (iOS Style)

- Uses CupertinoApp
- Provides iOS-style components (e.g., CupertinoButton, CupertinoNavigationBar).

intro to widgets

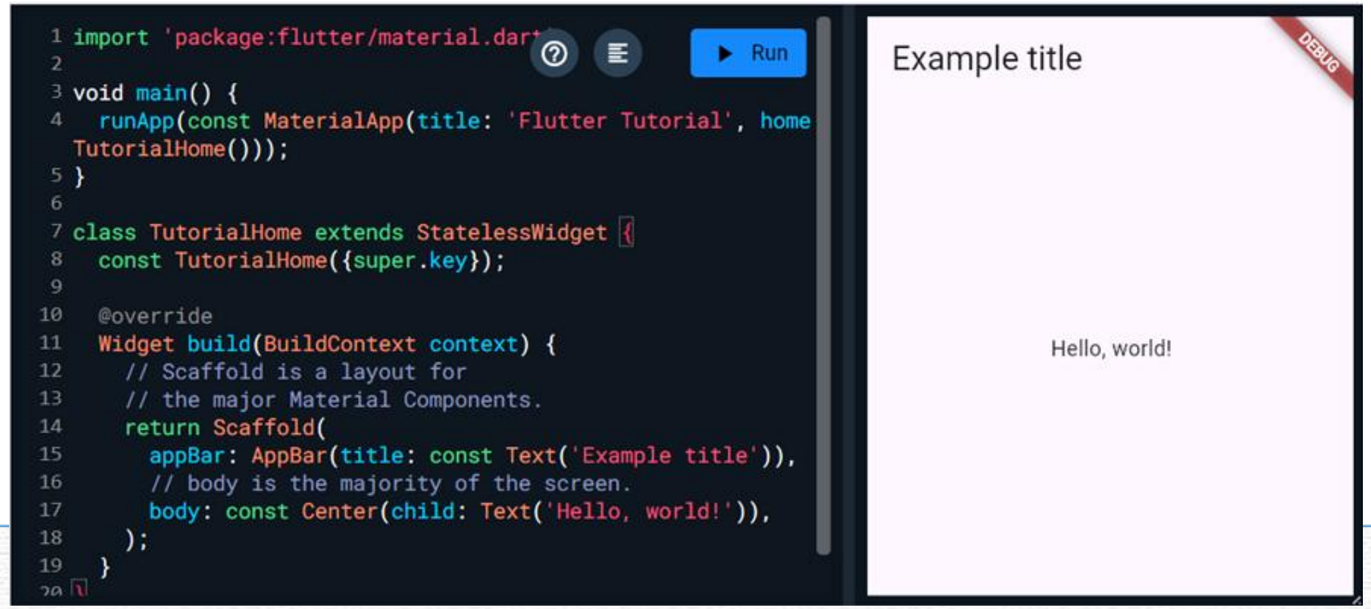
Material vs. Cupertino



Layout Widgets

Scaffold Widget

Implements the basic Material Design visual layout structure.



basic widgets

Appbar Widget

A top bar to display titles, buttons, and icons.

```
AppBar(
  title: Text("My App"),
  backgroundColor: Colors.blue,
)
```

Layout Widgets

Center

Centers its child within itself both vertically and horizontally.

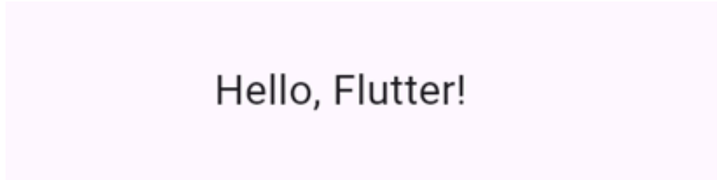
```
body: Center(
  child: Text(
    'Hello, Flutter!',
    style: TextStyle(fontSize: 24),
  ), // Text
)); // Center // Scaffold
```

basic widgets

Text

Displays a string of text with single style.

```
child: Text(
  'Hello, Flutter!',
  style: TextStyle(fontSize: 24),
), // Text
```

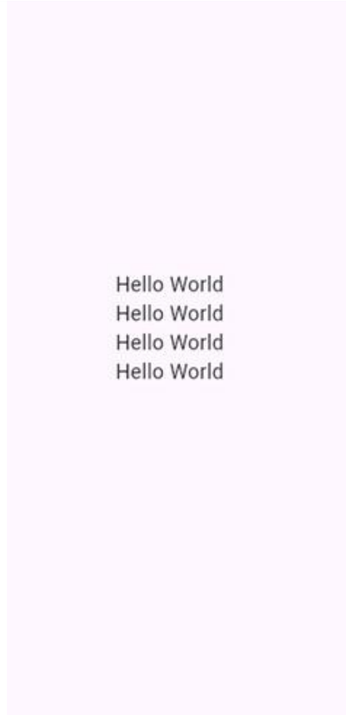


Layout Widgets

Column

Arranges widgets vertically

```
child: Column(mainAxisAlignment: MainAxisAlignment.center, children: [
  Text("Hello World"),
  Text("Hello World"),
  Text("Hello World"),
  Text("Hello World"),
]), // Column
```



Layout Widgets

Row

Arranges widgets horizontally.

```
child: Row(
  mainAxisAlignment: MainAxisAlignment.center, children: [
  Text("Hello World"),
  Text("Hello World"),
  Text("Hello World"),
  Text("Hello World"),
]), // Row
```

Layout Widgets

Container Widget

Used for layout and styling.

Example properties: padding, margin, decoration.

```
child: Container(
  width: 200,
  height: 200,
  alignment: Alignment.center,
  decoration: BoxDecoration(
    color: Colors.blue,
    borderRadius: BorderRadius.circular(10),
  ), // BoxDecoration
  child: Text(
    'Hello, Flutter!',
    style: TextStyle(fontSize: 24),
  ), // Text
), // Container
```

tHANK YOU

SEE YOU NEXT TIME