Flutter

Study JAM

By : Ahmed Abu Eldahab @dahabdev

Ahmed Abu Eldahab

Senior Technical Consultant
Google Developer Expert in Flutter

/Dahabdev

AGENDA

20 MINUTES	**Intro**
40 MINUTES	**Flutter Beyond Hello world! (Part 1)**
10 MINUTES	**Break**
60 MINUTES	**Flutter Beyond Hello world! (Part 2)**
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Study

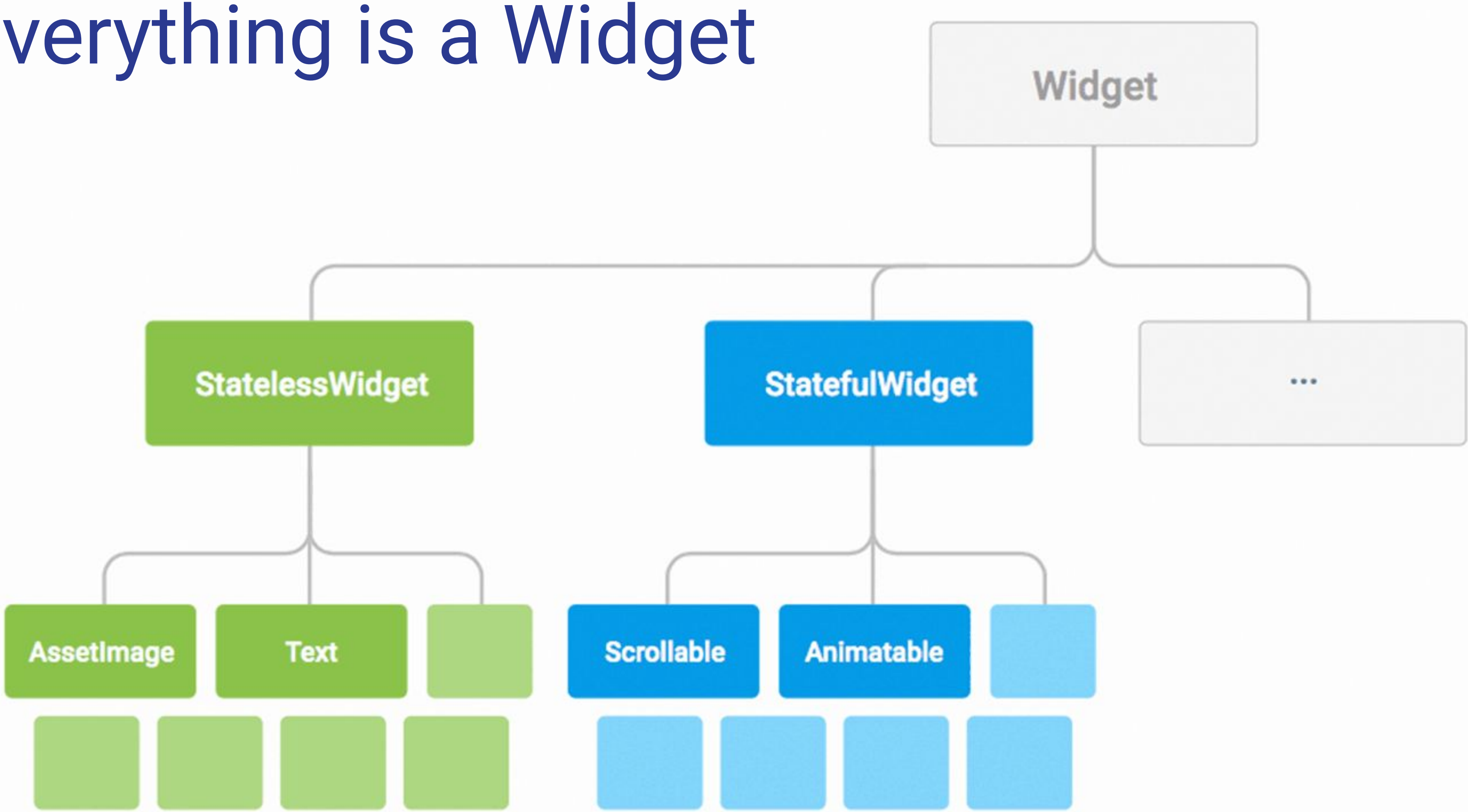
Flutter Beyond Hello world!

By : Ahmed Abu Eldahab

Online StudyJam

@dahabdev

Everything is a Widget



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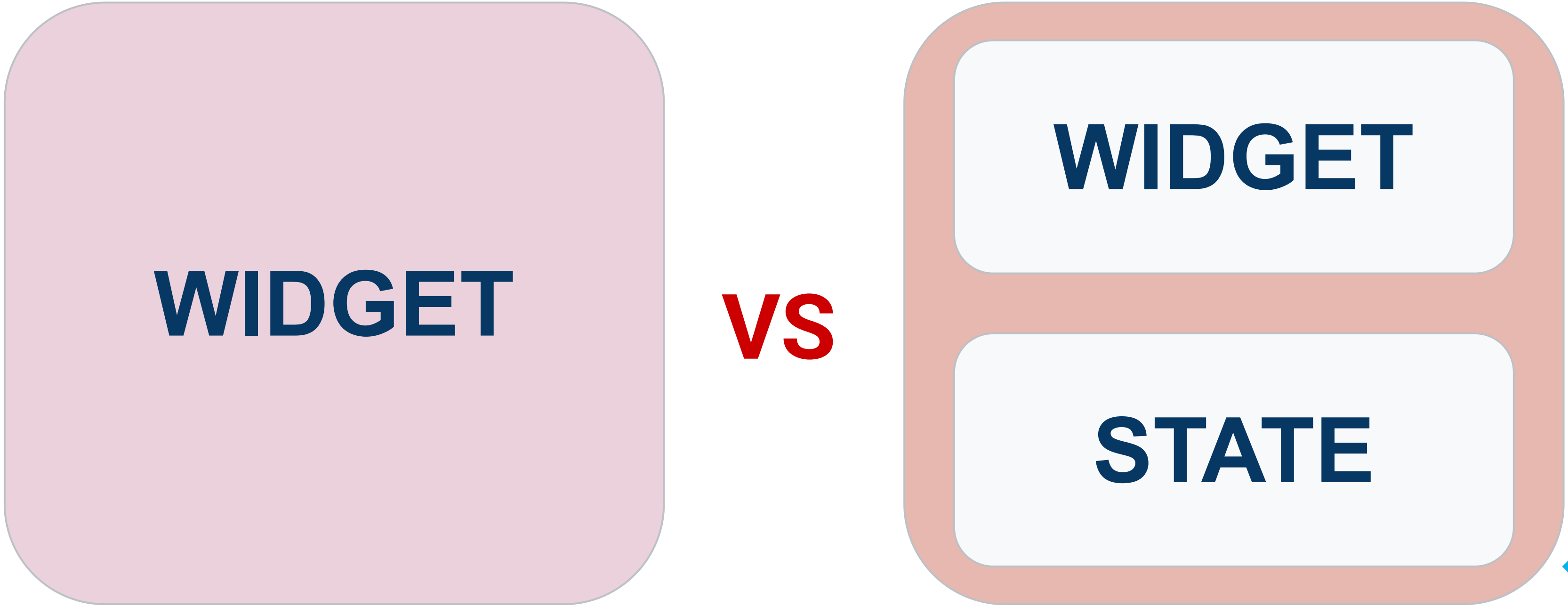


Stateless Widget

WIDGET

VS

Stateful Widget

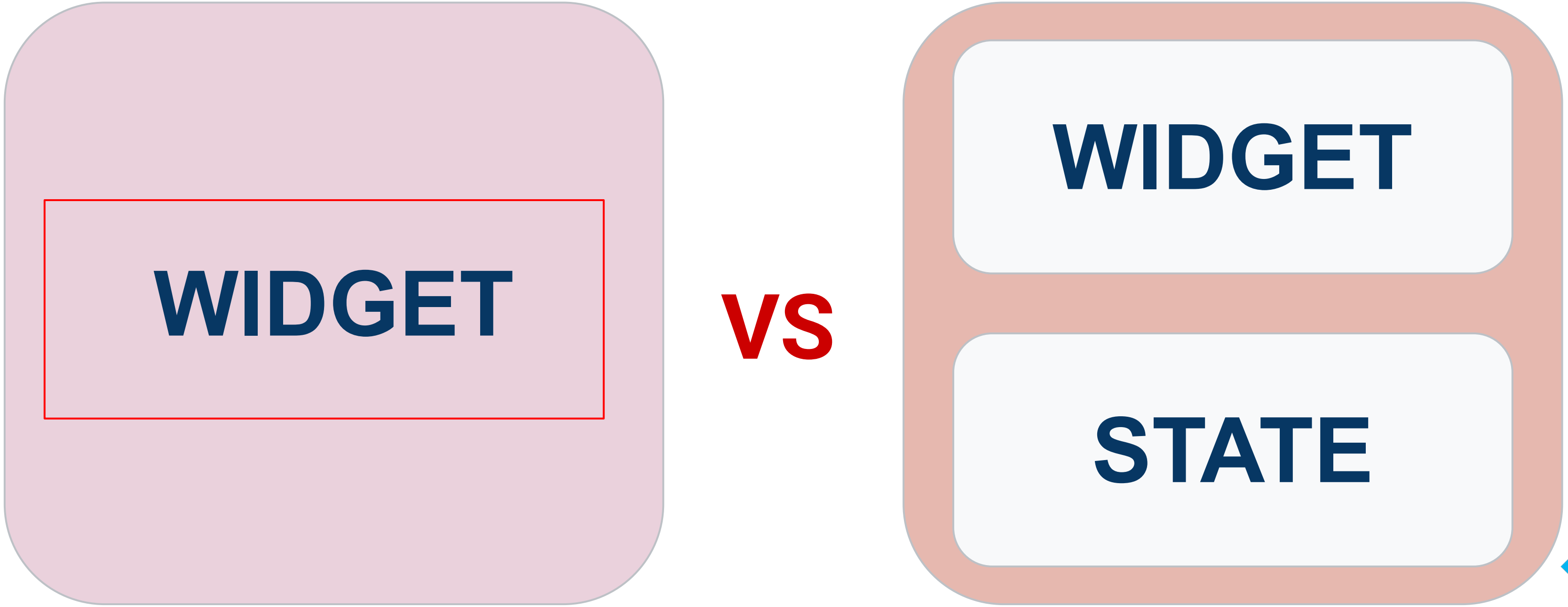
WIDGET

STATE

Everything is a Widget

Stateless Widget

Stateful Widget



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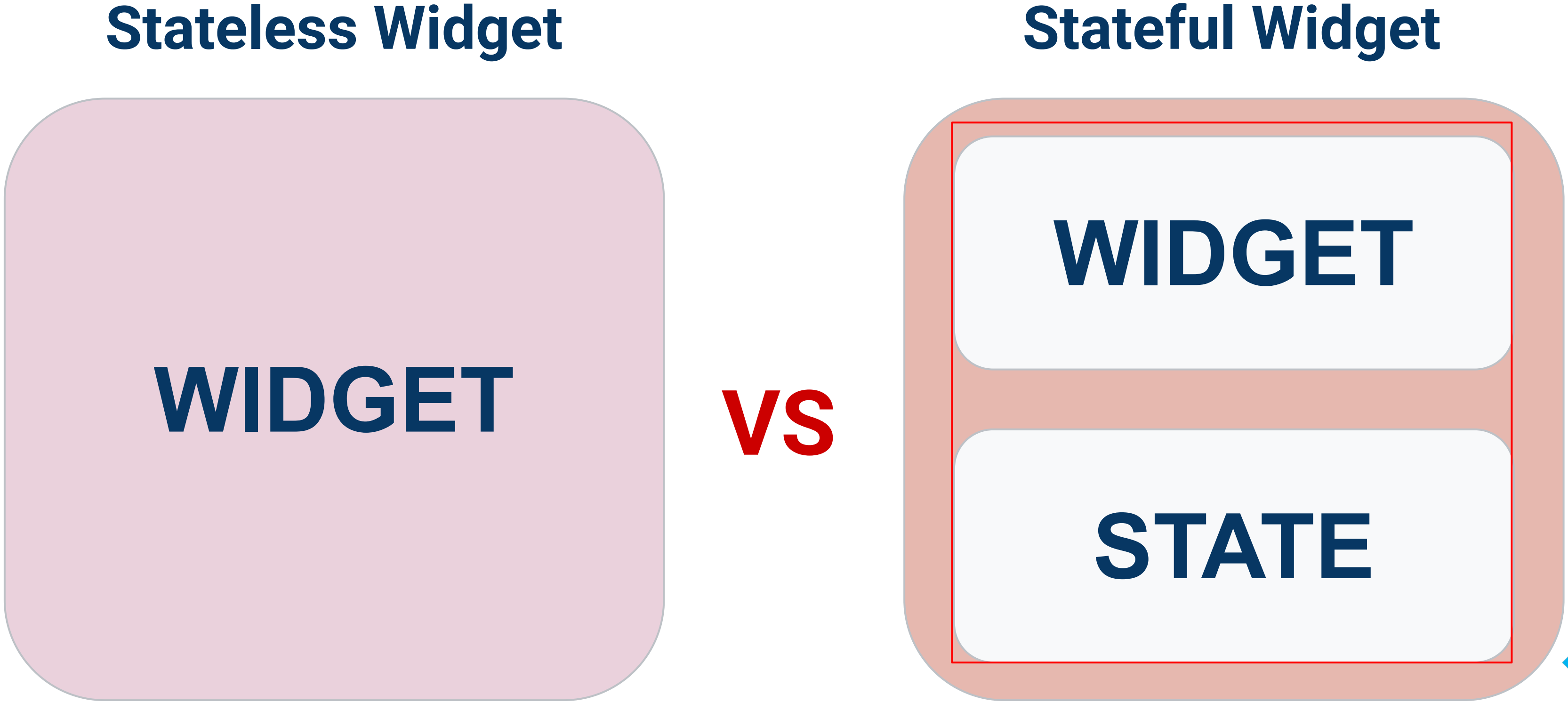

Stateless Widget

WIDGET

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Stateful Widget

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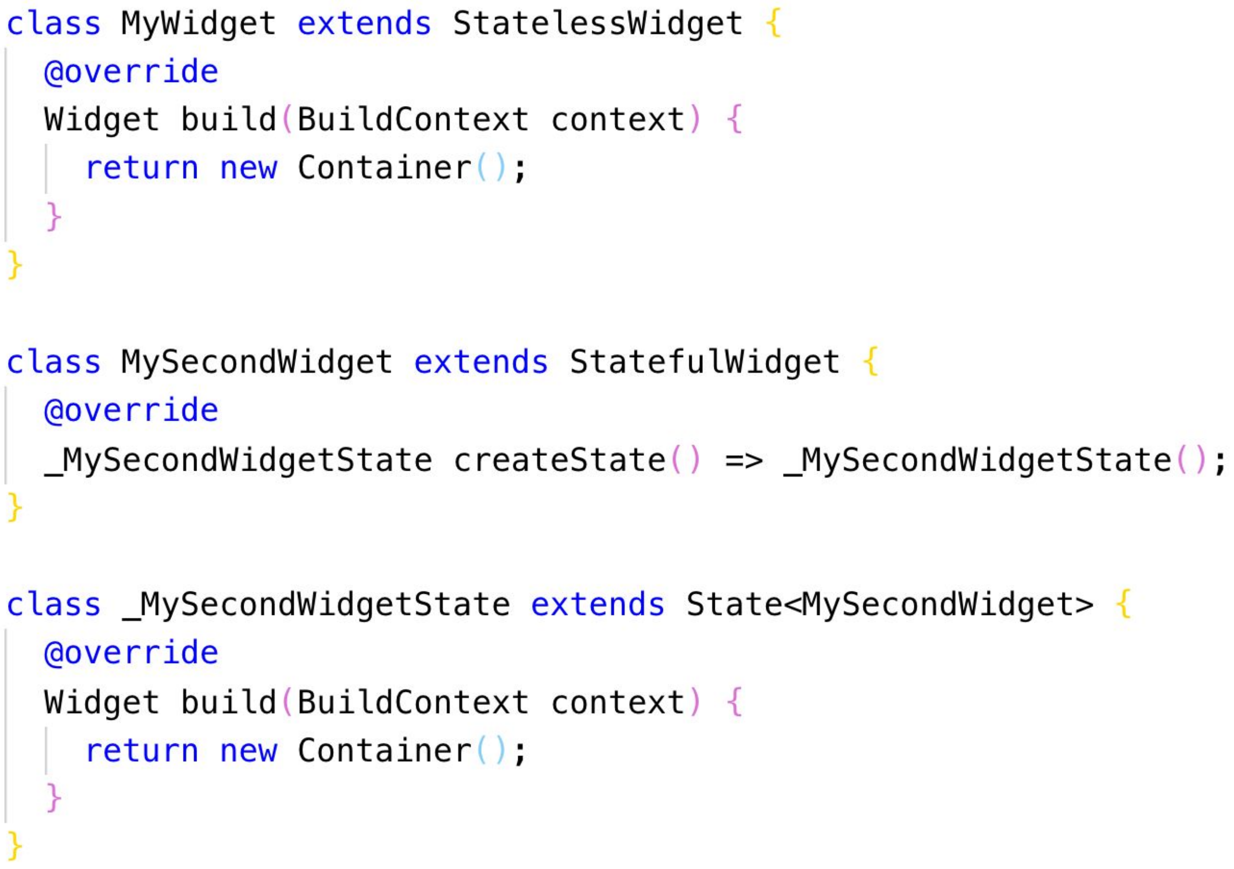
STATE

Flutter Widgets



```
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  @override
  Widget build(BuildContext context) {
    return new Container();
  }
}

class MySecondWidget extends StatefulWidget {
  @override
  _MySecondWidgetState createState() => _MySecondWidgetState();
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class _MySecondWidgetState extends State<MySecondWidget> {
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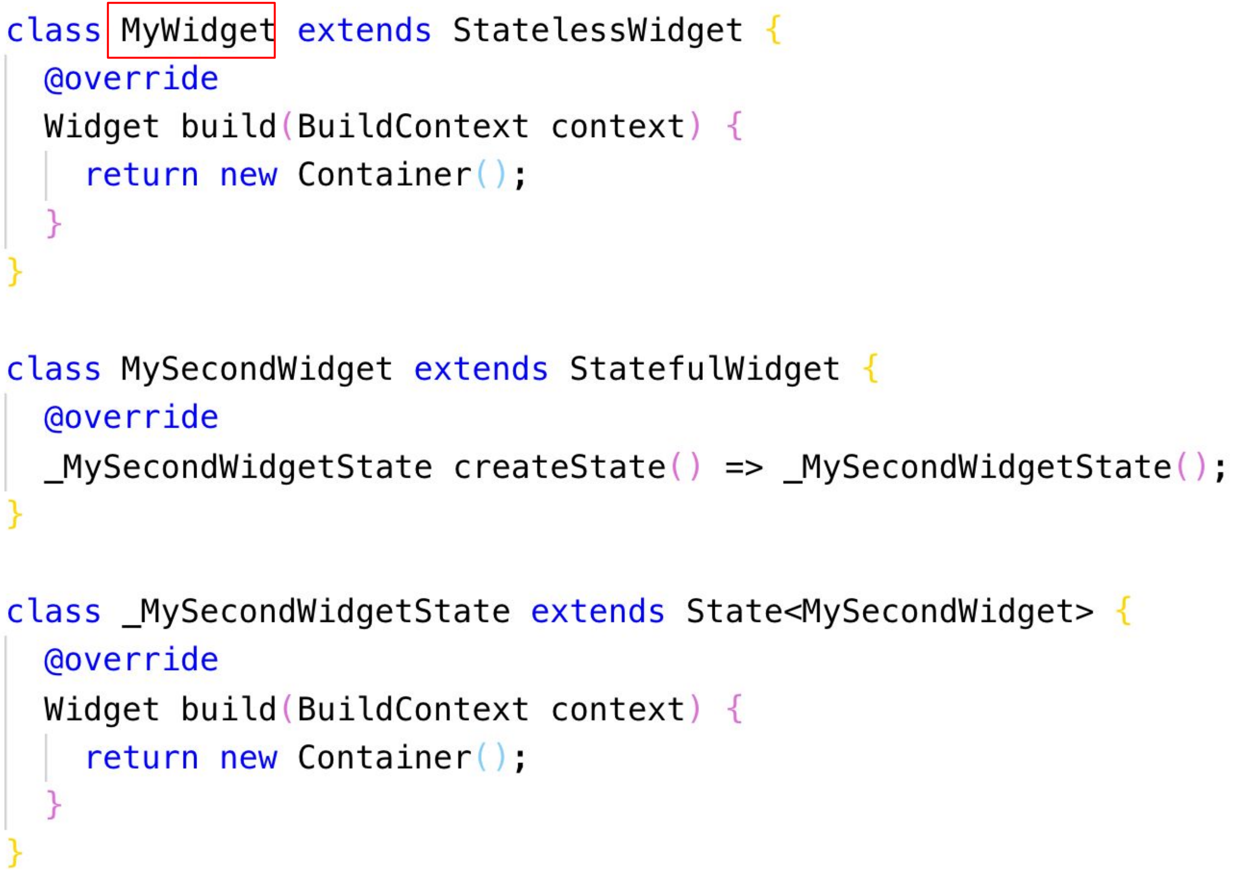
Flutter Widgets



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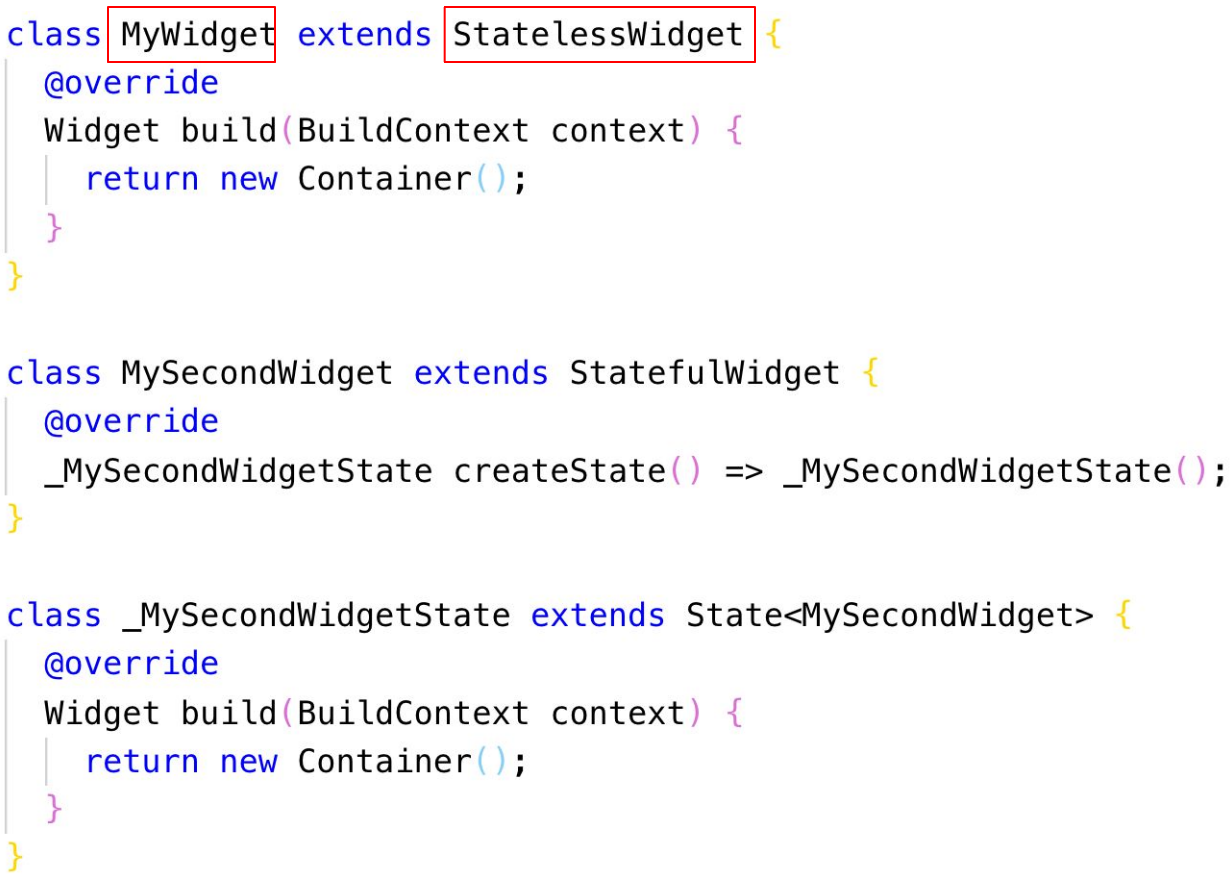
Flutter Widgets



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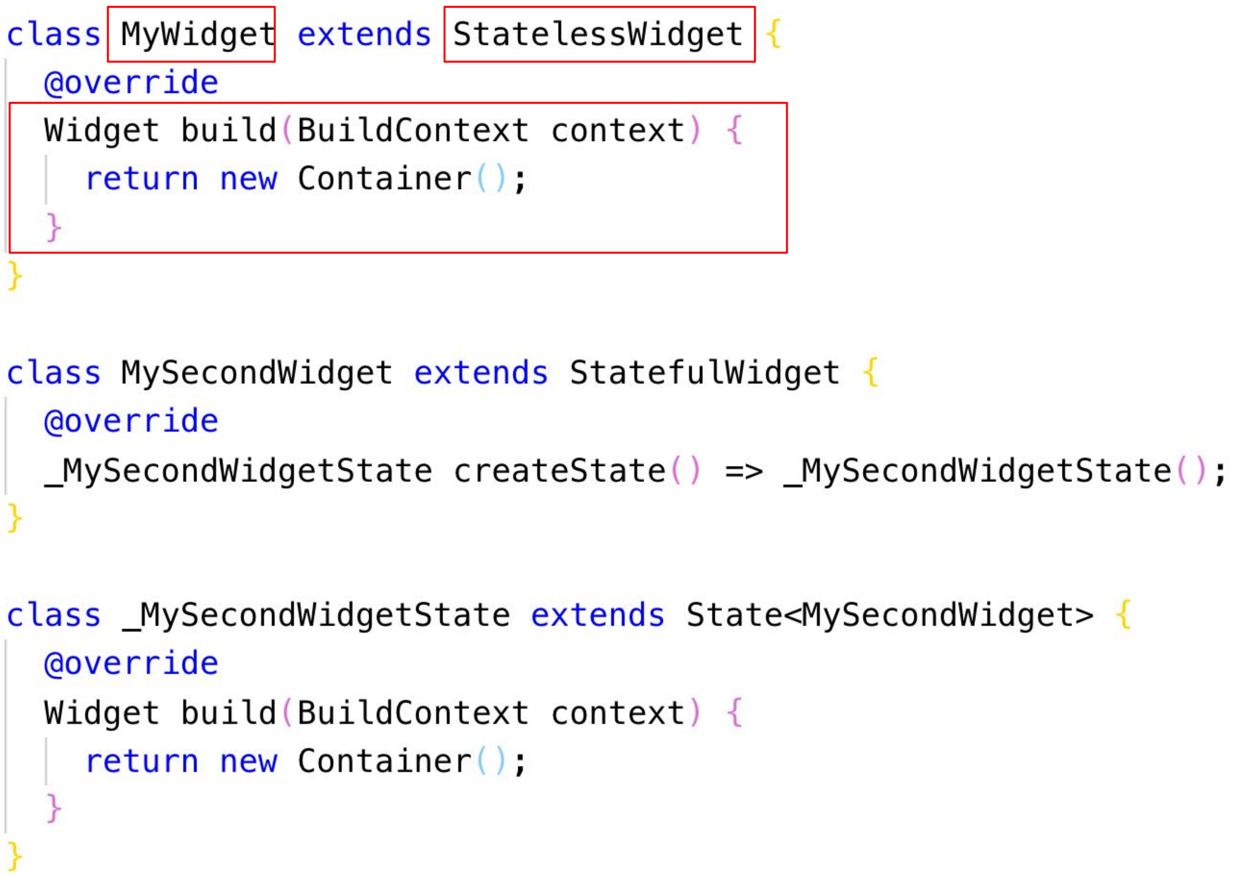
Flutter Widgets



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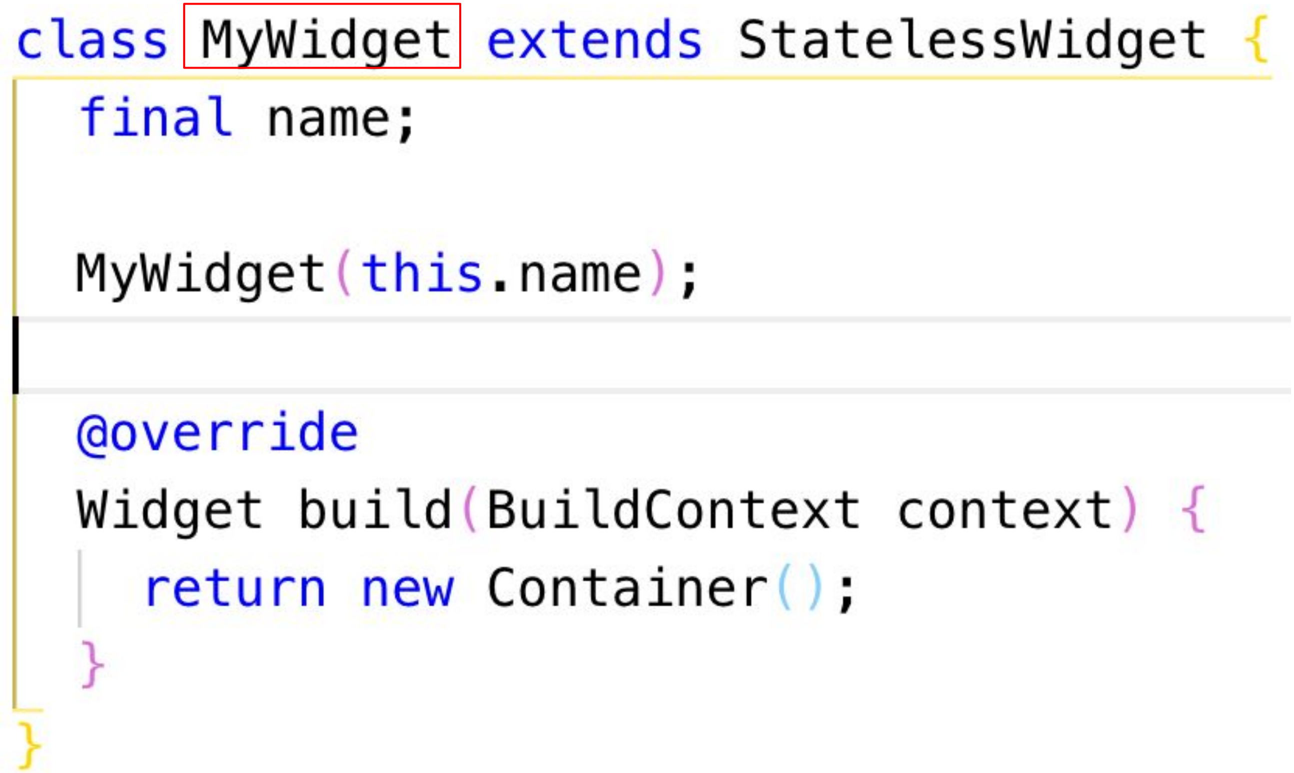
Flutter Widgets

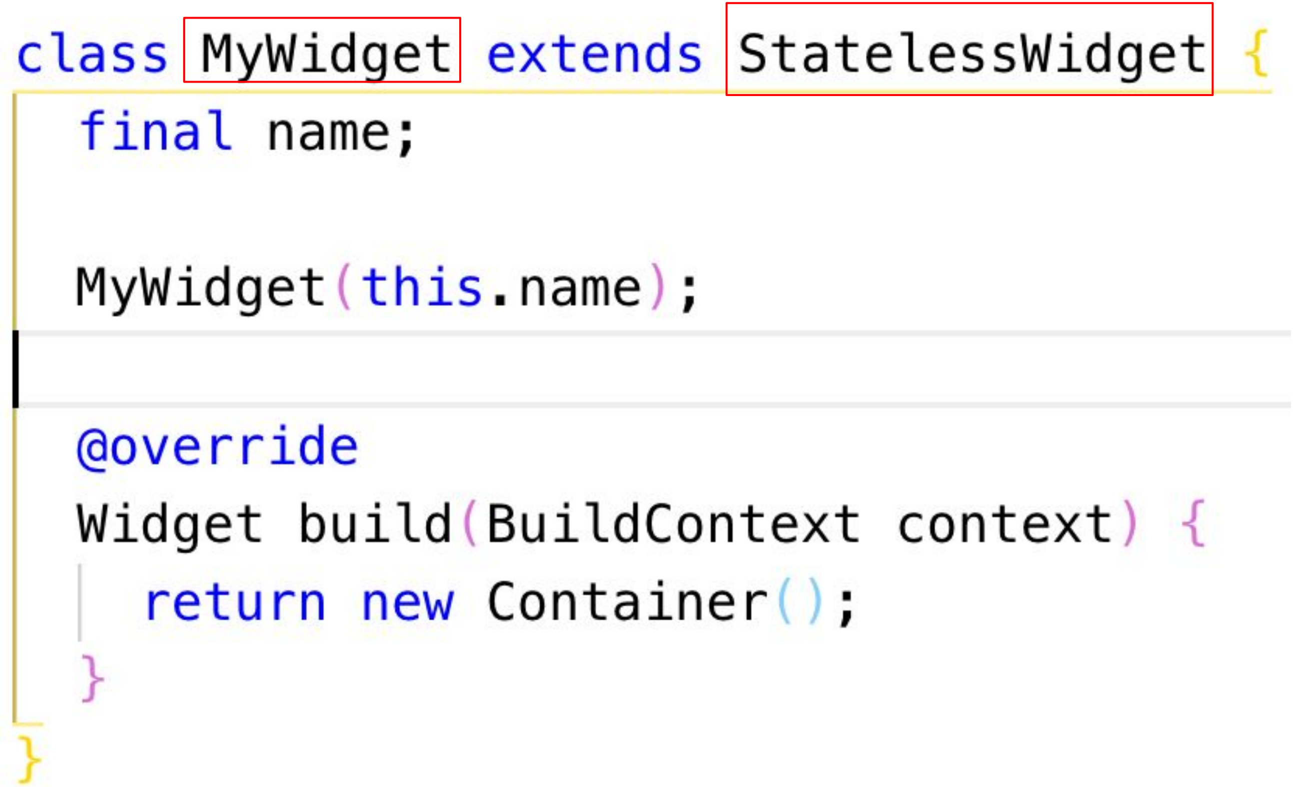


```
class MyWidget extends StatelessWidget {
  final name;

  MyWidget(this.name);

  @override
  Widget build(BuildContext context) {
    return new Container();
  }
}
```

Flutter Widgets



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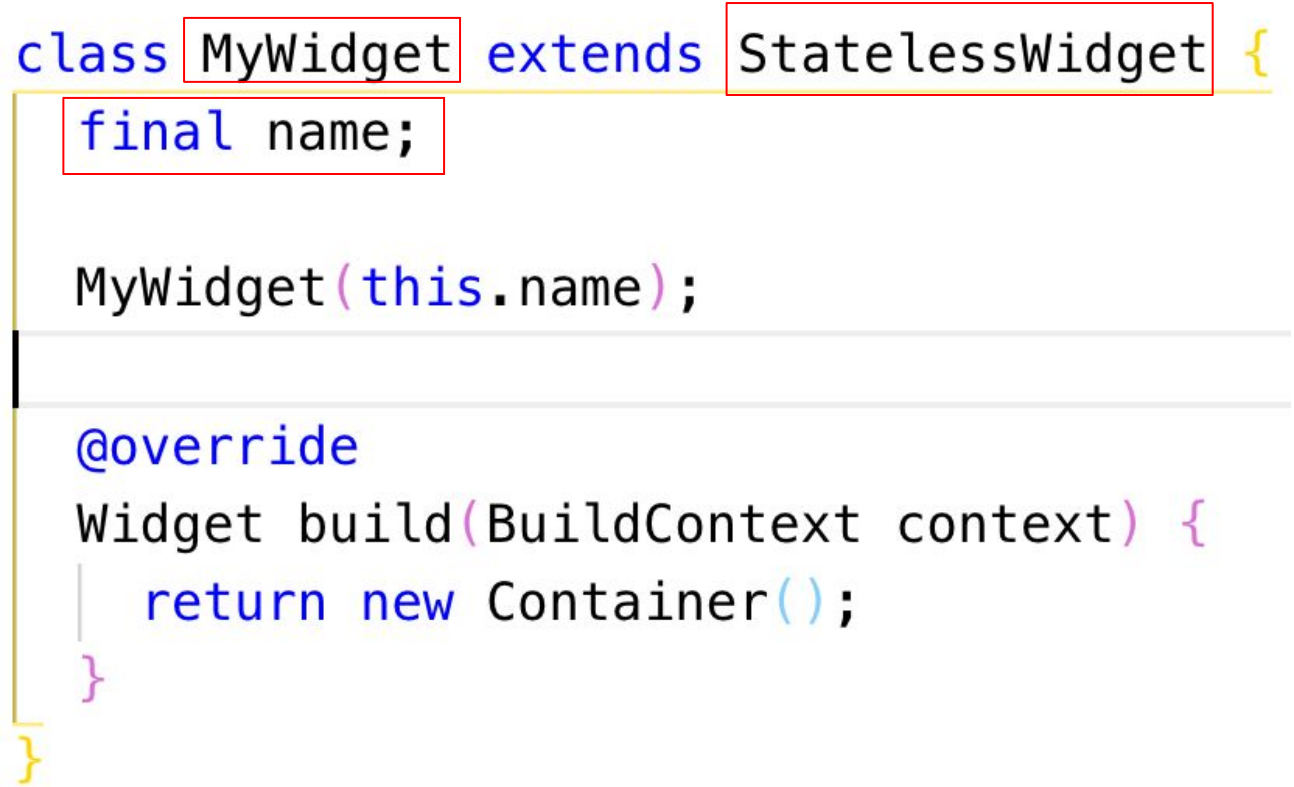
Flutter Widgets



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  Widget build(BuildContext context) {
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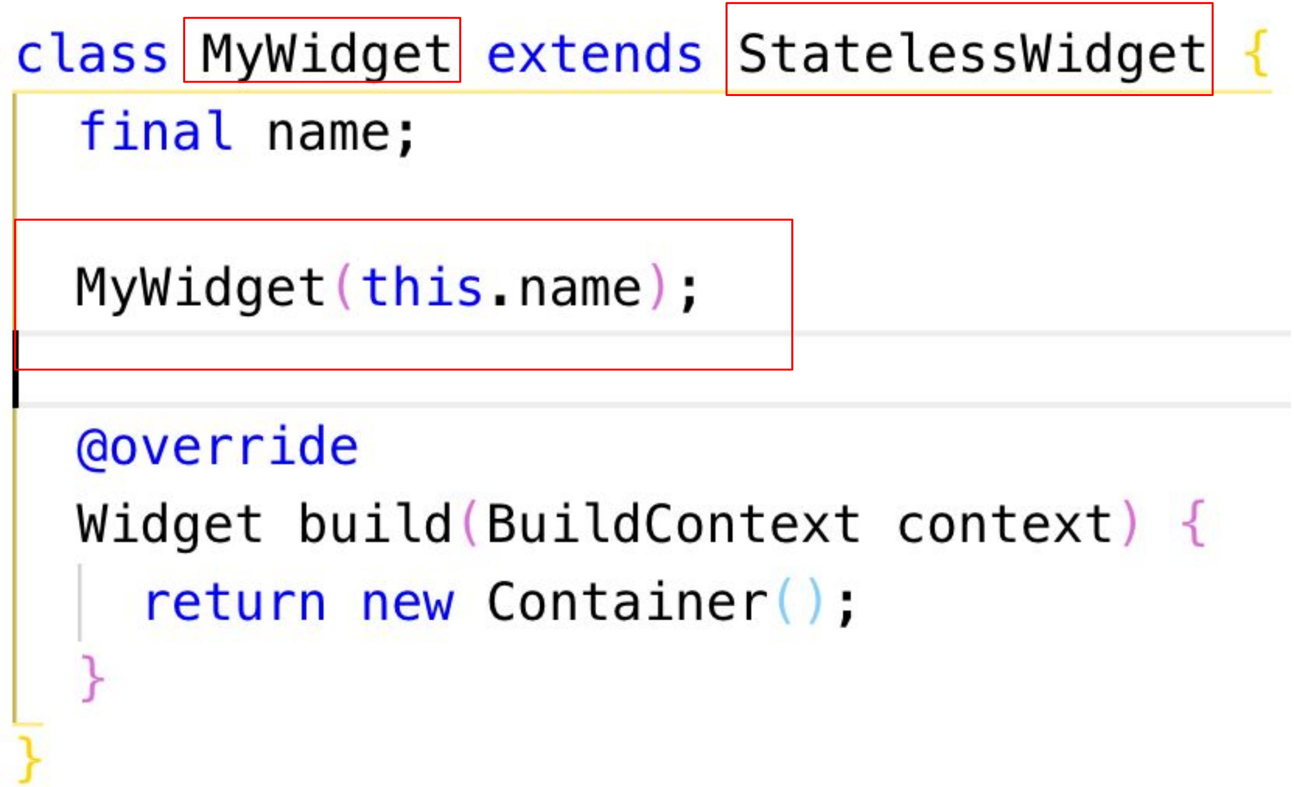
Flutter Widgets



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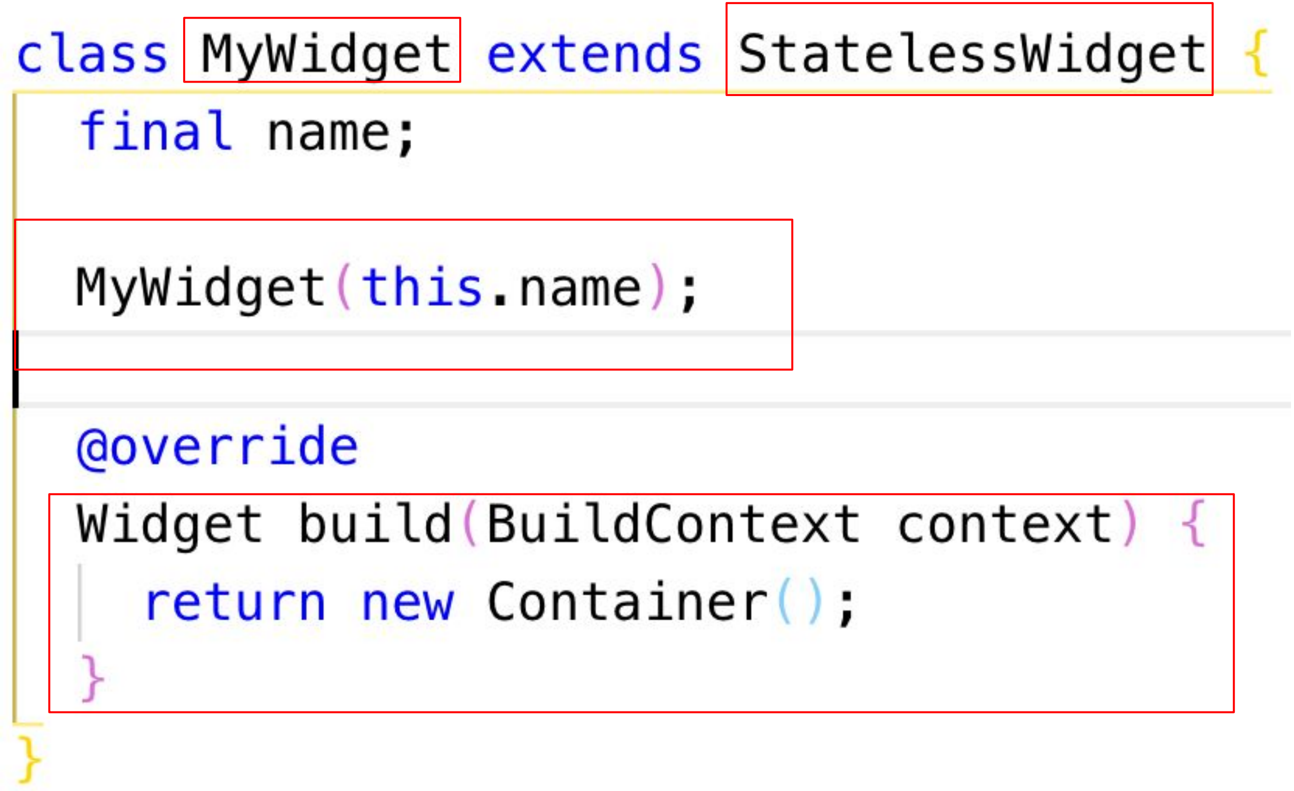
Flutter Widgets



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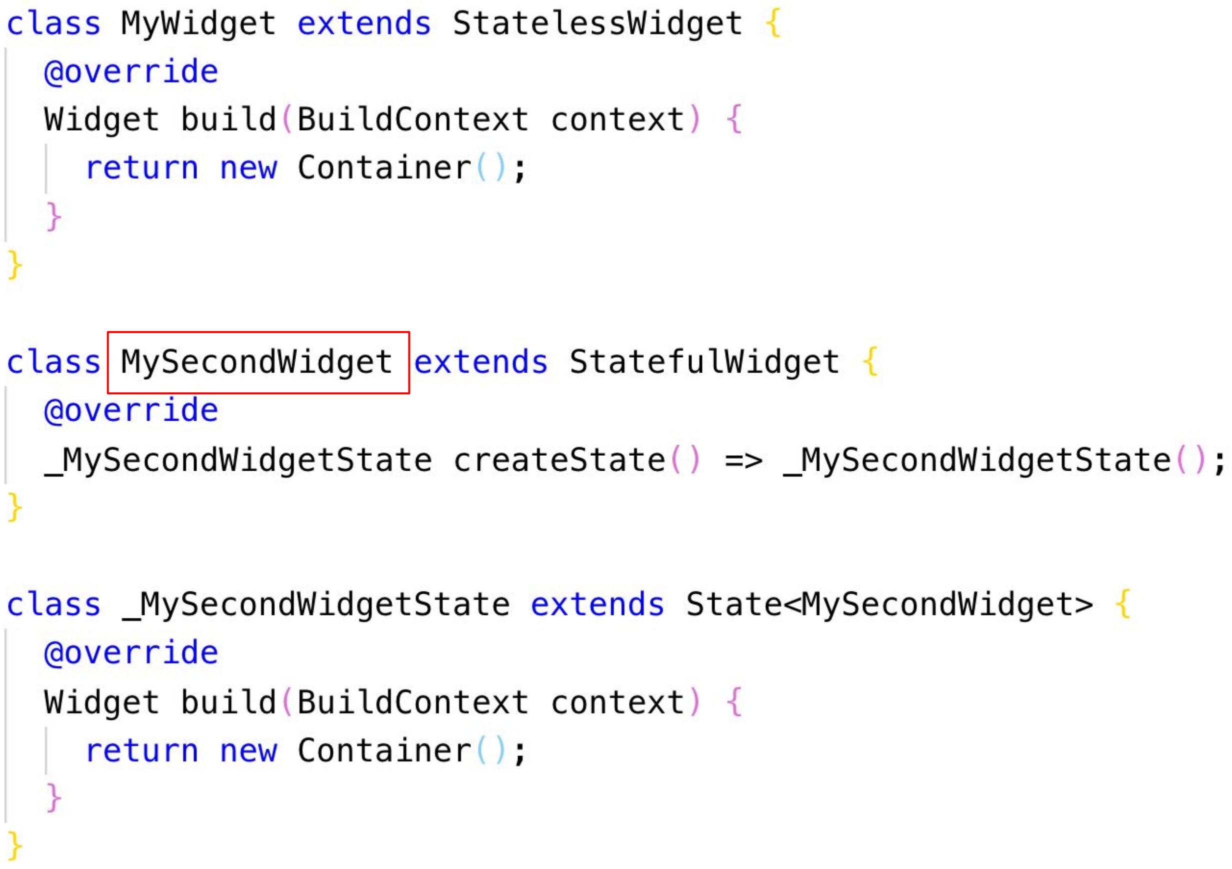
Flutter Widgets



```dart
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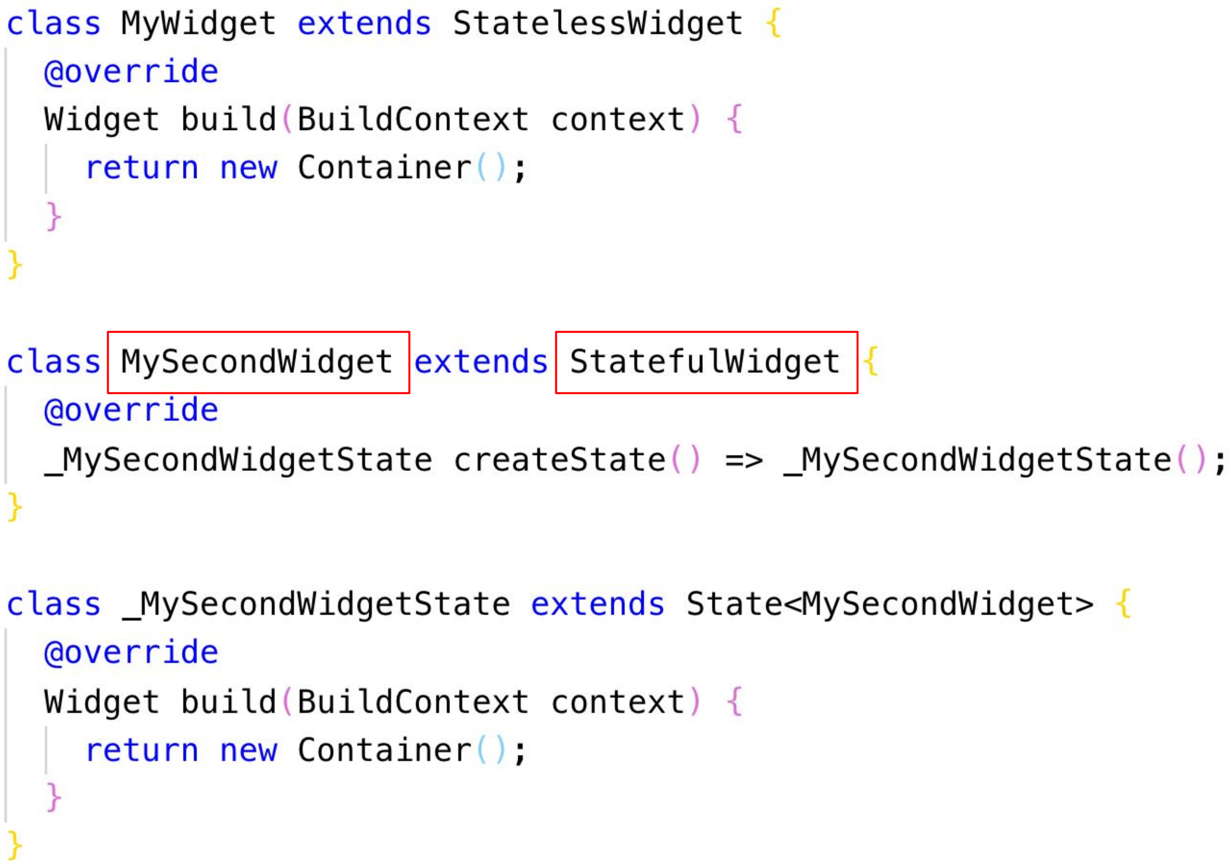
Flutter Widgets



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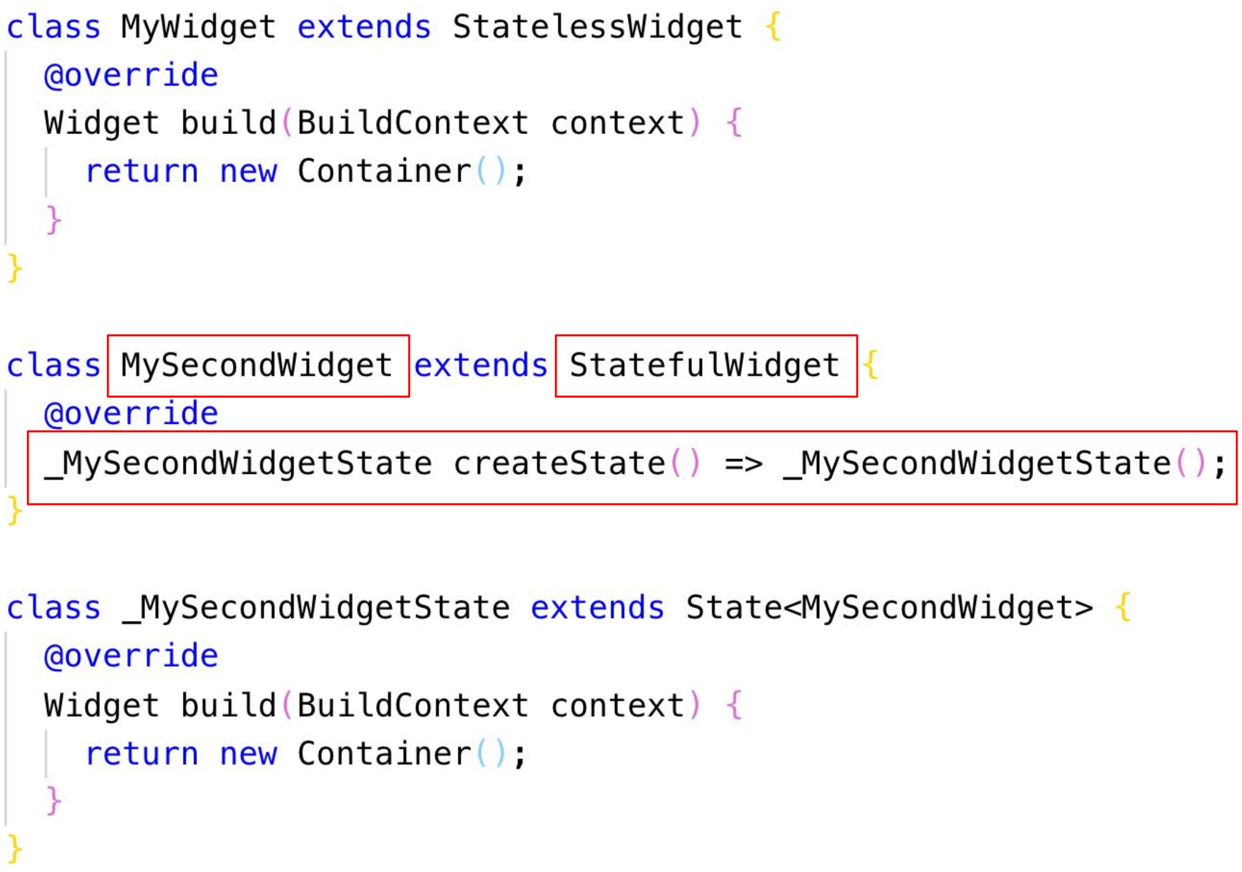
Flutter Widgets



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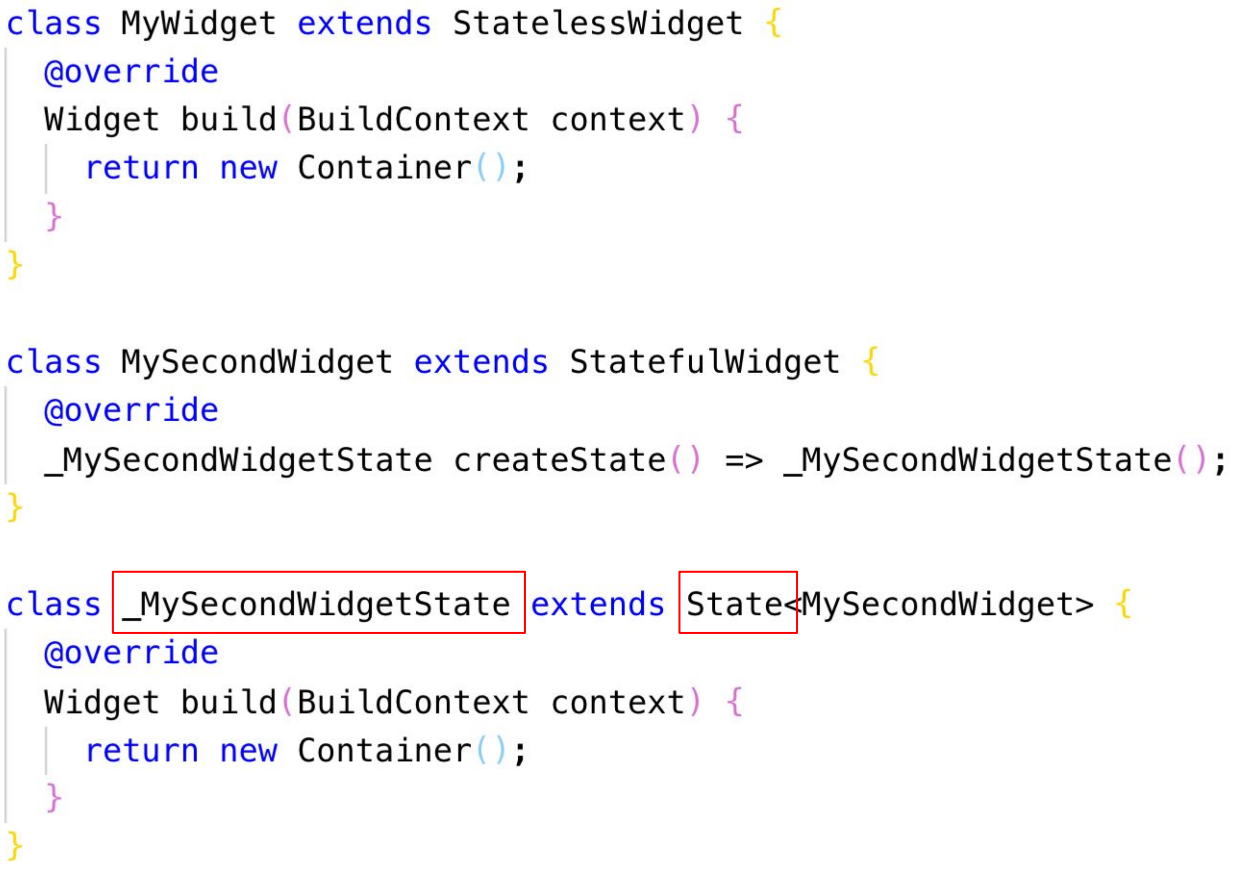
Flutter Widgets



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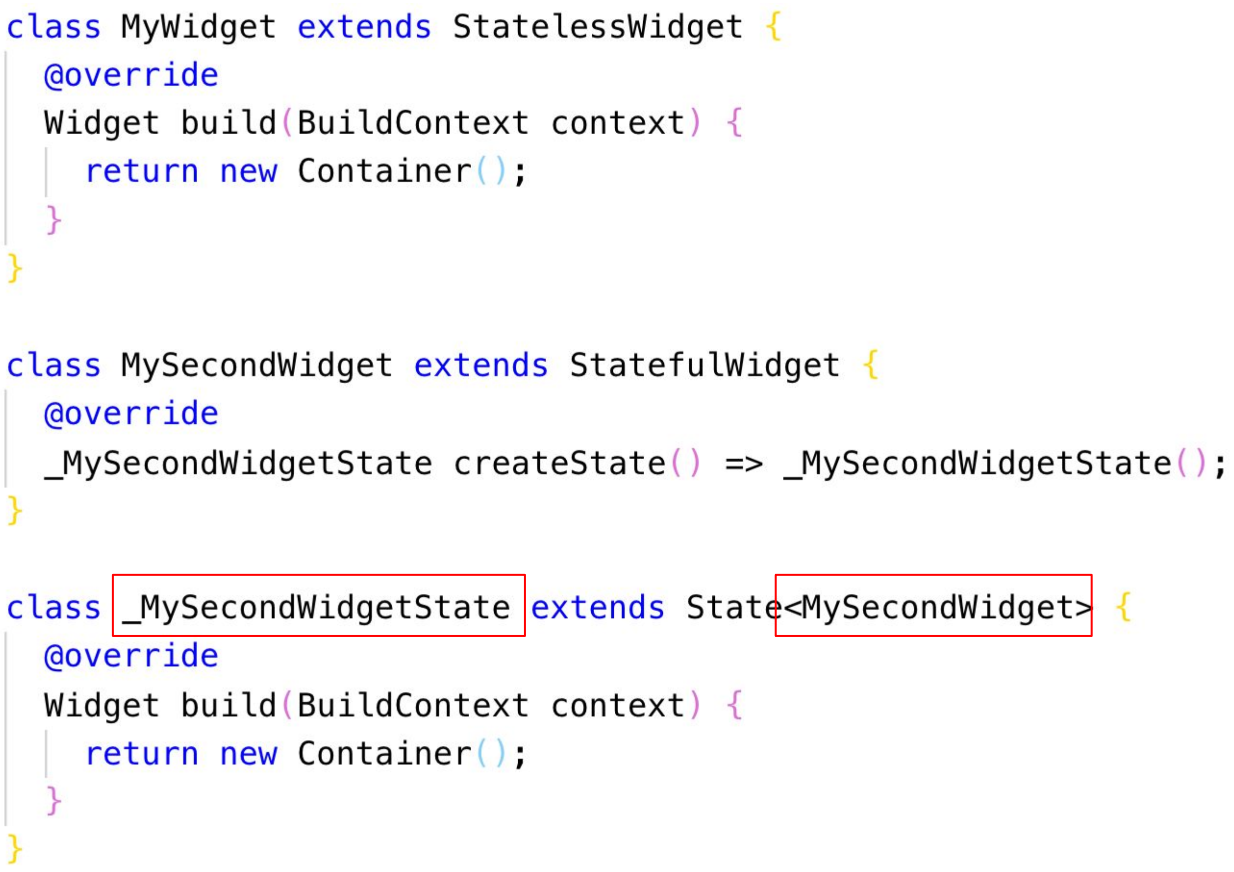
Flutter Widgets



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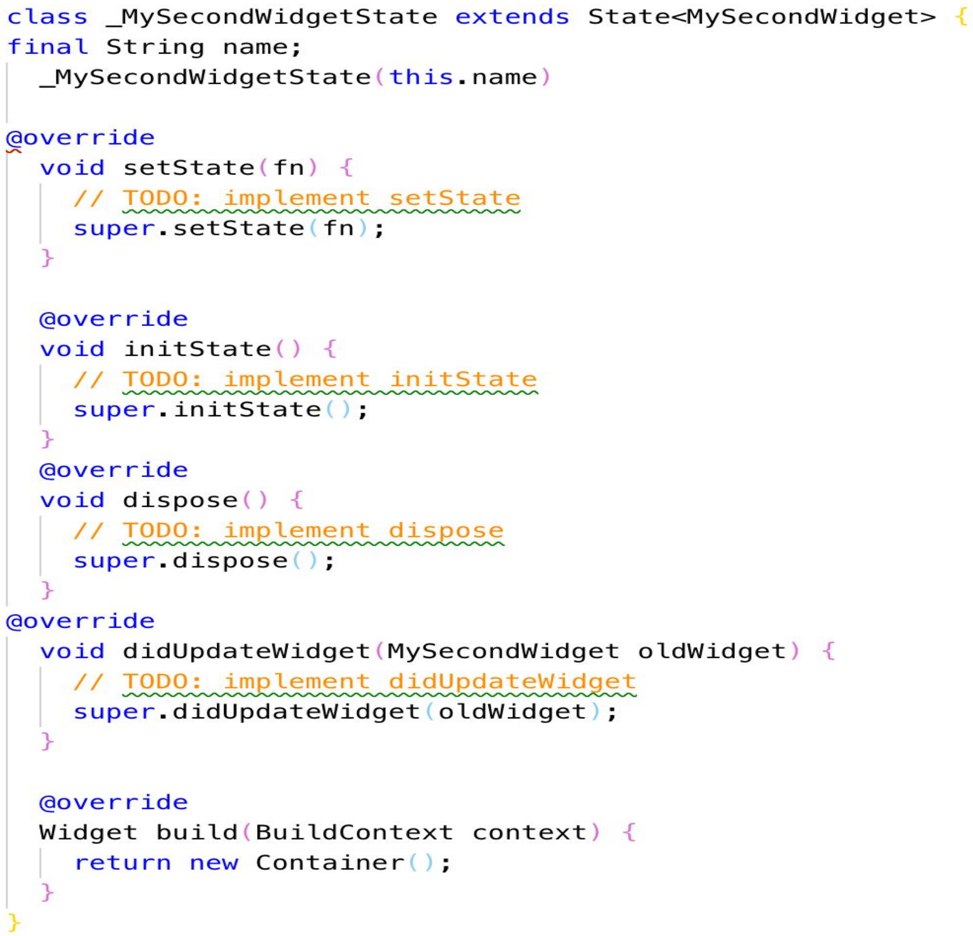
Flutter Widgets



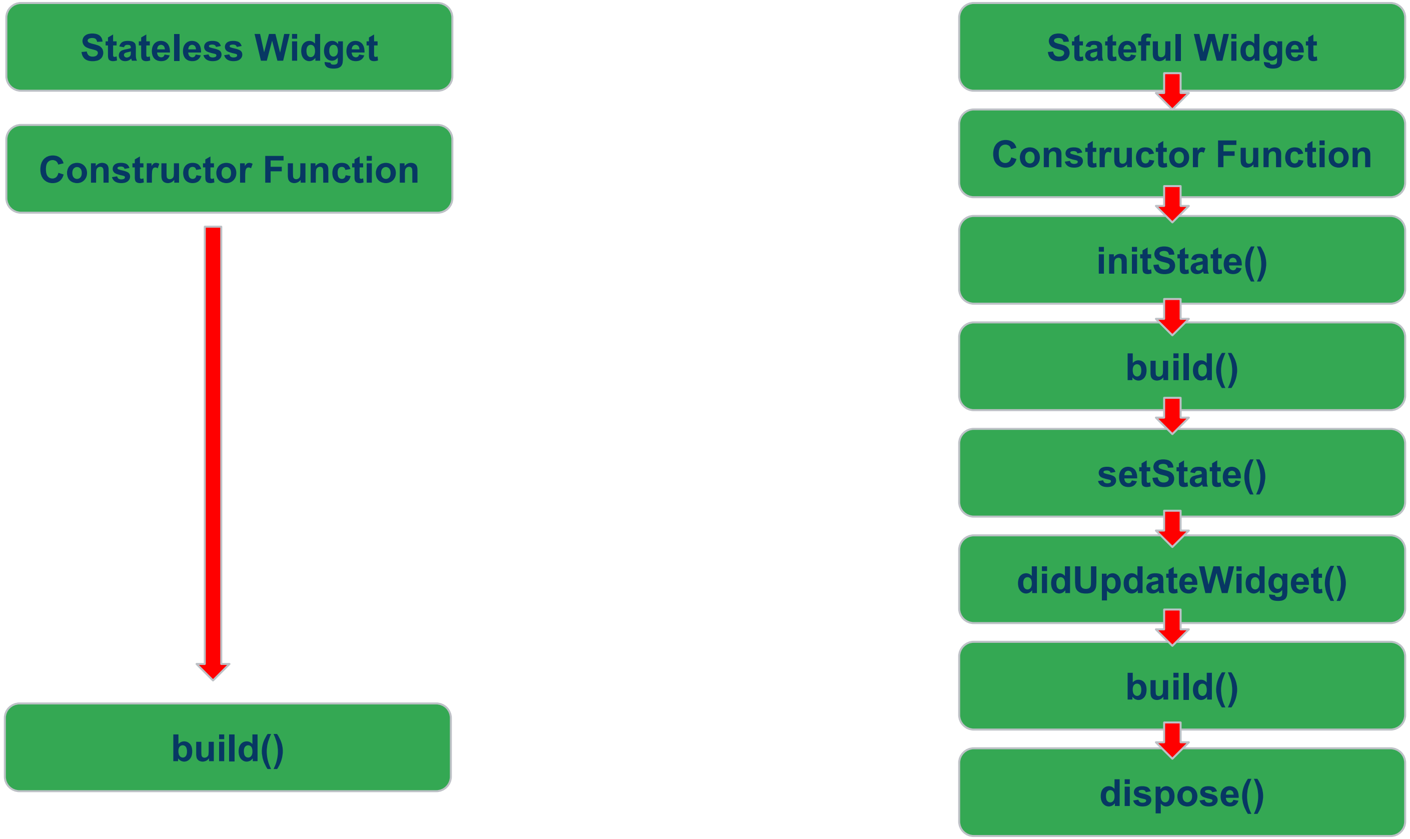
```
class _MySecondWidgetState extends State<MySecondWidget> {
final String name;
  _MySecondWidgetState(this.name)

@override
  void setState(fn) {
    // TODO: implement setState
    super.setState(fn);
  }

  @override
  void initState() {
    // TODO: implement initState
    super.initState();
  }
  @override
  void dispose() {
    // TODO: implement dispose
    super.dispose();
  }
@override
  void didUpdateWidget(MySecondWidget oldWidget) {
    // TODO: implement didUpdateWidget
    super.didUpdateWidget(oldWidget);
  }

  @override
  Widget build(BuildContext context) {
    return new Container();
  }
}
```

Flutter Widgets



Stateless Widget

Constructor Function

build()

Stateful Widget

Constructor Function

initState()

build()

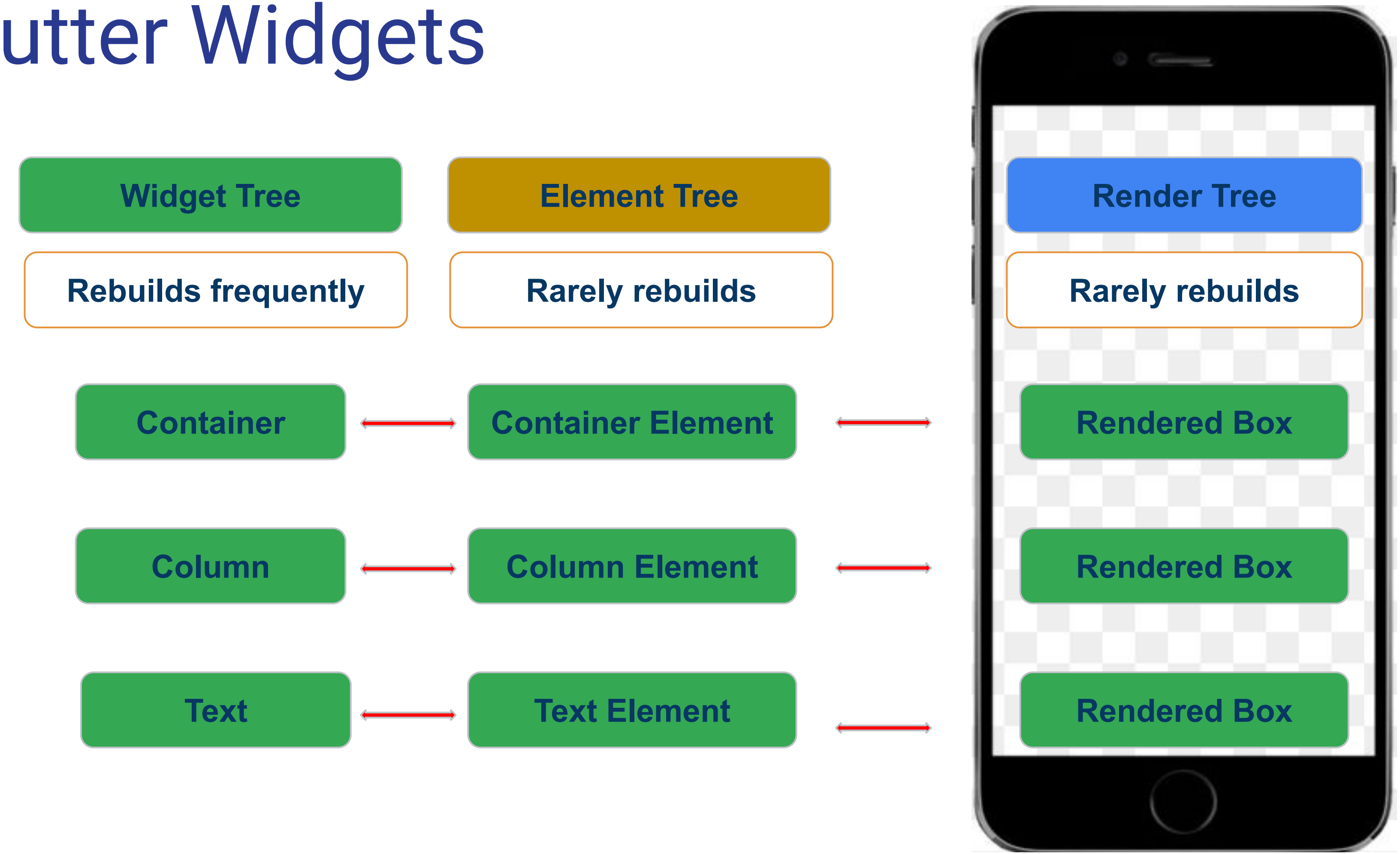
setState()

didUpdateWidget()

build()

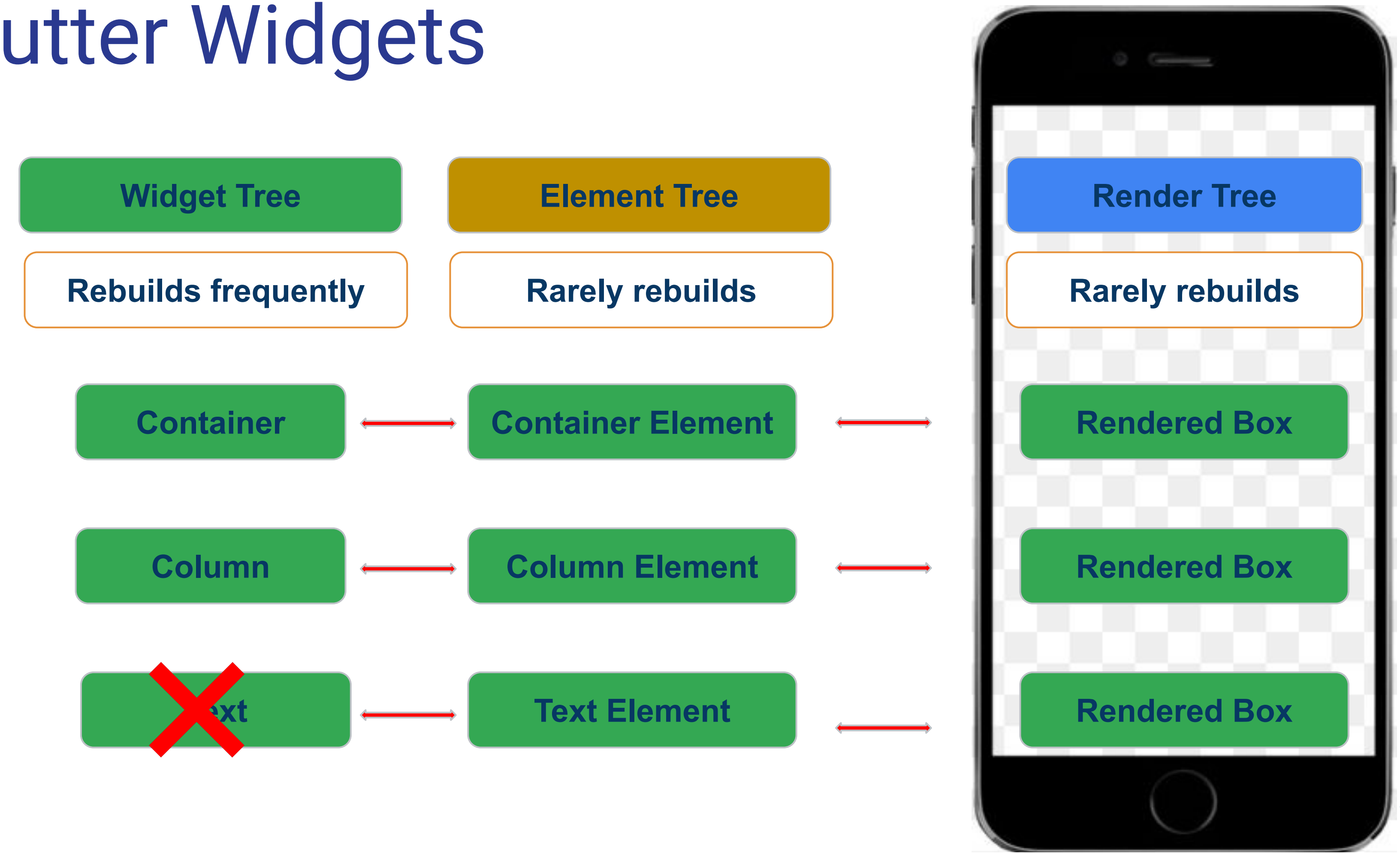
dispose()

Flutter Widgets



Widget Tree	Element Tree	Render Tree
Rebuilds frequently	Rarely rebuilds	Rarely rebuilds
Container	Container Element	Rendered Box
Column	Column Element	Rendered Box
Text	Text Element	Rendered Box

Flutter Widgets



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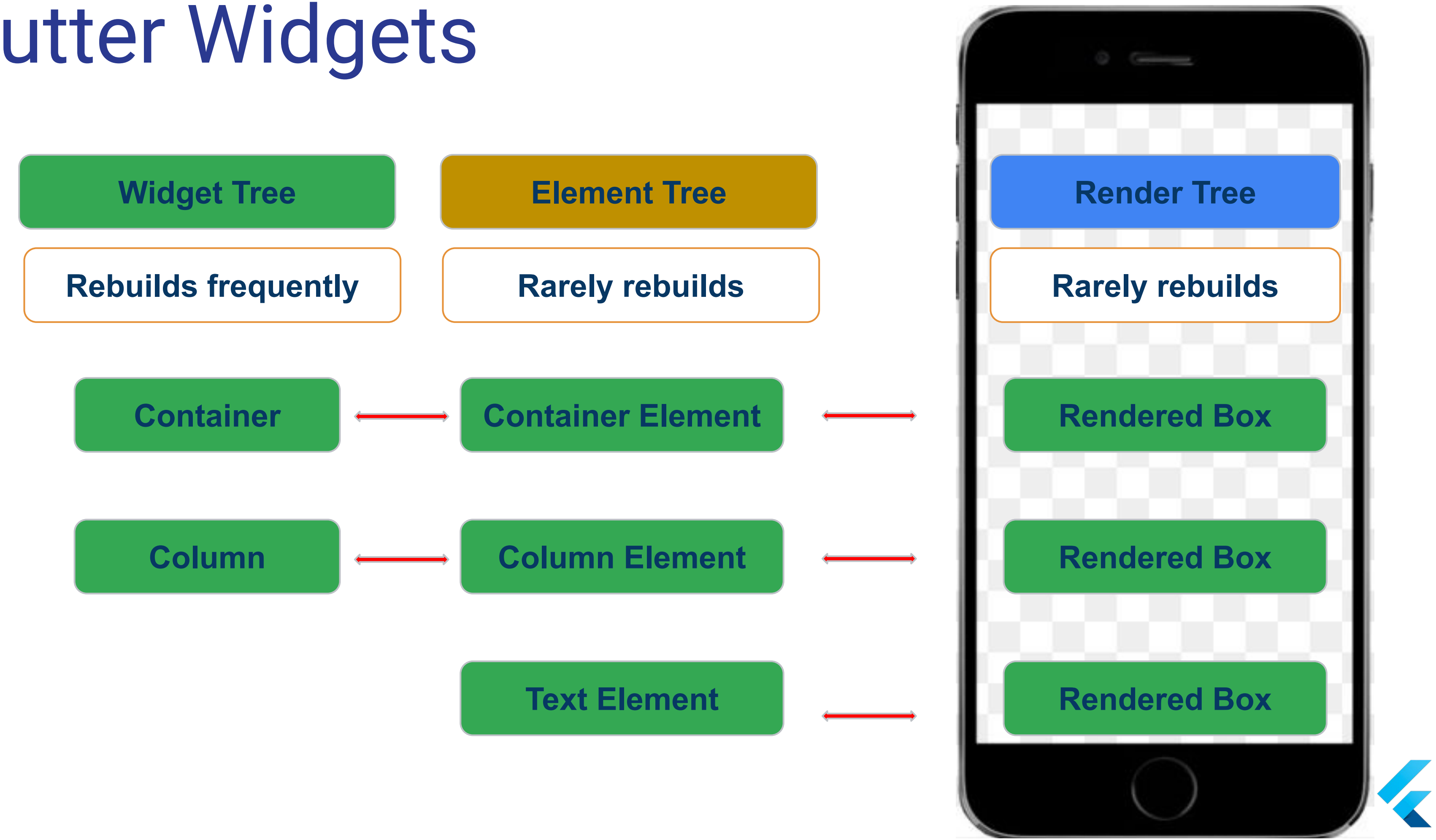
~~Text~~ ↔ Text Element ↔ Rendered Box

Flutter Widgets



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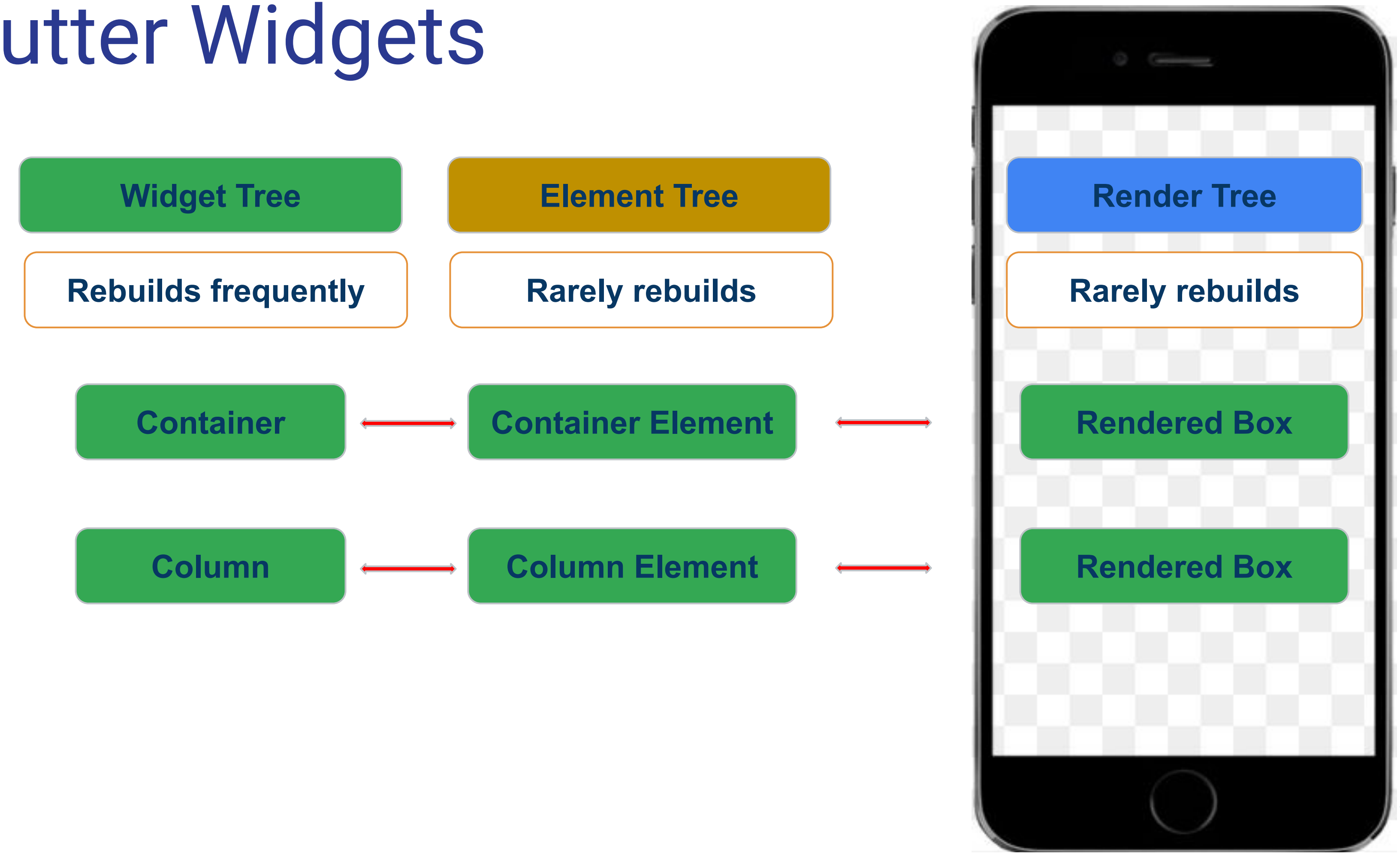
Rendered Box

Flutter Widgets



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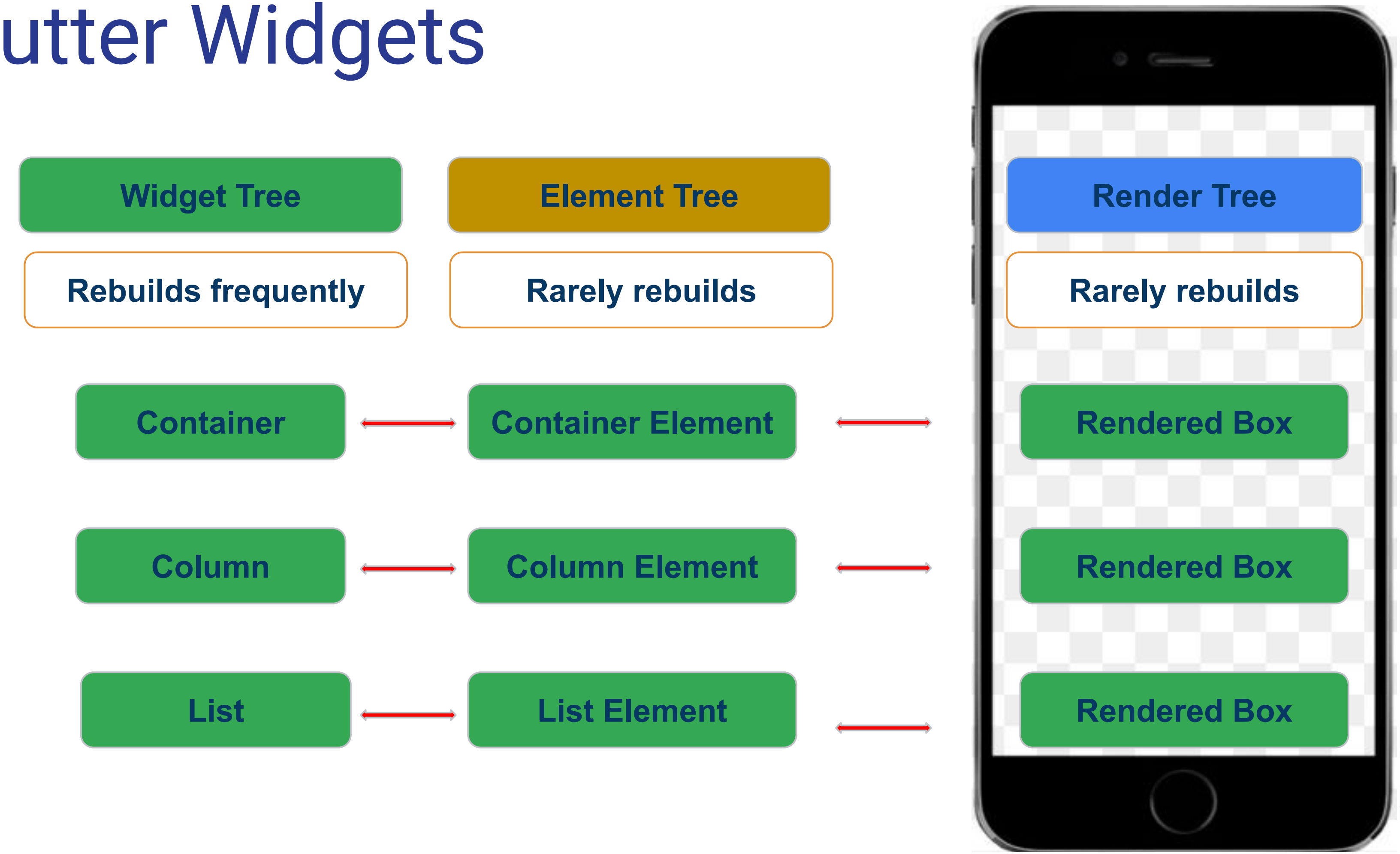
Flutter Widgets



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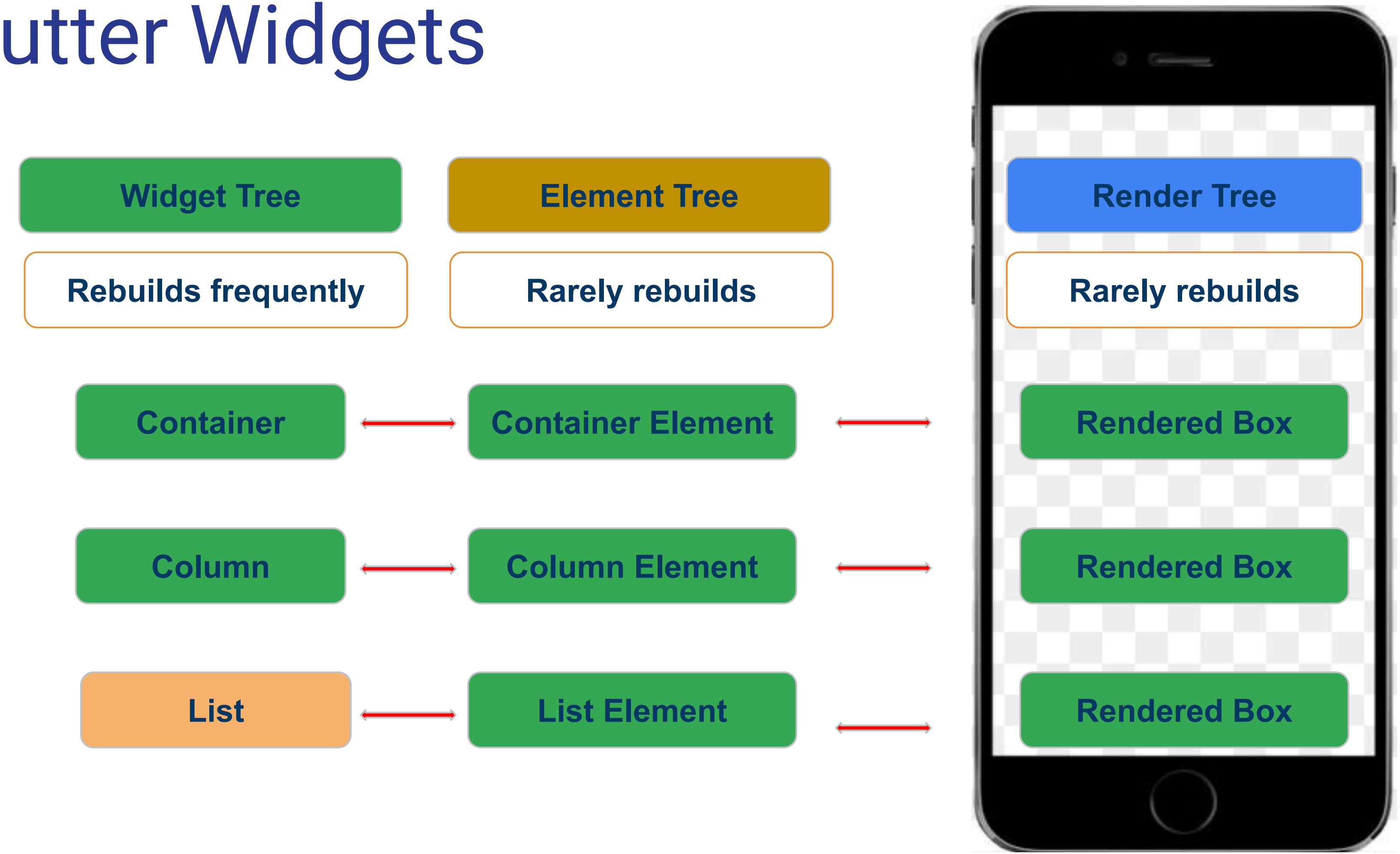
Flutter Widgets



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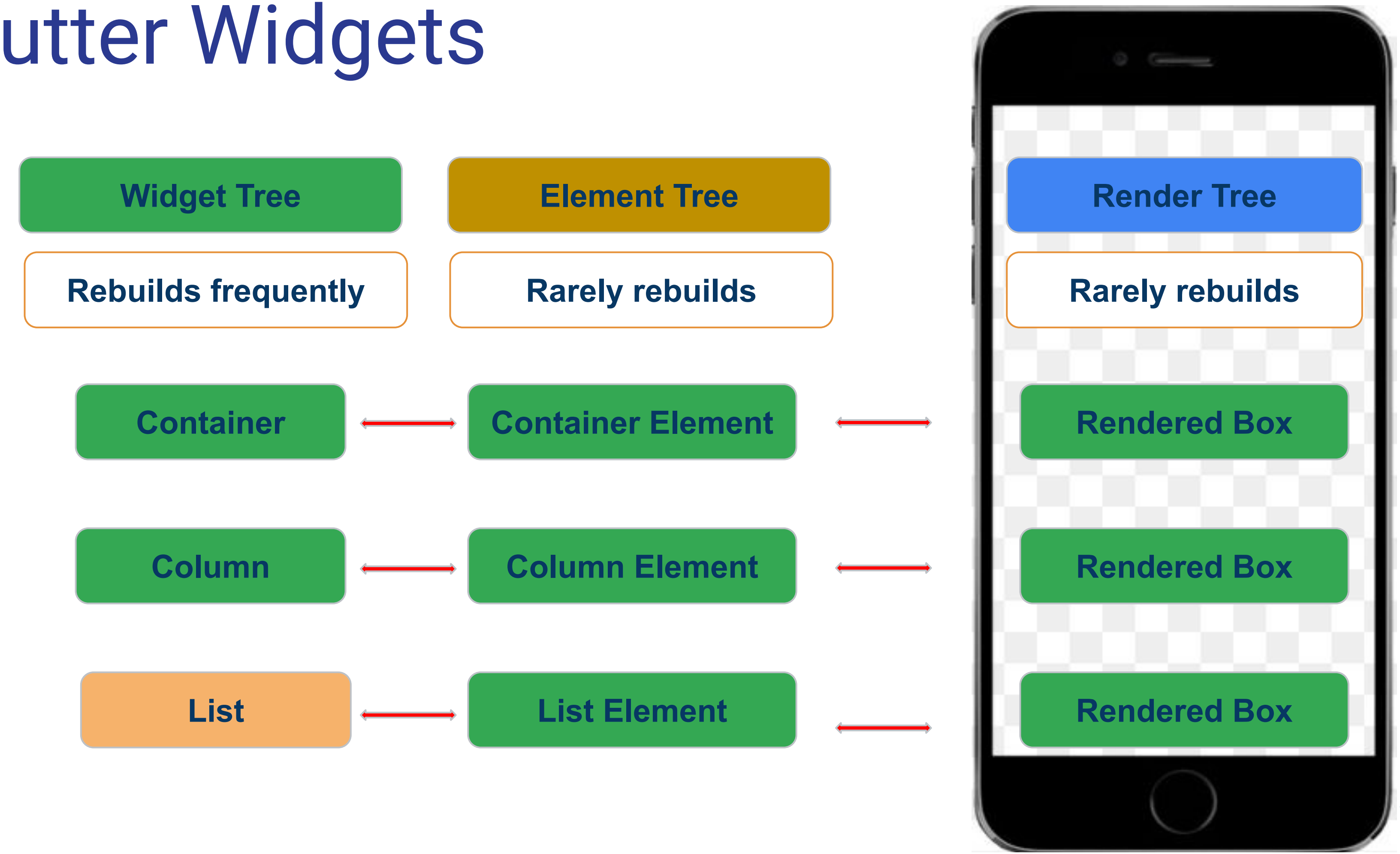

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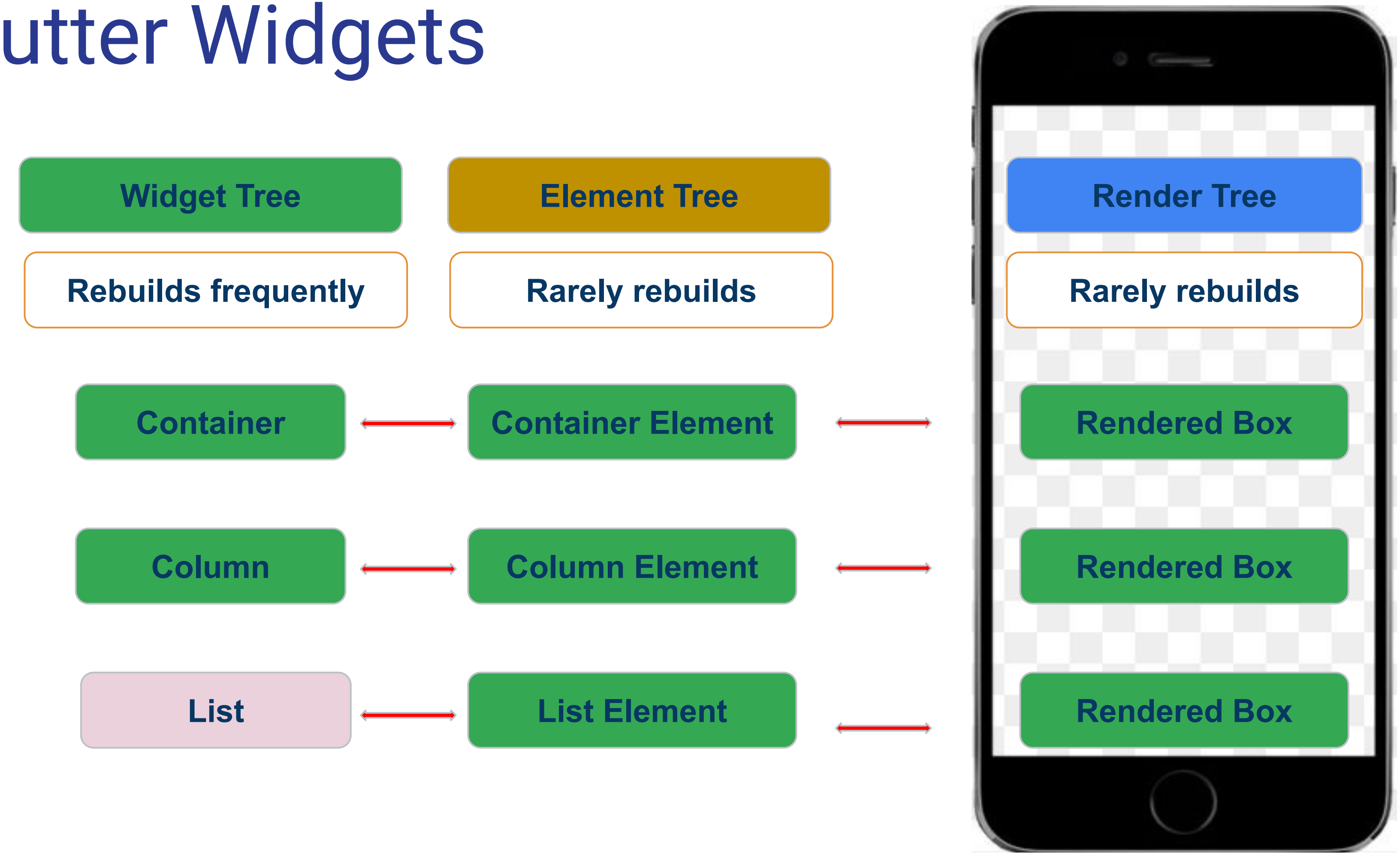

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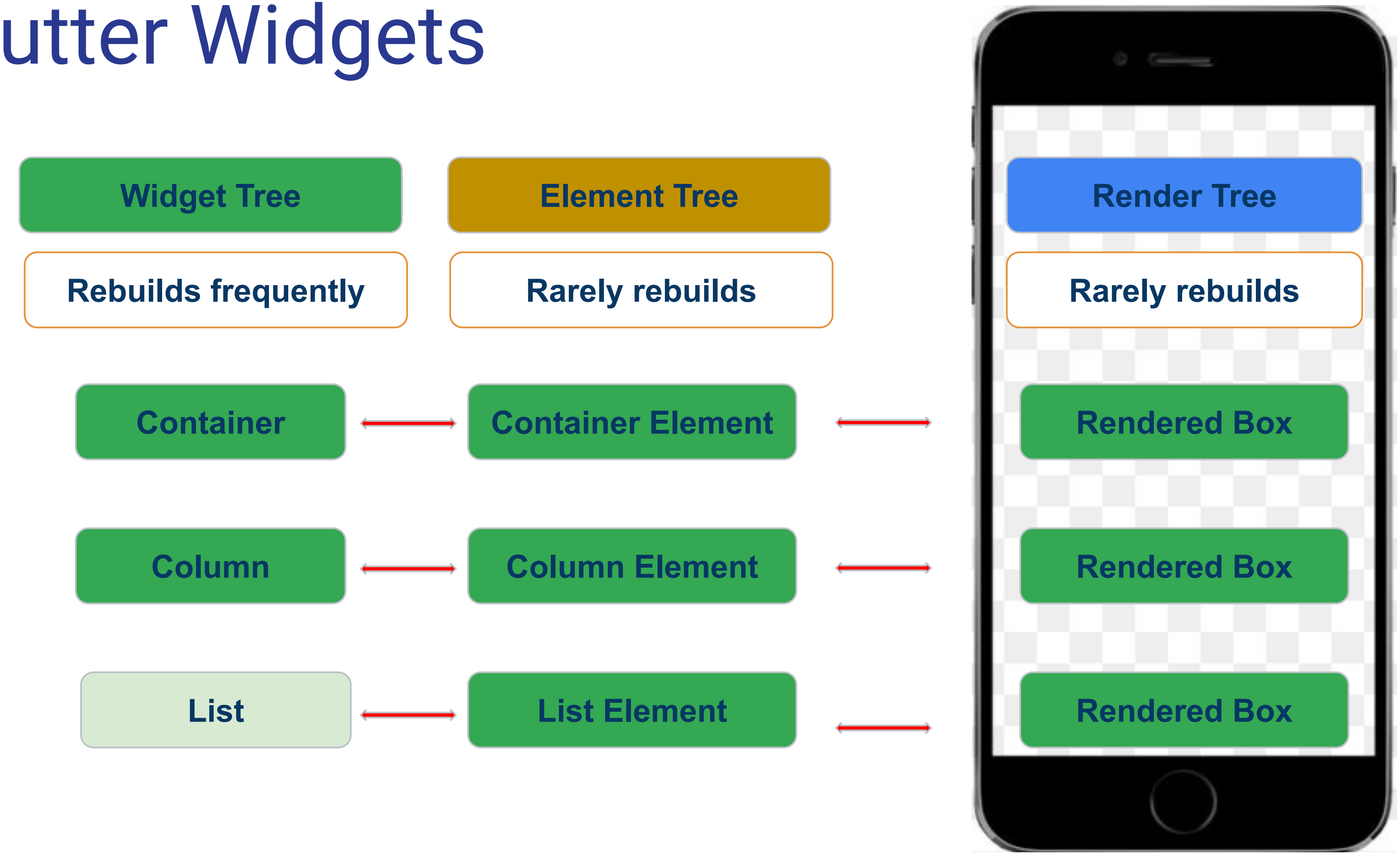

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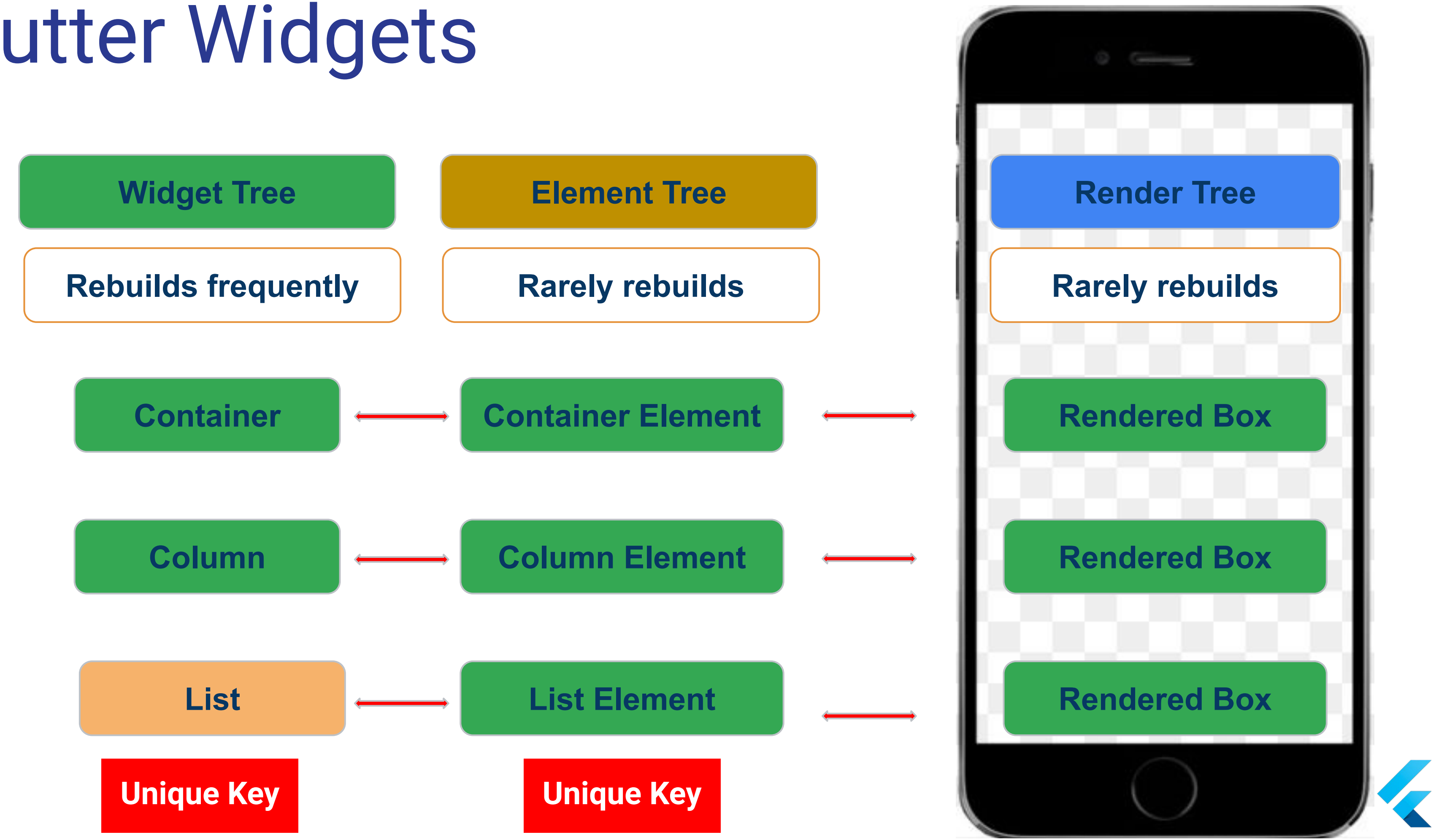

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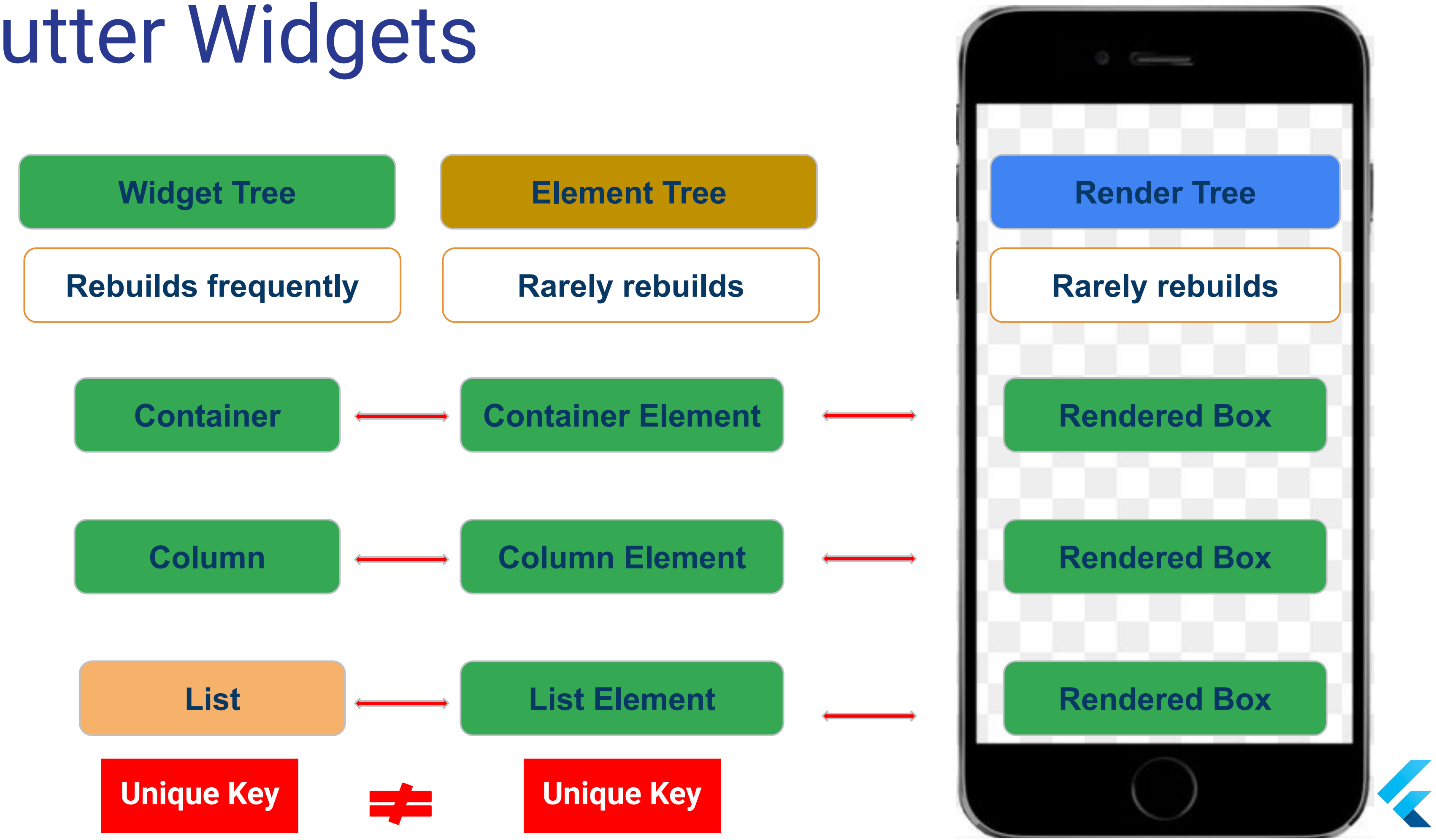
Unique Key

Unique Key

Flutter Widgets



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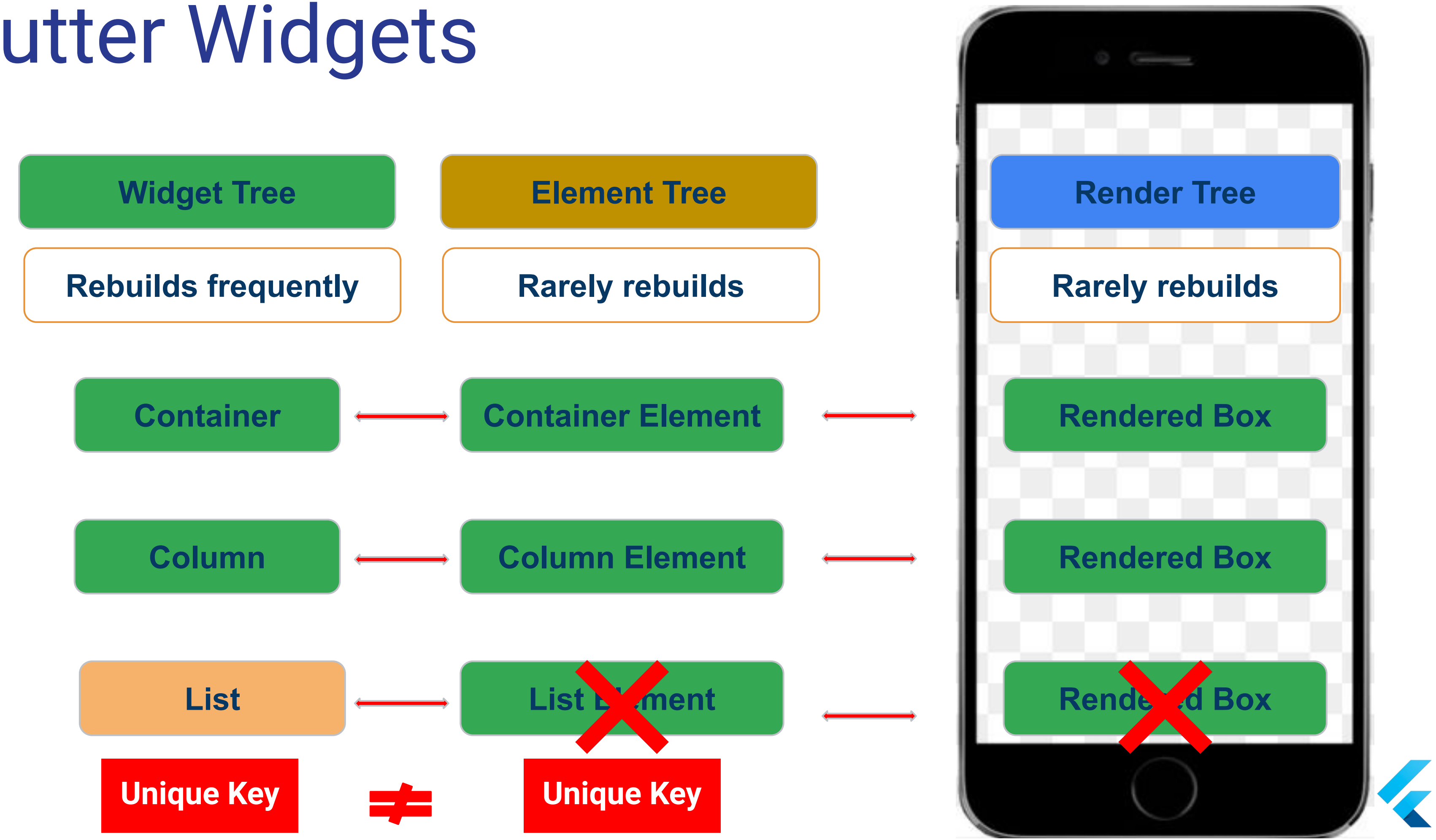
Unique Key ≠	Unique Key	

Flutter Widgets



Widget Tree

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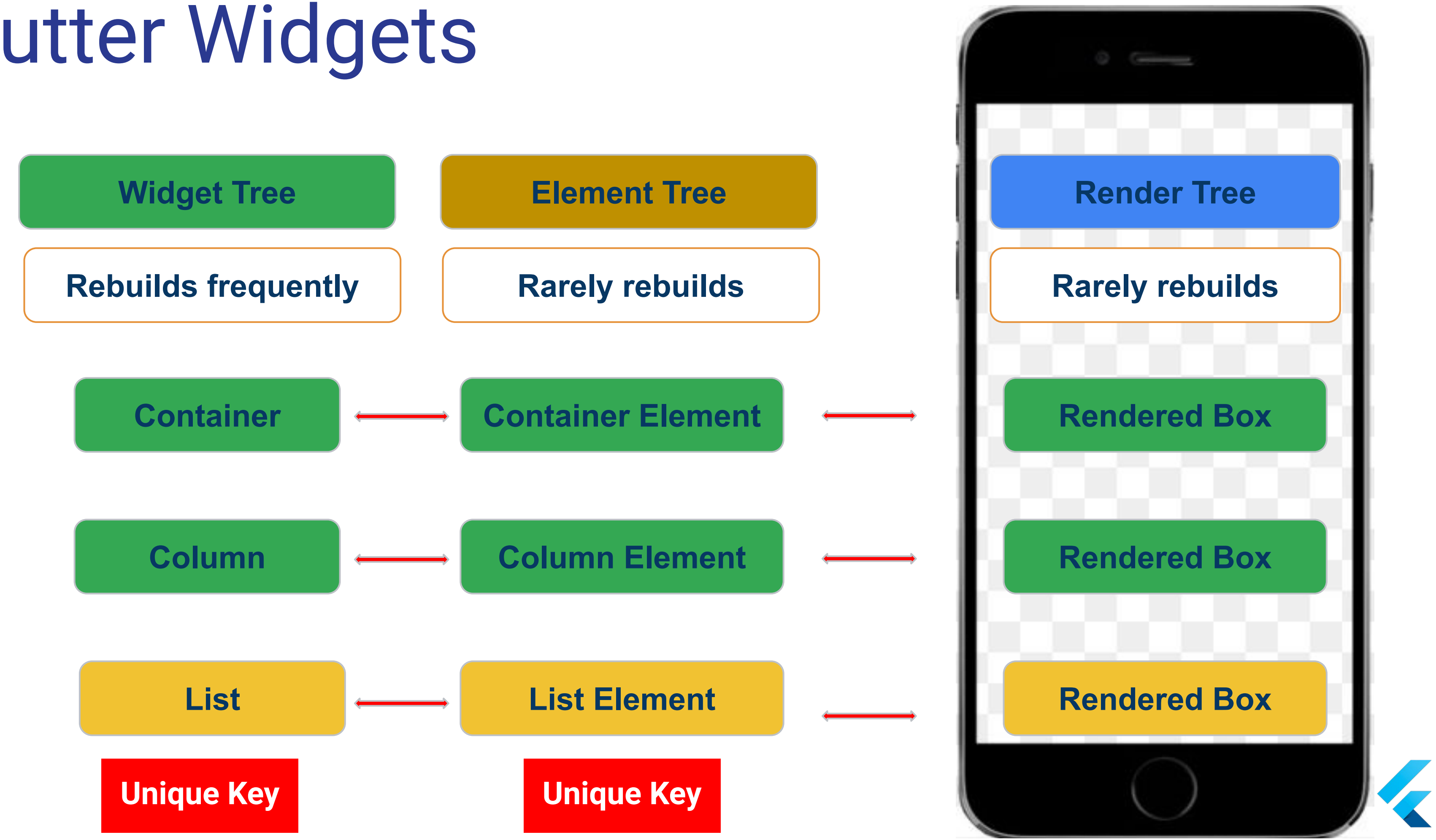
Unique Key ≠ Unique Key

Flutter Widgets



Widget Tree

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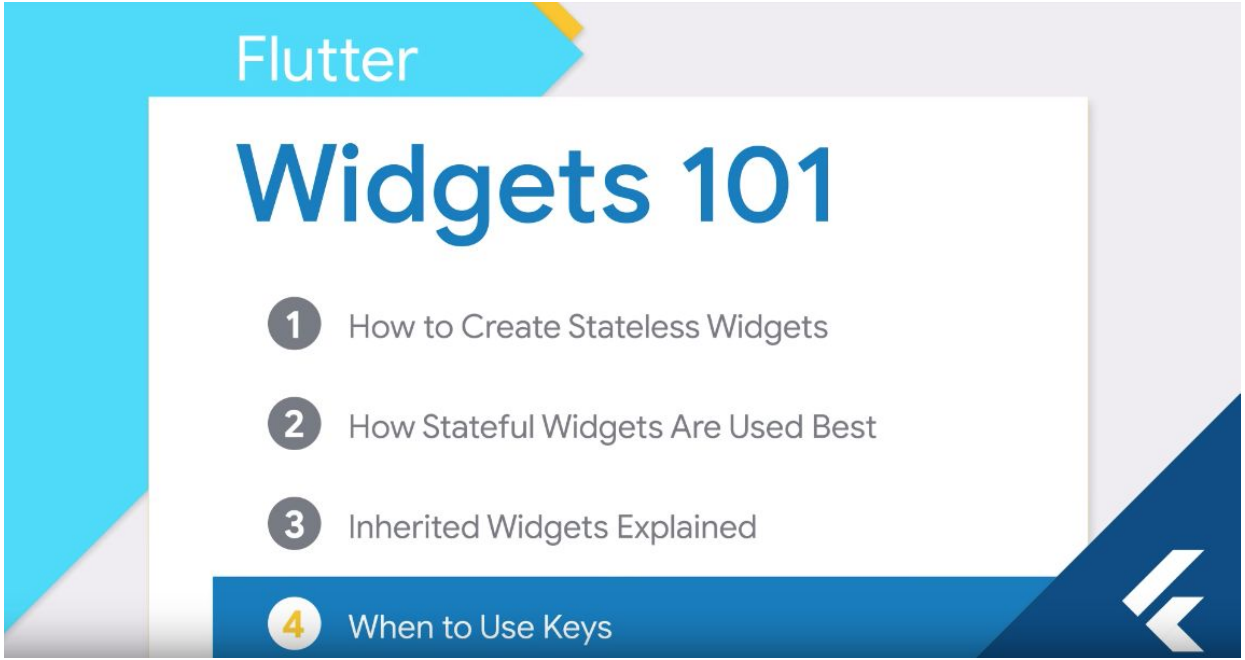
Flutter Widgets



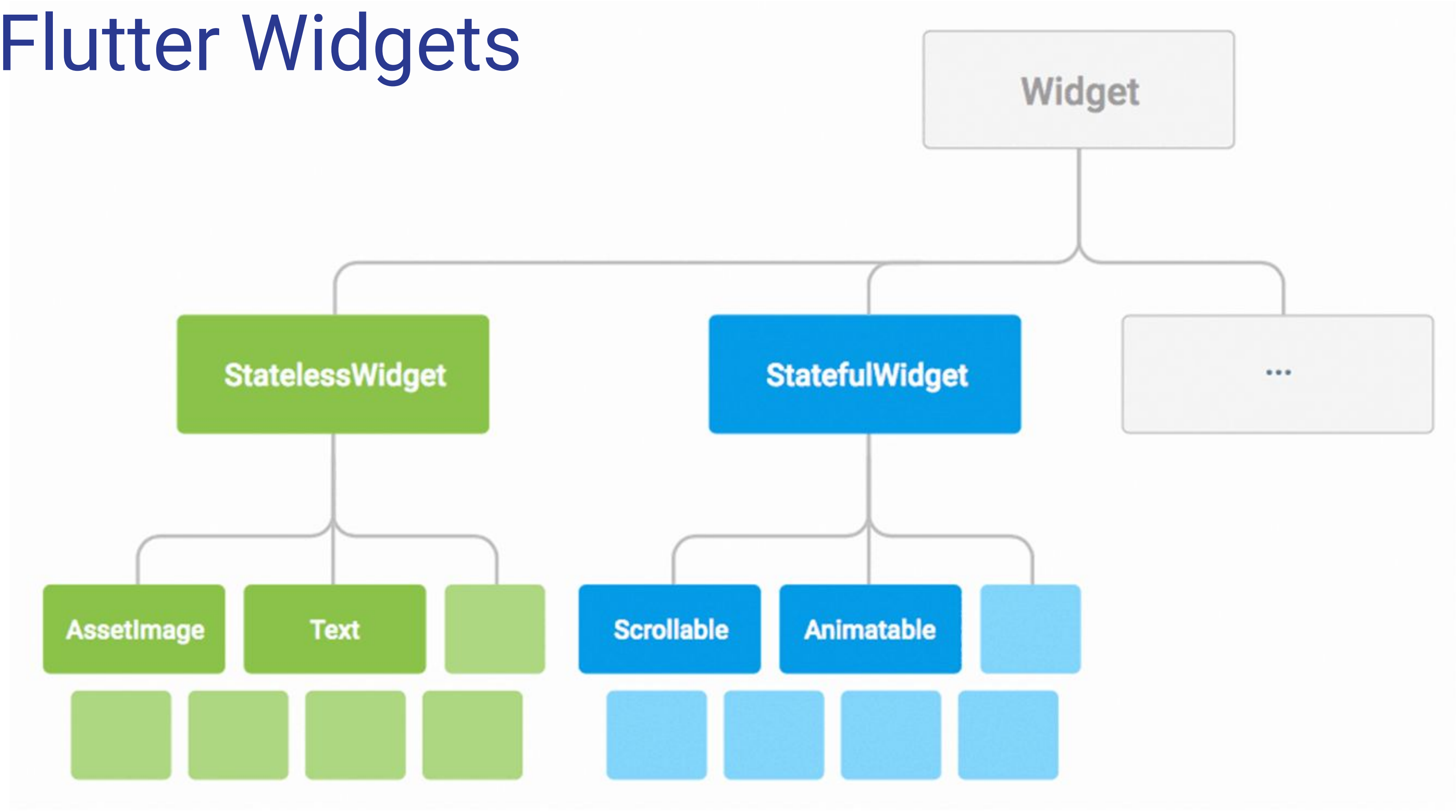
Flutter

Widgets 101

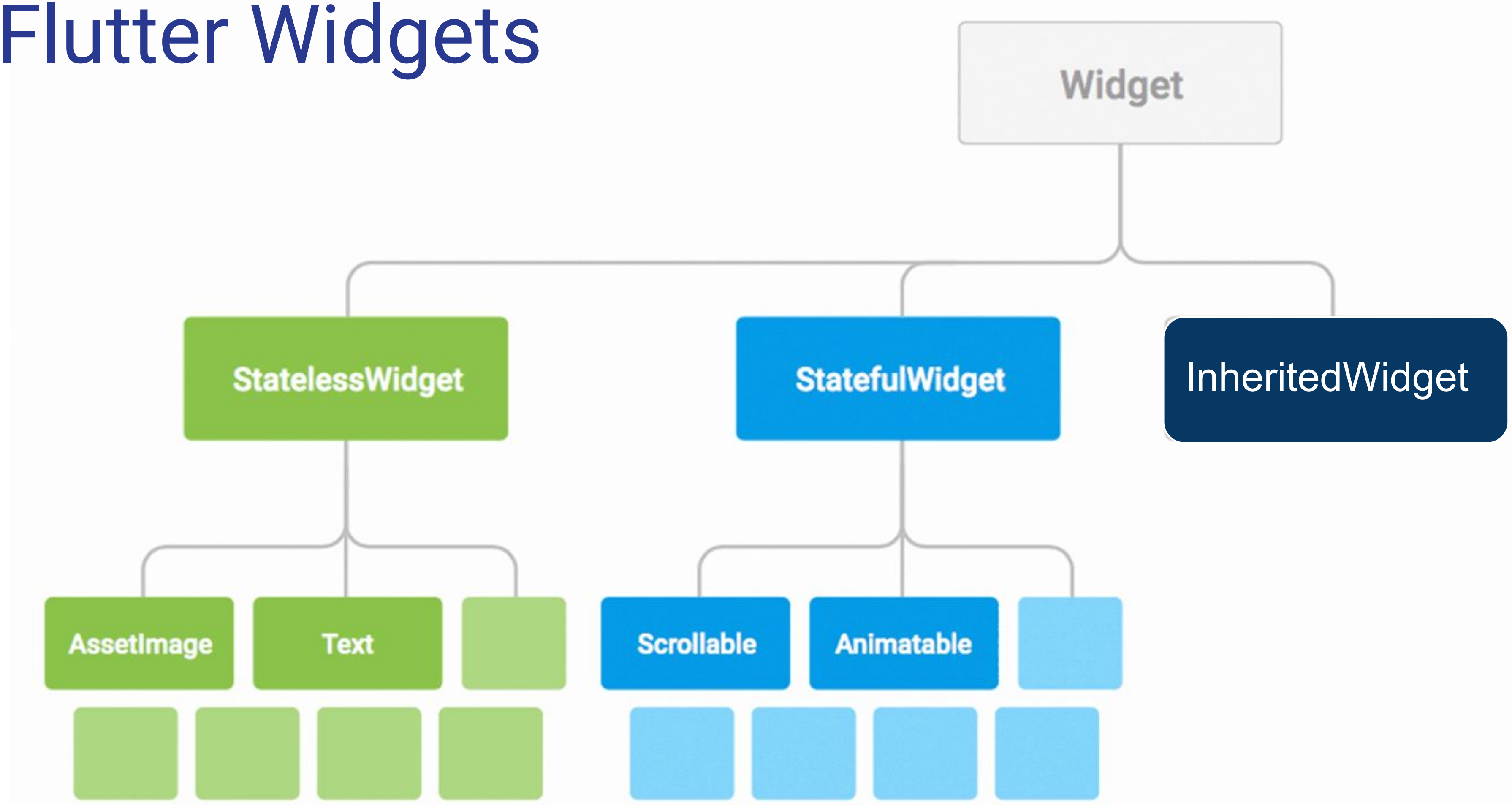
1. How to Create Stateless Widgets
2. How Stateful Widgets Are Used Best
3. Inherited Widgets Explained
4. When to Use Keys

https://www.youtube.com/watch?v=kn0EOS-ZiIc

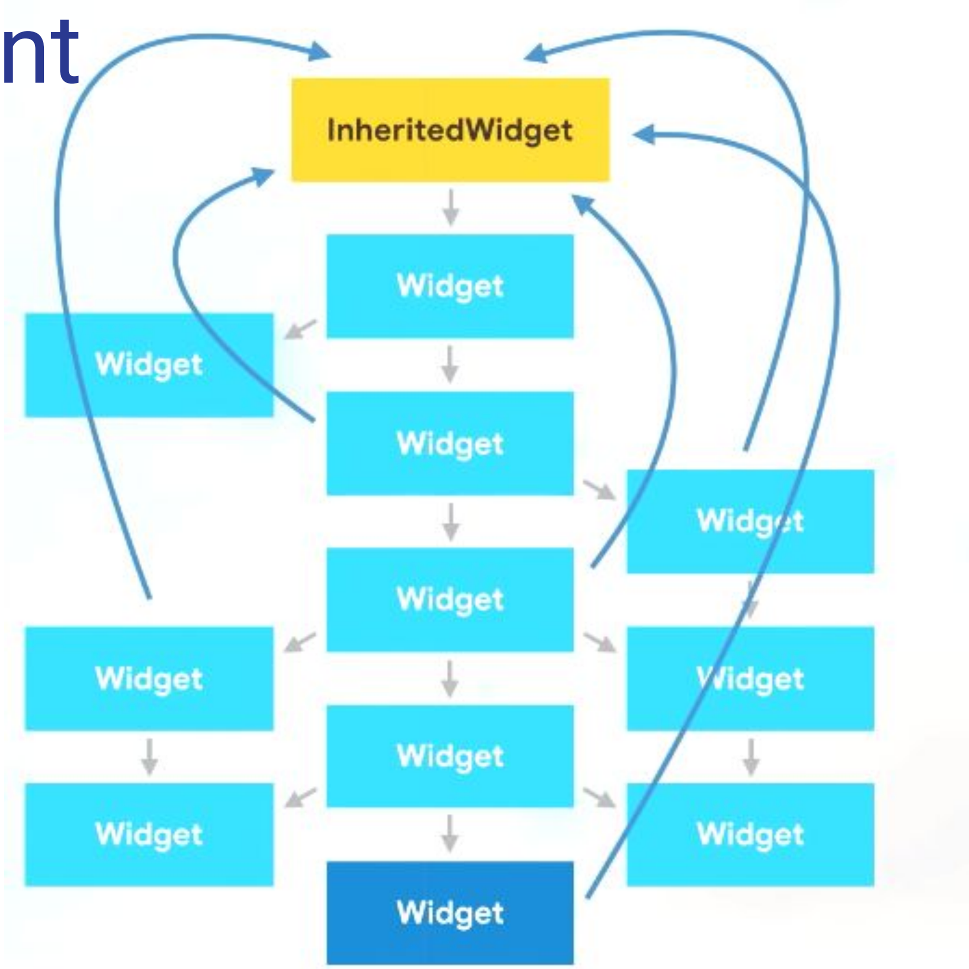
Flutter Widgets



Flutter Widgets



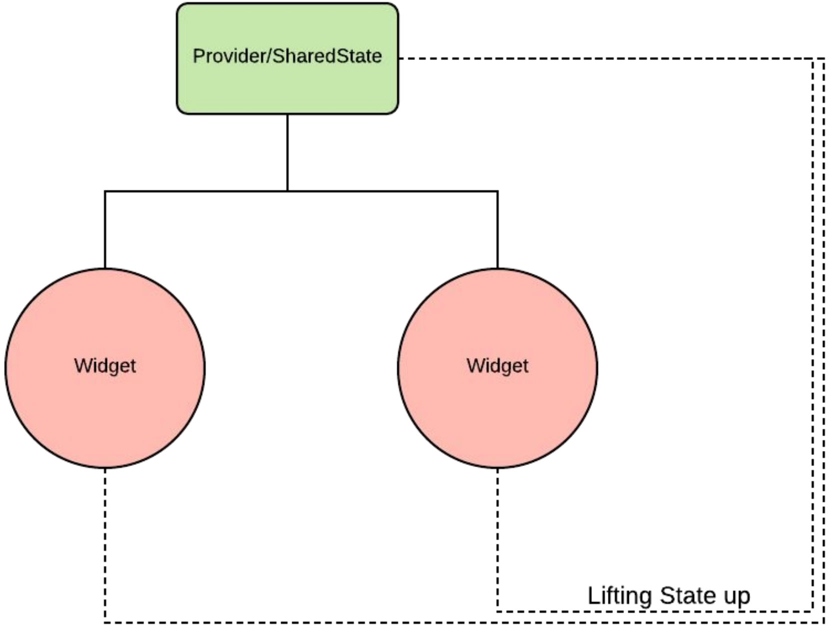
State Management



State Management

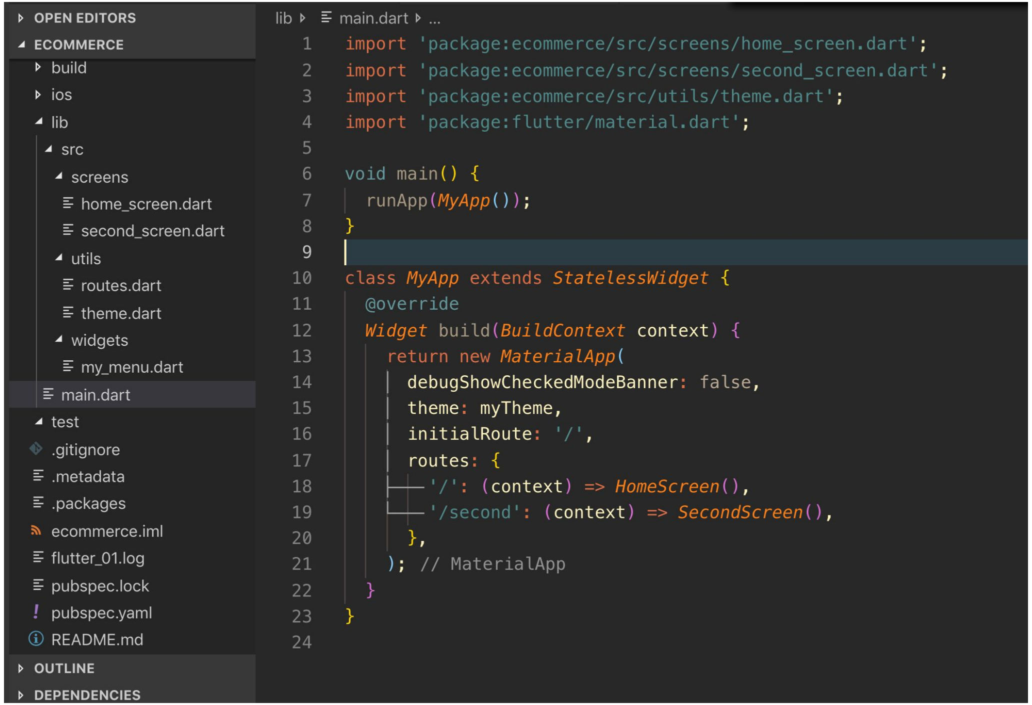
Flutter
Provider

https://pub.dev/packages/provider



BEST PRACTICE

Directory structure



```
OPEN EDITORS
ECOMMERCE
  build
  ios
  lib
    src
      screens
        home_screen.dart
        second_screen.dart
      utils
        routes.dart
        theme.dart
      widgets
        my_menu.dart
    main.dart
  test
  .gitignore
  .metadata
  .packages
  ecommerce.iml
  flutter_01.log
  pubspec.lock
  pubspec.yaml
  README.md
OUTLINE
DEPENDENCIES
```

lib › main.dart › ...

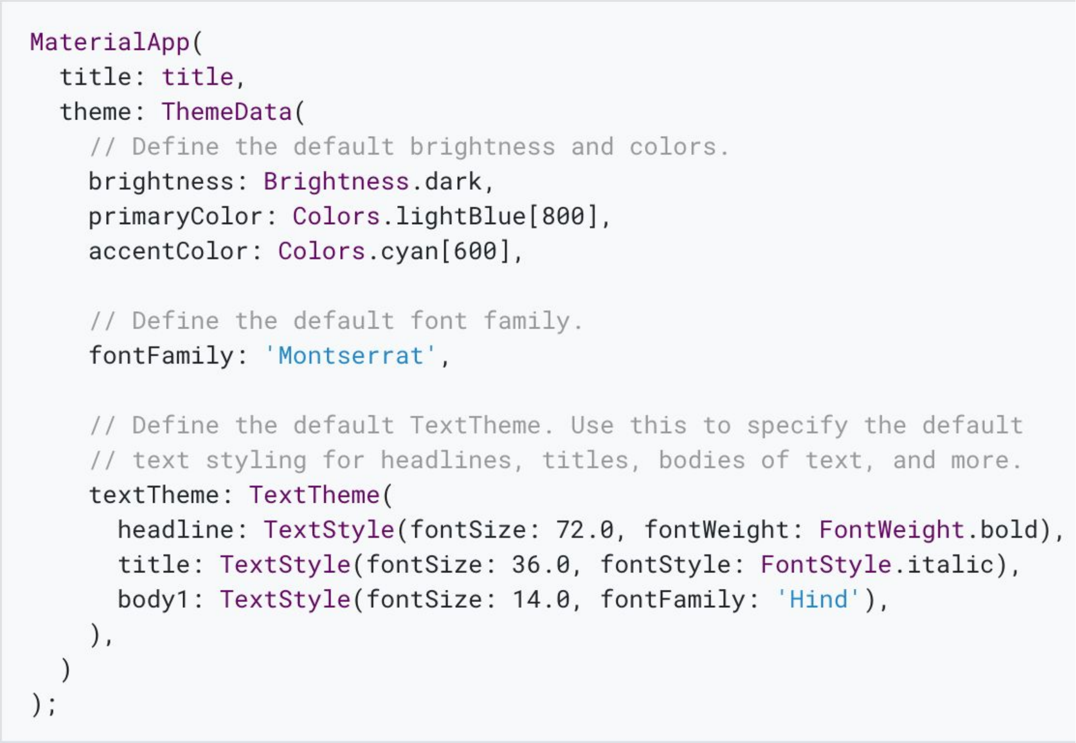
```dart
import 'package:ecommerce/src/screens/home_screen.dart';
import 'package:ecommerce/src/screens/second_screen.dart';
import 'package:ecommerce/src/utils/theme.dart';
import 'package:flutter/material.dart';

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return new MaterialApp(
      debugShowCheckedModeBanner: false,
      theme: myTheme,
      initialRoute: '/',
      routes: {
        '/': (context) => HomeScreen(),
        '/second': (context) => SecondScreen(),
      },
    ); // MaterialApp
  }
}

```

Directory structure

lets.code(it

We Will build simple Application with three screens

App Theme

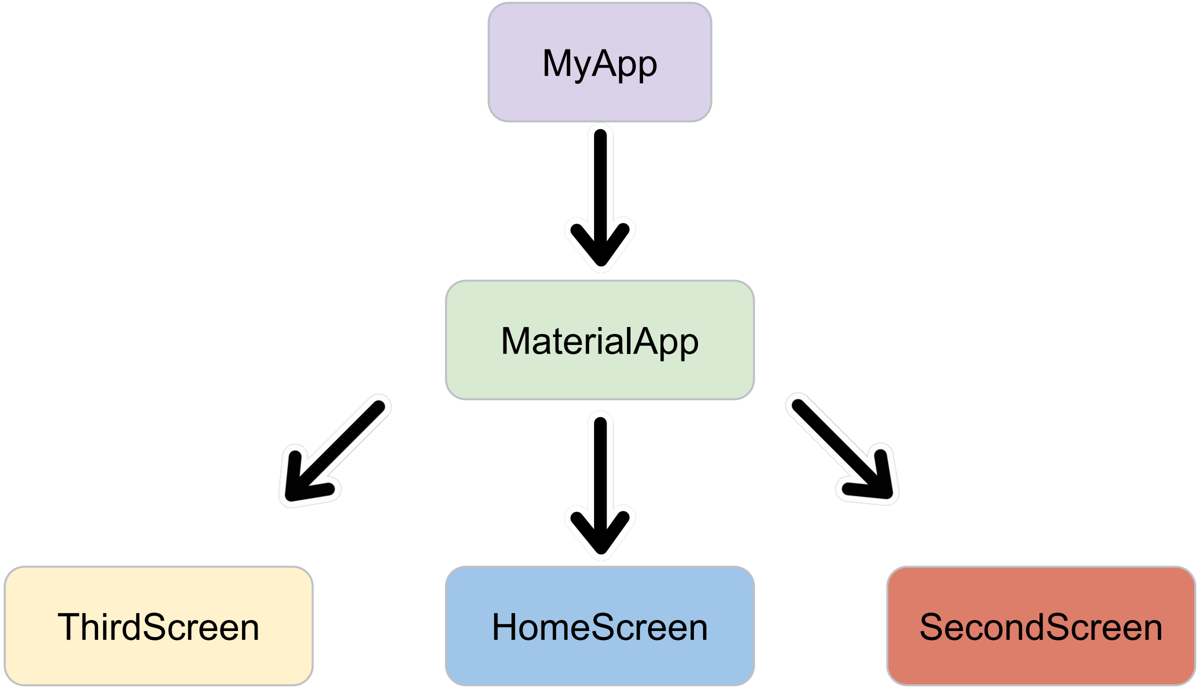


```
MaterialApp(
  title: title,
  theme: ThemeData(
    // Define the default brightness and colors.
    brightness: Brightness.dark,
    primaryColor: Colors.lightBlue[800],
    accentColor: Colors.cyan[600],

    // Define the default font family.
    fontFamily: 'Montserrat',

    // Define the default TextTheme. Use this to specify the default
    // text styling for headlines, titles, bodies of text, and more.
    textTheme: TextTheme(
      headline: TextStyle(fontSize: 72.0, fontWeight: FontWeight.bold),
      title: TextStyle(fontSize: 36.0, fontStyle: FontStyle.italic),
      body1: TextStyle(fontSize: 14.0, fontFamily: 'Hind'),
    ),
  )
);
```

App Theme

lets.code(it

Routing



MyApp

MaterialApp

ThirdScreen

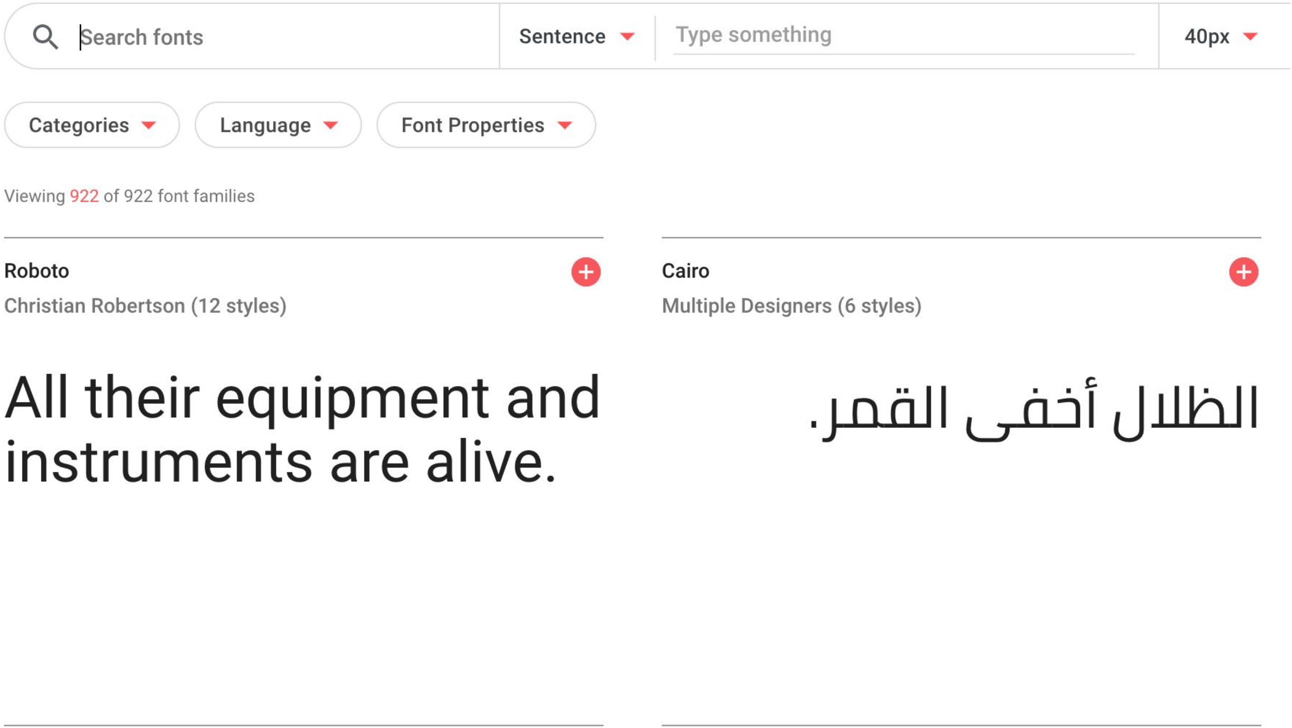
HomeScreen

SecondScreen

Named Routes

lets.code(it

Custom Fonts



Viewing 922 of 922 font families

Roboto

Christian Robertson (12 styles)

All their equipment and instruments are alive.

Cairo

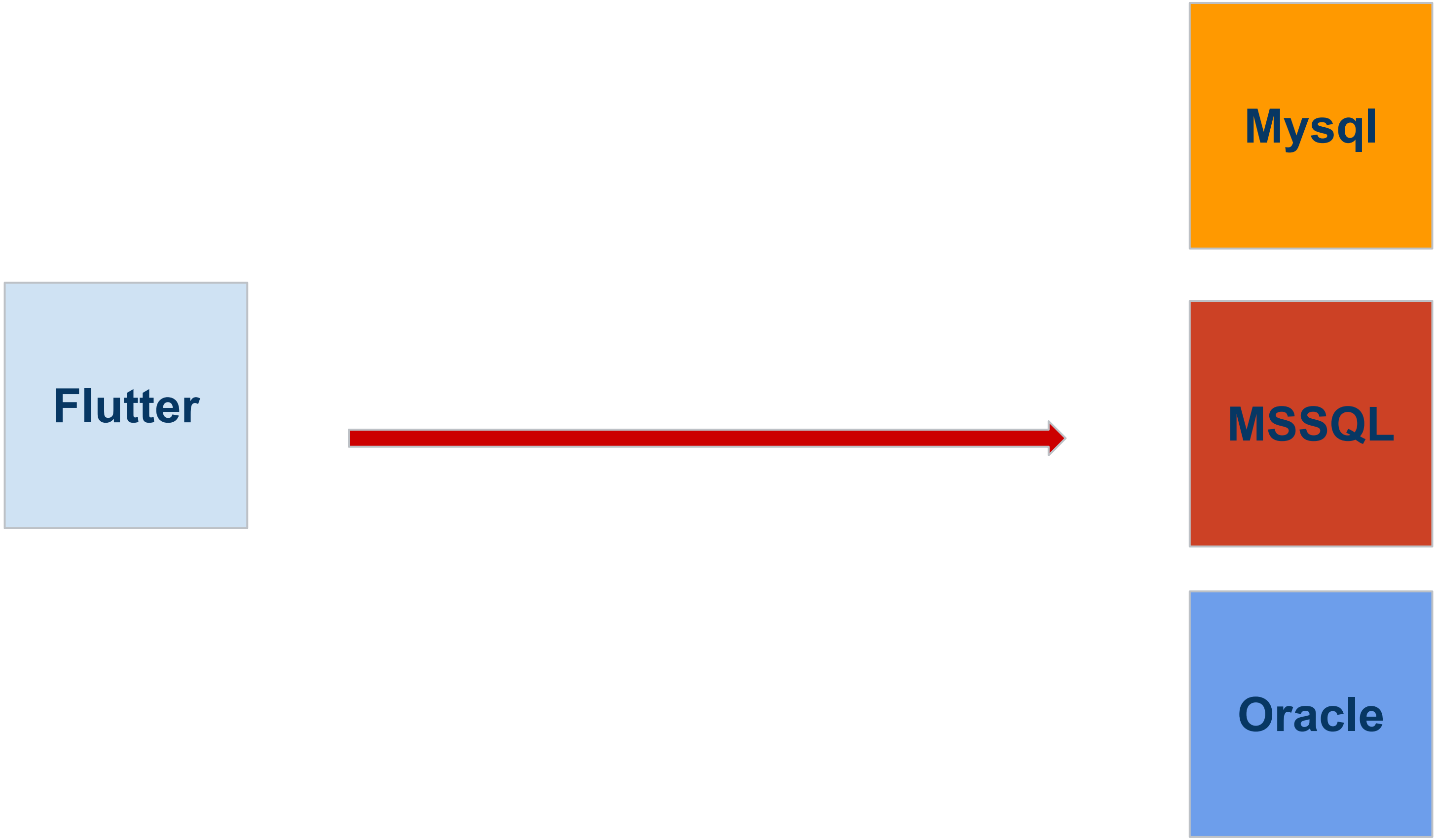
Multiple Designers (6 styles)

الظلال أخفى القمر.

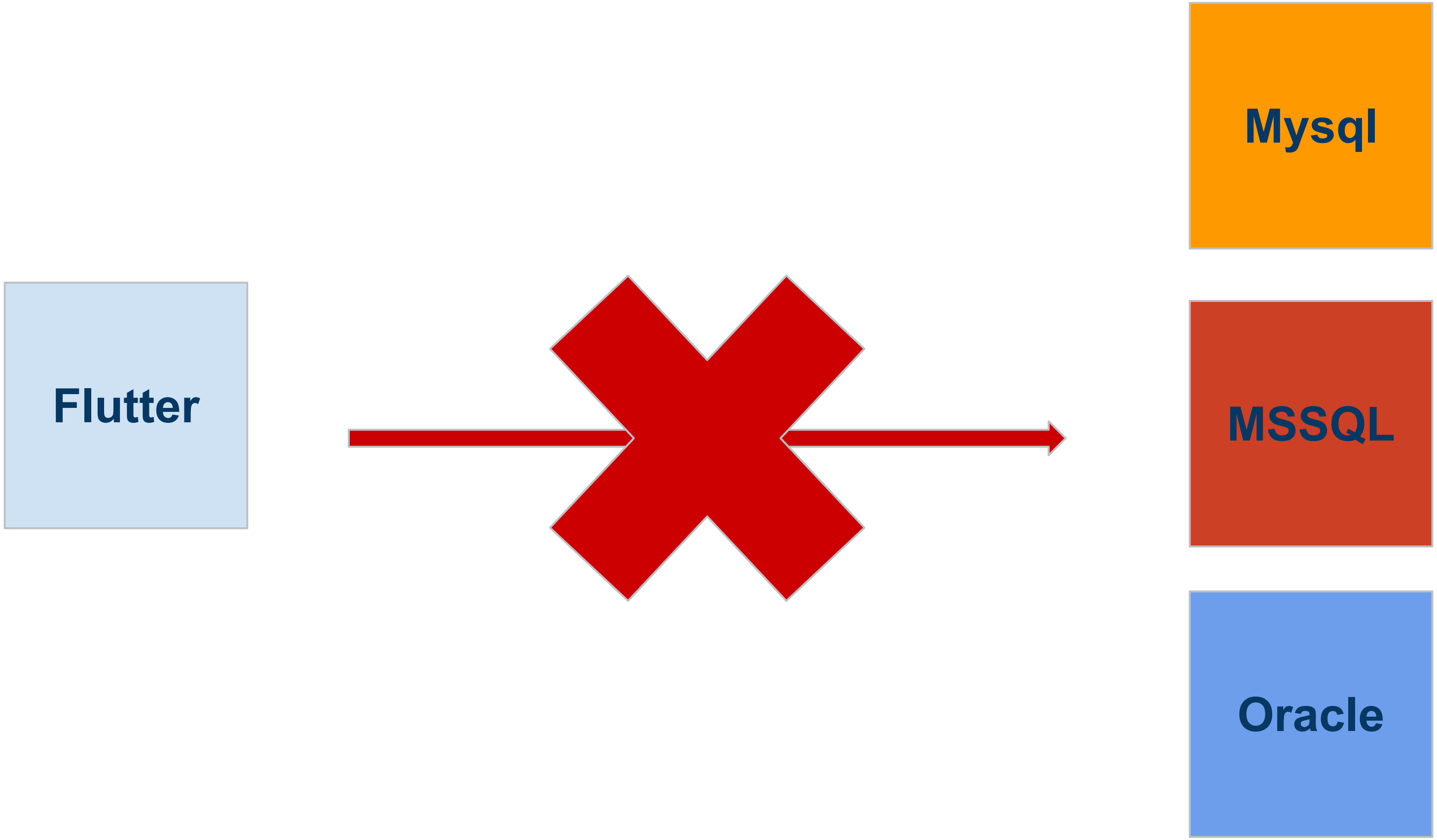
Custom Fonts

lets.code(it

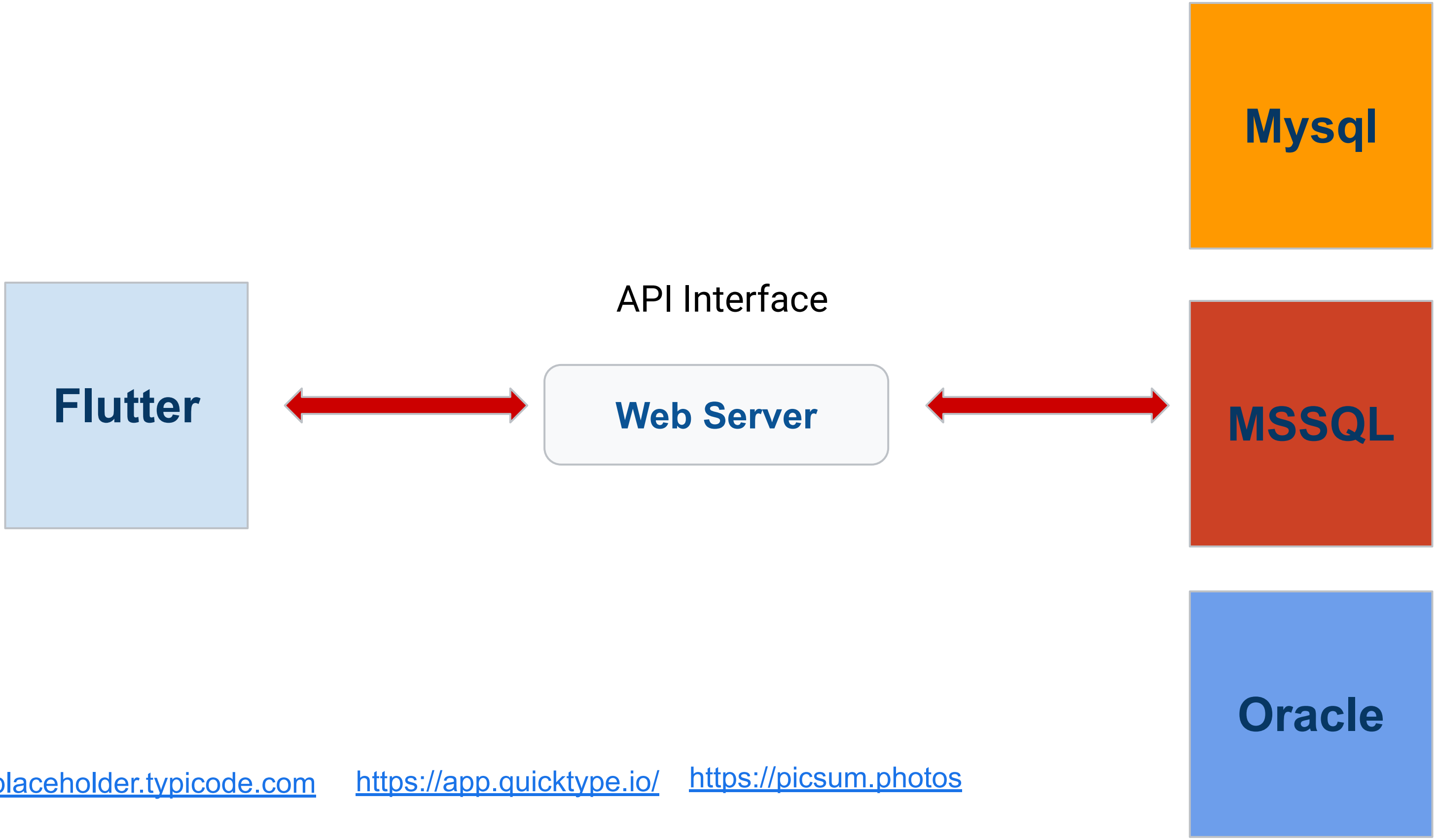
Connect to Database



Connect to Database

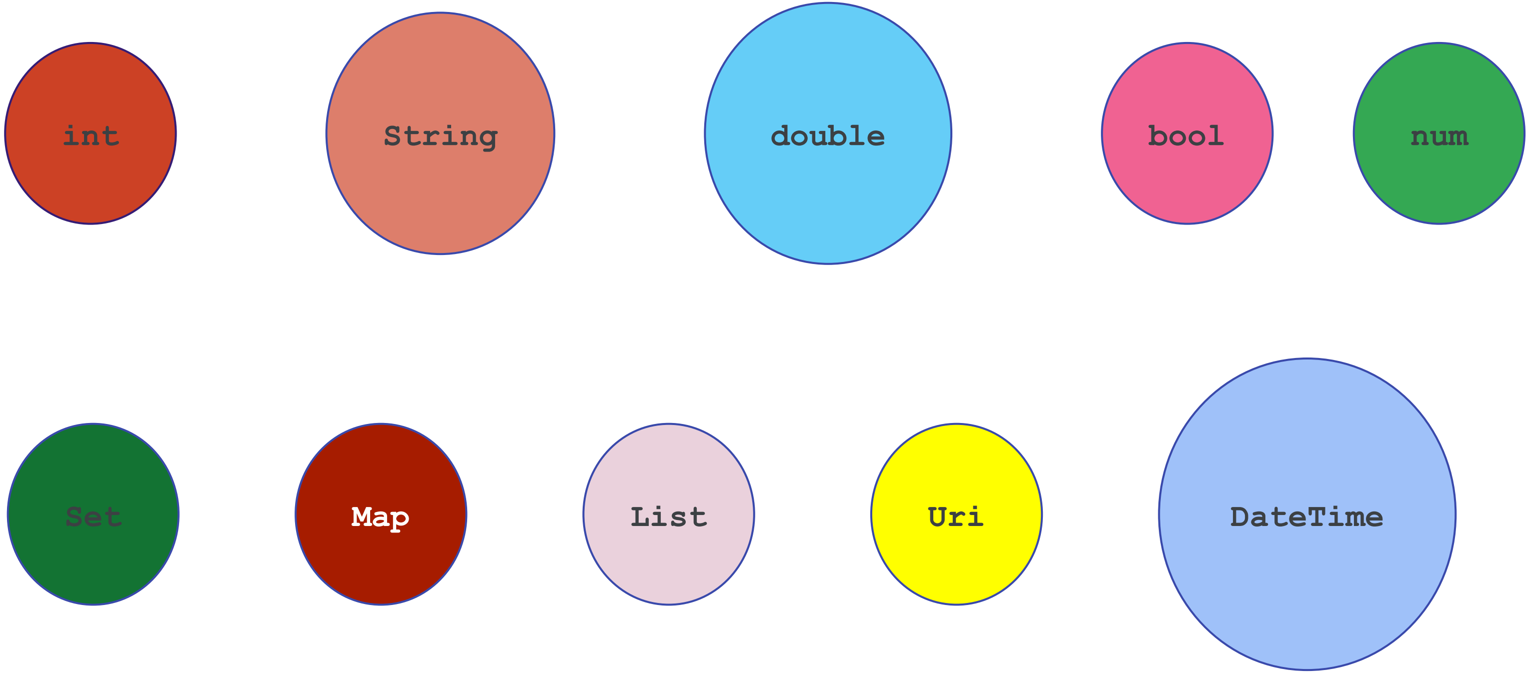


Connect to Database



http://jsonplaceholder.typicode.com https://app.quicktype.io/ https://picsum.photos

Dart Data Types



int

String

double

bool

num

Set

Map

List

Uri

DateTime

https://api.dart.dev/stable/2.4.0/dart-core/dart-core-library.html

Fetching Data from Web

lets.code(it

Async Programming

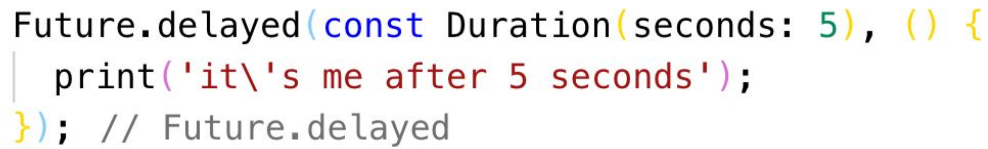
Flutter

Async in Dart

lets.code(it

FutureBuilder

Async = await



```
Future.delayed(const Duration(seconds: 5), () {
  print('it\'s me after 5 seconds');
}); // Future.delayed
```

Thanks

Flutter Study

We will be back in 10 minutes

Ahmed Abu Eldahab

Senior Technical Consultant
Google Developer Expert in Flutter

/Dahabdev