Starting soon!

# React (pt. 3)

JFSS CS Club 2022/23
Aritro

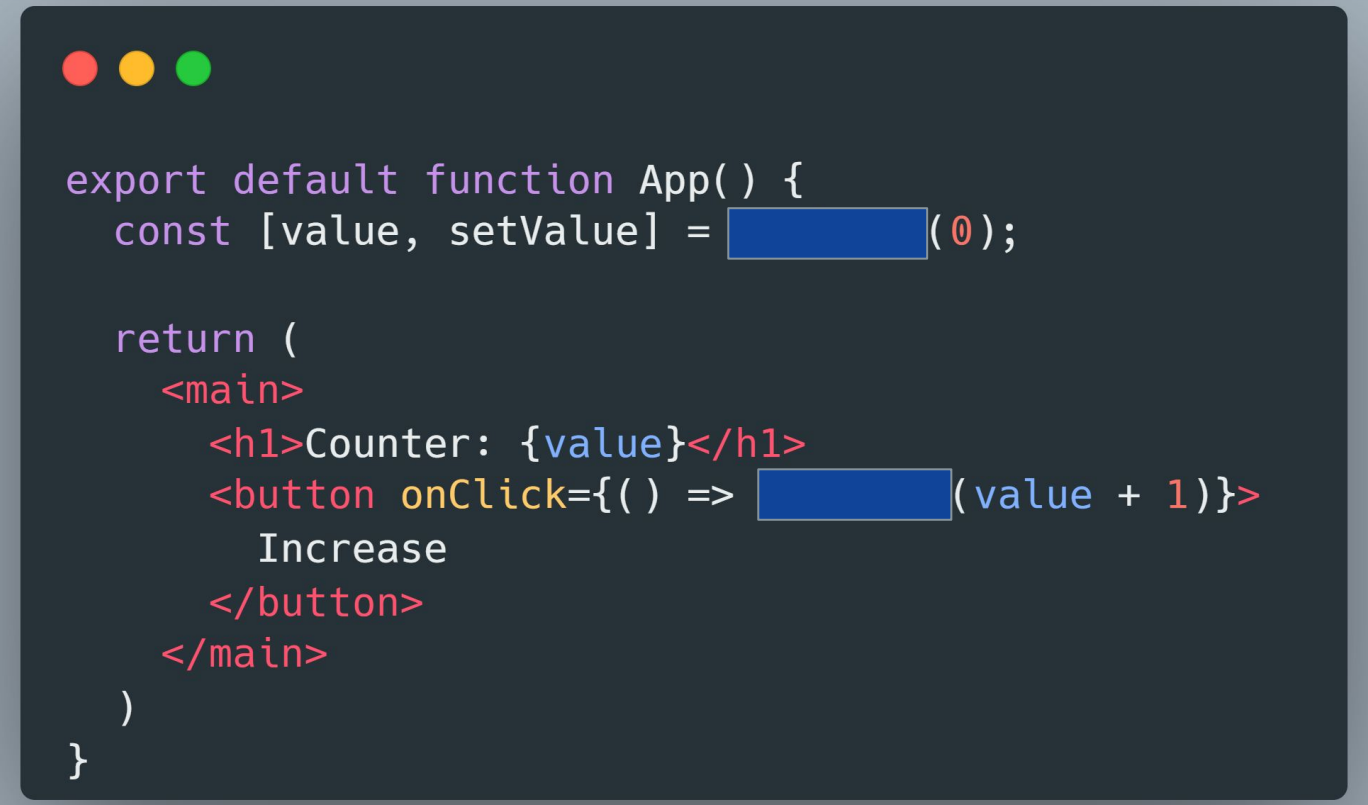
# Recap

**Answer:** Extension on JavaScript, allows HTML in JS

# What is JSX?

**Answer:** Independent and reusable code for your UI

# What are components?


export default function App() {
const [value, setValue] = (0);
return (
<main>
<h1>Counter: {value}</h1>
<button onClick={() => (value + 1)}>
Increase
</button>
</main>
)
}

# Hooks

# Hooks

- Allows us to make our components dynamic
  - Respond to changes in our code (ex. vars)
- Important hooks
  - useState (already covered)
  - **useEffect**
  - useContext (not as important)

# useEffect Hook

- Allows us to run code after UI has rendered (on screen)
- Generally runs on / after:
  - First render (when it first shows up on screen)
  - State update

# useEffect Hook

- General uses:
  - Data fetching
  - Directly changing DOM (ex. title)
  - Using timer functions (ex. setTimeout)

# Basic useEffect Usage

```
export default function App() {
  const [value, setValue] = useState(0);

  useEffect(() => {
    console.log("Current value:", value);
  });

  return (
    <main>
      <h1>Counter: {value}</h1>
      <button onClick={() => setValue(value + 1)}>
        Increase
      </button>
    </main>
  )
}
```

function to run on every render / state change

# Dependencies

- By default, runs on every state change
  - Imagine expensive action in useEffect (data fetch)
    - Just want one fetch, not multiple
- Can specify when useEffect should run

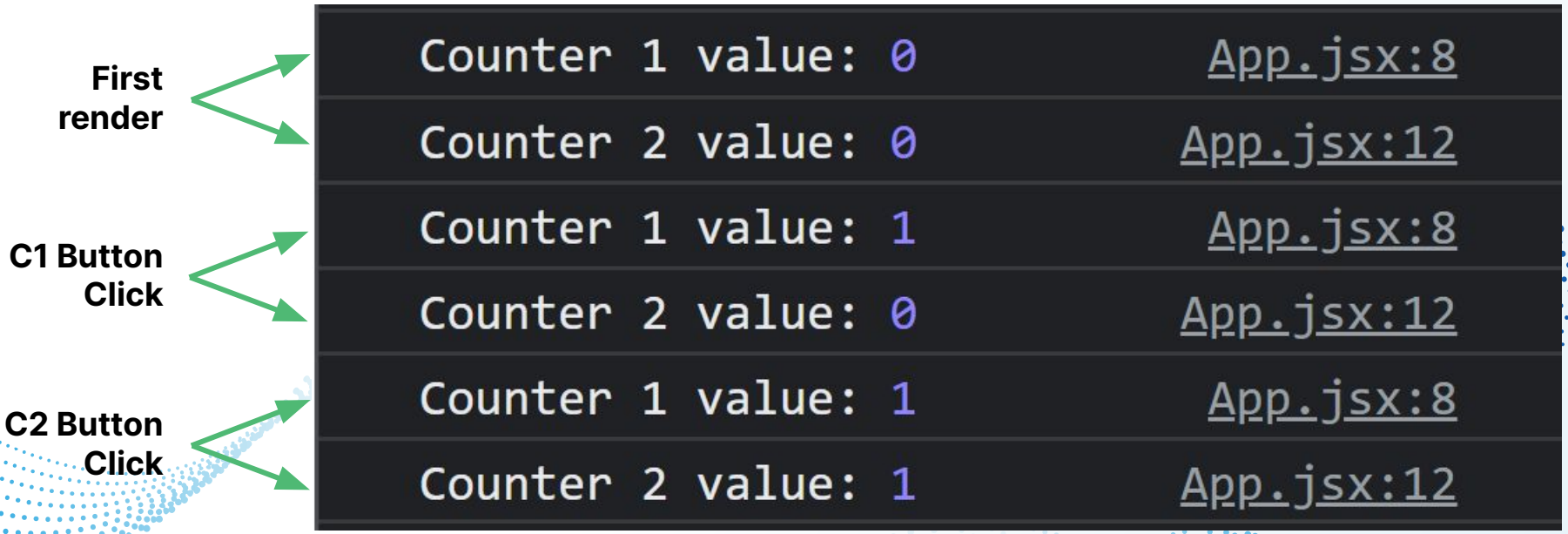
# Dependency Array

- Extra parameter in useEffect
  - useEffect(callback, [dependencies])
- Can add variables to it
  - When vars change, useEffect runs
  - If vars don’t change, useEffect doesn’t run

# Without Dependencies

```
export default function App() {
  const [counter1, setCounter1] = useState(0);
  const [counter2, setCounter2] = useState(0);

  useEffect(() => {
    console.log("Counter 1 value:", counter1);
  });

  useEffect(() => {
    console.log("Counter 2 value:", counter2);
  });

  return (
    <main>
      <h1>Counter 1: {counter1}</h1>
      <h1>Counter 2: {counter2}</h1>

      <button onClick={() => setCounter1(counter1 + 1)}>
        Increase (C1)
      </button>

      <button onClick={() => setCounter2(counter2 + 1)}>
        Increase (C2)
      </button>
    </main>
  )
}
```

# Without Dependencies



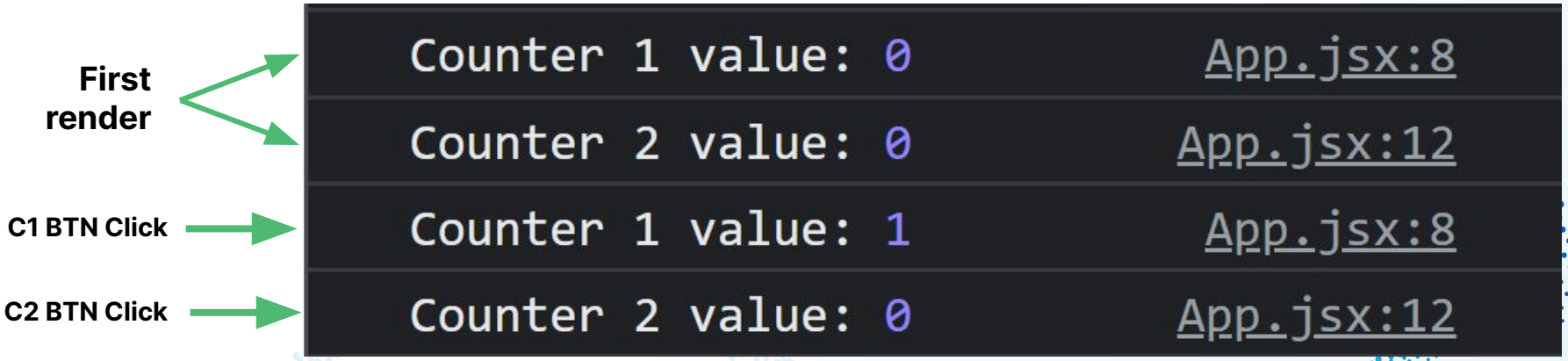

**useEffect for other counter running when it shouldn't, not performant**

# With Dependencies

```
export default function App() {
  const [counter1, setCounter1] = useState(0);
  const [counter2, setCounter2] = useState(0);

  useEffect(() => {
    console.log("Counter 1 value:", counter1);
  }, [counter1]);

  useEffect(() => {
    console.log("Counter 2 value:", counter2);
  }, [counter2]);

  return (
    <main>
      <h1>Counter 1: {counter1}</h1>
      <h1>Counter 2: {counter2}</h1>

      <button onClick={() => setCounter1(counter1 + 1)}>
        Increase (C1)
      </button>

      <button onClick={() => setCounter2(counter2 + 1)}>
        Increase (C2)
      </button>
    </main>
  )
}
```

Appropriate variable in each dependency array

# Without Dependencies




**Only runs when specific state changes**

# Trying useEffect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