

# Flux Pattern

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# Simple state-sharing App

- <https://codesandbox.io/s/upbeat-fast-lqcqdd>

## Todos

What needs to be done?

☐

Read email

▼

×

☐

Clean house

▼

×

☐

Read newspaper

▼

×

☐

Clean bedroom

▼

×

☐

Clean house

▼

×

Actions

Mark All Completed

Clear Completed

Remaining Todos

5 items left

Filter by Status

All

Active

Completed

Filter by Color

☐ Green

☐ Blue

☐ Orange

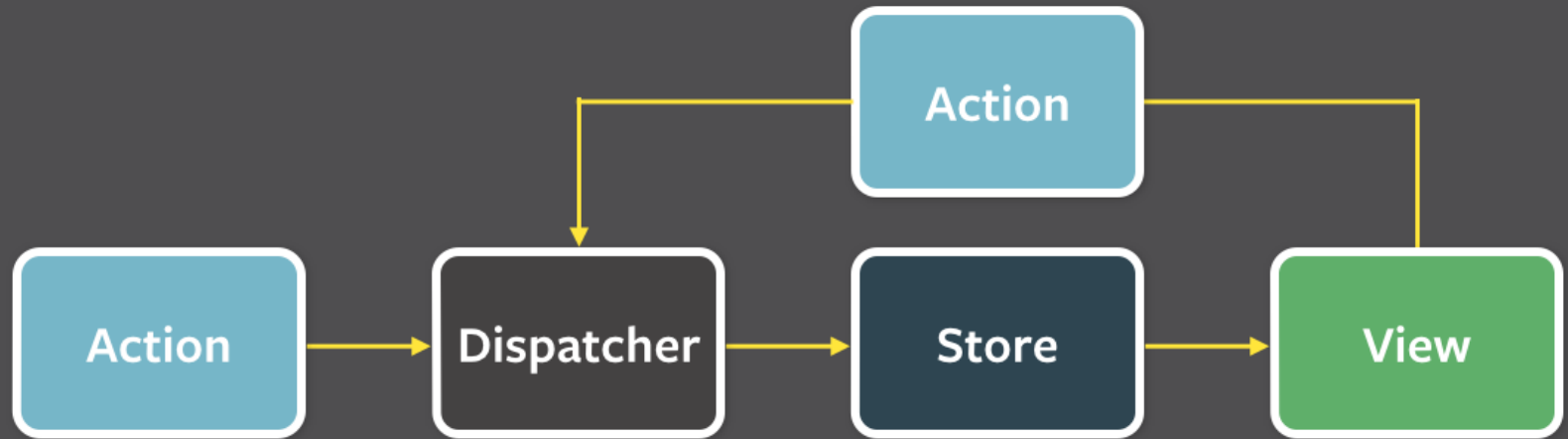
☐ Purple

☐ Red

# How does UI get updated?

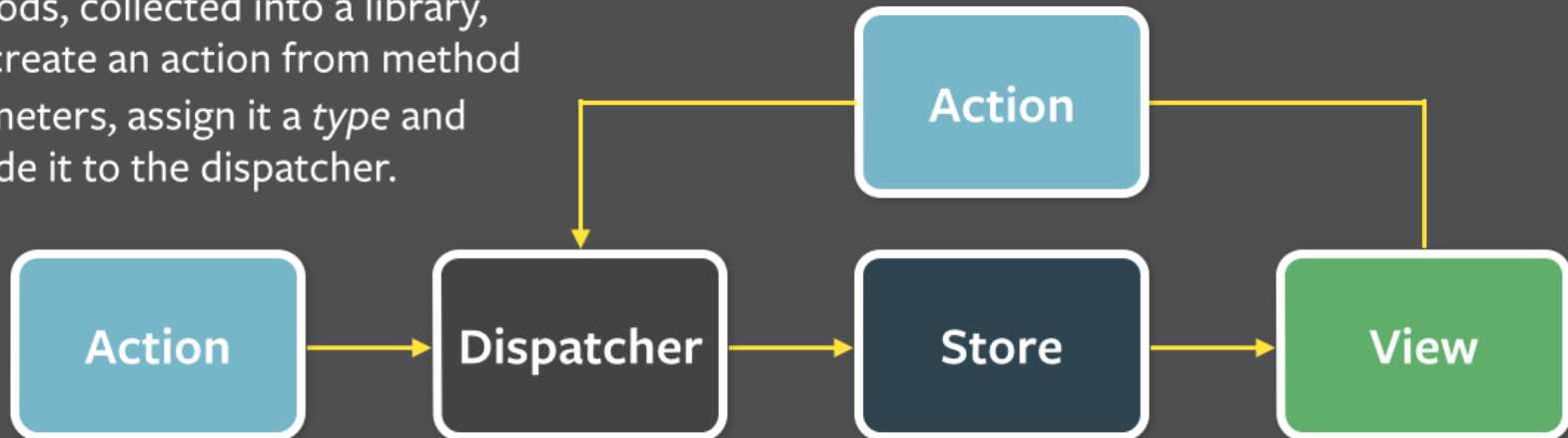
- Frontend is stateful
- User interactions triggers events
- Events make changes in the state

# Flux Pattern



# Flux Pattern

*Action creators* are helper methods, collected into a library, that create an action from method parameters, assign it a *type* and provide it to the dispatcher.



Every action is sent to all stores via the *callbacks* the stores register with the dispatcher.

After stores update themselves in response to an action, they emit a *change* event.

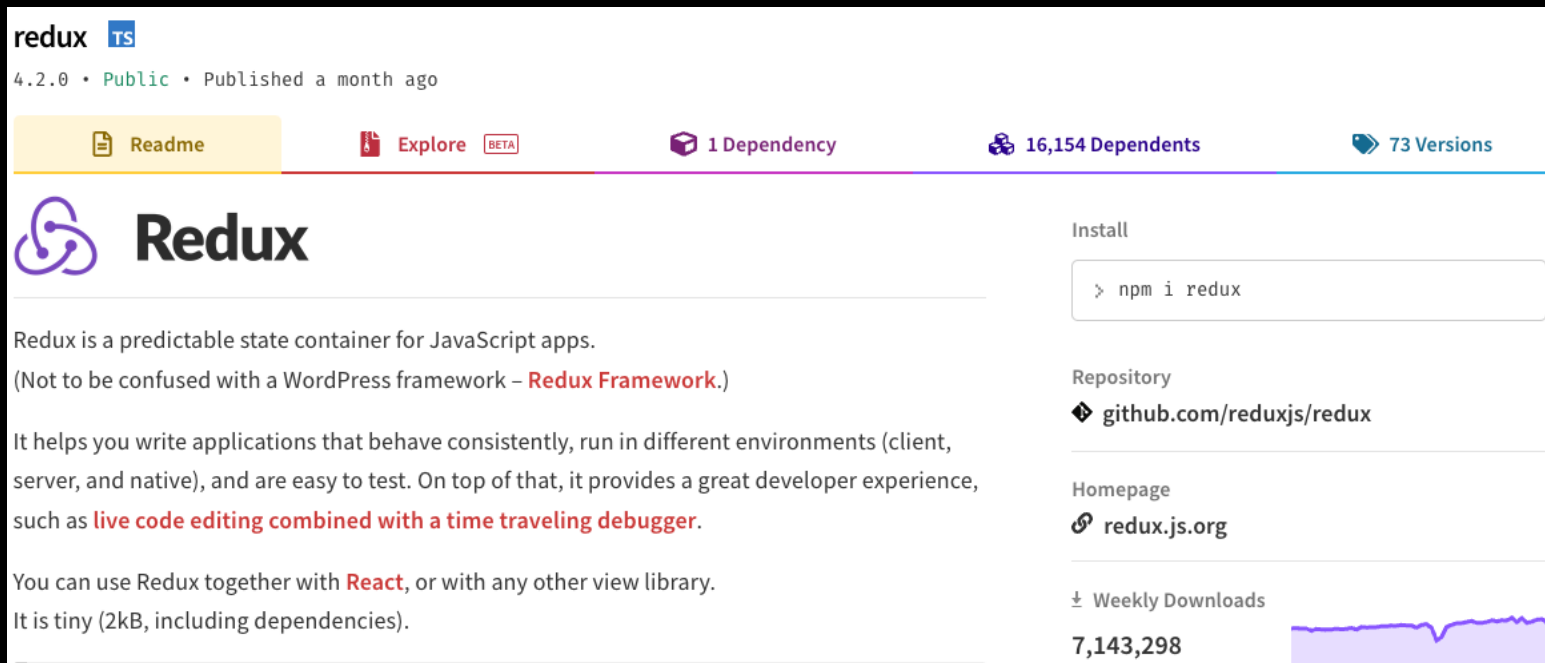
Special views called *controller-views*, listen for *change* events, retrieve the new data from the stores and provide the new data to the entire tree of their child views.

# Flux Pattern

- Created at Meta(=Facebook) at 2014
- Uni-directional data flow
  - vs MVC (bi-directional data flow)
- Composed of...
  - Dispatcher : Takes actions and updates store
  - Store : Internal state, emits change events
  - View : Updates UI in response to store events
  - Action : Messages sent to the dispatcher

# Redux

- Implementation of Flux Pattern (with single store)
- Most popular React state management library



The screenshot shows the Redux package page on npm. At the top, it displays 'redux' with a TypeScript (TS) badge, version '4.2.0', 'Public' status, and 'Published a month ago'. Below this is a navigation bar with links for 'Readme', 'Explore' (marked BETA), '1 Dependency', '16,154 Dependents', and '73 Versions'. The main content area features the Redux logo and the title 'Redux'. A description states: 'Redux is a predictable state container for JavaScript apps. (Not to be confused with a WordPress framework – **Redux Framework**.)' It then explains that it helps write applications that behave consistently across different environments (client, server, and native) and provides a great developer experience, such as 'live code editing combined with a time traveling debugger'. It also mentions that Redux can be used with 'React' or any other view library and is 'tiny (2kB, including dependencies)'. On the right side, there is an 'Install' section with a code block showing '> npm i redux'. Below that is the 'Repository' section with a link to 'github.com/reduxjs/redux'. The 'Homepage' section has a link to 'redux.js.org'. At the bottom right, the 'Weekly Downloads' are shown as '7,143,298' with a small area chart.

redux TS  
4.2.0 • Public • Published a month ago

Readme Explore BETA 1 Dependency 16,154 Dependents 73 Versions

## Redux

Redux is a predictable state container for JavaScript apps.  
(Not to be confused with a WordPress framework – **Redux Framework**.)

It helps you write applications that behave consistently, run in different environments (client, server, and native), and are easy to test. On top of that, it provides a great developer experience, such as **live code editing combined with a time traveling debugger**.

You can use Redux together with **React**, or with any other view library.  
It is tiny (2kB, including dependencies).

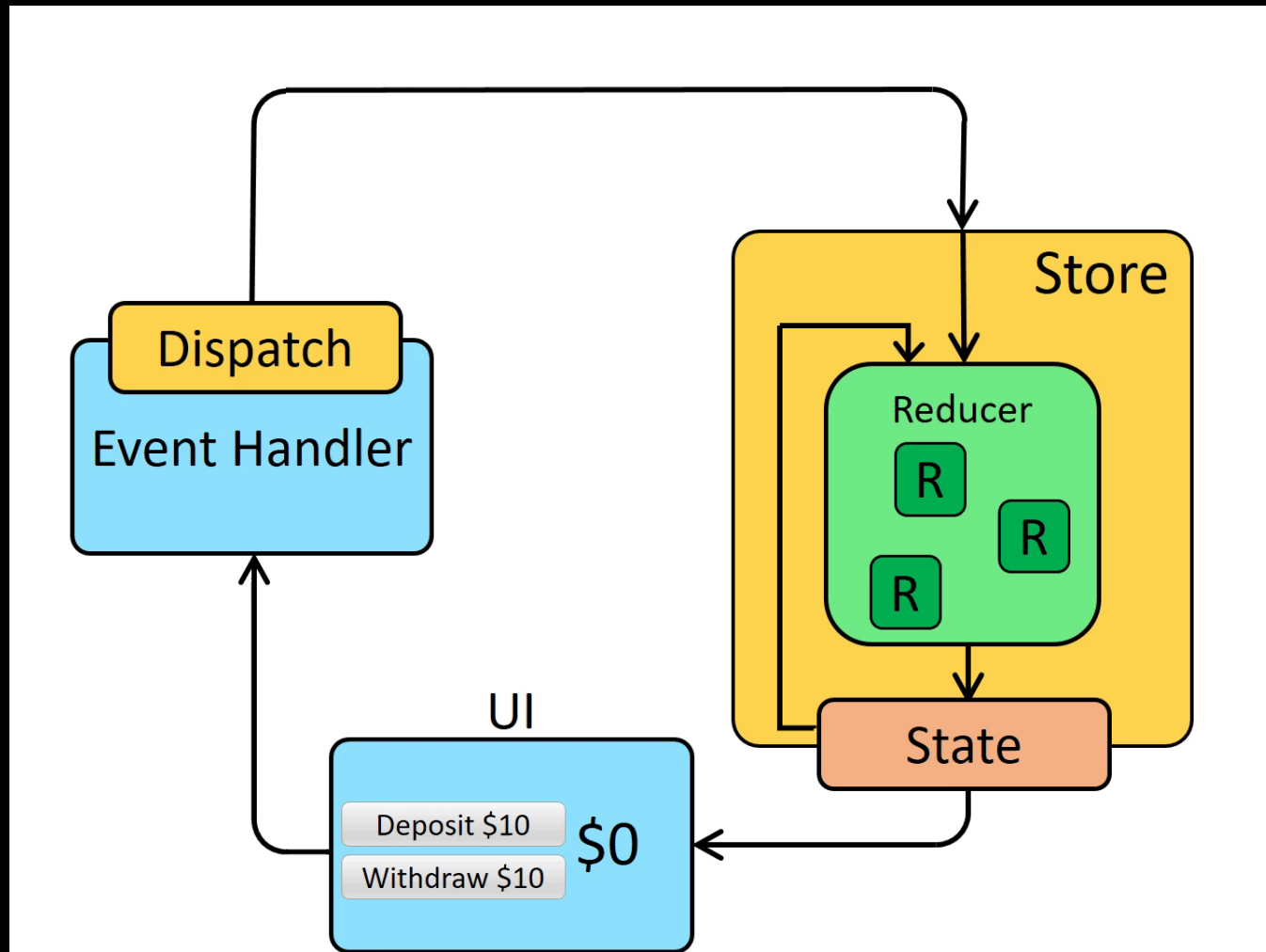
Install  
> npm i redux

Repository  
github.com/reduxjs/redux

Homepage  
redux.js.org

Weekly Downloads  
7,143,298

# Redux





# Observer Pattern in Vanilla Redux

- <https://codesandbox.io/s/redux-fundamentals-core-example-forked-klsxwq>
- Create data store
- Subscribe callback functions to the store
- User interactions will update store
- UI will be updated when callbacks are executed

# Observer Pattern in React Redux

- <https://codesandbox.io/s/upbeat-fast-lqcqdg>
- Create data store
- Pass store into the context provider
- Context consumers are notified when context value changes
- react-redux hooks will automatically subscribe the component to the store

Q & A