Google Developers

Experts

Unidirectional Data Flow Rocks!

Introducing Redux, Cubits and Blocs.

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State Management

State Management

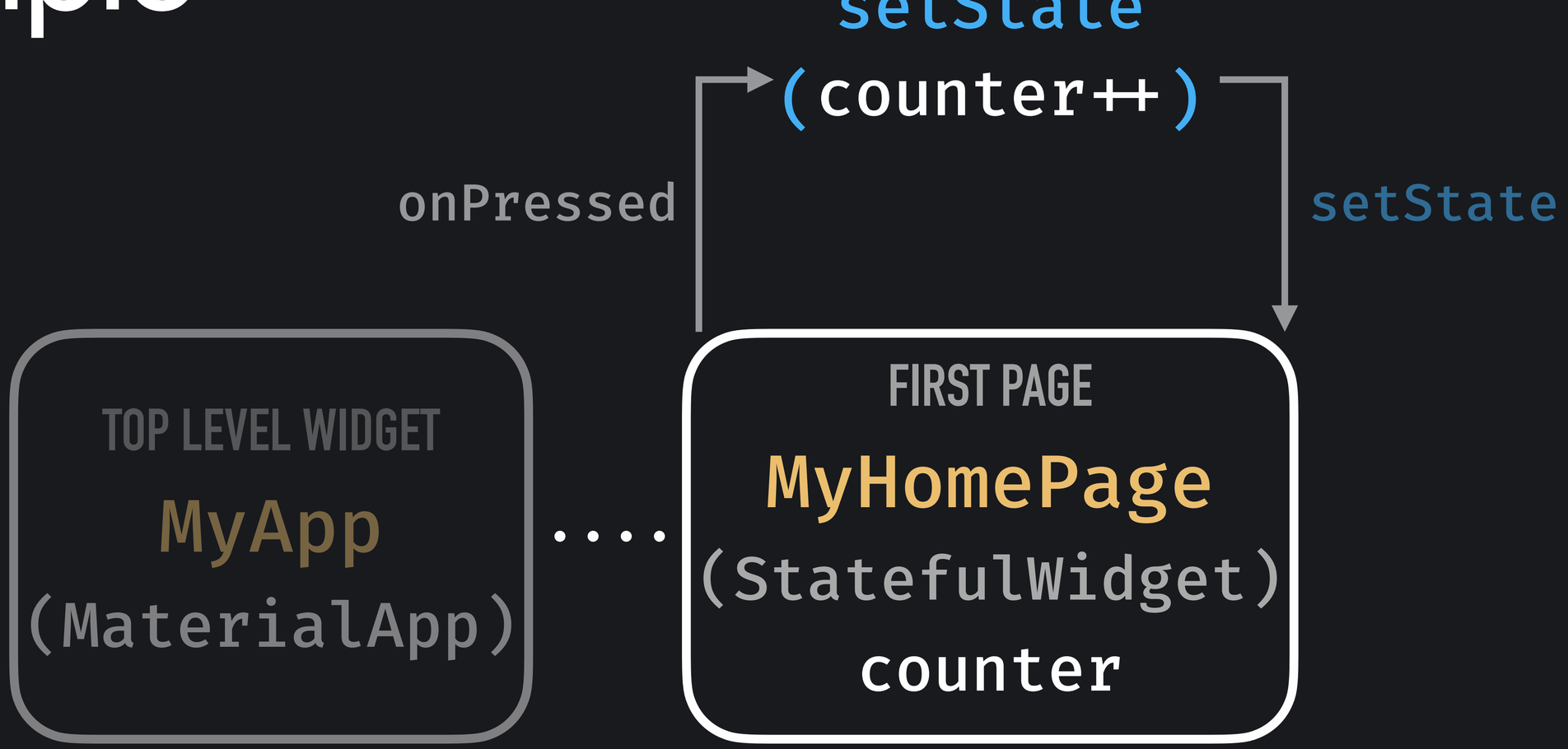
- Using built-in solutions is fine.
- Keep state local, pass it around.
- Becomes a problem when the app and scope grows.
- We need some state management design pattern.

State Management

- Unidirectional data flow.
- A design pattern for state management.
- Makes the flow of data structured, consistent, predictable and testable.
- Helps separate views from business logic.
- Works well with declarative programming.

Example

Example


setState
(counter++)
onPressed
setState
TOP LEVEL WIDGET
MyApp
(MaterialApp)
FIRST PAGE
MyHomePage
(StatefulWidget)
counter

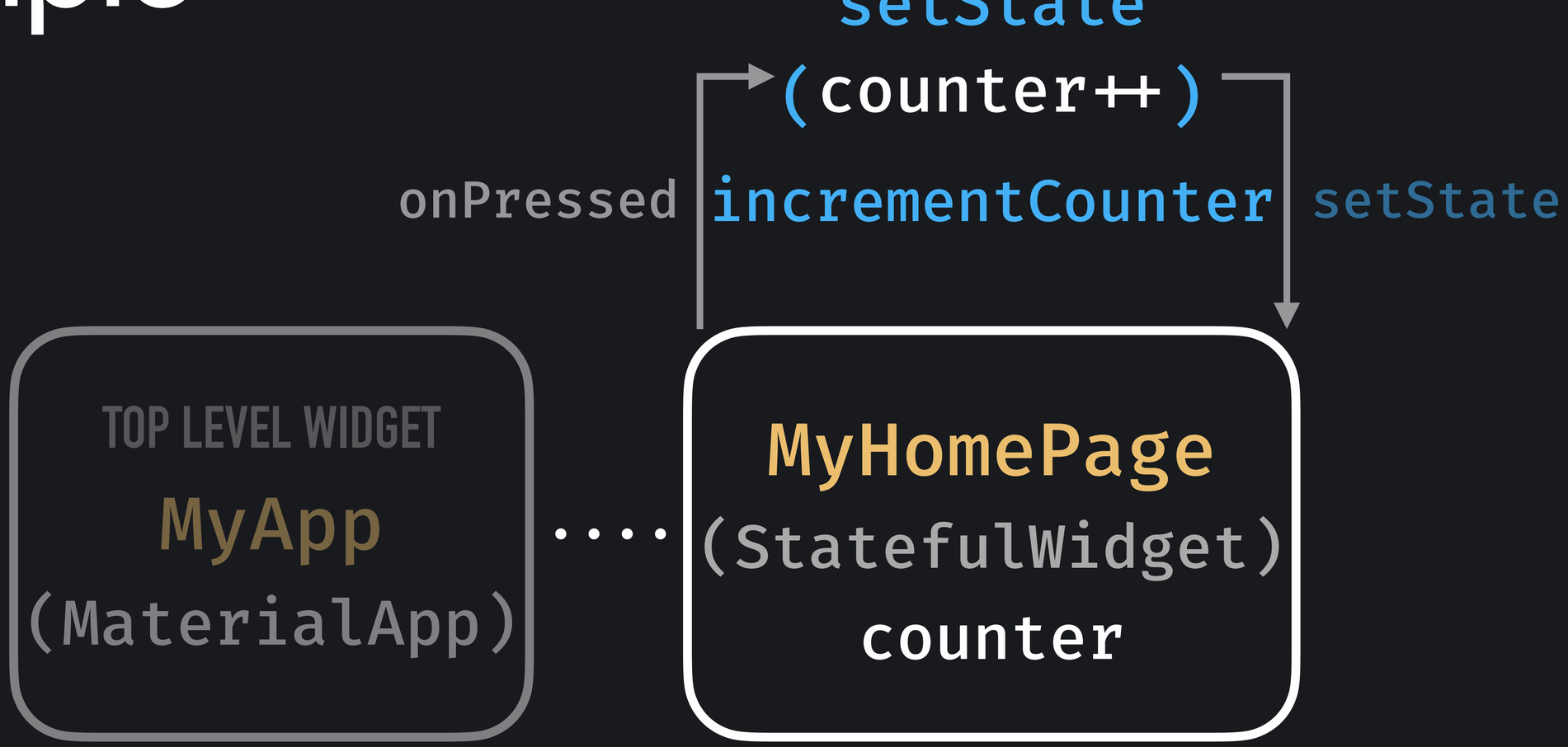
SOME CODE

```
class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return new MaterialApp(
      title: 'Flutter Demo',
      theme: new ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: new MyHomePage(title: 'Flutter Demo Home Page'),
    );
  }
}
```

```dart
class MyHomePage extends StatefulWidget {
  MyHomePage({Key key, this.title}) : super(key: key);

  final String title;

  @override
  _MyHomePageState createState() => new _MyHomePageState();
}
```

```
class _MyHomePageState extends State<MyHomePage> {
  int _counter = 0;

  void _incrementCounter() {
    setState(() {
      _counter++;
    });
  }

  ...
    floatingActionButton: new FloatingActionButton(
      onPressed: _incrementCounter,
      tooltip: 'Increment',
  ...
```

Example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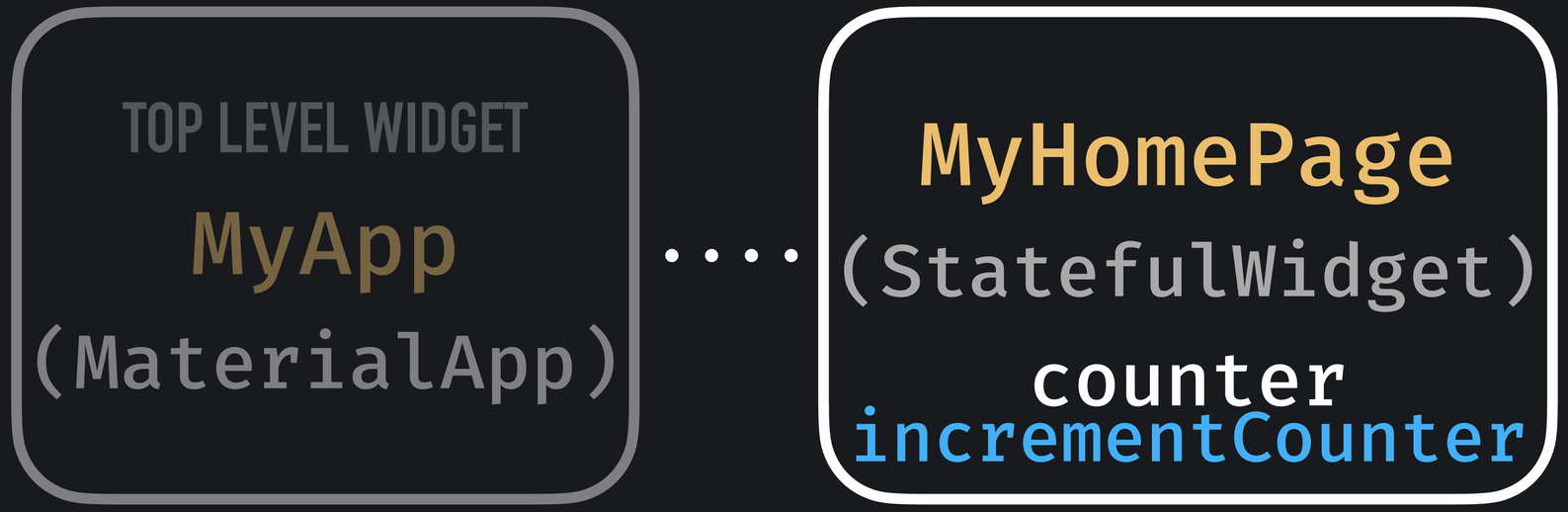

TOP LEVEL WIDGET
MyApp
(MaterialApp)
MyHomePage
(StatefulWidget)
counter
incrementCounter

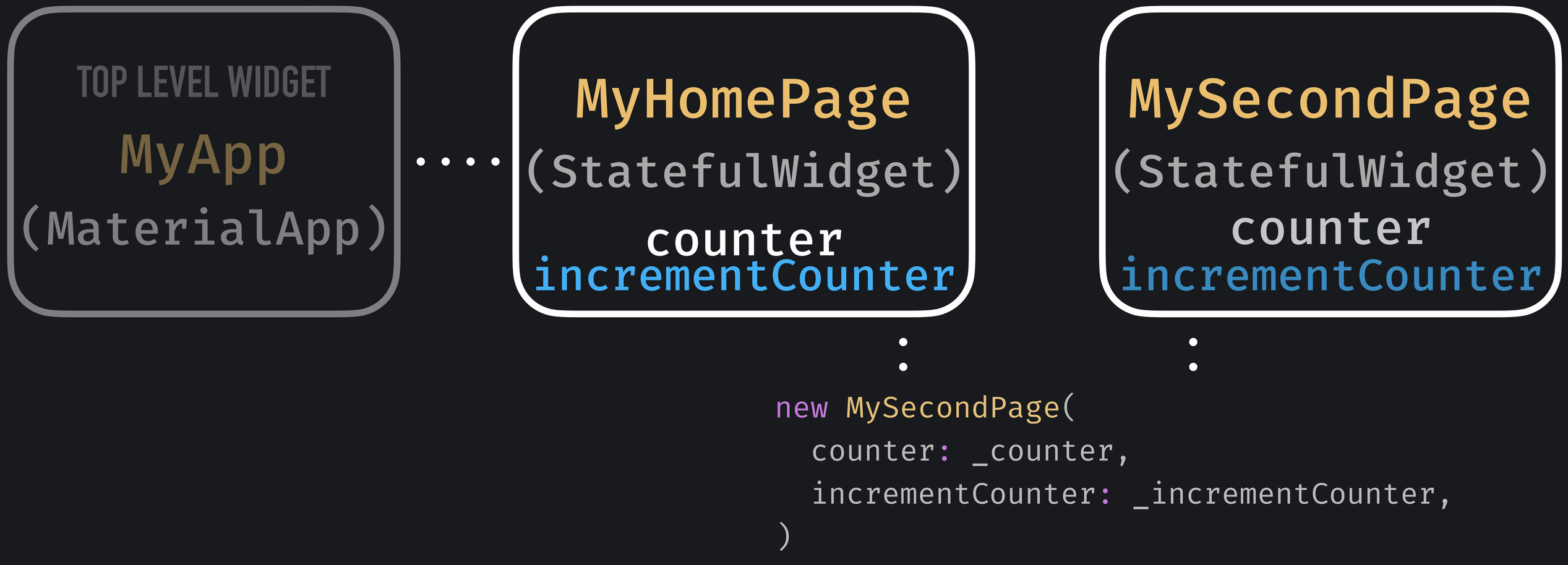
Example


TOP LEVEL WIDGET
MyApp
(MaterialApp)
MyHomePage
(StatefulWidget)
counter
incrementCounter
MySecondPage
(StatefulWidget)

Example

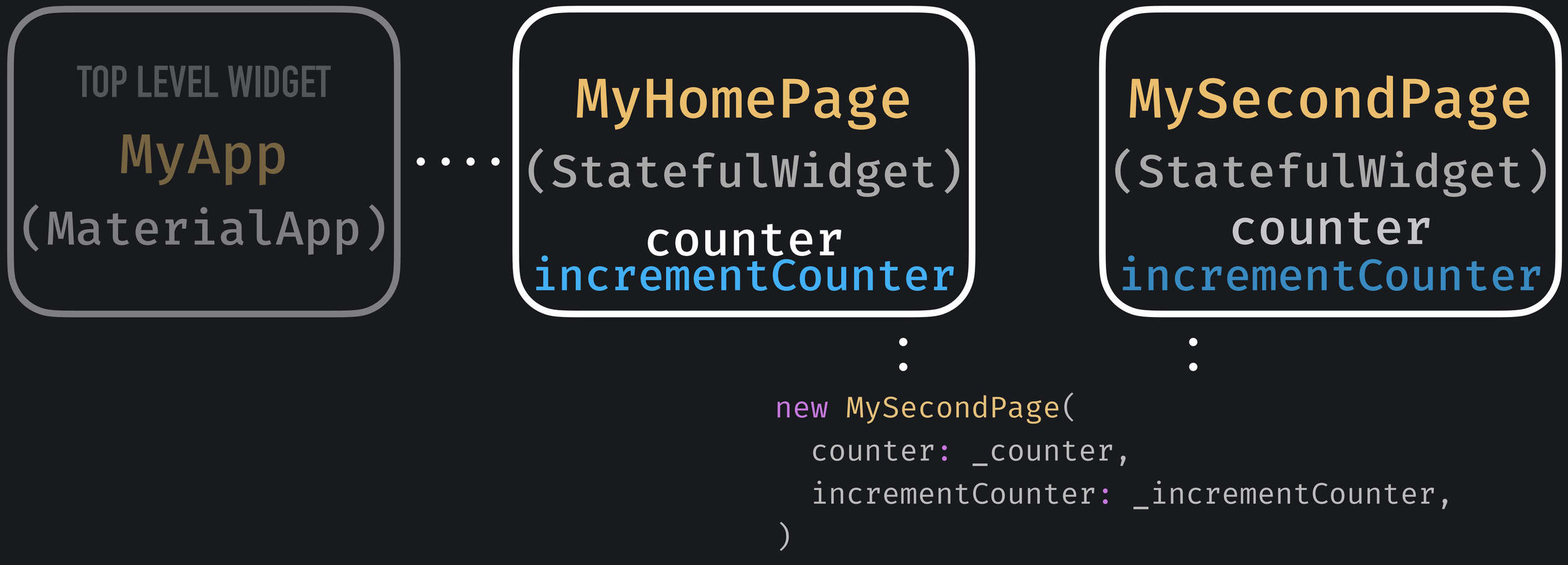

TOP LEVEL WIDGET
MyApp
(MaterialApp)
MyHomePage
(StatefulWidget)
counter
incrementCounter
MySecondPage
(StatefulWidget)
counter
incrementCounter

Example




```
new MySecondPage(
  counter: _counter,
  incrementCounter: _incrementCounter,
)
```

Example

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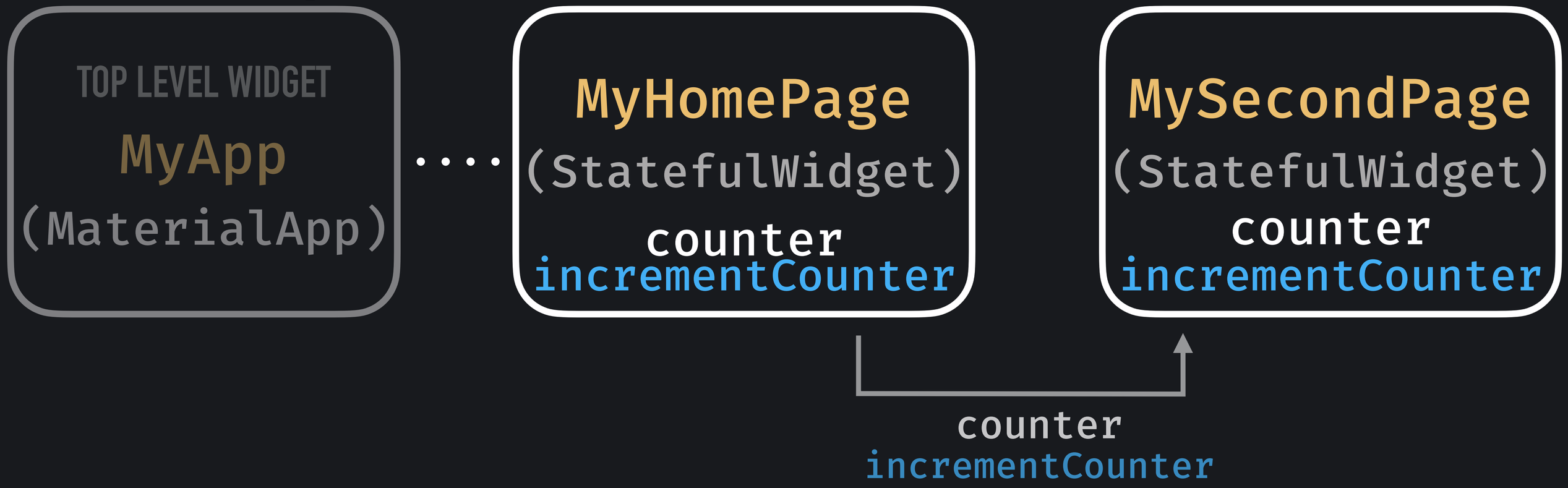
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(MaterialApp)
MyHomePage
(StatefulWidget)
counter
incrementCounter
MySecondPage
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incrementCounter
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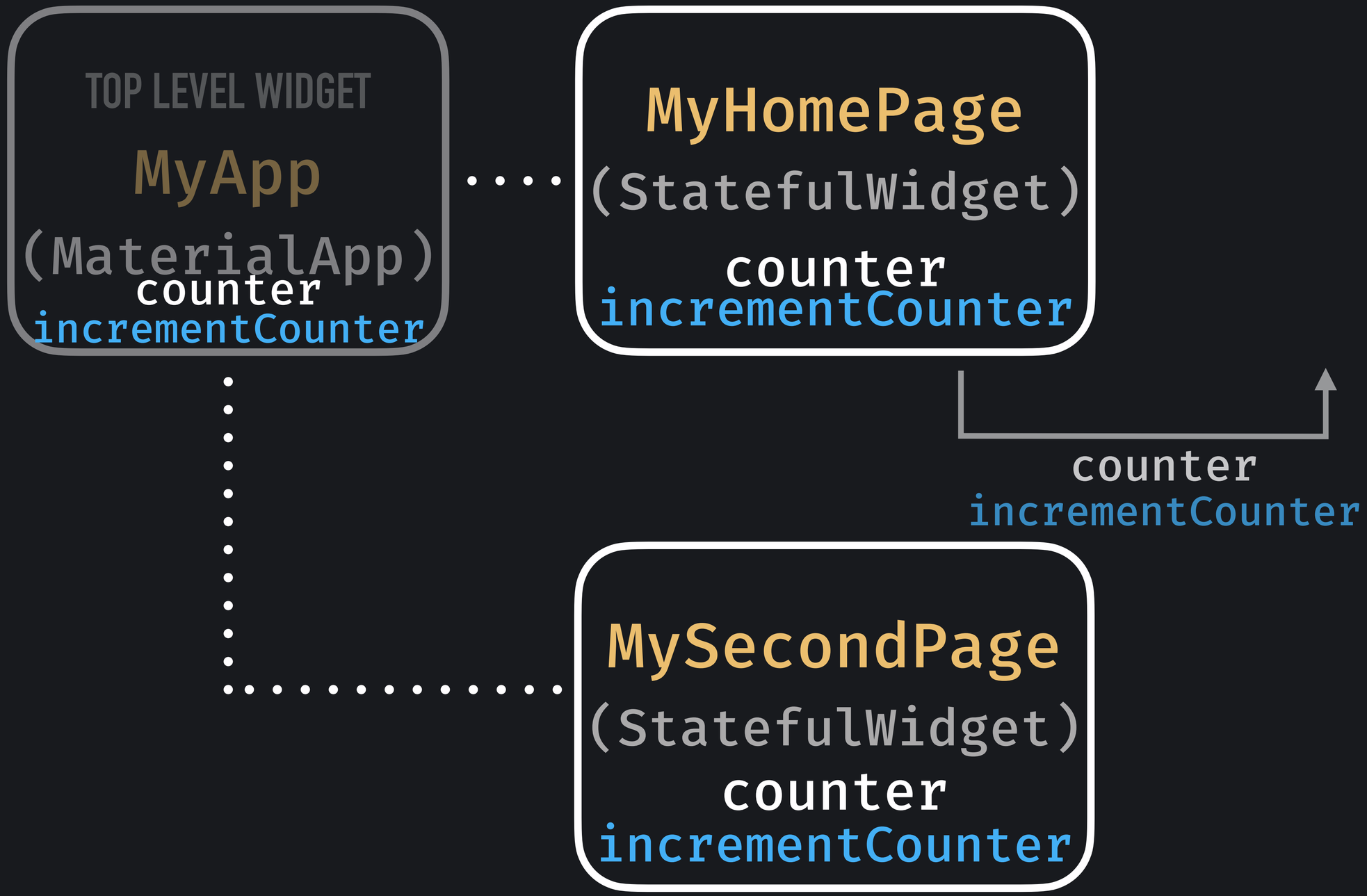
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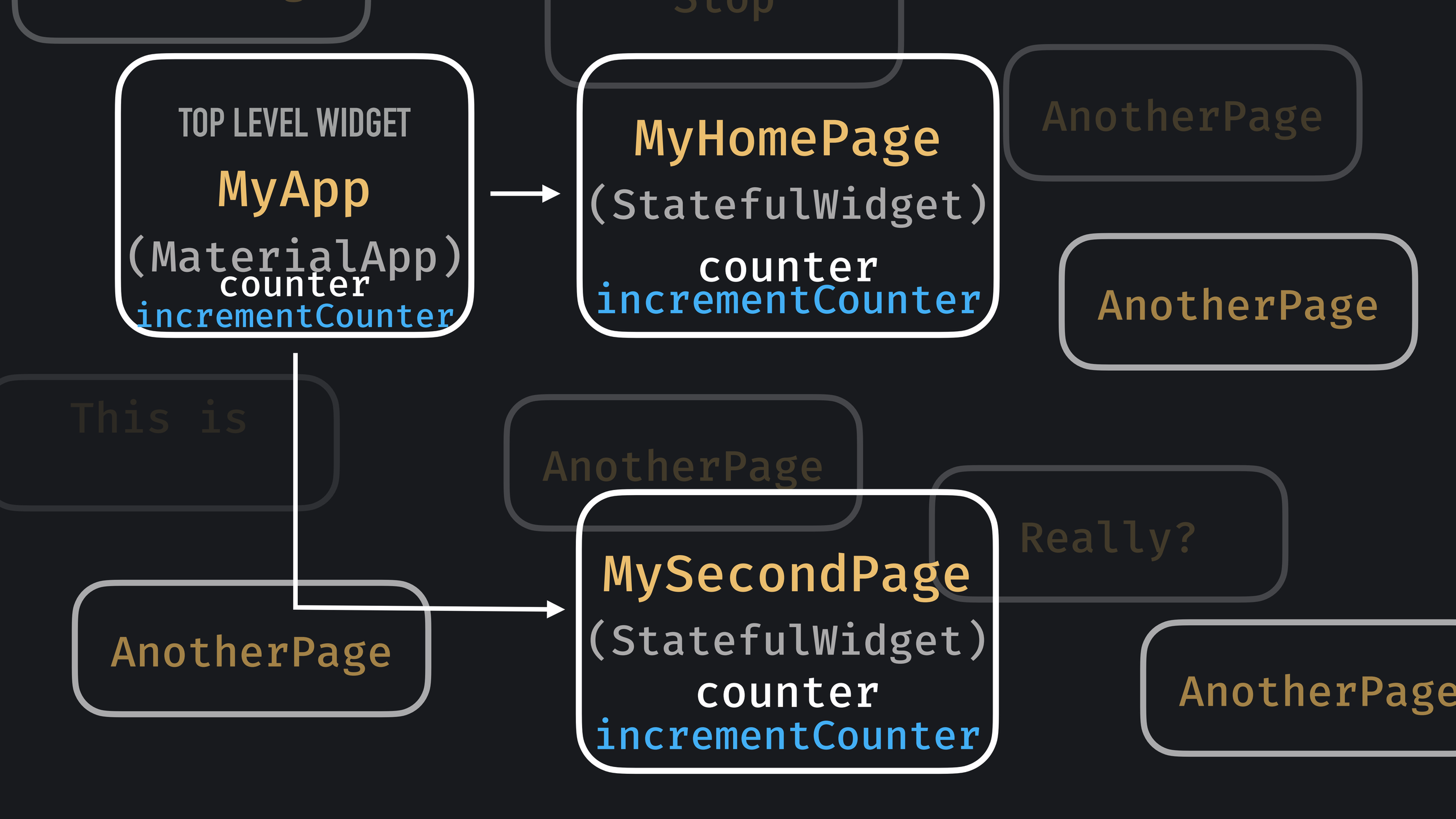
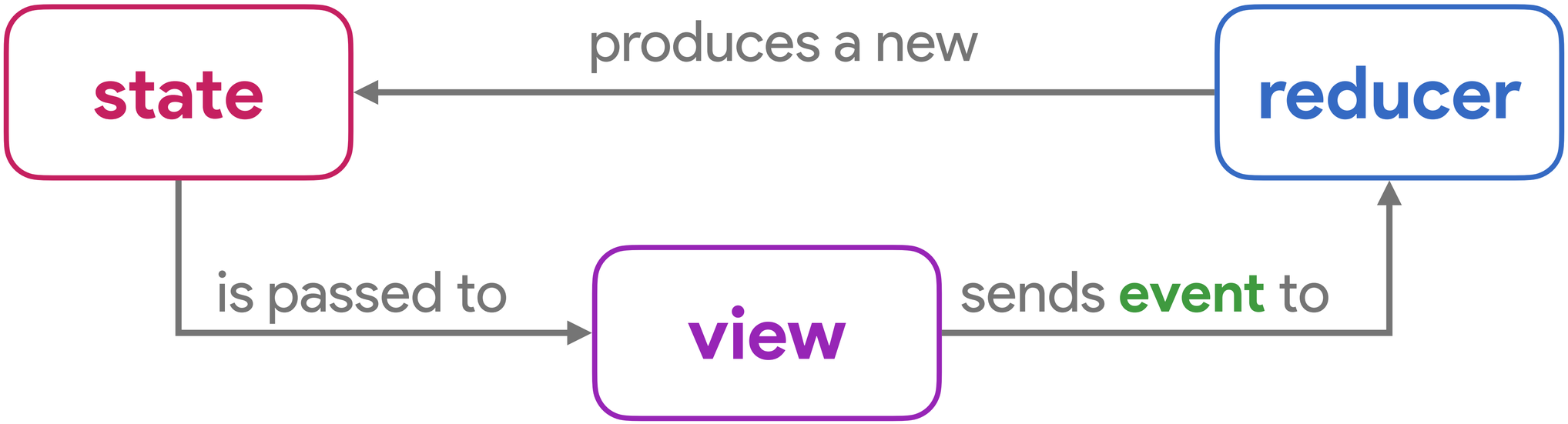

TOP LEVEL WIDGET
MyApp
(MaterialApp)
counter
incrementCounter
MyHomePage
(StatefulWidget)
counter
incrementCounter
MySecondPage
(StatefulWidget)
counter
incrementCounter
AnotherPage
AnotherPage
AnotherPage
AnotherPage
AnotherPage
Really?
AnotherPage
This is

Unidirectional Data Flow

Unidirectional Data Flow

- An immutable **state** that represents (a part of) your app.
- A collection of **events** that represent actions.
- A **reducer/pure function** that takes a **state** and an **event** and produces a new state.

Unidirectional Data Flow



Unidirectional Data Flow

Redux

Bloc

Cubit

Bloc

Business logic component

- A class containing a **state** and **reducers**.
- Uses the `Streams` API.
- Manages and produces new **states** internally.
- Consumes **events** in the form of classes.

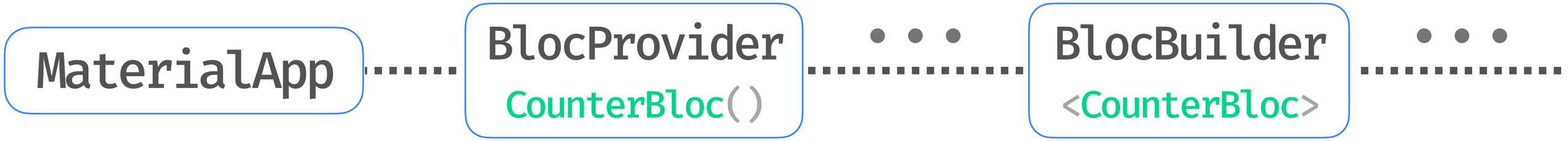
```
import 'package:bloc/bloc.dart';

class CounterBloc extends
  Bloc<CounterEvent, CounterState>
```

Bloc

- Are usually created per feature or screen.
- Can be passed using `BlocProviders` with `package:flutter_bloc`.

Bloc
Example



Cubit

Bloc's little brother

- A smaller, simpler form of Bloc.
- All Blocs are actually cubits.
- Same concepts, different execution.
- Uses public methods instead of classes to convey **events**.

Cubit in action

Google Developers

Experts

Thank You!

Slides and code available at https://cutt.ly/jfktalks

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