7.1

Routing, prop drilling, Context API

Routing

Jargon

1. Single page applications
2. Client side bundle
3. Client side routing

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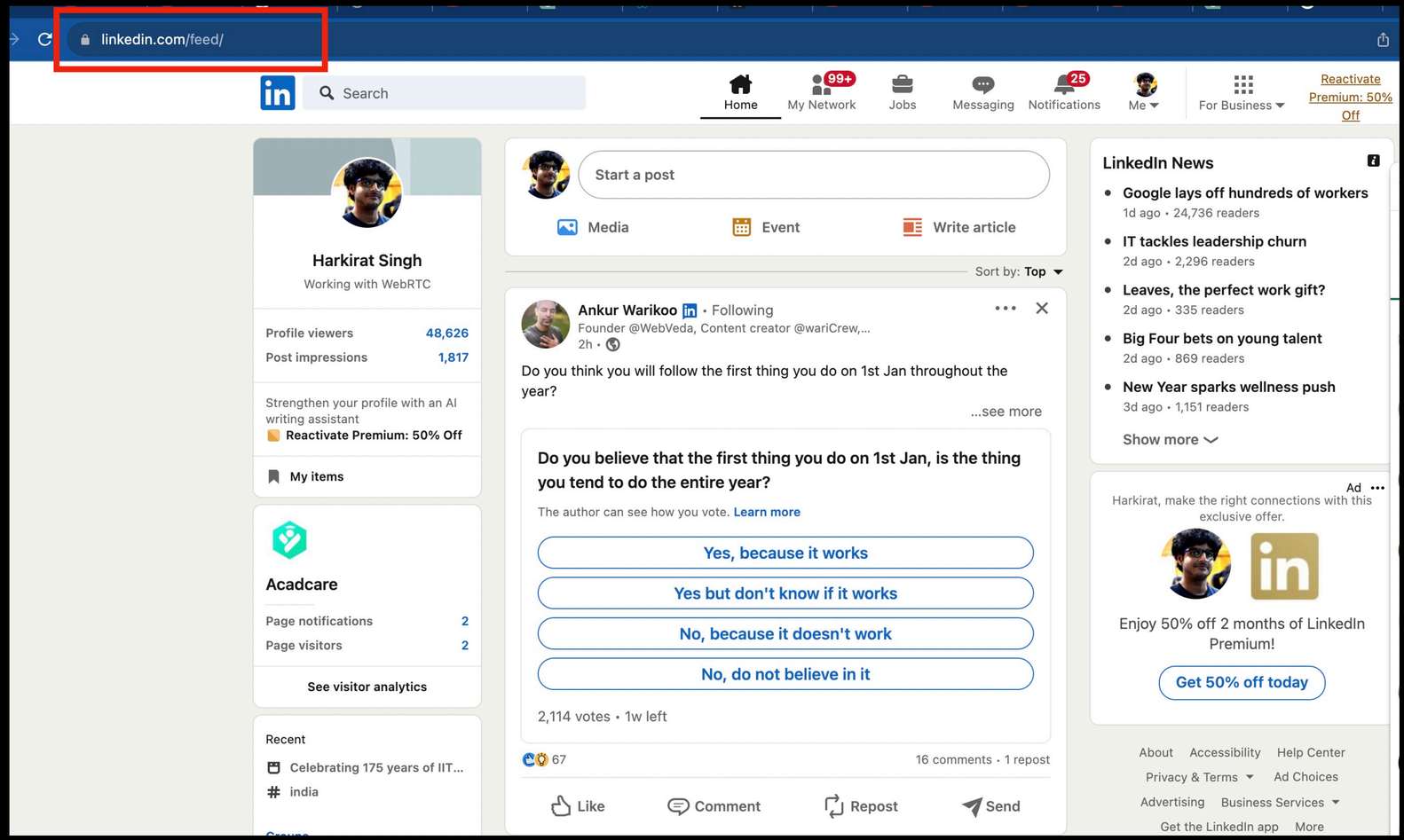
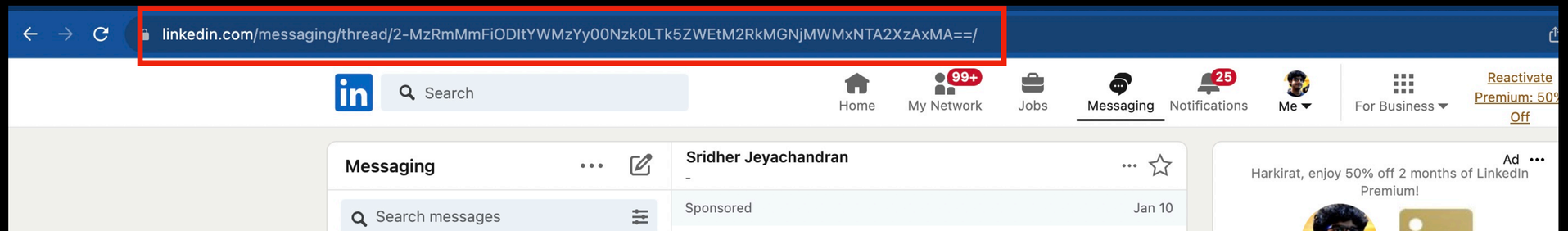
Routing

What are routes?





Routing

How to do routing in react?

react-router-dom

https://reactrouter.com

Routing

```
function App() {

  return (
    <BrowserRouter>
      <Routes>
        <Route path="/dashboard" element={<Dashboard />} />
        <Route path="/" element={<Landing />} />
      </Routes>
    </BrowserRouter>
  )
}
```

Routing

How to navigate?

src > components > Dashboard.jsx > Dashboard

```jsx
import { useNavigate } from "react-router-dom"


export default function Dashboard() {
    const navigate = useNavigate();

    function handleClick() {
        navigate('/')
    };

    return <div>
        Dashboard
        <button onClick={handleClick}>Click to navigate</button>
    </div>
}
```

Routing

Lazy loading

```
1
2   import React, { useCallback, useEffect, useRef, useState } from 'react'
3   import { BrowserRouter, Route, Routes } from "react-router-dom";
4   import { Landing } from './components/Landing';
5   const Dashboard = React.lazy(() => import("./components/Dashboard"));
6
7   function App() {
8
9     return (
10      <BrowserRouter>
11        <Routes>
12          <Route path="/dashboard" element={
13              <Dashboard />
14          } />
15          <Route path="/" element={<Landing />} />
16        </Routes>
17      </BrowserRouter>
18    )
19  }
20
21  export default App
```

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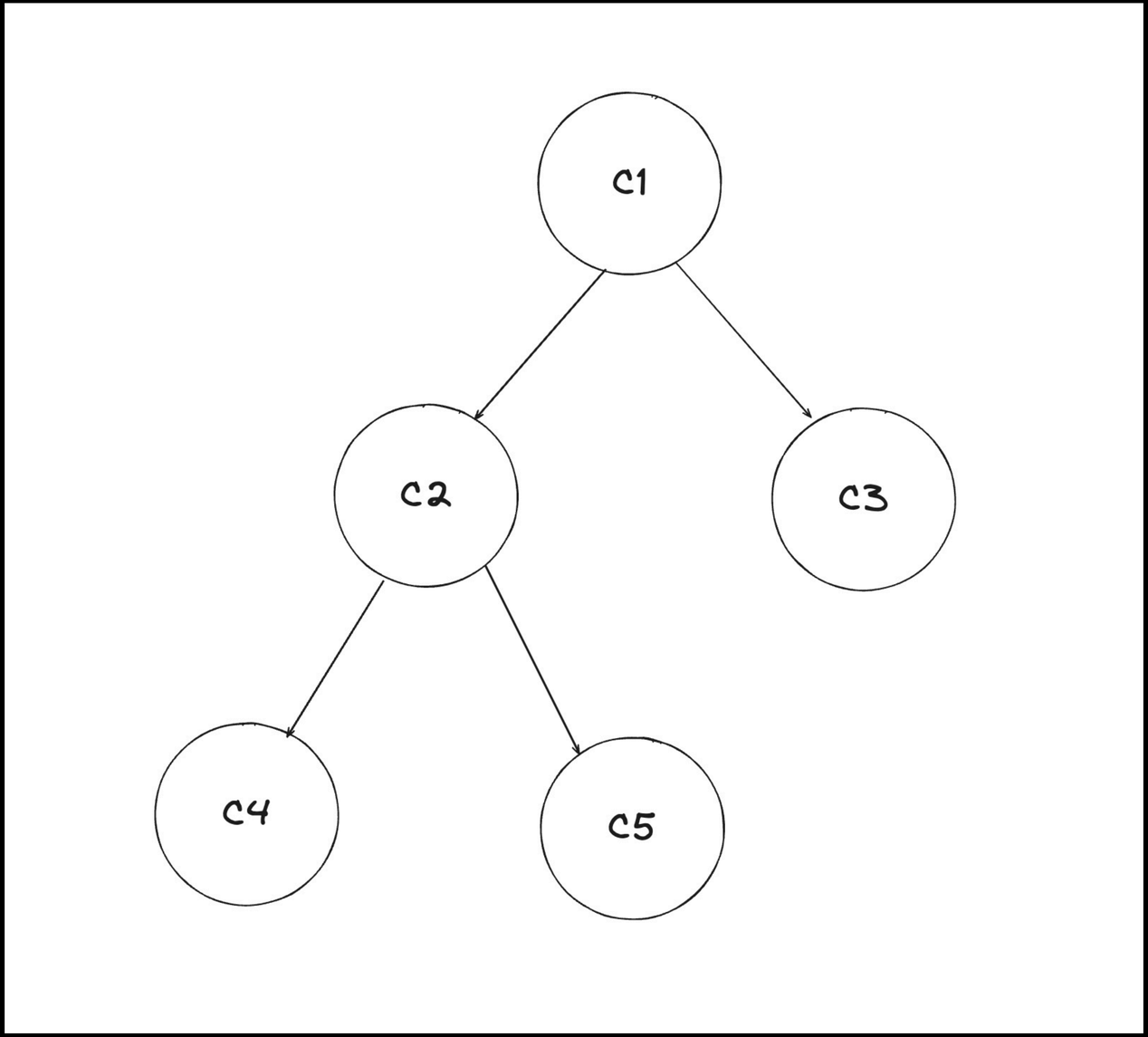
Routing, prop drilling, Context API

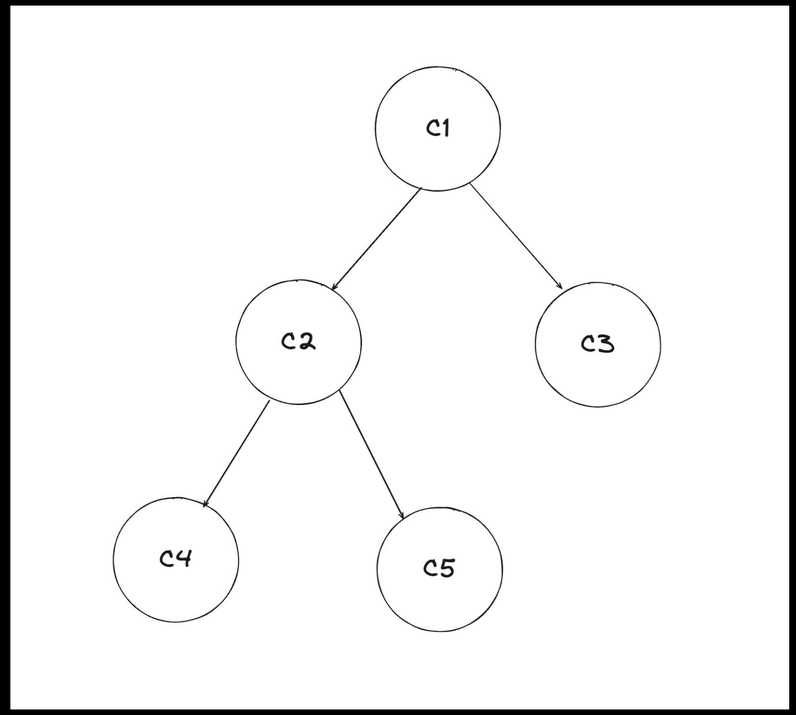
Prop drilling



Prop drilling

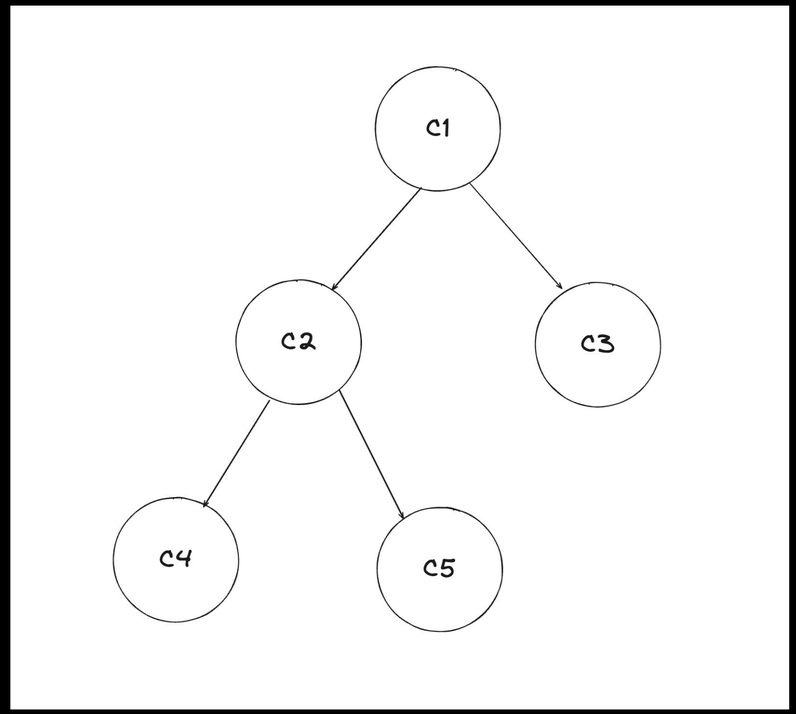
Before we begin, how do you think one should one manage state?

1. **Keep everything in the top level component (C1)**
2. **Keep everything as low as possible**
   (at the LCA of children that need a state)



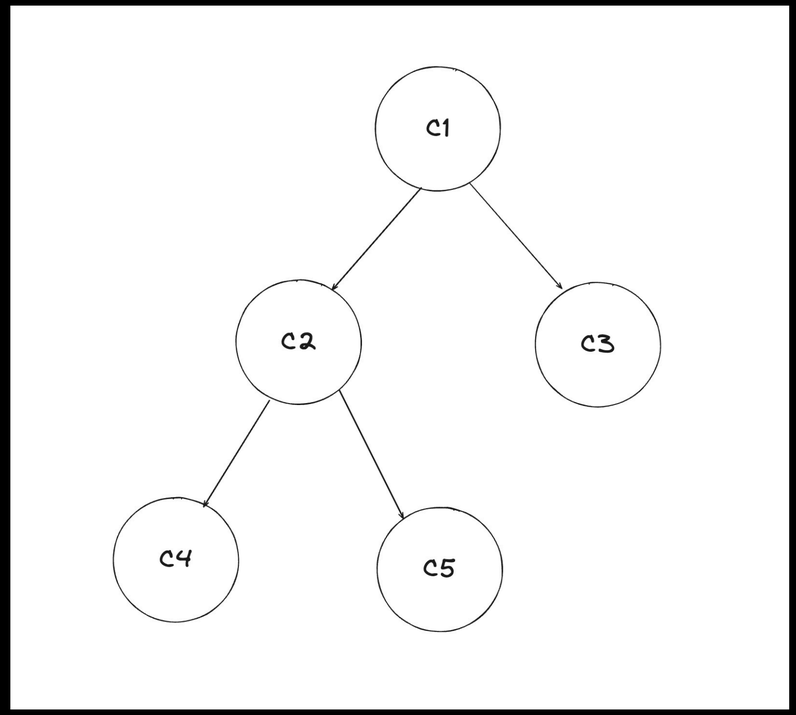
Prop drilling

Either way, you will need to drill props down through the Component tree.
This gets very hard to maintain and highly verbose
Makes code highly unreadable



Prop drilling

Prop drilling doesn’t mean that parent re-renders children
It just means the syntactic uneasiness when writing code

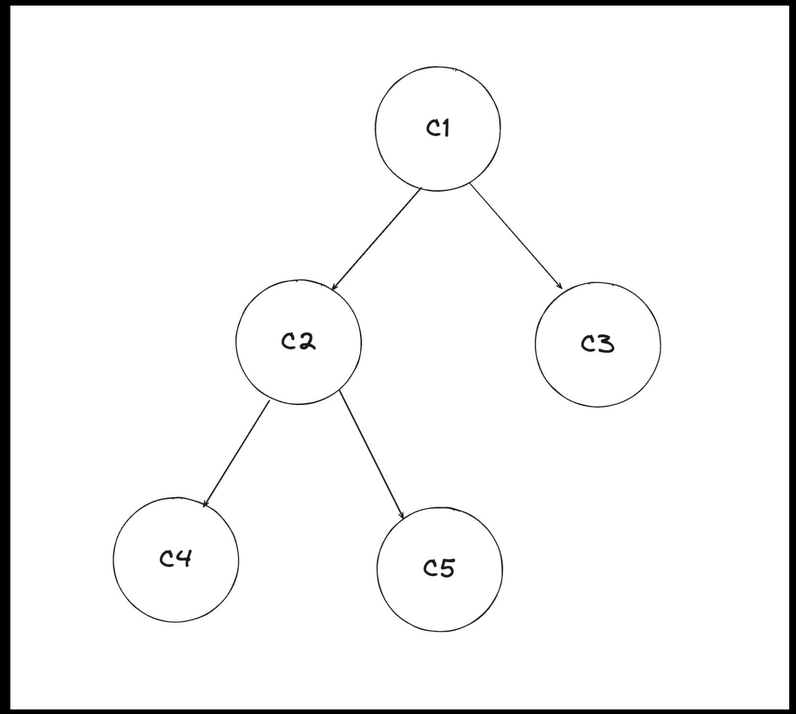


Prop drilling

The problem with passing props

Passing props is a great way to explicitly pipe data through your UI tree to the components that use it.

But passing props can become verbose and inconvenient when you need to pass some prop deeply through the tree, or if many components need the same prop. The nearest common ancestor could be far removed from the components that need data, and lifting state up that high can lead to a situation called “prop drilling”.



https://react.dev/learn/passing-data-deeply-with-context

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Routing, prop drilling, Context API

Context API

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Context API

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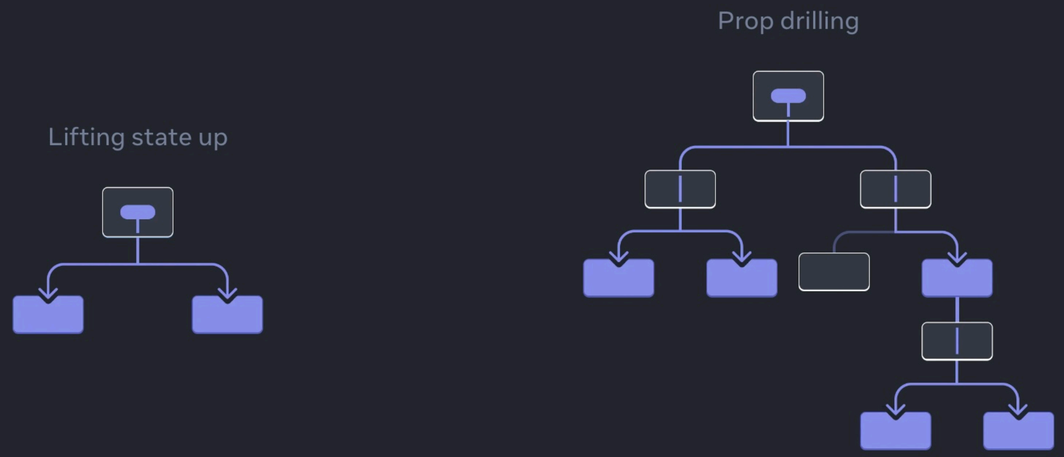
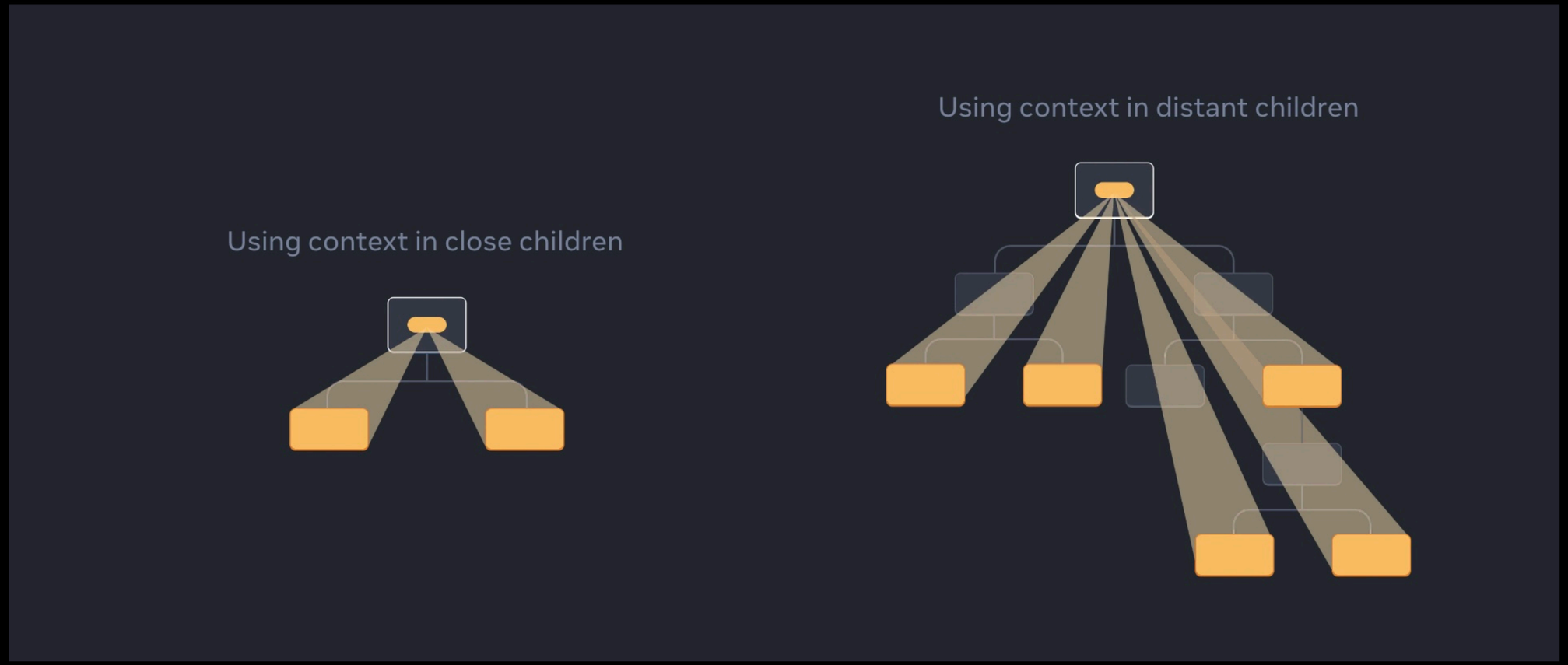


Wouldn’t it be great if there were a way to “teleport” data to the components in the tree that need it without passing props? With React’s context feature, there is!

Context API


Using context in close children
Using context in distant children

Context API

If you use the context api, you’re pushing your state management outside the code react components

Context API

Let’s create a simple Counter application, first without the context API and then with it

Things to learn -
createContext
Provider
useContext hook