Redux

Section 5

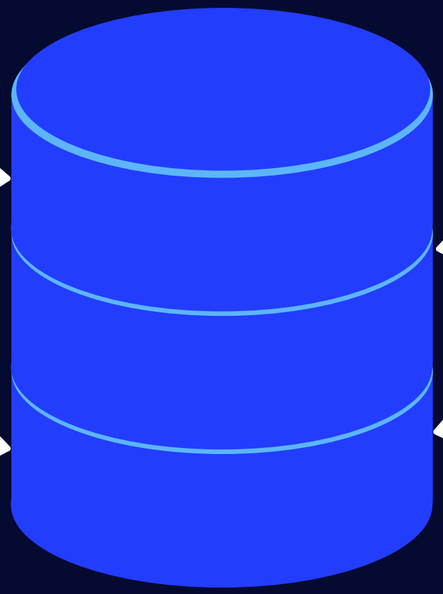
In this section

- What is Redux
- Do we need it?
- Setting up Redux for the app

What is Redux?

Can be used with any JS library

Excellent dev tools



State container for Javascript apps

Like having a database in the client

Do we need it?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Flux libraries are like glasses: you'll know when you need them.
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Do we need it?

Does the data change over time?

Do we want to cache data in memory, but it can change whilst cached?

Is our data relational and do models depend on each other?

Is the same data assembled from different sources and rendered in several places in the UI?

Redux Trade Offs*

Pure objects only

```
const User = {
  name: 'Alice',
  age: 25
};
```

```
const User = {
  name: 'Bob',
  createdAt: new Date(),
  id: Math.random()
};
```

Redux Trade Offs*

Describe changes with pure functions only

```
function add(a, b) {
  return a + b;
}
```

```
let counter = 0;

function increment() {
  counter++;
  return counter;
}
```

Redux Terminology

Actions

Action creators

Store

Reducers

Redux Terminology

```
{ type: 'ADD_TODO', payload: 'Buy milk' }).
```

Actions

Redux Terminology

```
const addTodo = (text: string) => ({ type: 'ADD_TODO', payload: text });
```

Action creators

Redux Terminology

The centralized place that holds your app’s state. You interact with it using actions.

Store

Redux Terminology

Reducers

```ts
type CounterState = {
  value: number;
};

type Action =
  | { type: 'INCREMENT' }
  | { type: 'DECREMENT' }

const initialState: CounterState = { value: 0 };

function counterReducer(state = initialState, action: Action): CounterState {
  switch (action.type) {
    case 'INCREMENT':
      return { value: state.value + 1 };
    case 'DECREMENT':
      return { value: state.value - 1 };
    default:
      return state;
  }
}
```

Redux Toolkit

The official, opinionated, batteries-included toolset for efficient Redux development

Get Started

Simple

Includes utilities to simplify common use cases like **store setup, creating reducers, immutable update logic**, and more.

Opinionated

Provides **good defaults for store setup out of the box**, and includes **the most commonly used Redux addons built-in**.

Powerful

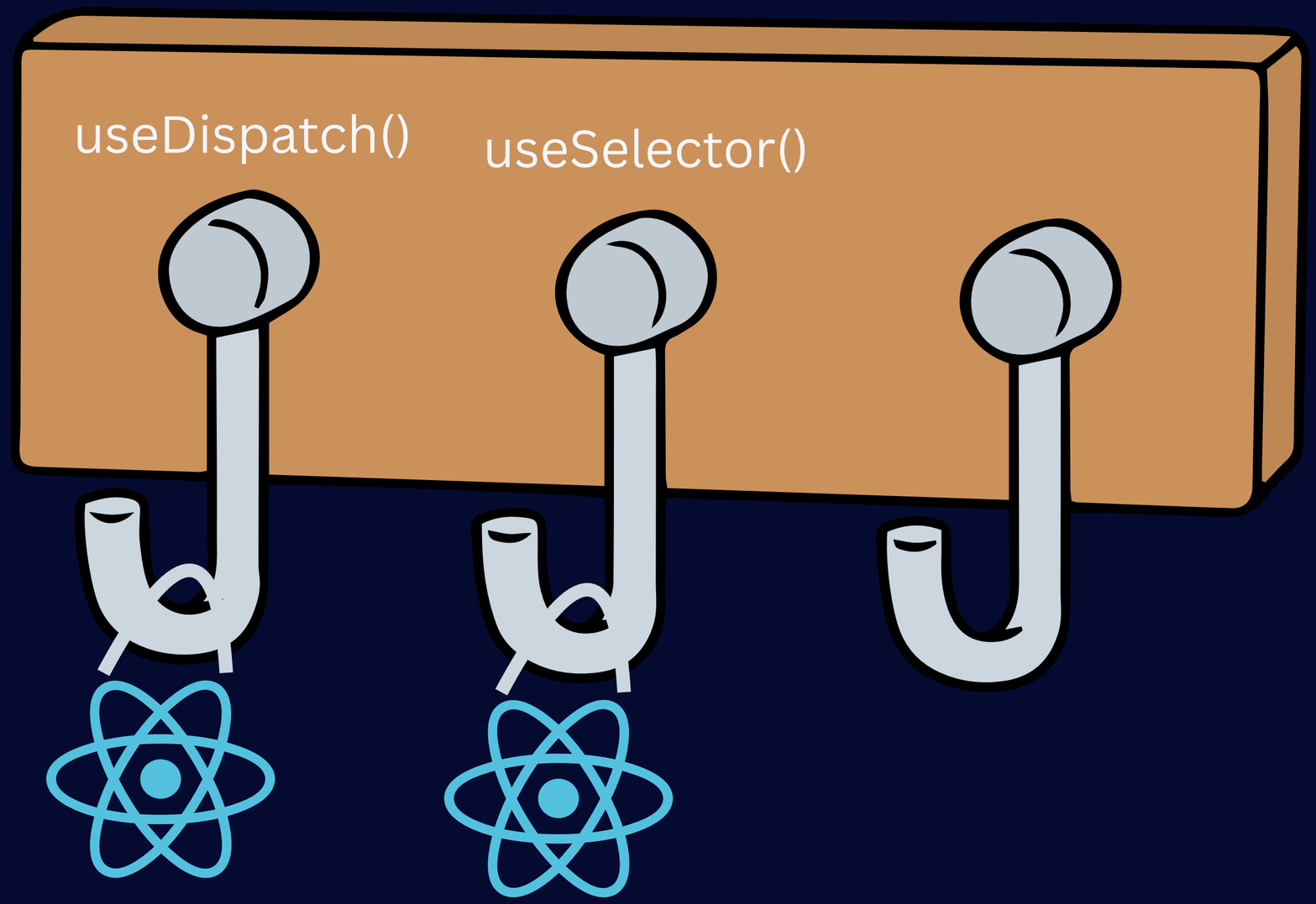
Takes inspiration from libraries like Immer and Autodux to let you **write "mutative" immutable update logic**, and even **create entire "slices" of state automatically**.

Effective

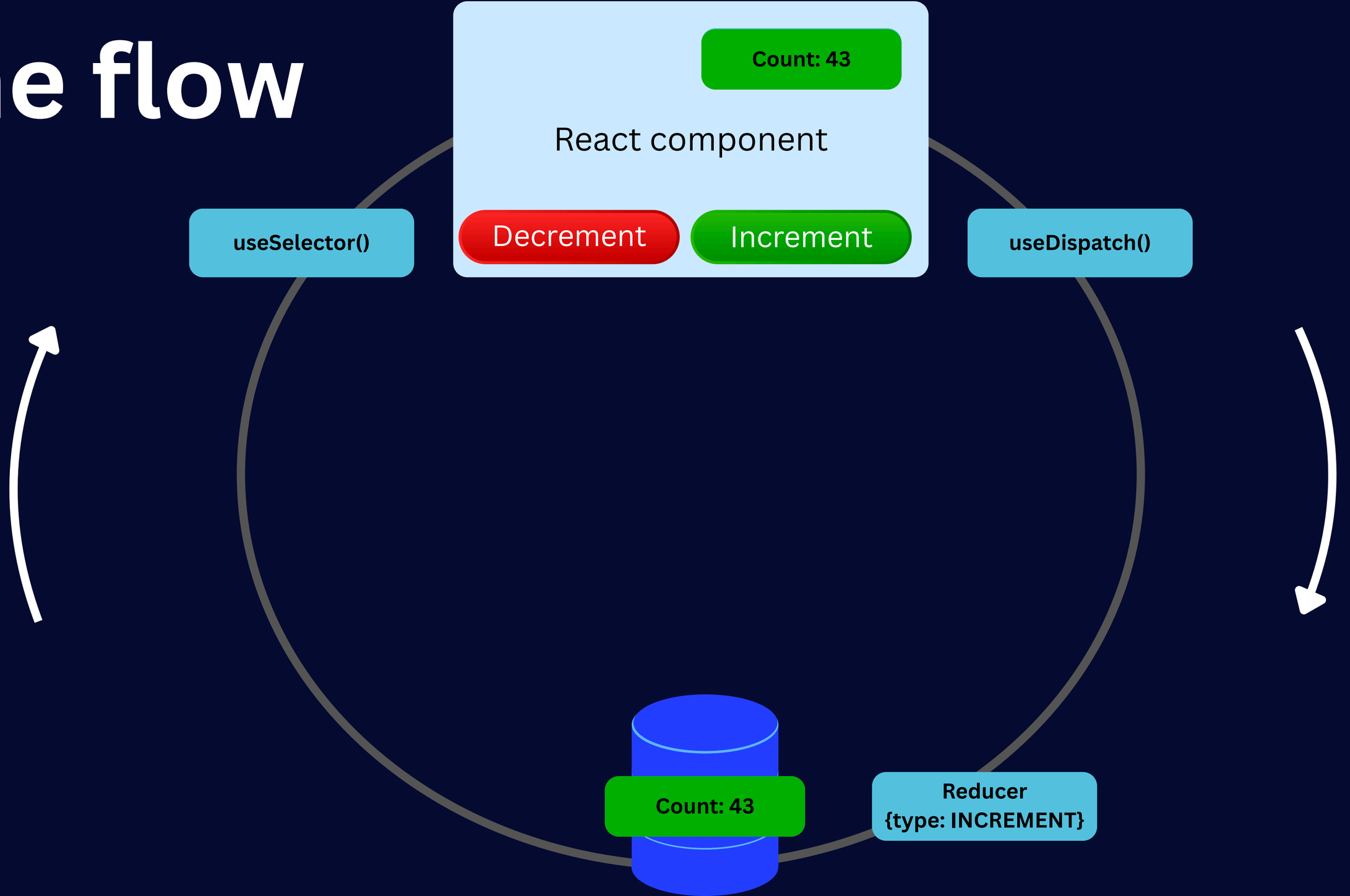
Lets you focus on the core logic your app needs, so you can **do more work with less code**.

The goal of this section

React Redux


useDispatch()
useSelector()

The flow


Count: 43
React component
Decrement
Increment
useSelector()
useDispatch()
Count: 43
Reducer
{type: INCREMENT}

Summary

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- Do we need it?
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Up next