



Google Developer Student Clubs
USTHB

State Management



About us



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► Plan

- ▶ Stateless vs Stateful
- ▶ What is State
- ▶ State Management Approaches
- ▶ Provider
- ▶ Examples

1

Stateless vs Stateful

Stateless vs Stateful

Stateless

Widget never changes.

Ex:

- Text,
- Icon,
- Container

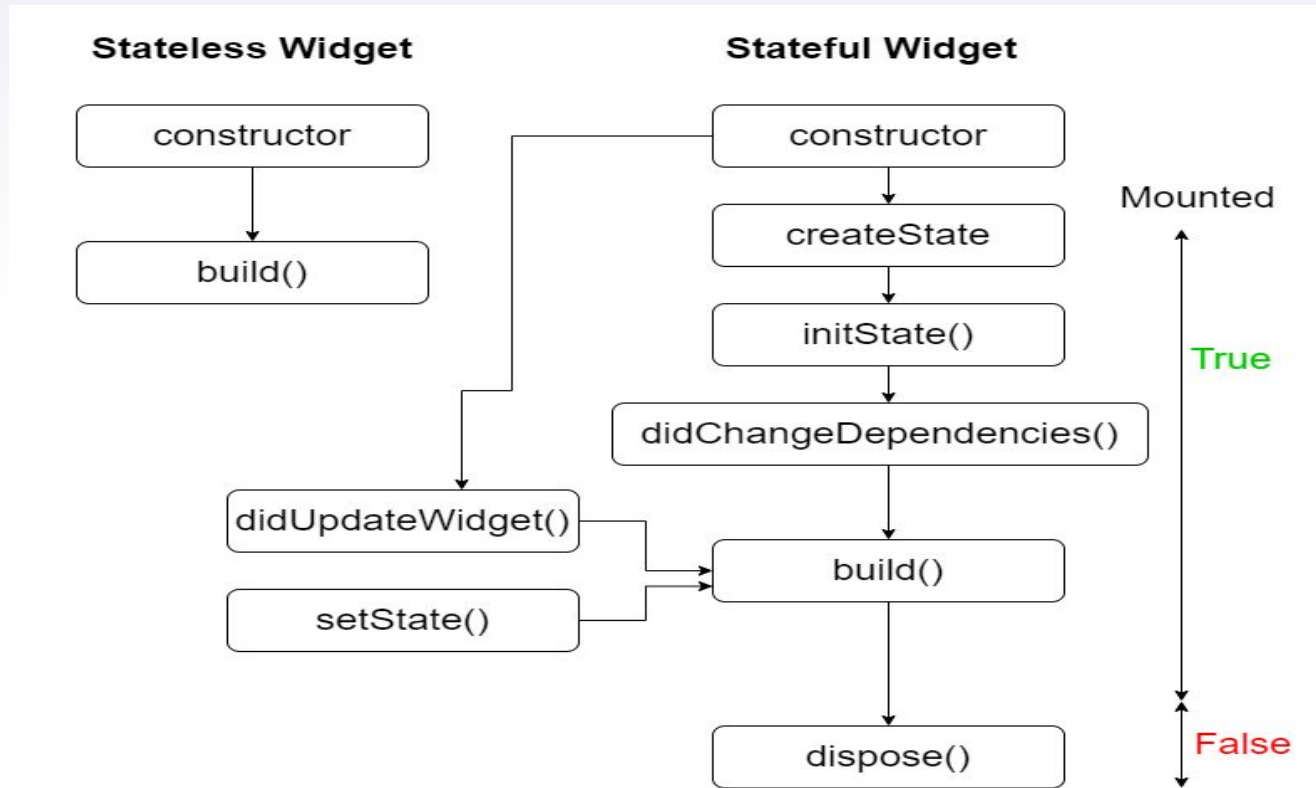
Stateful

Dynamic widget

Ex :

- Checkbox,
- TextField,
- Slider

Stateless vs Stateful



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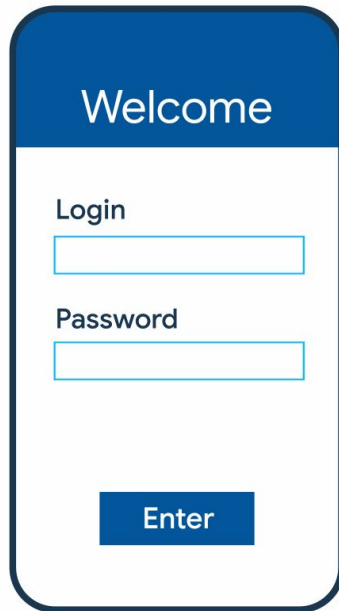
2

What is State

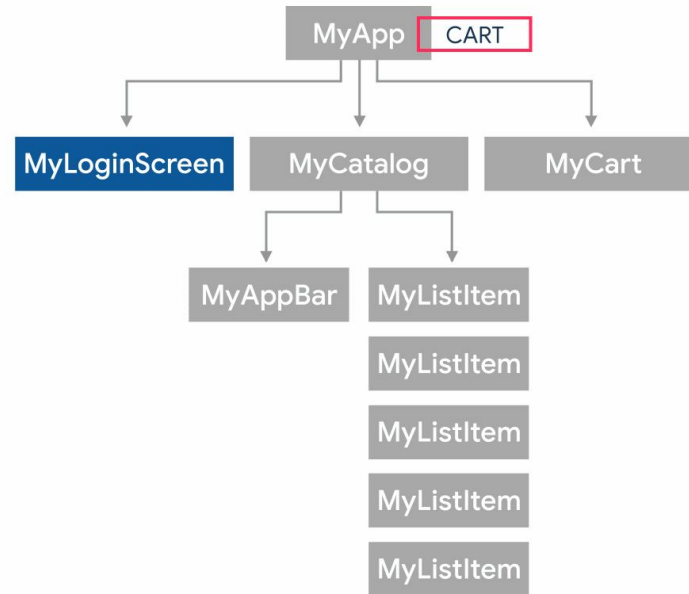
State

- ▶ **State** consists of values or any data stored in your app that can change
- ▶ Like **_counter** in the default flutter app
- ▶ State comes a time when you need to share application state **between screens**, across your app

State - Example



A mobile app login screen mockup. It features a blue header with the text "Welcome". Below the header, there is a "Login" label followed by a text input field. Underneath the input field is a "Password" label followed by another text input field. At the bottom of the screen is a blue button with the text "Enter".



State - Declarative UI

Flutter is declarative. This means that Flutter builds its user interface to reflect the current state of your app.

$$\text{UI} = f(\text{state})$$

The layout
on the screen

Your
build
methods

The application state

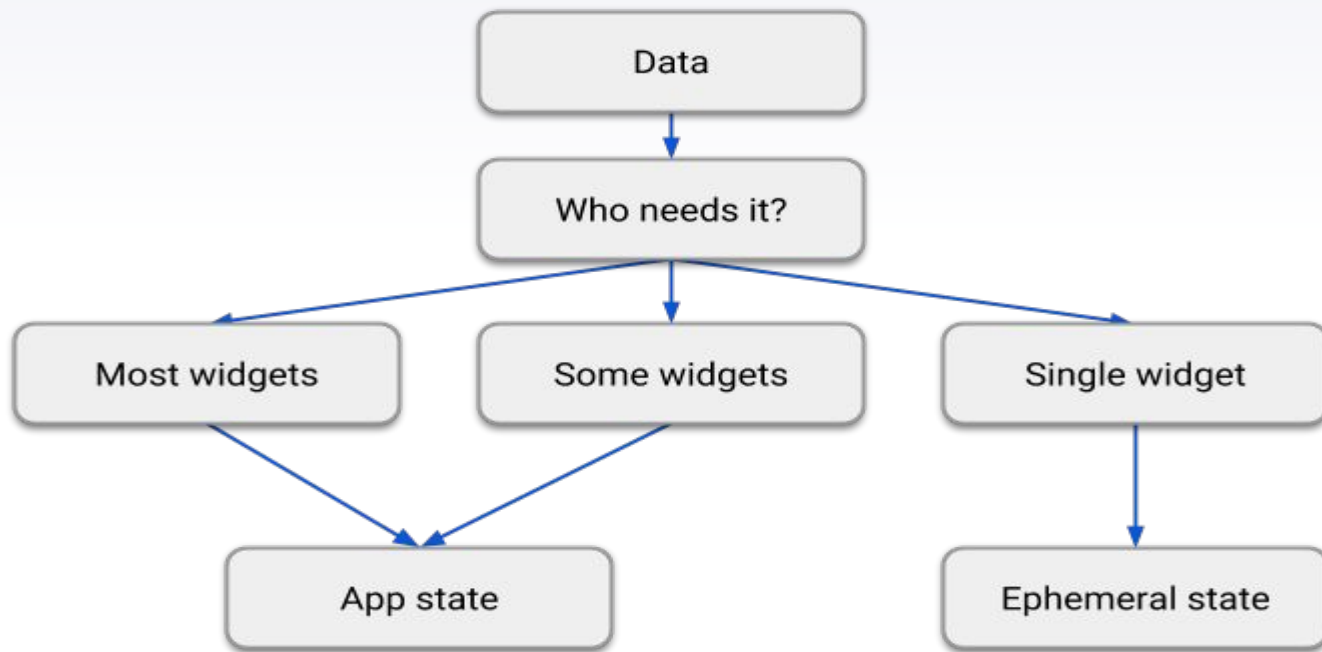
Ephemeral State

- ▶ **Ephemeral** state (sometimes called UI state or **local** state) is the state you can neatly contain in a single widget
 - ▶ Like : index of PageView, current Selected Tab in a BottomNavigationBar.
- ▶ There is no need to use state management techniques on this kind of state, All you need is **StatefulWidget** (**setState** is enough).

App State

- ▶ State that is **not ephemeral**, that you want to share across many parts of your app, and that you want to keep between user **sessions**, is what we call application state (sometimes also called **shared state**).
 - ▶ Like : Login info, The shopping cart in an E-commerce app.
- ▶ For managing app state, you'll want to research your options. Your choice depends on the complexity and nature of your app, your team's previous experience, and many other aspects.

Ephemeral vs App State



Ephemeral vs App State

There is no clear-cut, universal rule to distinguish whether a particular variable is ephemeral or app state. Sometimes, you'll have to refactor one into another. For example, you'll start with some clearly ephemeral state, but as your application grows in features, it might need to be moved to app state.

“The rule of thumb is: Do whatever is less awkward.”

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State Management Approaches

State Management Approaches

- ▶ setState
- ▶ InheritedWidget & InheritedModel
- ▶ Provider
- ▶ Riverpod
- ▶ Redux
- ▶ Bloc
- ▶ Mobx, GetX,.....

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4

Provider



Provider

- ▶ Change Notifier
- ▶ Change Notifier Provider
- ▶ Consumer



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Examples

Examples

- ▶ Counter App with Provider
- ▶ Tasks Manager App with Provider

Ressources

- ▶ Flutter docs & Youtube channel
- ▶ Flutter community
- ▶ Medium
- ▶ Youtube Channels:
 - ▷ Reso Coder
 - ▷ Vandan Nahavandipoor

THANKS!

Any questions?

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