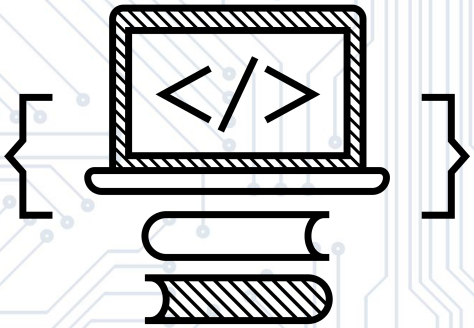
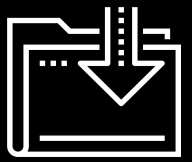


Global State in React

Web Development

Lesson 20.3



What is “state”?

It is **data or information that gets changed** or manipulated throughout the runtime of a program.

The "state" of a program at a given time refers to **a snapshot of all the data** the program is currently looking at or analyzing to get to the next step in it's execution

State is variables that are watched

Example: Cars have state. What happens when...

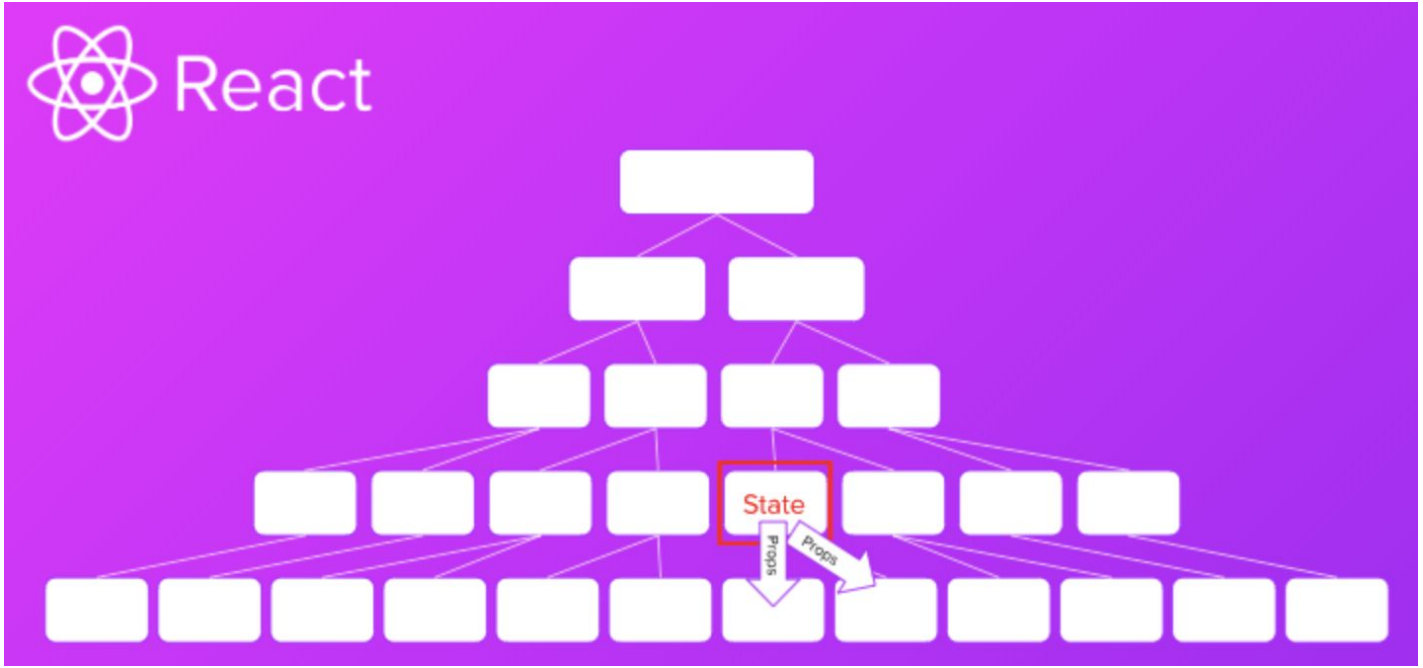
...you insert the key into the ignition?

...turn the key?

...press the brake pedal?

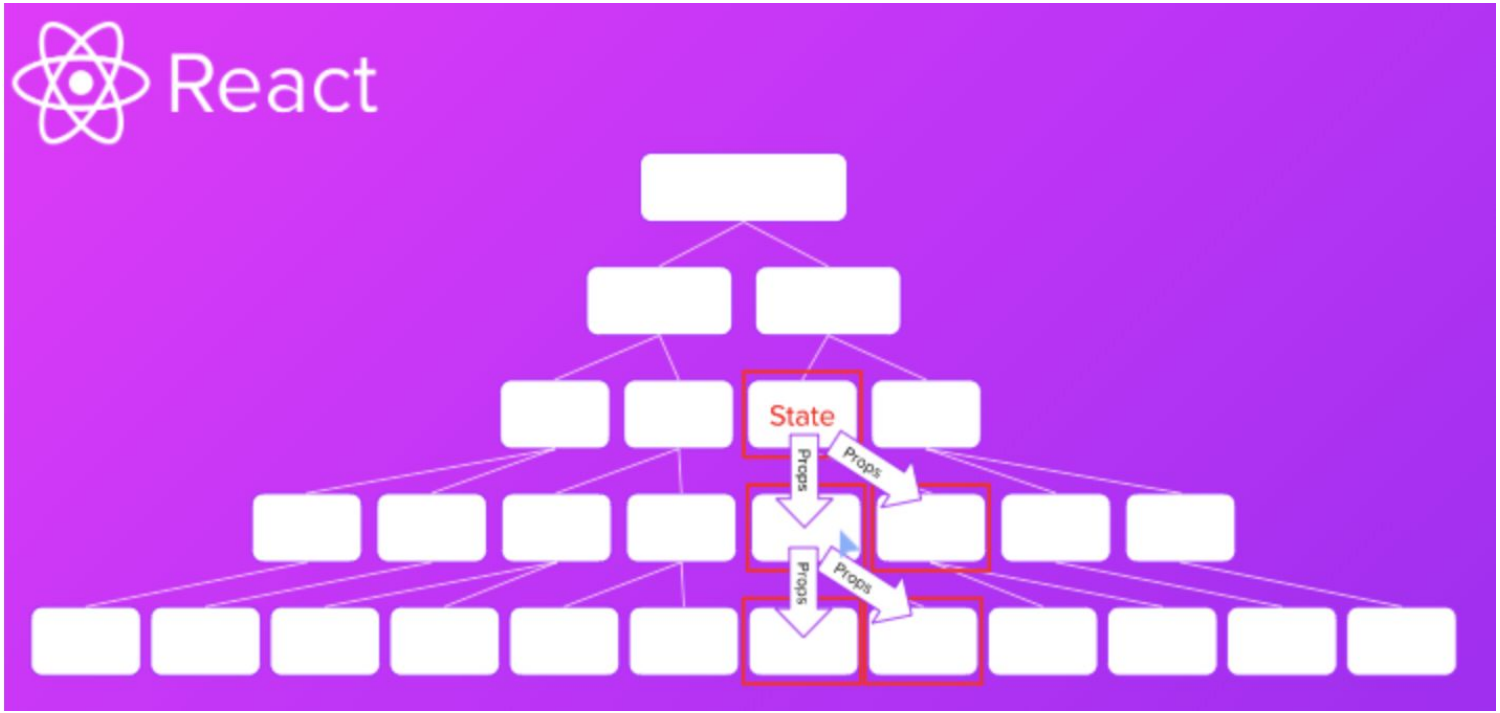
...shift into Drive?

Global State



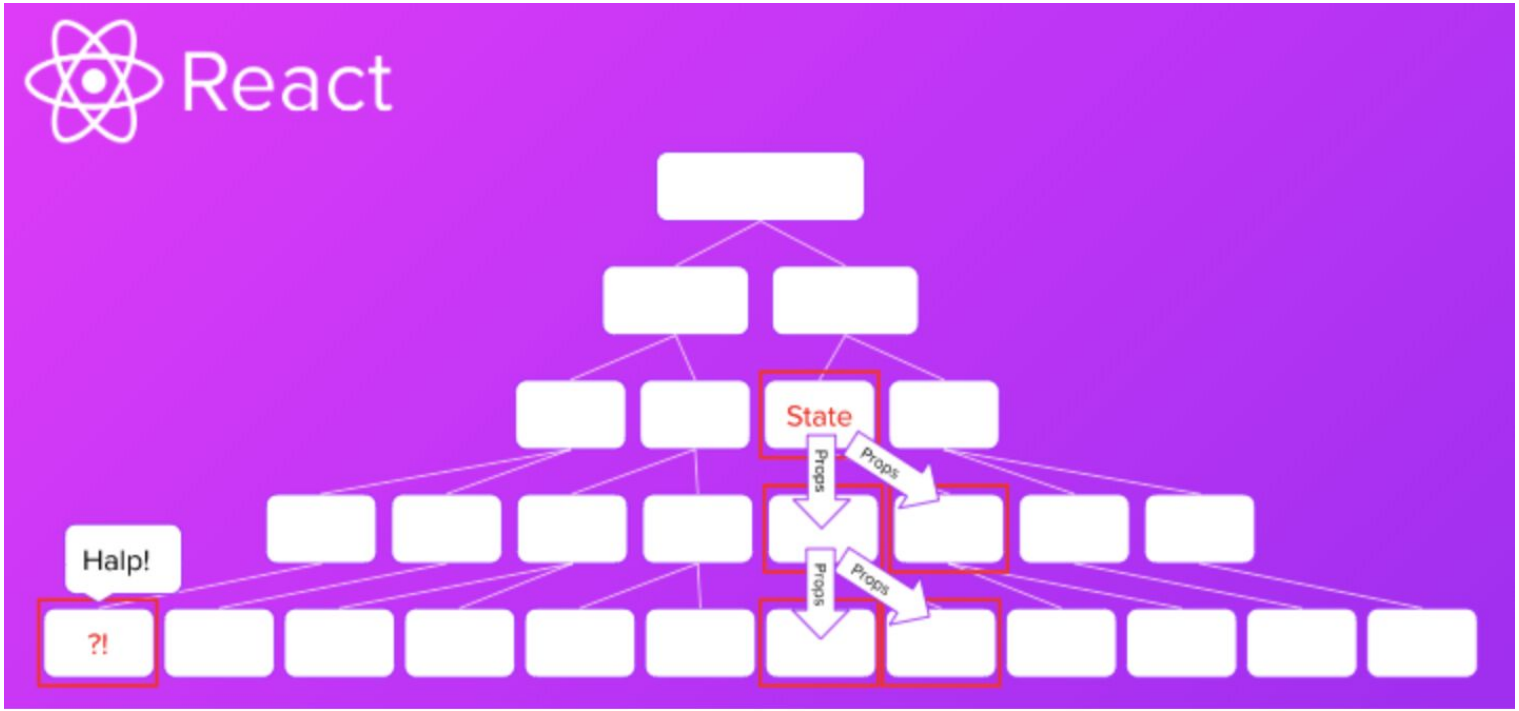
Global State

To apply state to more components, you need to raise the state up the tree



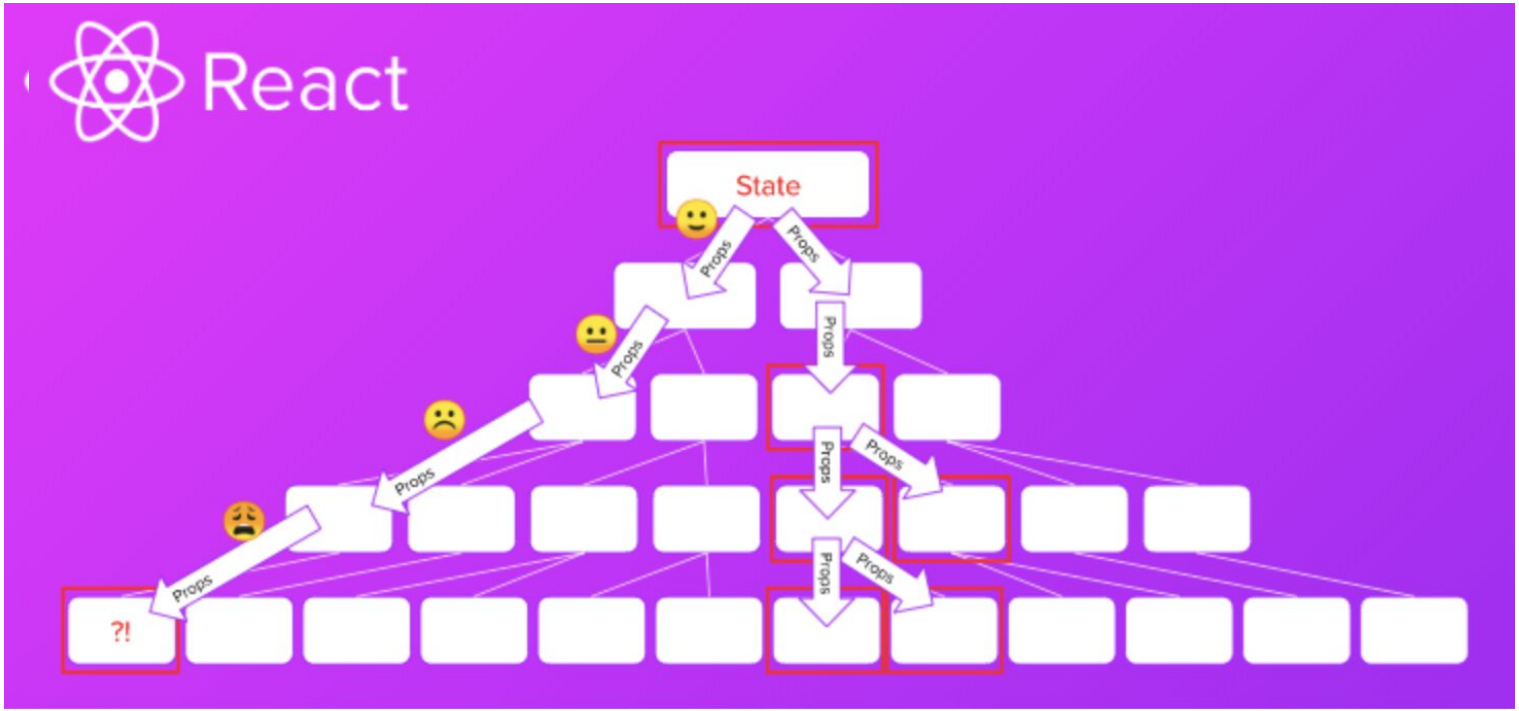
Global State

To apply state to more components, you need to raise the state up the tree



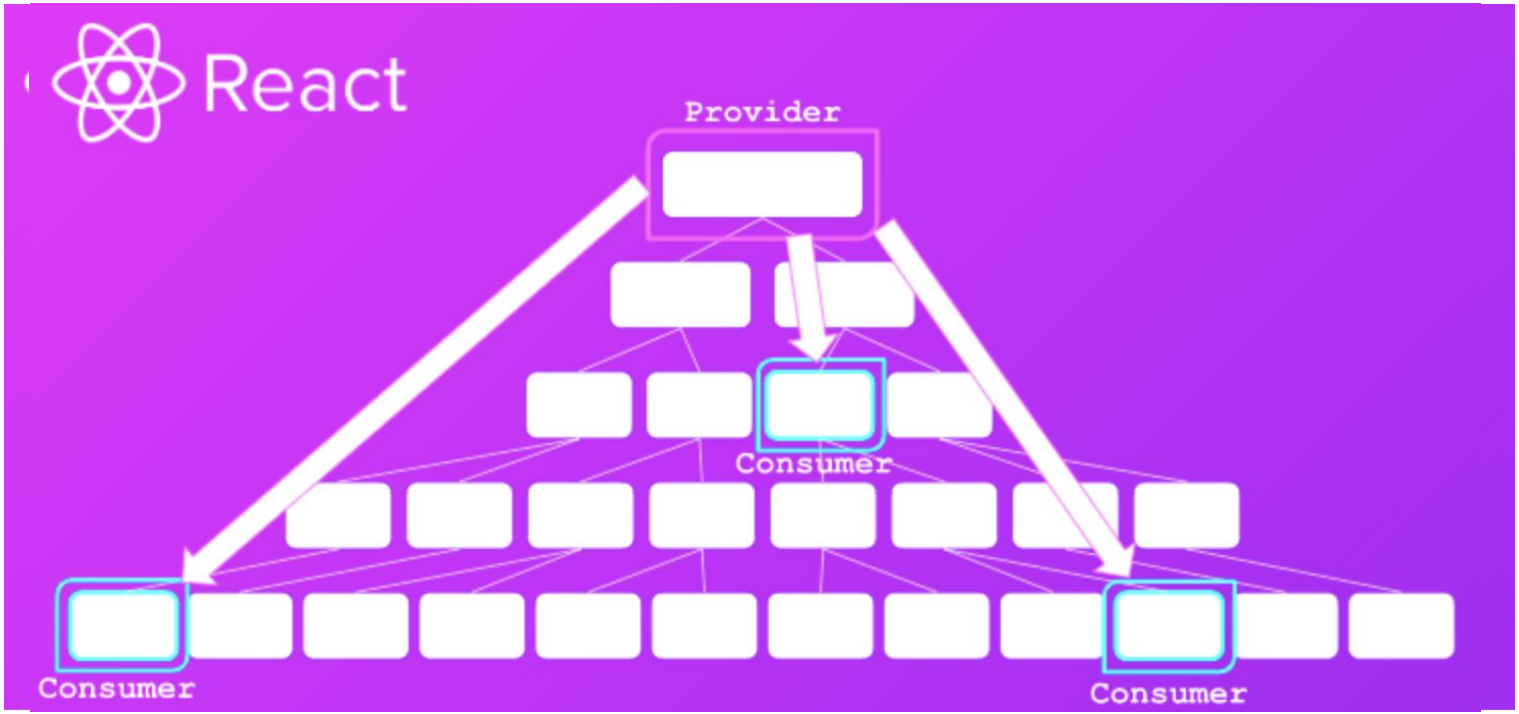
Global State

This can lead to *prop drilling*



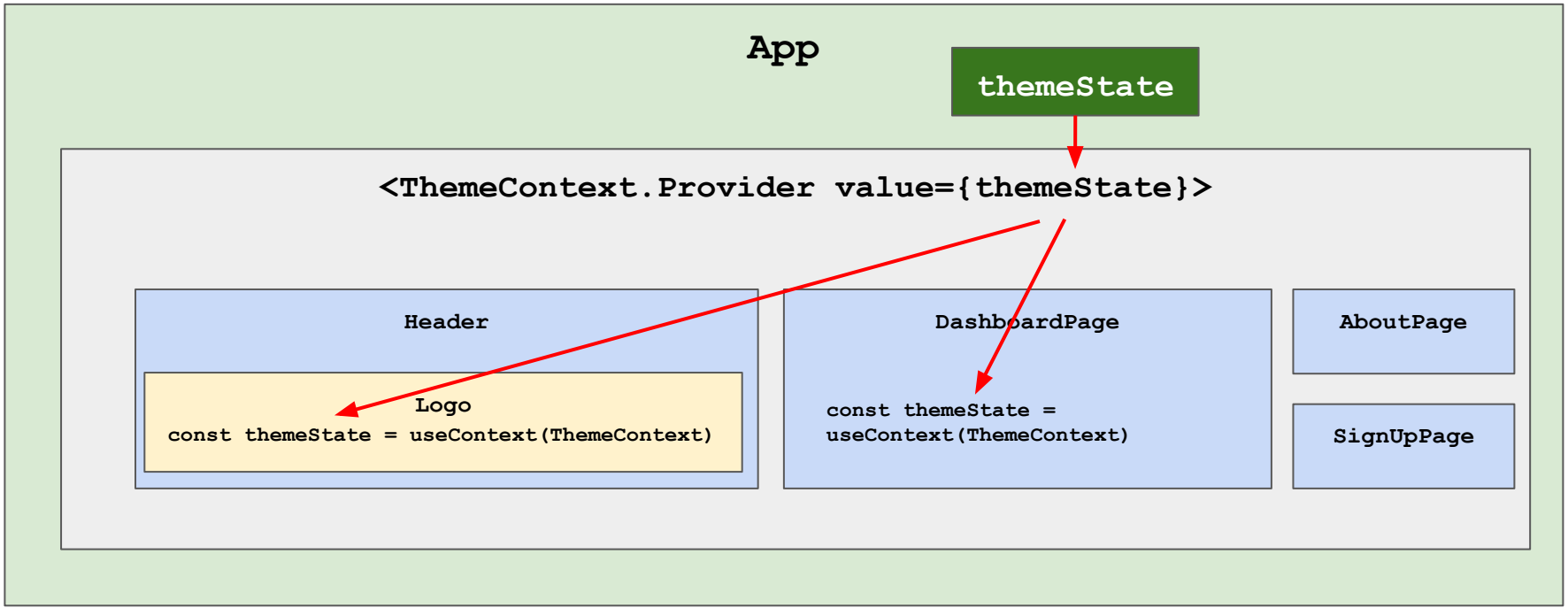
Global State

Solution: **`Context API`**



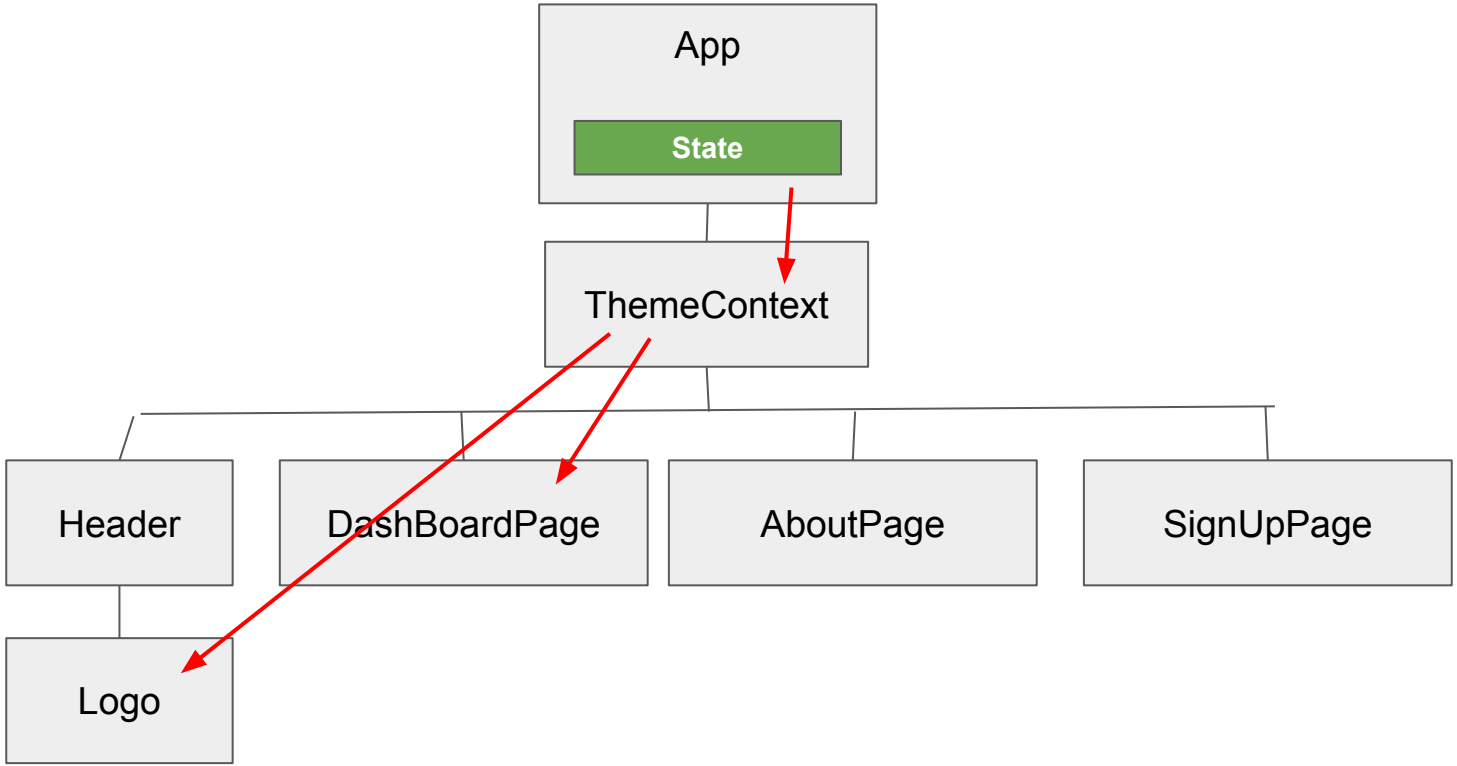
Context provider !== Global State

It “provides” a shortcut to Global State



Global State in Parent Component

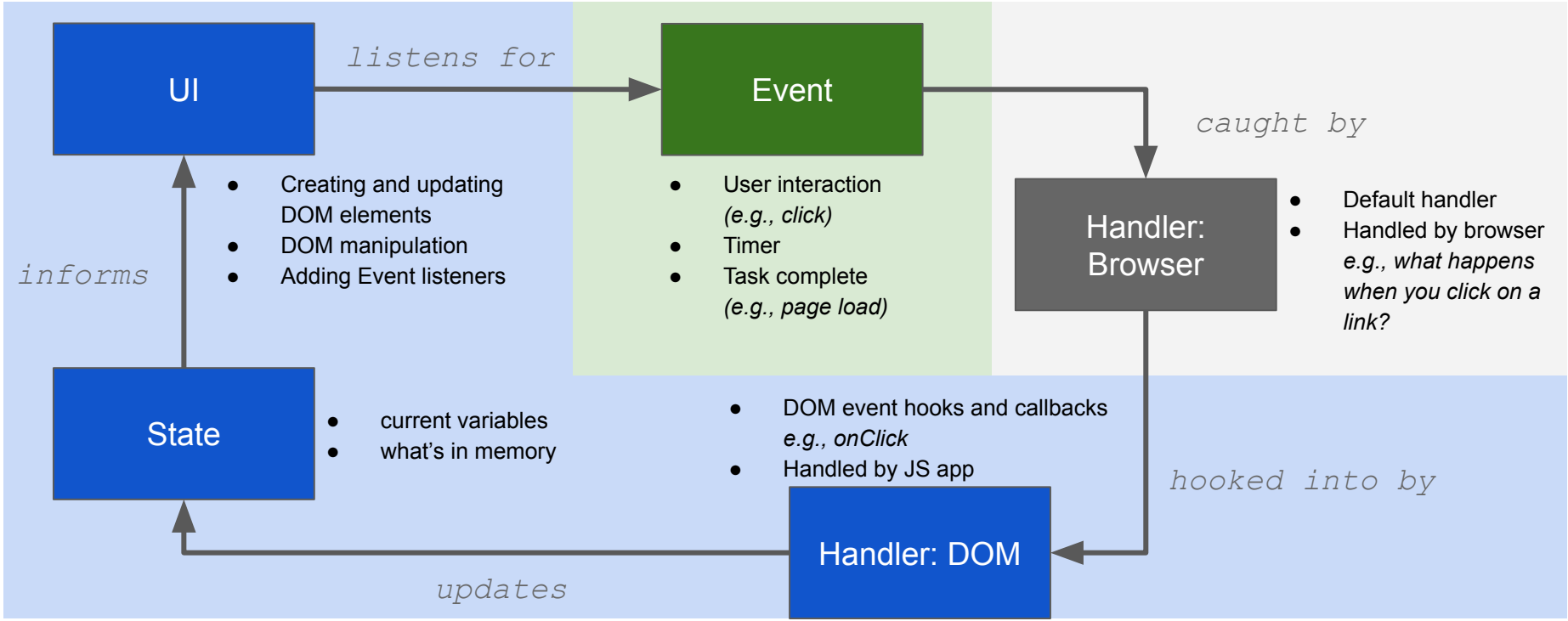
State still flows down, but instead through a Context Provider



What is a reducer?

Event loop

Handling user interaction



A **reducer** is a function that knows how to resolve new state from a given action

Reducers are functions

They take two parameters to create a new state

01 `state`

- The previous state
- Immutable

02 `action`

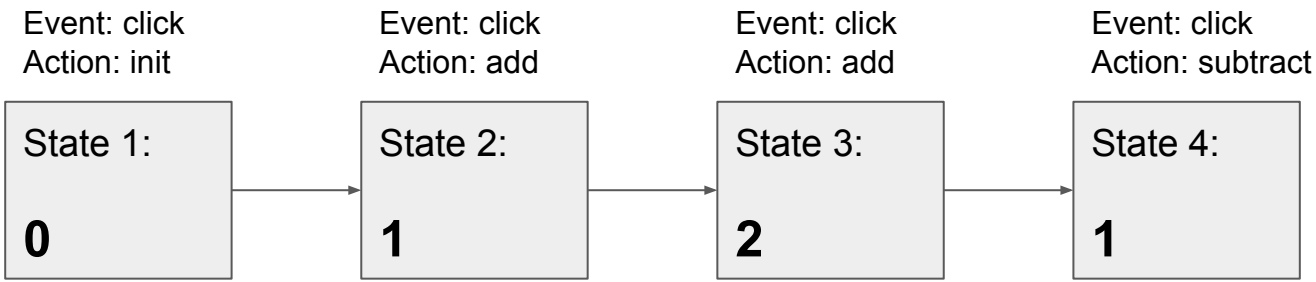
Two parts:

- An action label (e.g., “add”)
- A payload
  - Anything needed by the reducer to create the next state
  - E.g., a new value, something to add to the old value

State changes over time

E.g., increment or decrement

Everytime you click the increment or decrement button, state changes based on an **action**



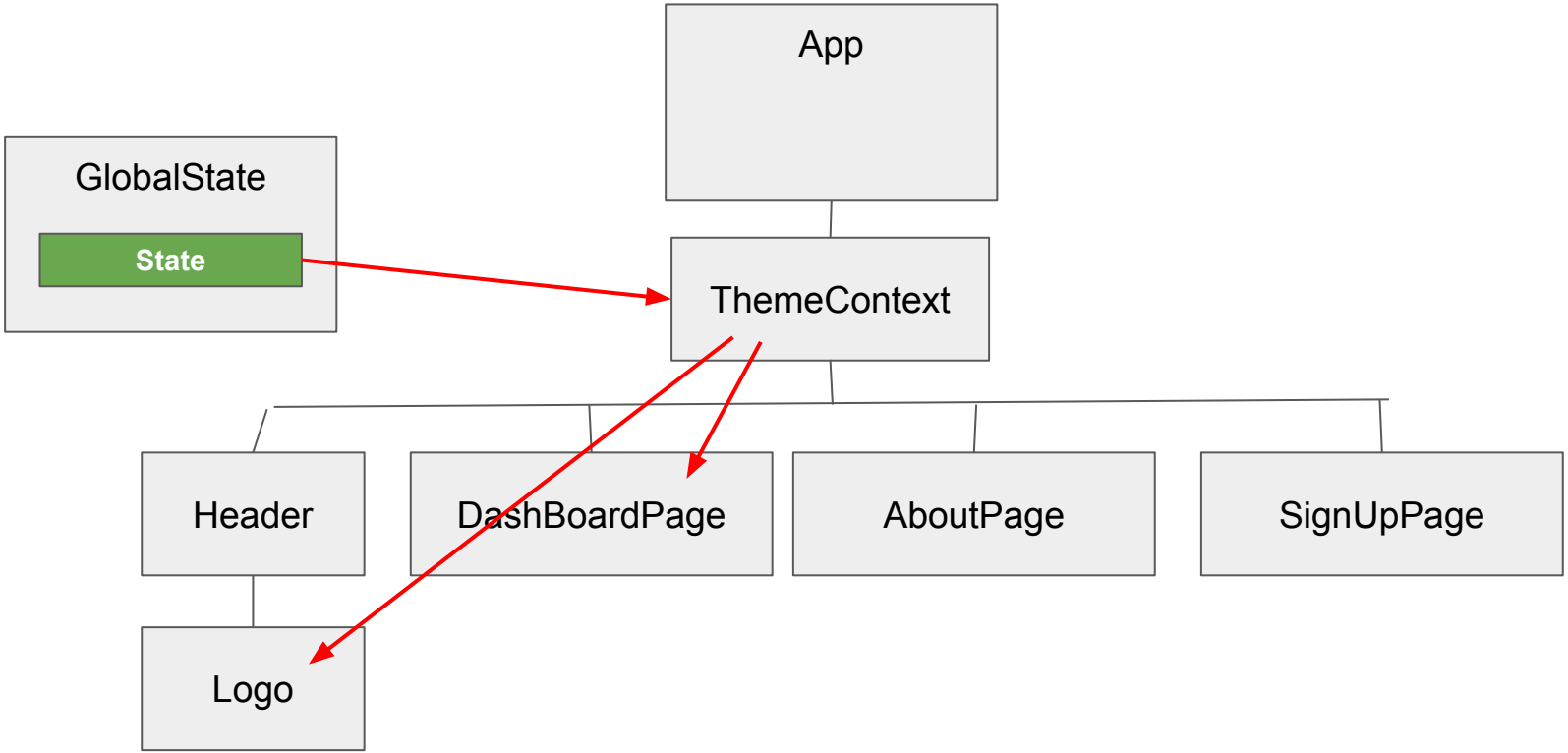
When we reduce an action, we create a new state (i.e., new memory).

- For primitives (e.g., strings, numbers, booleans) we just provide state with a new value
- For objects and arrays, **we need to create an entirely new instance even if we are only changing one property**

Reducers encapsulate the logic needed to create a new state for every action

Global Store

Can we do this?



Global Store

Uses all the parts we learned this week

State (usually an object)

A context provider

A reducer

A custom useContext hook

Elements of State Management

State: data or information that gets changed or manipulated throughout the runtime of a program

Context: a defined environment that **provides** state to components that need to **consume** state

Reducer: a function that resolves changes to state for a given action

Store: a module that defines and maintains state, provides context, and reduces changes