

Yandex



Widgets

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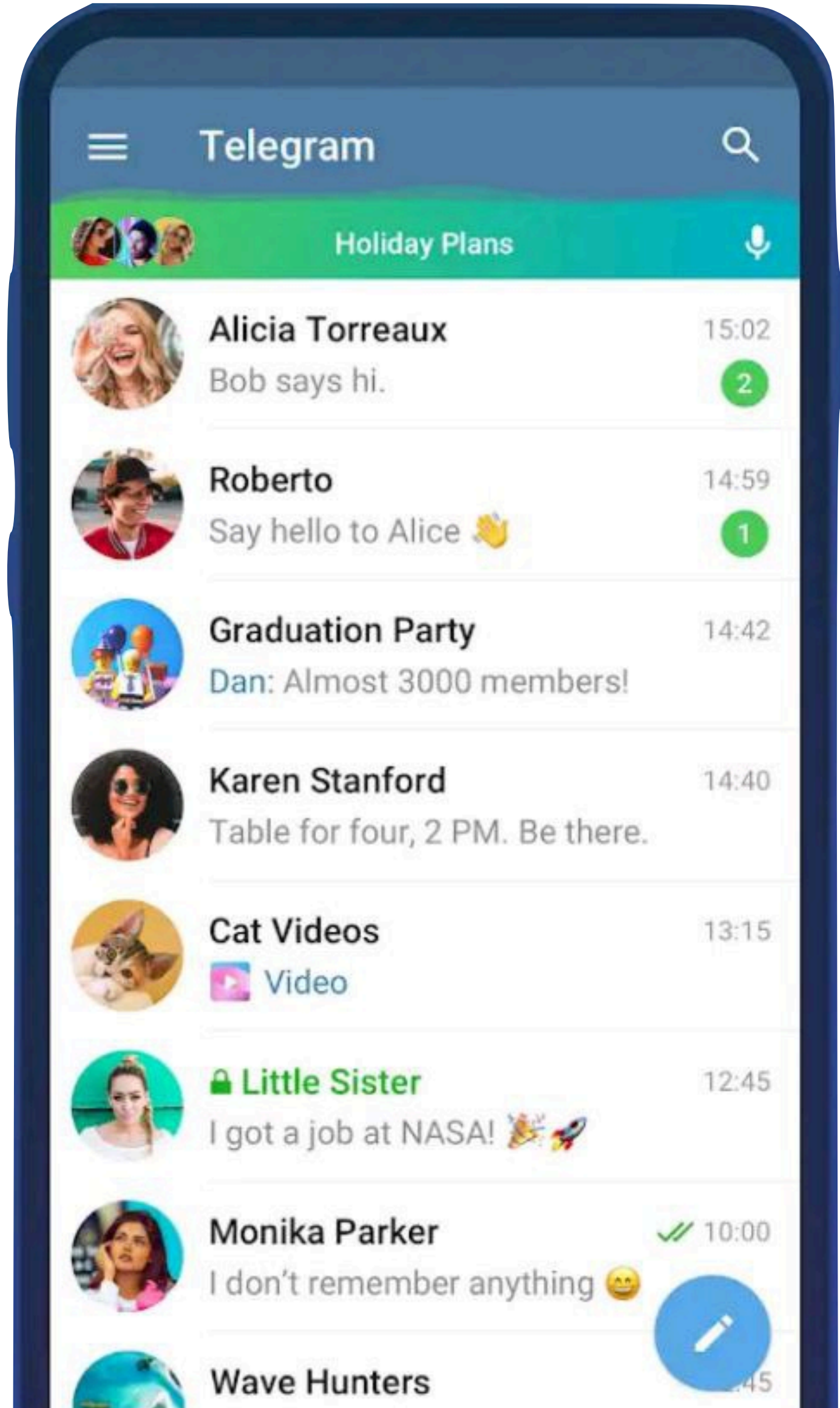
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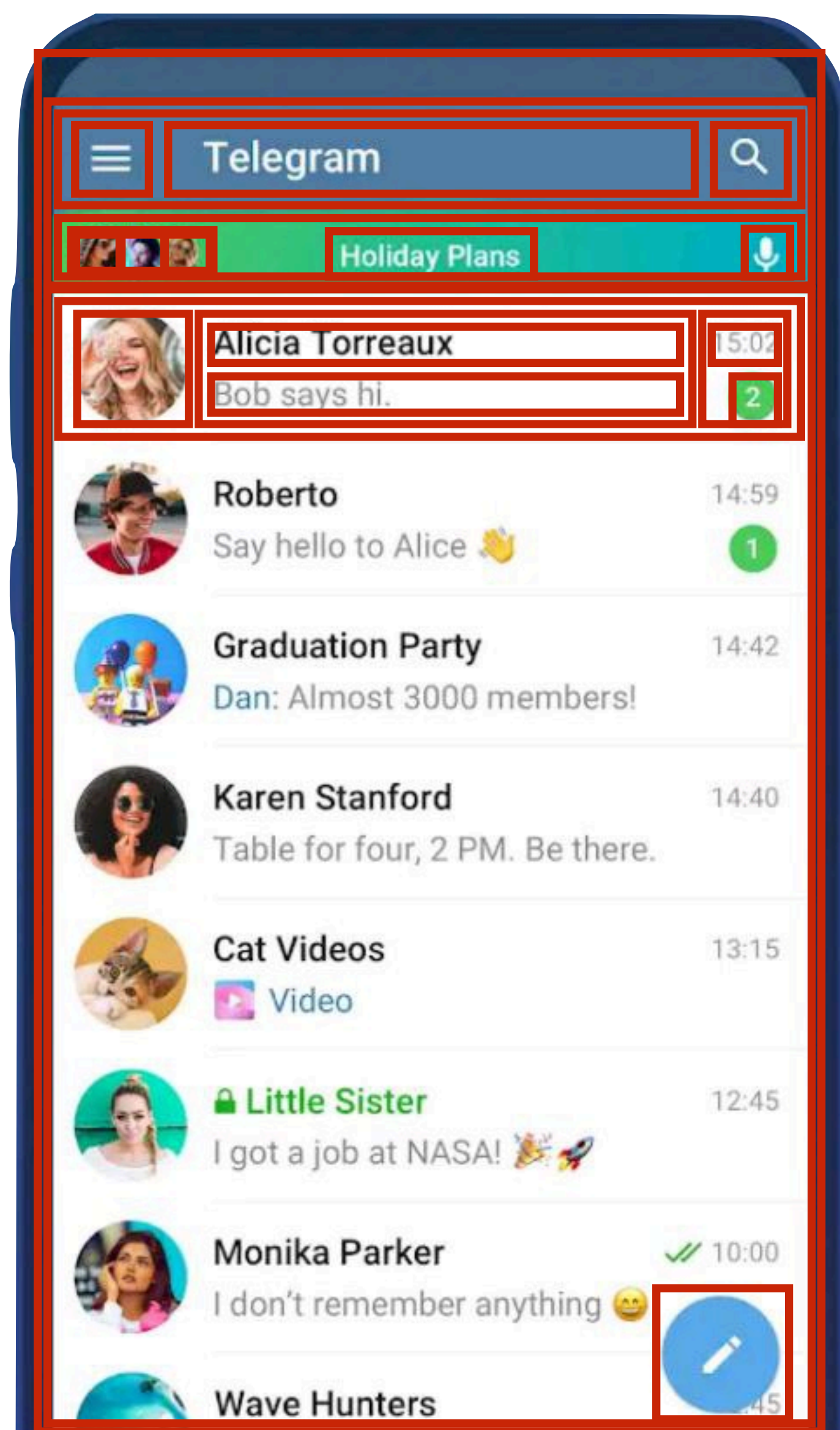
Intro

Everything is a Widget!

Everything is a Widget



Everything is a Widget



**What is the difference between
declarative and imperative UI?**

Imperative

```
val a = TextView(..)

a.text = "New Text"

a.textAlignment = TextAlign.center

a.style = TextStyle(...)
```

Declarative

```
Text(

    'New text',

    textAlign: TextAlign.center,

    style: TextStyle(...),

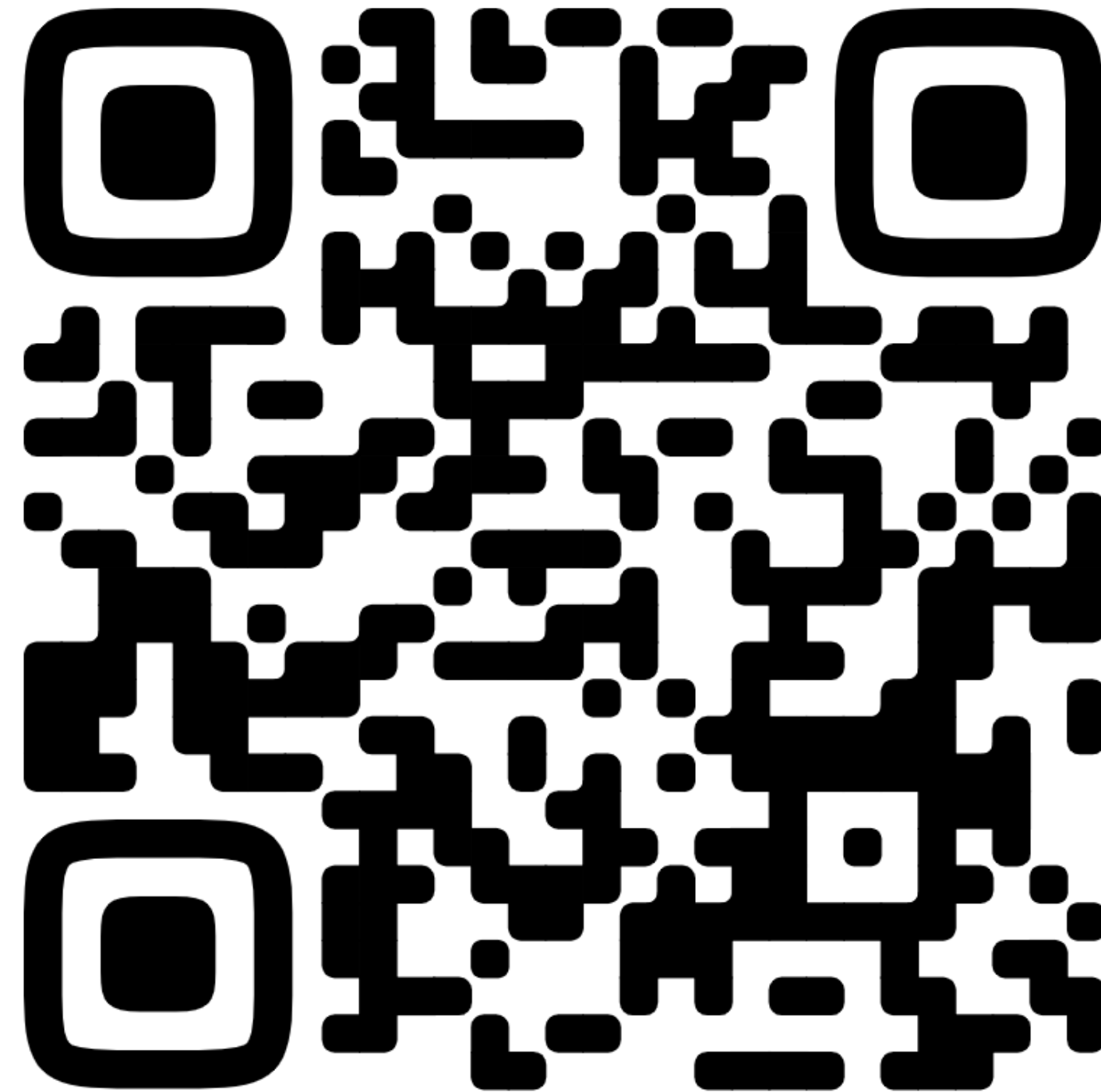
)
```

Everything is a Widget

```
void main() ⇒ runApp(const App());
```

```
class App extends StatelessWidget {  
  const App({Key? key}) : super(key: key);  
  
  @override  
  Widget build(BuildContext context) ⇒  
    const MaterialApp(home: HomePage());  
}
```

Widget examples



bit.ly/widget_examples

Framework widgets

Framework widgets

MaterialApp

Scaffold

Text

Container

Column/Row

Padding

Image

GestureDetector

Framework widgets

MaterialApp

- Theme

- Navigation

- Localization

<https://api.flutter.dev/flutter/material/MaterialApp-class.html>

<https://docs.flutter.dev/development/accessibility-and-localization/internationalization>

Framework widgets

Scaffold

- | AppBar

- | Floating Action Button

- | Drawer

- | Bottom Sheet

- | Bottom Navigation Bar

Framework widgets

Text

Text

Style

Alignment

```
const Card(  
  child: Padding(  
    padding: EdgeInsets.all(16.0),  
    child: Text(  
      'Hello World!',  
      style: TextStyle(  
        fontWeight: FontWeight.bold,  
      ),  
    ),  
  ),  
)
```


Framework widgets

Container

| Positioning

| Sizing

| Paining

Framework widgets

Column/Row

- Vertical or horizontal layouting

- Alignment

- Sizing

<https://api.flutter.dev/flutter/widgets/Column-class.html>

<https://api.flutter.dev/flutter/widgets/Row-class.html>

Framework widgets

Padding

Insets child

```
const Card(  
  child: Padding(  
    padding: EdgeInsets.all(16.0),  
    child: Text('Hello World!'),  
  ),  
)
```

Framework widgets

Image

`Image.file`

`Image.network`

`Image.asset`

`Image.memory`

Framework widgets

GestureDetector

- Taps

- LongTaps

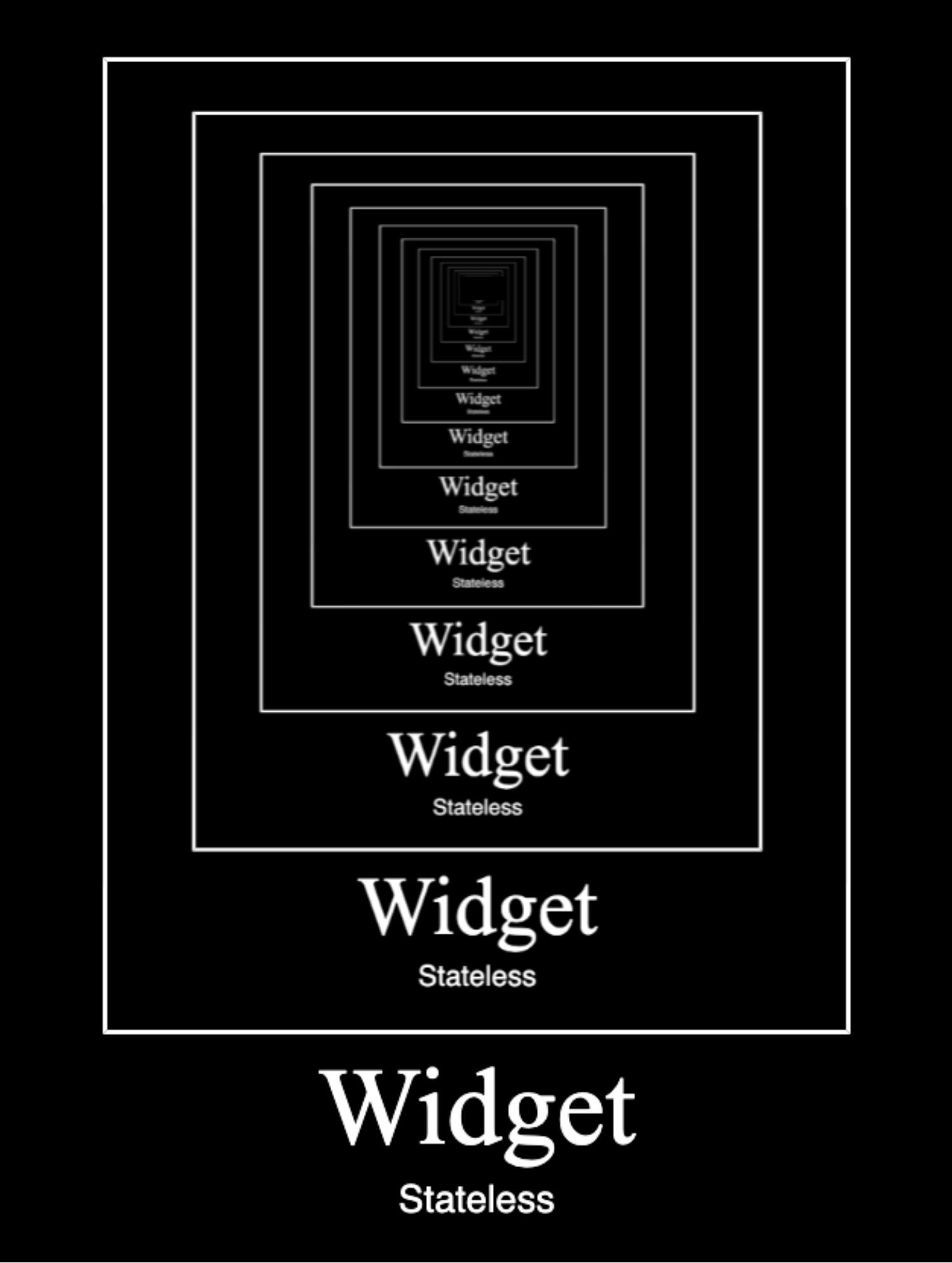
- Double taps

- Grags

- Scale

- Etc

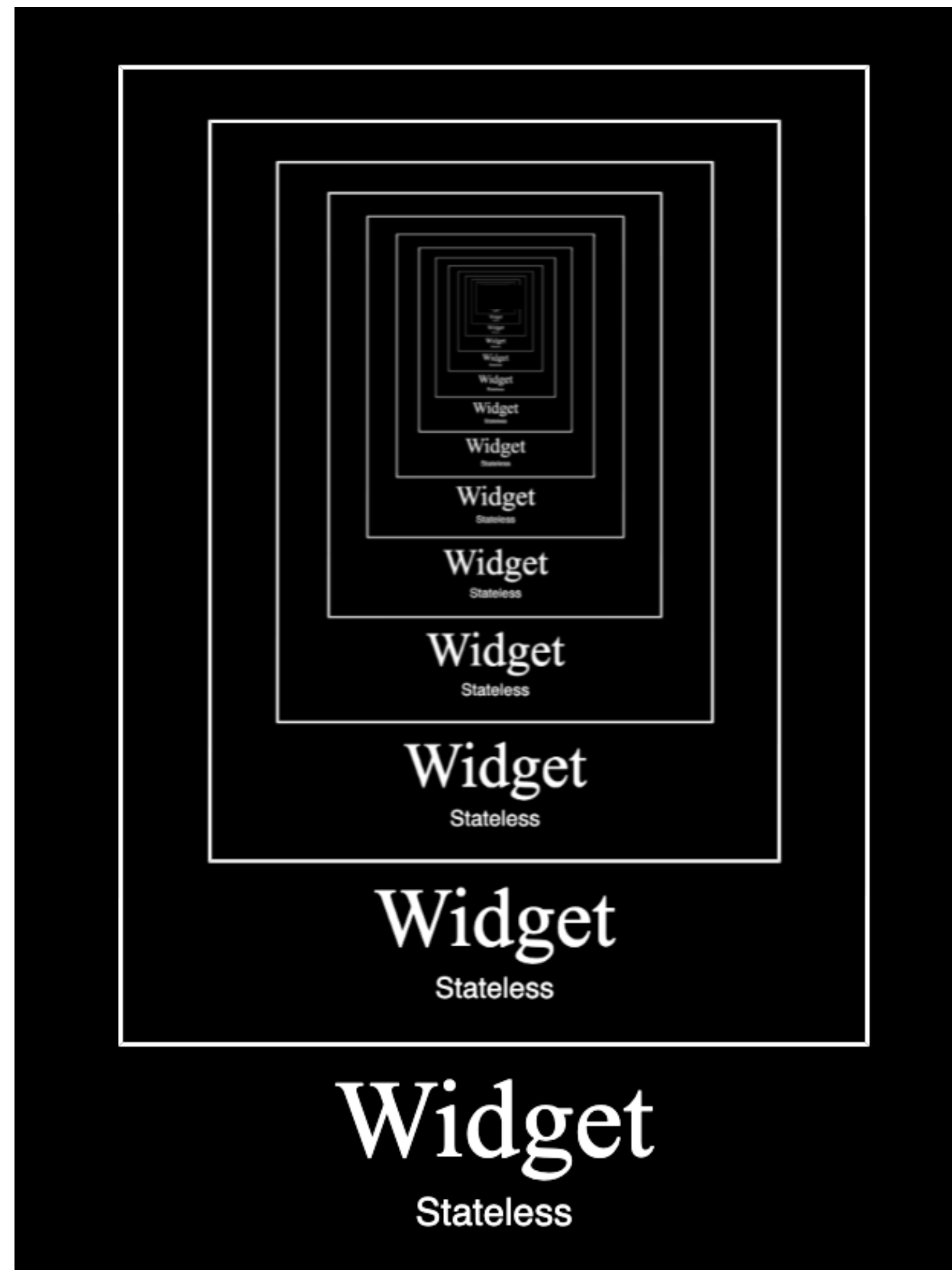
Stateless and Stateful Widgets



StatelessWidget

Composition

Optimization

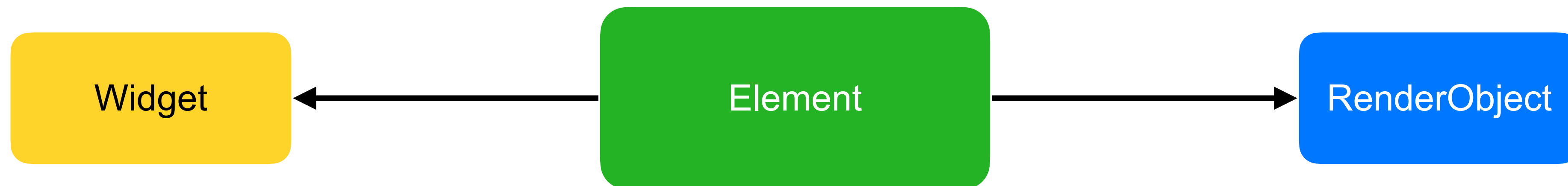


StatefulWidget

| StatefulWidget

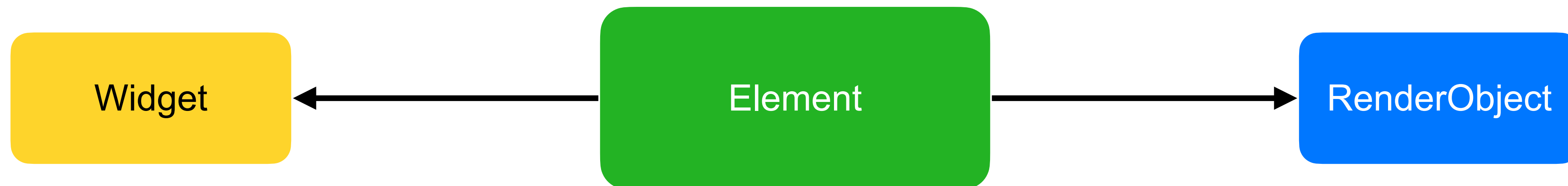
| State<T extends StatefulWidget>

Under the hood



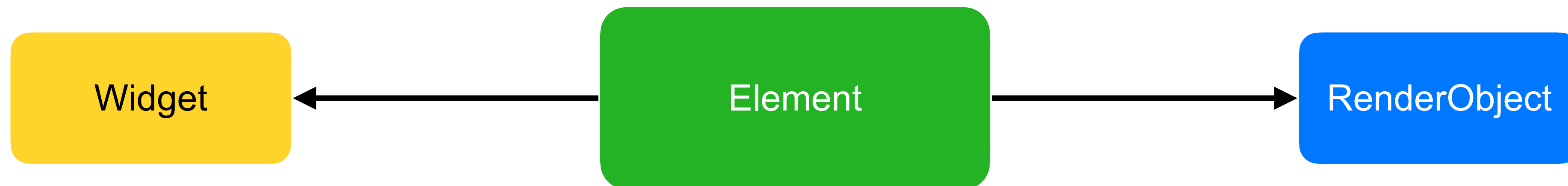
Under the hood

- | Configuration
- | Immutable
- | Blueprint



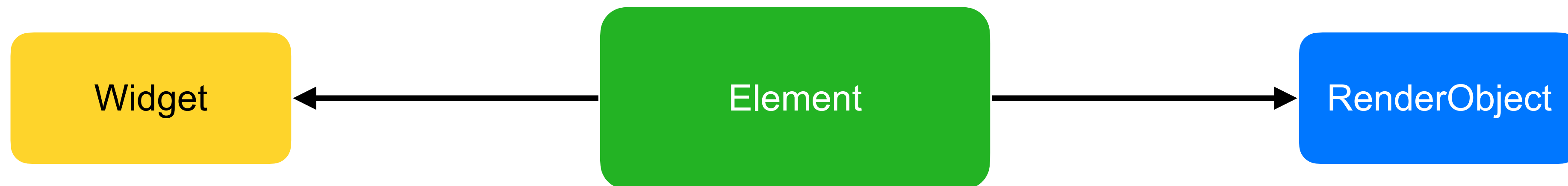
Under the hood

Configuration	Actual instance in tree
Immutable	Mutable
Blueprint	State control



Under the hood

Configuration	Actual instance in tree	Rendering
Immutable	Mutable	Mutable
Blueprint	State control	



StatefulWidget

build

setState

initState

dispose

didUpdateWidget

didChangeDependencies

activate

deactivate

reassemble



Thank you for attention

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