

Flutter widgets

Widget

- Each element on a screen of the Flutter app is a widget.
- The view of the screen completely depends upon the choice and sequence of the widgets used to build the app.
- And the structure of the code of an app is a tree of widgets.

Types of Layout Widgets

- Single Child Widget
- Multiple Child Widget

Single child layout widget

- The single child layout widget is a type of widget, which can have only **one child widget** inside the parent layout widget.
- These widgets can also contain special layout functionality.
- Flutter provides us many single child widgets to make the app UI attractive.
- If we use these widgets appropriately, it can save our time and makes the app code more readable.
- Example
 - **Container**
 - **Padding**
 - **Center**
 - **Align**
 - **SizedBox**
 - **ConstrainedBox**

Multiple Child widgets

- The multiple child widgets are a type of widget, which contains **more than one child widget**, and the layout of these widgets are **unique**.
- Example
 - Row
 - Column
 - Listview
 - GridView
 - Table

Two major Widgets

- Stateful Widget
- Stateless Widget

Stateless widgets

- The **widgets whose state can not be altered once they are built** are called stateless widgets.
- These widgets are immutable once they are built i.e any amount of change in the variables, icons, buttons, or retrieving data can not change the state of the app.

Stateless widget

These widgets never changed.
Their appearance remained constant.
So they are Stateless Widgets.

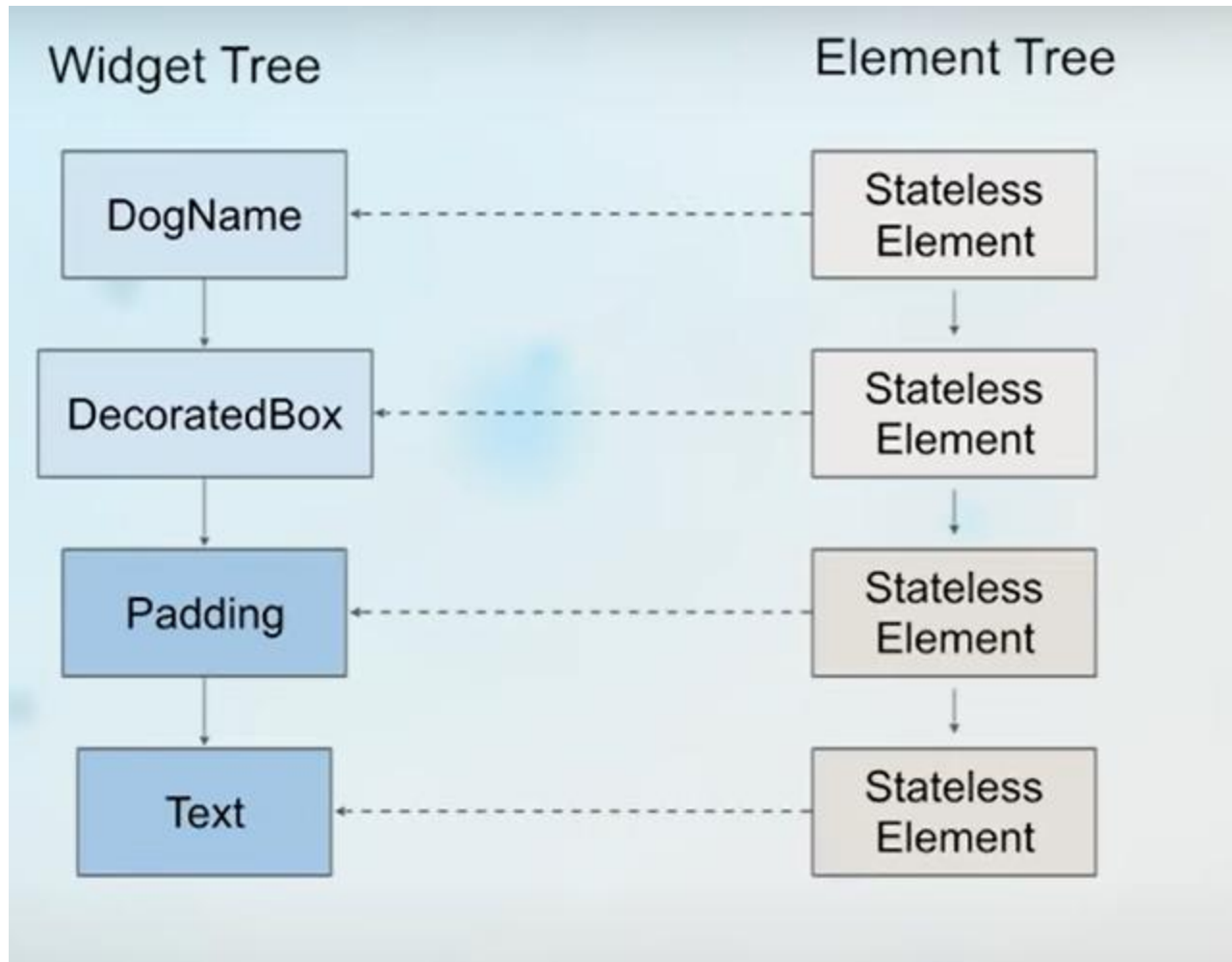



```
class DogName extends StatelessWidget{
  final String name;

  const DogName(this.name);

  @override
  Widget build(BuildContext context){
    return DecoratedBox(
      decoration: BoxDecoration(color: Colors.lightBlueAccent),
      child: Padding(
        padding: const EdgeInsets.all(8.0),
        child: Text(name),
      ), // Padding
    ); // DecoratedBox
  }
}
```

Widget tree



- Write a flutter program to display dog names(demonstrate stateless widget and layout widgets)

main.dart

```
import 'package:flutter/material.dart';

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

class DogApp extends StatelessWidget {

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'My Dog App',
      home: Scaffold(backgroundColor: Colors.blueGrey,
        appBar: AppBar(backgroundColor: Colors.cyan,
          title: Text('Yellow lab'),
        ),
        body: Center(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.center,
            children: [
              DogName('Rocky'),
              SizedBox(height: 10.0),
              DogName('Lyla'),
              SizedBox(height: 10.0),
              DogName('Nico'),
            ],
          ),
        ),
      ),
    );
  }
}
```

```
class DogName extends StatelessWidget {  
  final String name;  
  const DogName(this.name);  
  @override  
  Widget build(BuildContext context) {  
    return DecoratedBox(decoration: BoxDecoration(color:  
Colors.lightBlueAccent),  
    child: Padding(  
      padding: const EdgeInsets.all(10.0),  
      child: Text(name),  
    ),  
  );  
}
```