Custom Hooks in React

Have any of your components starting to get chunky with logic and functions? We're going to talk about a strategy for dealing with that and make our logic and components more reusable.

We were asked to watch a video (https://www.youtube.com/watch?v=Jl4q2cccwf0) and article (https://ziffur.com/article/composing_with_react_hooks) to understand the basics first.

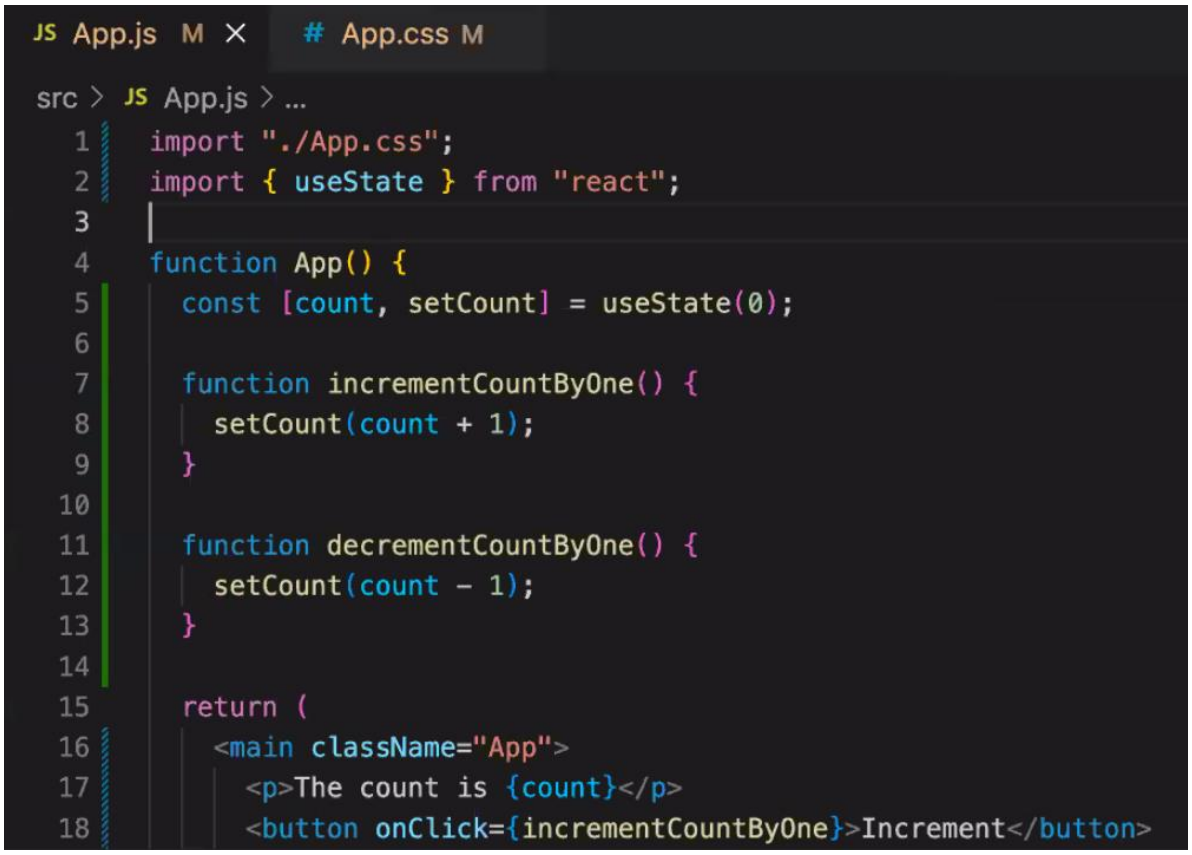
Takeaways from the video:

- Custom hooks allow you to reuse code in many components
  - This is particularly handy for big logic like useEffect
  - Or fetch requests
  - But can be used for any functionality!
- Create a file called useFetch.js in the src – you are basically creating a component for the custom hook (like we saw for useContext)
- Const useFetch = () => {}
- Custom hooks must start with the word "use"
- Can then copy and paste whatever code is already working inside it (make sure to import useState, useEffect etc and declare any state that you need)
  - Rename any state to be more generic (e.g. instead of Blogs, use Data)
- At the end of the whole file, remember to export it!
- Then need to return values (such as state) from the custom hook – at the bottom of the file outside of the useFetch function
  - Return as an object (e.g. return {data, isPending, error}
- Don't hardcode URL – pass it in to the hook as an argument, then add it as a dependency array if needed
- Import in to app using const {data, isPending, Error} = useFetch(*arguments* (e.g. URL))
  - Can also specify data: blogs to import the data as blogs so you can still pass in props

Takeaway from the article:
- Lots of duplication in Arhi's example below
- Naming is really important –use verbs for functions, nouns for generic variables and yes/no questions (using the prefixes is/has/should) for Booleans
  - See here: https://github.com/kettanaito/naming-cheatsheet

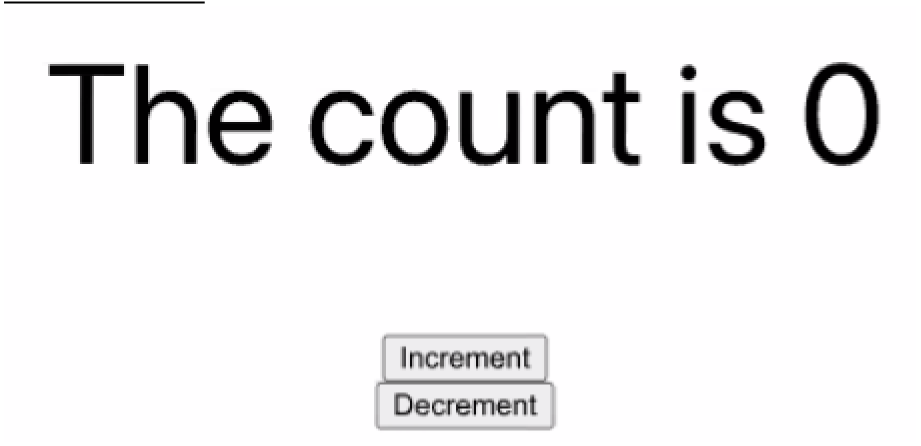
Arshi then demoed an example with a simple Counter app:

Original code:



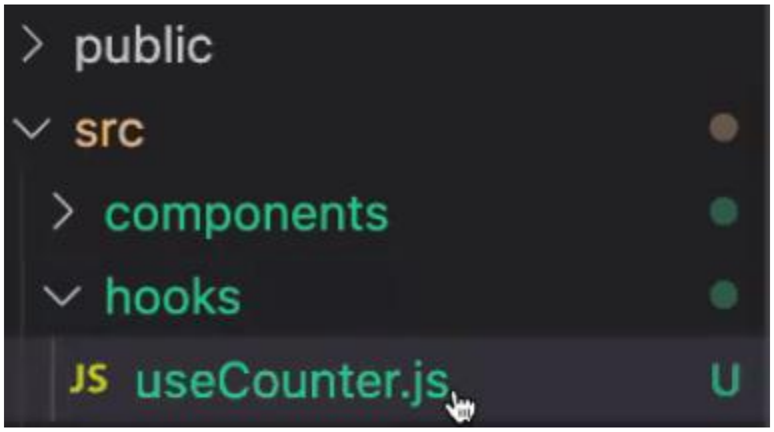
```
import "./App.css";
import { useState } from "react";

function App() {
  const [count, setCount] = useState(0);

  function incrementCountByOne() {
    setCount(count + 1);
  }

  function decrementCountByOne() {
    setCount(count - 1);
  }

  return (
    <main className="App">
      <p>The count is {count}</p>
      <button onClick={incrementCountByOne}>Increment</button>
```

<u>In the browser:</u>



- Notice there is a State for count, functions for increasing or decreasing the count.
- We are mixing concerns in this file – the logic for what it's doing and the presentation of what is on the screen.
- All of the logic about the state and updating the state can be moved out to a custom hook.

One pattern for custom hooks is creating a folder called hooks in the src folder (separate to components). There are plenty of others, but whatever you choose – be consistent and remember to name the component semantically!

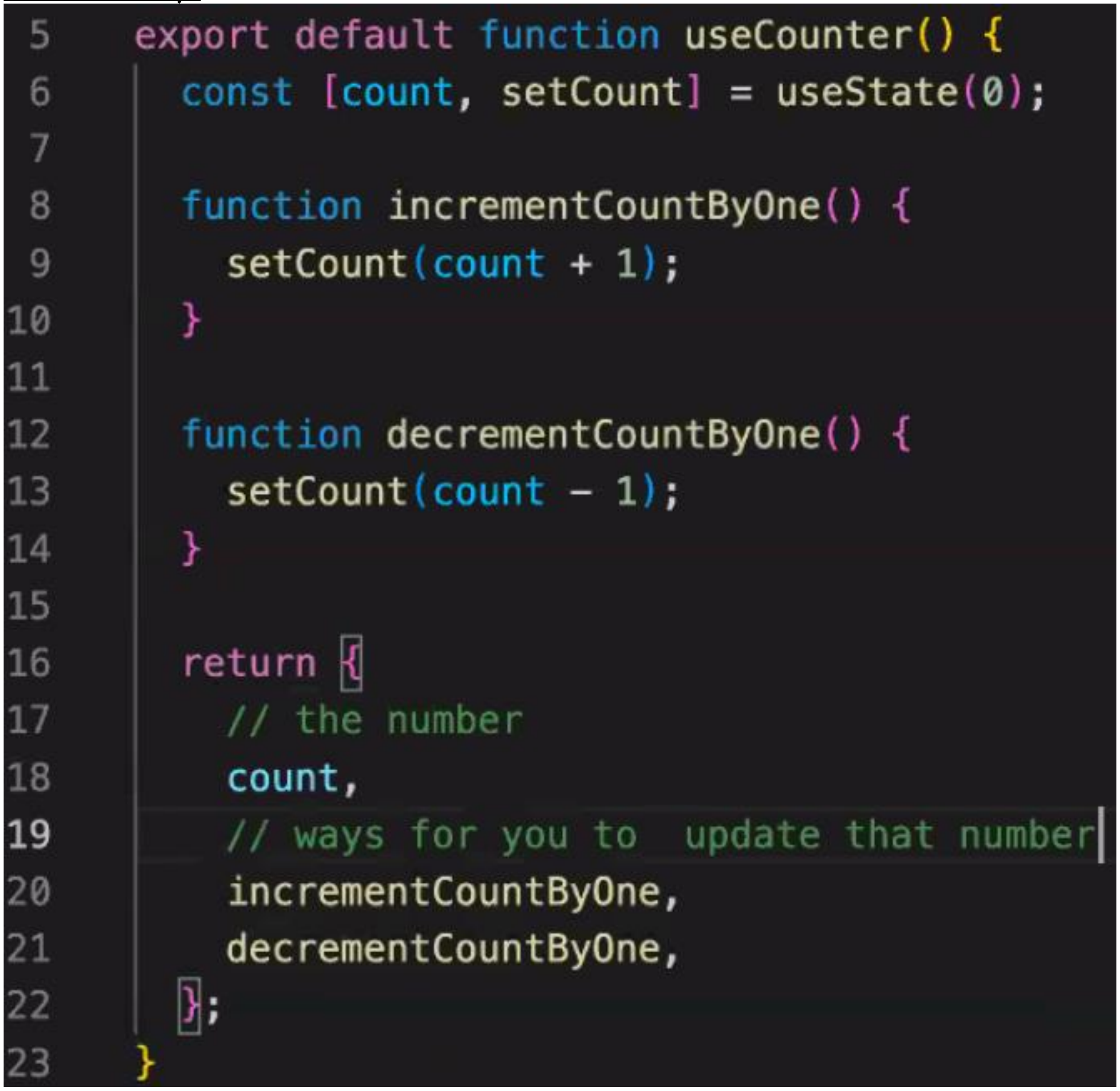


Plan:

Write a custom hook (function)
Export it (so that it's available in other files)
Remember to import any other hooks being used (e.g. useState)
Function:

- Don't need to take in any input on this occasion but you may need to for others
- We need to give some things back (remember to return!)

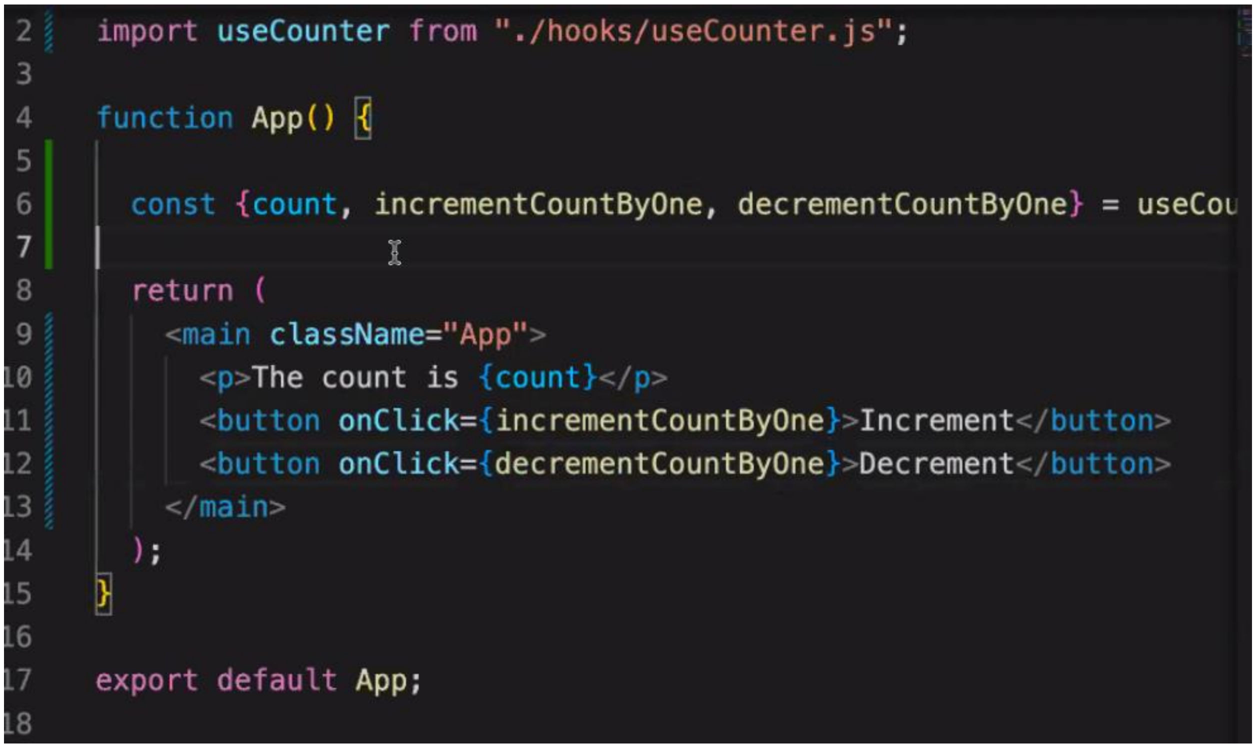
In useCounter.js:



```
export default function useCounter() {
  const [count, setCount] = useState(0);

  function incrementCountByOne() {
    setCount(count + 1);
  }

  function decrementCountByOne() {
    setCount(count - 1);
  }

  return {
    // the number
    count,
    // ways for you to  update that number
    incrementCountByOne,
    decrementCountByOne,
  };
}
```

In app.js:

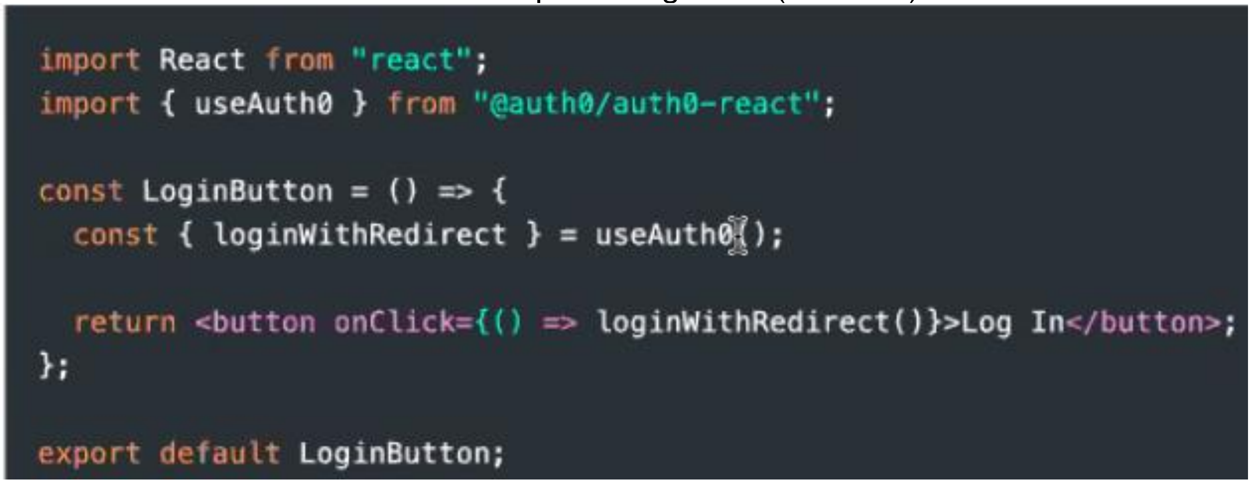
Import it in to the app (line 2) and de-structure the results when calling it (line 6)



```
import useCounter from "./hooks/useCounter.js";

function App() {

  const {count, incrementCountByOne, decrementCountByOne} = useCou

  return (
    <main className="App">
      <p>The count is {count}</p>
      <button onClick={incrementCountByOne}>Increment</button>
      <button onClick={decrementCountByOne}>Decrement</button>
    </main>
  );
}

export default App;
```

Arshi's Golden Nuggets

- Custom hooks are very testable (as it will be a function that returns something)
    - One library for testing your hooks is React Hooks Testing Library ()
- Custom hooks can give you more control of what is being returned (e.g. you could make a custom error message instead of just error.message)
- Checkout www.usehooks.com for examples of custom hooks
- We used a custom hook when implementing Auth0 (useAuth0):



```
import React from "react";
import { useAuth0 } from "@auth0/auth0-react";

const LoginButton = () => {
  const { loginWithRedirect } = useAuth0();

  return <button onClick={() => loginWithRedirect()}>Log In</button>;
};

export default LoginButton;
```