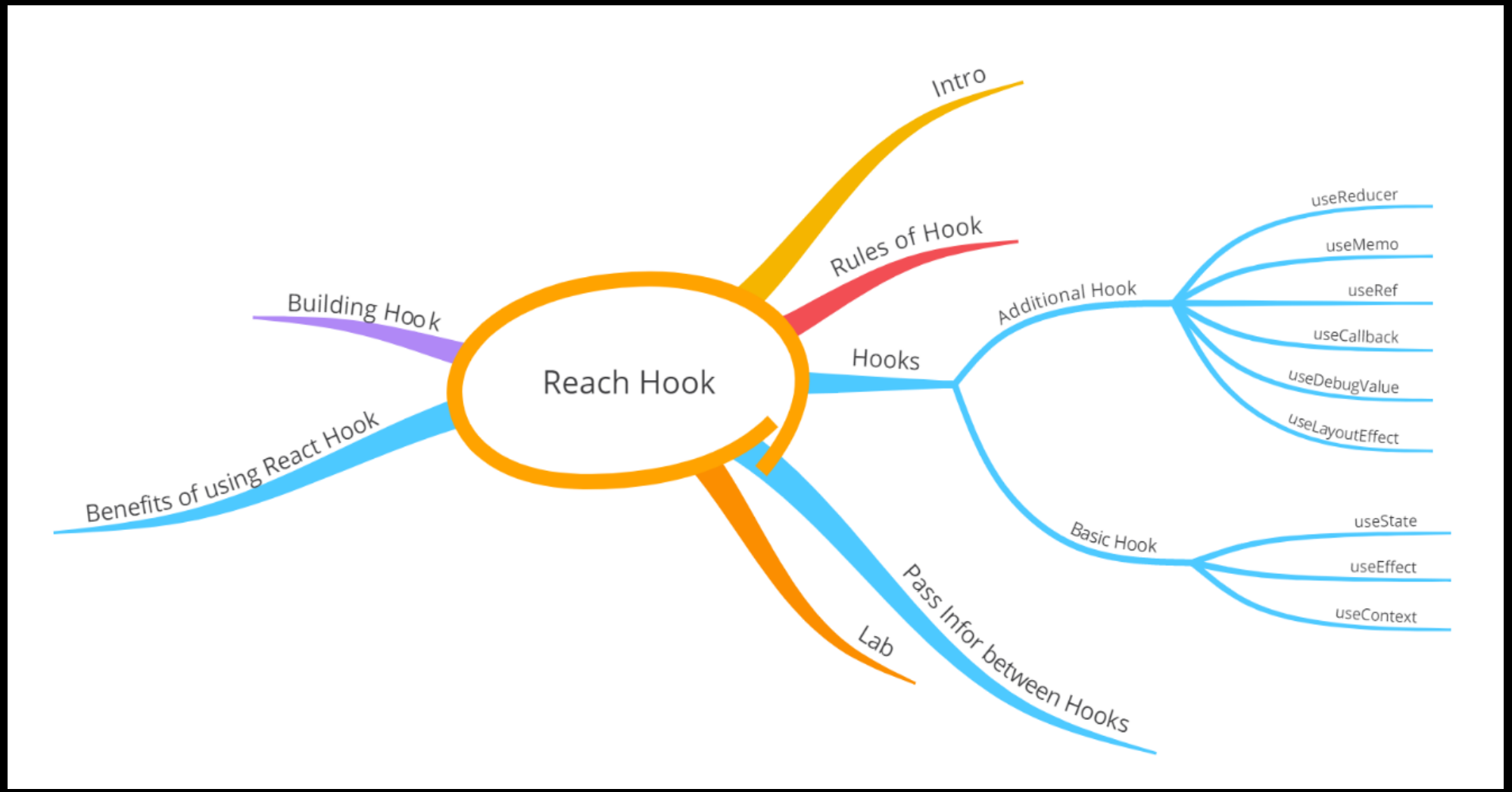
SESSION 6

REACT HOOK

OBJECTIVES


Reach Hook
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INTRODUCTION TO HOOKS

- ***Hooks*** are a new addition in **React 16.8**. They let you **use state** and other React features **without writing a class**.
- **Hooks are functions** that let you “hook into ” React state and lifecycle features from **function components**.

INTRODUCTION TO HOOKS

- Before the release of Hooks, React Components were divided into two broad categories depending on whether the component was class-based or function-based.
  - **React Hooks are a way to add React.Component features** to functional components. Features like:

    State

    Lifecycle

BENEFITS OF HOOK

- Improved code reuse
- Better code composition
- Better defaults
- Sharing non-visual logic with the use of custom hooks.
- Flexibility in moving up and down the components tree.

THE BENEFITS OF USING HOOKS

- Hooks have a lot of benefit to us as developers, and they are going to change the way we write components for the better.
- They already help us to write clearer and more concise code - it's like we went on a code diet and we lost a lot of weight and we look better and feel better.
- Not only is the code a lot smaller — the saved space certainly adds up for larger components — it’s also a lot more readable, which is a huge advantage of Hooks.

DEMO

```
import './App.css';
import React, { useState } from 'react';

const HooksExample = () => {
    const [counter, setCount] = useState(0);

    return (
        <div className="App">
            <header className="App-header">
                The button is pressed: { counter } times.
                <button
                    onClick={() => setCount(counter + 1)}
                    style={{ padding: '1em 2em', margin: 10 }} >
                    Click me!
                </button>
            </header>
        </div>
    )
}
export default HooksExample;
```

DEMO

index.js > ...

You, a few seconds ago | 1 author (You)

No Hook

```
import React, { Component } from 'react'

You, a few seconds ago | 1 author (You)
export default class Button extends Component {
  constructor () {
    super()
    this.state = { buttonText: 'Click me, please' }
    this.handleClick = this.handleClick.bind(this)
  }

  handleClick () {
    this.setState(() => {
      return { buttonText: 'Thanks, been clicked!' }
    })
  }

  render () {
    const { buttonText } = this.state
    return <button onClick={this.handleClick}>{buttonText}</button>
  }
}
```

index.js > ...

Hook

with Hook

```
import React, { useState } from 'react'

export default function Button() {

  const [buttonText, setButtonText] = useState('Click me, please')

  return (
    <button onClick={() => setButtonText('Thanks, been clicked!')}>
      {buttonText}
    </button>
  )
}
```

BASIC REACT HOOKS

- useState()
- useEffect()
- useContext()
- useReducer()

BASIC REACT HOOKS

- The useState() hook allows React developers to update, handle and manipulate state inside functional components without needing to convert it to a class component.
- Let's use the code snippet below is a simple Age counter component and we will use it to explain the power and syntax of the useState() hook.

```
function App() {
  const [age, setAge] = useState(19);
  const handleClick = () => setAge(age + 1)

  return
      <div>
          I am {age} Years Old
        <div>
        <button onClick={handleClick}>Increase my age! </button>
      </div>
   </div>
}
```

Hi, I am 19 Years old Increase my Age!

BASIC REACT HOOKS

- The useEffect() hook accepts a function that would contain effectual code.

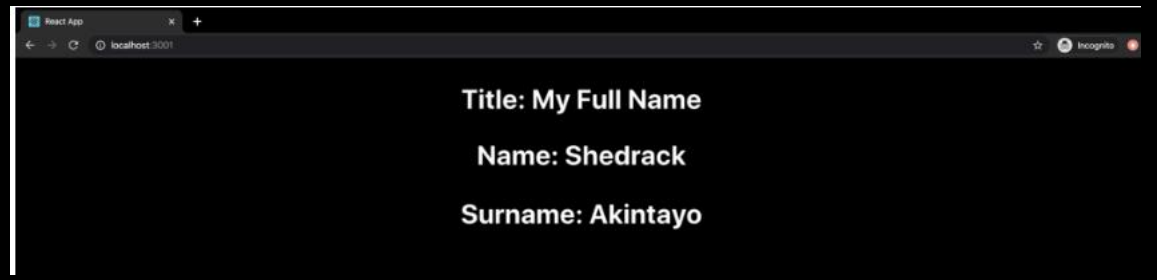
- If you're familiar with React class lifecycle methods, you can think of **useEffect Hook** as **componentDidMount**, **componentDidUpdate**, and **componentWillUnmount** combined.

STEP 1: DEFINE THE STATE OF YOUR APPLICATION


```
import React, {useState} from 'react';
function App() {
    //Define State
    const [name, setName] = useState({firstName: 'name', surname: 'surname'});
    const [title, setTitle] = useState('BIO');

    return(
        <div>
            <h1>Title: {title}</h1>
            <h3>Name: {name.firstName}</h3>
            <h3>Surname: {name.surname}</h3>
        </div>
    );
};
export default App
```

STEP 2: CALL THE USEEFFECT HOOK

```
import React, {useState, useEffect} from 'react';
function App() {
    //Define State
    const [name, setName] = useState({firstName: 'name', surname: 'surname'});
    const [title, setTitle] = useState('BIO');

    //Call the use effect hook
    useEffect(() => {
      setName({FirstName: 'Shedrack', surname: 'Akintayo'})
    }, [])//pass in an empty array as a second argument

    return(
        <div>
            <h1>Title: {title}</h1>
            <h3>Name: {name.firstName}</h3>
            <h3>Surname: {name.surname}</h3>
        </div>
    );
};
export default App
```



BASIC REACT HOOKS

useState, as the name describes, is a hook that allows you to use state in your function. We define it as follows:

const [**someState**, **updateState**] = useState(**initialState**)

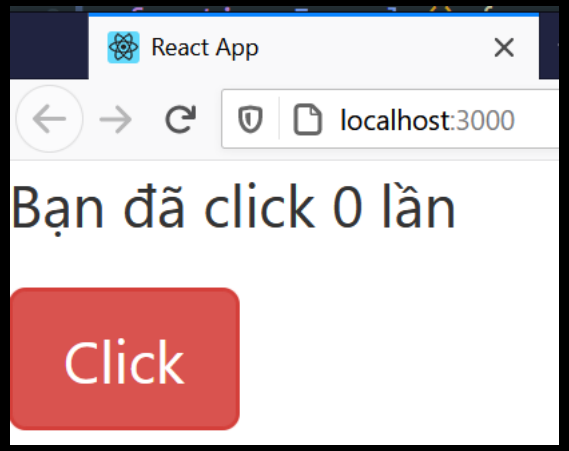
Let's break this down:

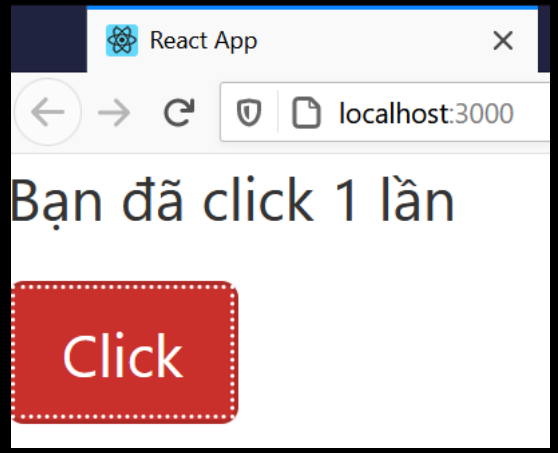
someState: lets you access the current state variable, someState
updateState: function that allows you to update the state — whatever you pass into it becomes the new someState
initialState: what you want someState to be upon initial render

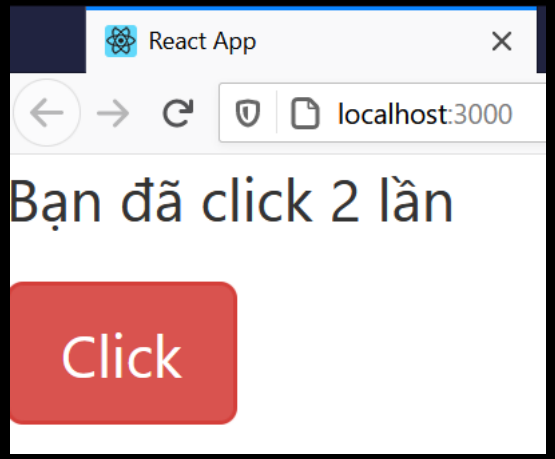
FIVE IMPORTANT RULES FOR HOOKS

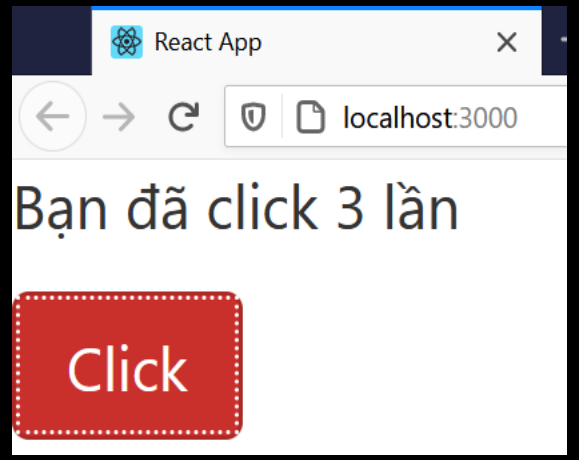
- Never call Hooks from inside a loop, condition or nested function
- Hooks should sit at the top-level of your component.
- Only call Hooks from React functional components.
- Never call a Hook from a regular function
- Hooks can call other Hooks

DEMO REACT HOOK









DEMO REACT HOOK

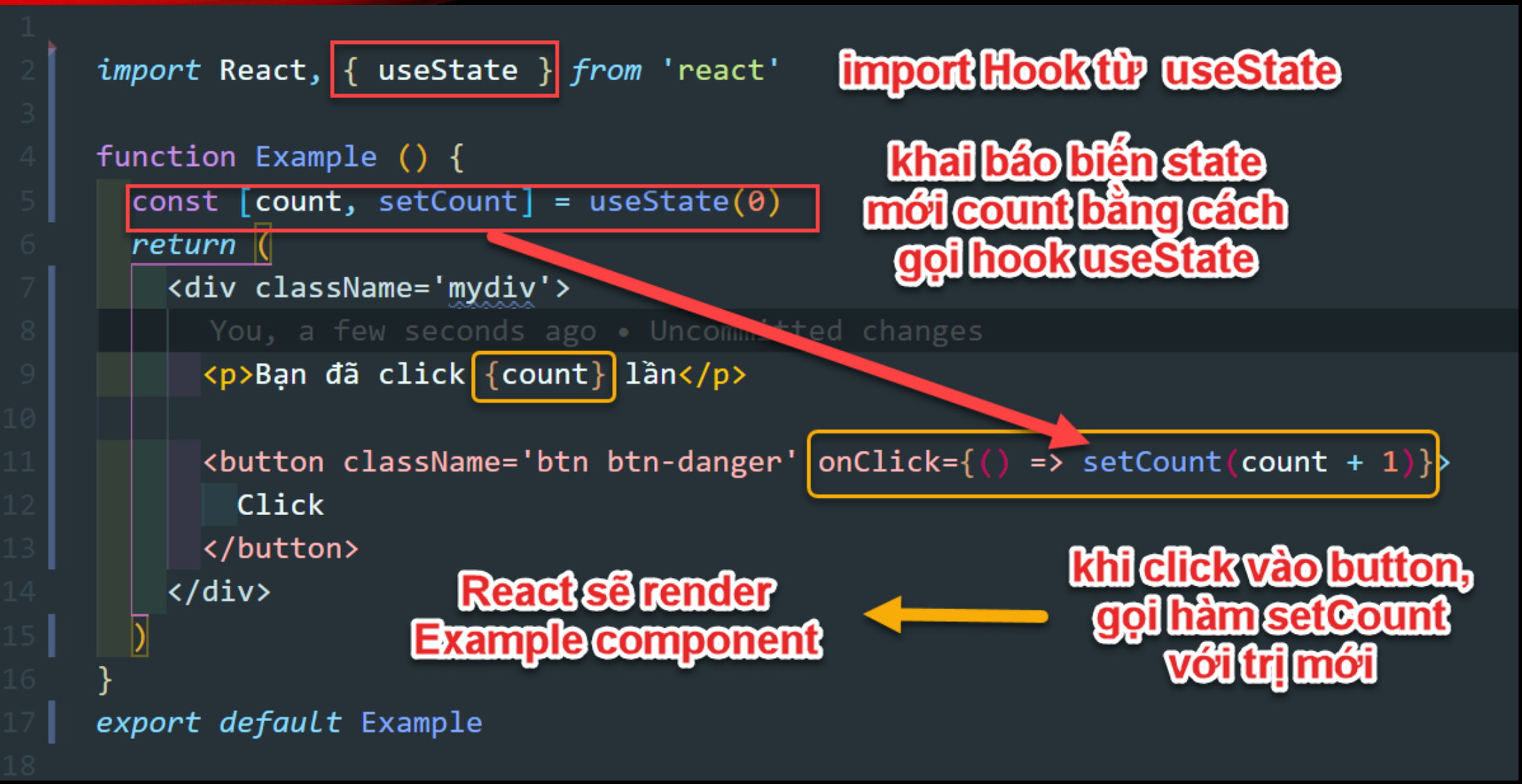
App.js

```
import React from 'react';
import './App.css';
class Example extends React.Component {
constructor(props) {
    super(props);
    this.state = {
      count: 0
    };
  }

  render() {
    return (
      <div>
        <p>Bạn đã bấm {this.state.count} lần</p>

        <button onClick={() => this.setState({ count: this.state.count + 1 })}>

          Click Me
        </button>
      </div>
    );
  }
}
export default Example
```

Sử dụng class component và state

We'll start learning about Hooks by comparing this code to an equivalent class example.

DEMO REACT HOOK



USEEFFECT

useEffect is another hook that handles **componentDidUpdate, componentDidMount,** and **componentWillUnmount** all in one call.
If you need to fetch data, for example, you could useEffect to do so, as seen below.

The component becomes a function and fetch gets called inside useEffect. Moreover, **instead of calling this.setState** I can **use setData** (an arbitrary function extracted from useState):

USEEFFECT()

```jsx
import React, { useState, useEffect } from 'react'

export default function DataLoader () {
  const [data, setData] = useState([])

  useEffect(() => {
    fetch('http://localhost:3001/links/')
      .then(response => response.json())
      .then(data => setData(data))
  })

  return (
    <div>
      <ul>
        {data.map(el => (
          <li key={el.id}>{el.title}</li>
        ))}
      </ul>
    </div>
  )
}
```

USEEFFECT()

`componentDidUpdate`! it's a lifecycle method which runs every time a component gets new props, or a state change happens. That's the trick. If you call `useEffect` as I did you would see an infinite loop.

For fixing this "bug" you would need to pass an empty array as a second argument to `useEffect`:

```
//
  useEffect(() => {
    fetch("http://localhost:3001/links/")
      .then(response => response.json())
      .then(data => setData(data));
  }, []); // << super important array

//
```

USEEFFECT()

Instead of HOCs and render props, we can encapsulate our logic in a React hook and then import that hook whenever we feel the need. In our example we can create a custom hooks for fetching data.

A custom hook is a JavaScript function whose name starts with "use", as a convention. Easier done than said. Let's make a `useFetch` hook then:

```
// useFetch.js
import { useState, useEffect } from "react";

export default function useFetch(url) {
  const [data, setData] = useState([]);

  useEffect(() => {
    fetch(url)
      .then(response => response.json())
      .then(data => setData(data));
  }, []);

  return data;
}
```

USEEFFECT()

- This is how you would use the custom hook:

```
import React from 'react'        You, a few seconds ago • Unc
import useFetch from './useFetch'

export default function DataLoader (props) {
  const data = useFetch('http://localhost:3001/links/')
  return (
    <div>
      <ul>
        {data.map(el => (
          <li key={el.id}>{el.title}</li>
        ))}
      </ul>
    </div>
  )
}
```

THE END