

# Flutter Continued

# Announcements!

## → NavTJ Pilot Program

- Want to get involved in the club quickly? This is your opportunity!
- Looking for students to test out our app and give **QUALITY FEEDBACK**
- Talk to an officer sometime during the meeting if you're interested and we'll put you in a GC

## → Steamology

- Service work opportunity (build that resume!)
- Large STEM program for underprivileged students (FLL, Hour of Code, etc.)
- Still a work in progress, will keep you all updated

## → StudyBuds

- Looking for **developers**
- Reach out to **Elijah** (Founder of StudyBuds) or an officer for more information

# Widgets

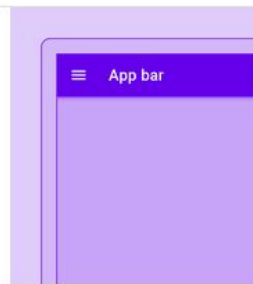
## Quick Recap:

- Defines the UI of your application
- **Stateless** vs **Stateful**
- Tree-like structure
- `build(BuildContext context)`



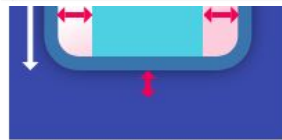
### Column

Layout a list of child widgets in the vertical direction.



### AppBar

A toolbar that might contain widgets such as a 'TabBar' or 'FlexibleSpaceBar'.



### Container

A convenience widget that combines common painting, positioning, and sizing widgets.

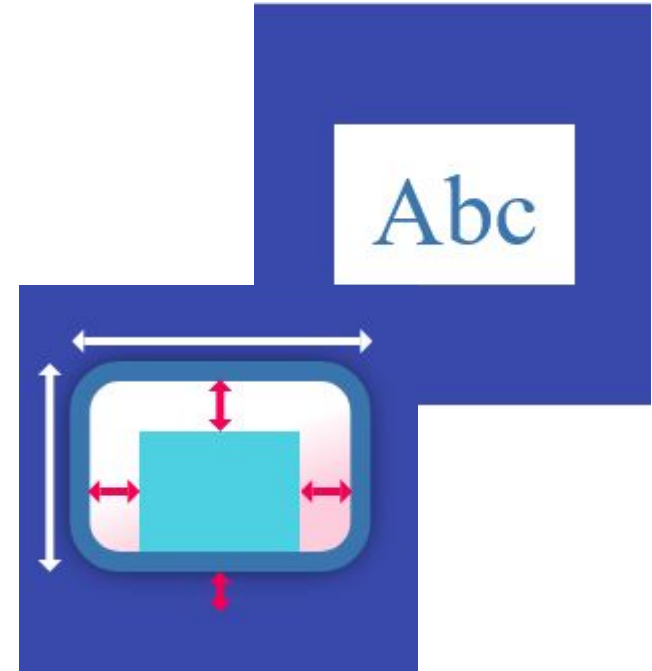
# Basic Widgets

**Layout** - Scaffold, Container

**Positioning** - Row, Column, Center

**Buttons** - FloatingActionButton, FilledButton

**Other** - Text, Color



# Stateless Widget

```
class MyApp extends StatelessWidget {  
  const MyApp({super.key});  
  
  @override  
  Widget build(BuildContext context) {  
    return const Scaffold(  
      body: Center(  
        child: Text("Hello!")  
      ) // Center  
    ) // Scaffold  
  }  
}
```

# Stateful Widget

```
class MyHomePage extends StatefulWidget {  
  const MyHomePage({super.key});  
  
  @override  
  State<MyHomePage> createState() => _MyHomePageState()  
}  
  
class _MyHomePageState extends State<MyHomePage> {  
  int _counter = 0;  
  
  void _incrementCounter() {  
    setState(() {  
      _counter++;  
    });  
  }  
}
```

```
@override  
Widget build(BuildContext context) {  
  return Scaffold(  
    appBar: AppBar(  
      backgroundColor: Theme.of(context).colorScheme.inversePrimary,  
      title: Text(widget.title),  
    ), // AppBar  
    body: Center(  
      child: Column(  
        mainAxisAlignment: MainAxisAlignment.center,  
        children: <Widget>[  
          const Text(  
            'You have pushed the button this many times:',  
          ), // Text  
          Text(  
            '$_counter',  
            style: Theme.of(context).textTheme.headlineMedium,  
          ), // Text  
        ], // <Widget>[]  
      ), // Column  
    ), // Center  
    floatingActionButton: FloatingActionButton(  
      onPressed: _incrementCounter,  
      tooltip: 'Increment',  
      child: const Icon(Icons.add),  
    ), // FloatingActionButton  
  ); // Scaffold  
}
```

# Navigation

- How you can go to different pages / screens
- **Navigator** object
- History stack
- push() / pop()

```
onPressed: () {  
  Navigator.of(context).push(  
    MaterialPageRoute(  
      builder: (context) =>  
        const SongScreen(song: song)  
    ),  
  );  
},  
child: Text(song.name),
```

# Images

- Assets in **pubspec.yaml**
- **Image(image: AssetImage(path))** for local images
- **Image.network()** for images on the web

```
1 import 'package:flutter/material.dart';
2
3 void main() => runApp(const MyApp());
4
5 class MyApp extends StatelessWidget {
6   const MyApp({super.key});
7
8   @override
9   Widget build(BuildContext context) {
10     var title = 'Web Images';
11
12     return MaterialApp(
13       title: title,
14       home: Scaffold(
15         appBar: AppBar(
16           title: Text(title),
17         ),
18         body: Image.network('https://images.unsplash.com/photo-1514888286684-000000000000'),
19       ),
20     );
21 }
```

