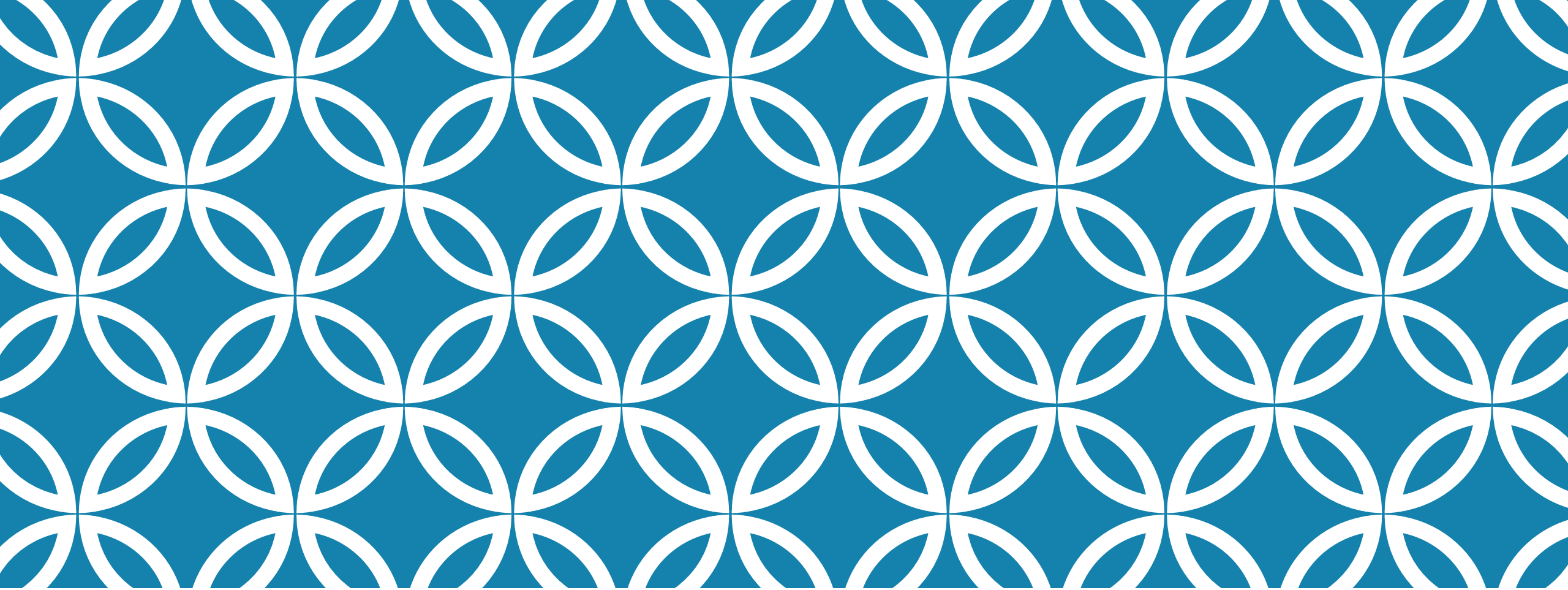


LECTURE #1

By: Aqib Rehman

OUTLINE

React vs React Native

React Intro

How React works

React setup

React Components

State

React Native

Use React to create mobile apps (Android & iOS)

Great choice for developers already familiar with React for web

REACT

React: A Front-end Development Library

React, or ReactJs is an open-source JavaScript library used to develop single-page web applications. It's one of the popular libraries to build UI (front-end) for web and mobile apps. It was developed and backed by Facebook in 2011 and has gained popularity since then.

React uses the Virtual DOM to create amazing UX, while React Native leverages APIs to render UI components that can be used again for both Android and iOS platforms.

REACT NATIVE ALSO USED:

Core components of React

i.e. Functional Components, States, Props

React Hooks and Context

JavaScript Basic Fundamentals

i.e. objects, arrays, error functions, callbacks

Without JavaScript knowledge not a good place to start

REACT

What is React?

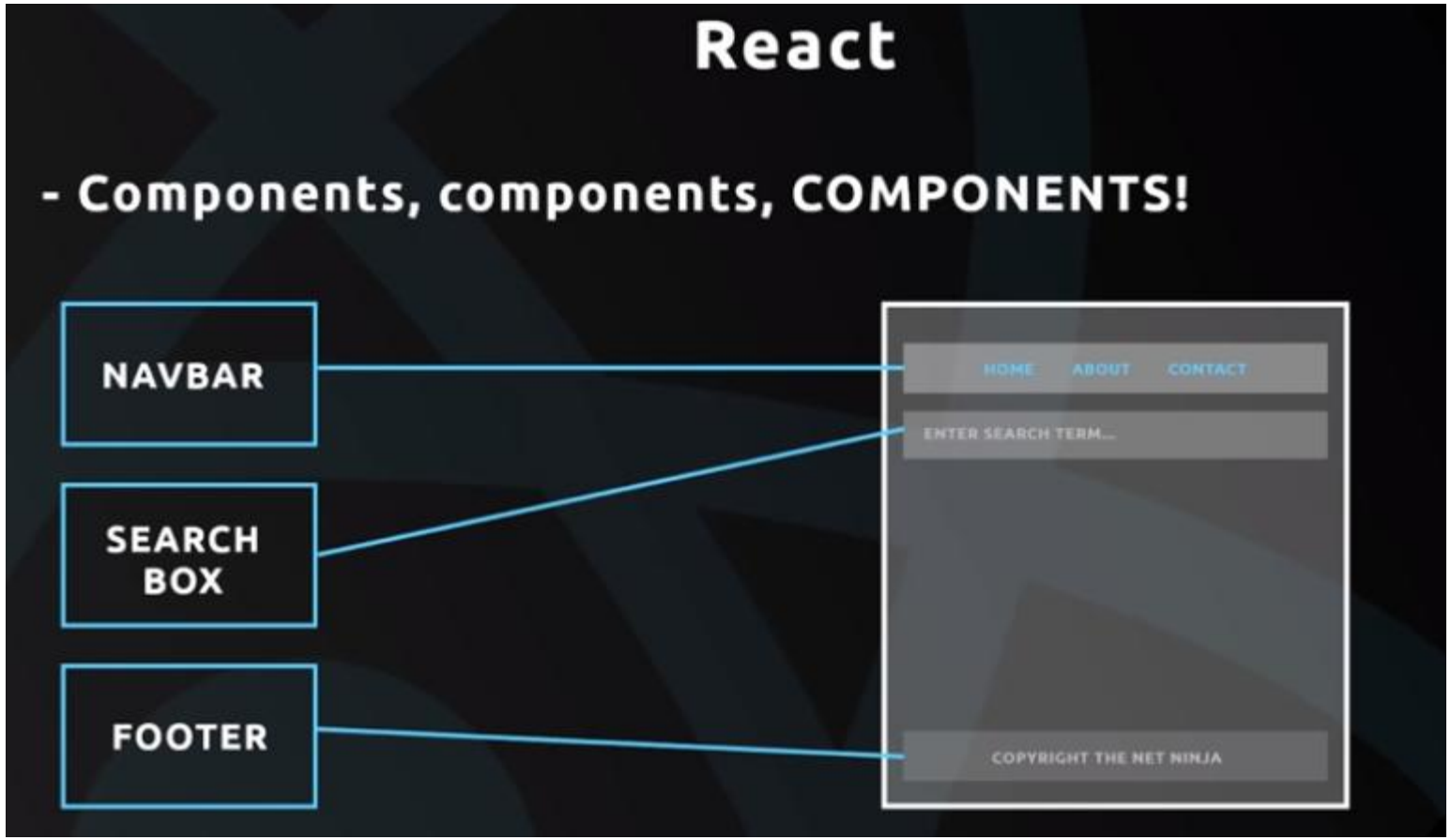
- JavaScript library created by Facebook
- Also used by Netflix & Instagram
- Used to create JS-driven dynamic web apps
- In that regard, can be compared to Angular & Vue

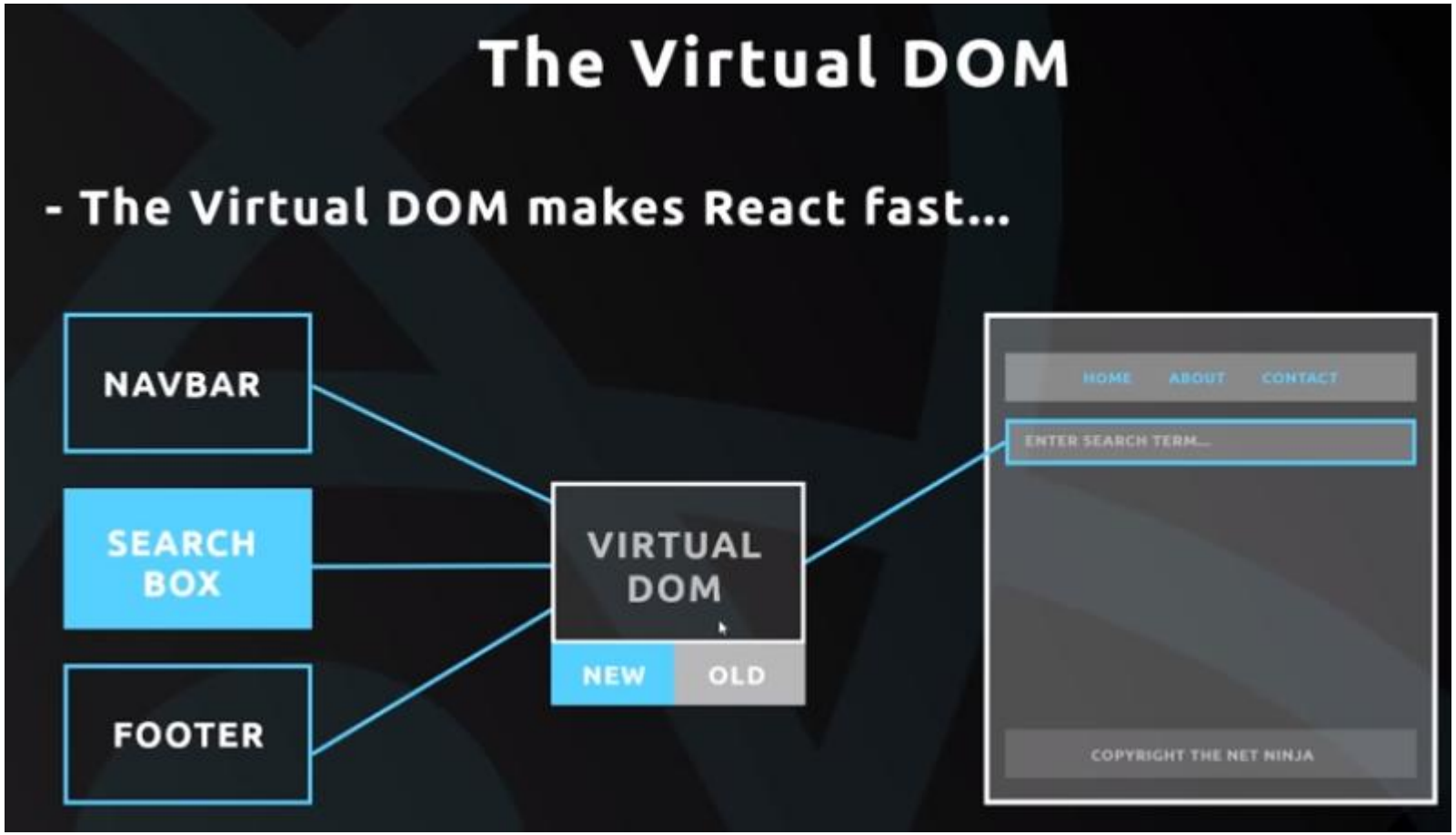
State management means:
Is pop up open or closed
Is menu open or closed

- React basics
  - components, events, templates, props & forms

- React Router
  - routes, route parameters, redirects

- Redux
  - stores, actions & reducers


React
- Components, components, COMPONENTS!
NAVBAR
SEARCH BOX
FOOTER
HOME
ABOUT
CONTACT
ENTER SEARCH TERM...
COPYRIGHT THE NET NINJA


The Virtual DOM
- The Virtual DOM makes React fast...
NAVBAR
SEARCH BOX
FOOTER
VIRTUAL DOM
NEW
OLD
HOME
ABOUT
CONTACT
ENTER SEARCH TERM...
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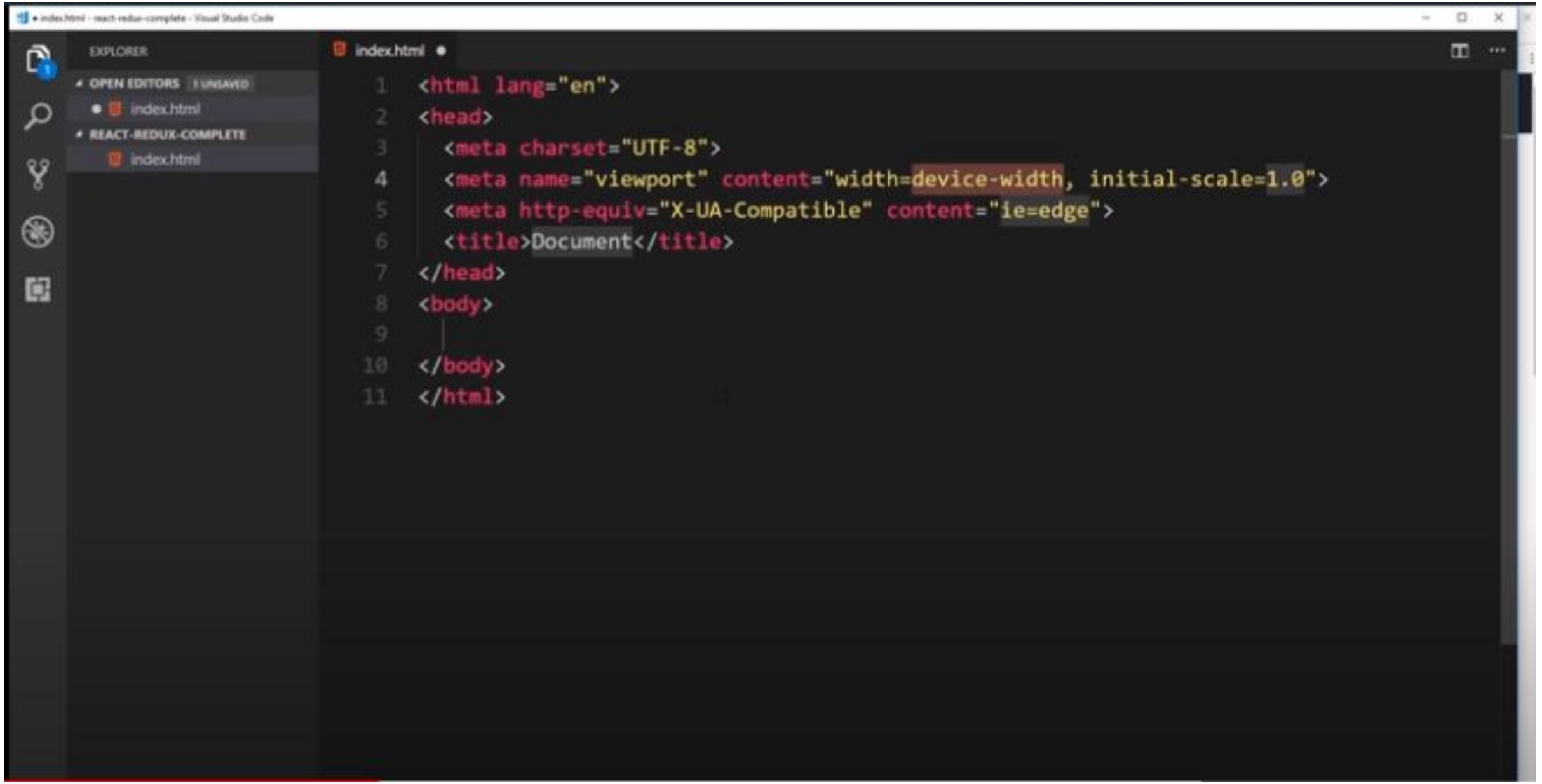
Components & Templates

- Components look like HTML templates (actually JSX)
- They can contain 'state' (data or UI state)
- They also can contain JavaScript for functionality

```
class App extends React.Component {
  state = {
    name: 'Ryu',
    age: 30
  }
  render(){
    return(
      <div classNiame="app-content">
        <h1>Hello, ninjas!</h1>
        <p>My name is: { this.state.name } and I am { this.state.age }</p>
      </div>
    )
  }
```


index.html - react-redux-complete - Visual Studio Code
EXPLORER
OPEN EDITORS 1 UNSAVED
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REACT-REDUX-COMPLETE
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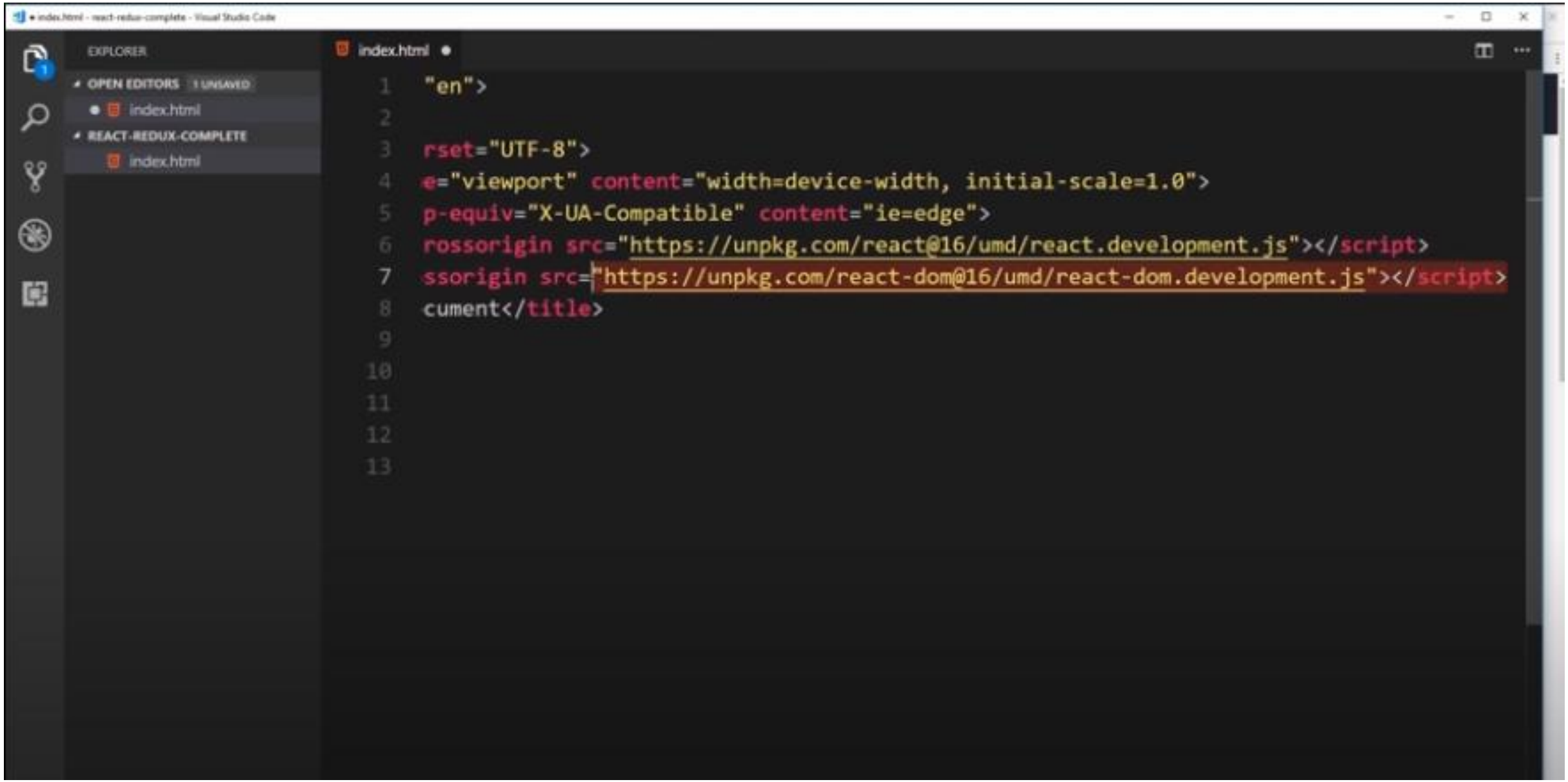
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta http-equiv="X-UA-Compatible" content="ie=edge">
<title>Document</title>
</head>
<body>
</body>
</html>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REACT-REDUX-COMPLETE
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ssorigin src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"></script>
cument</title>

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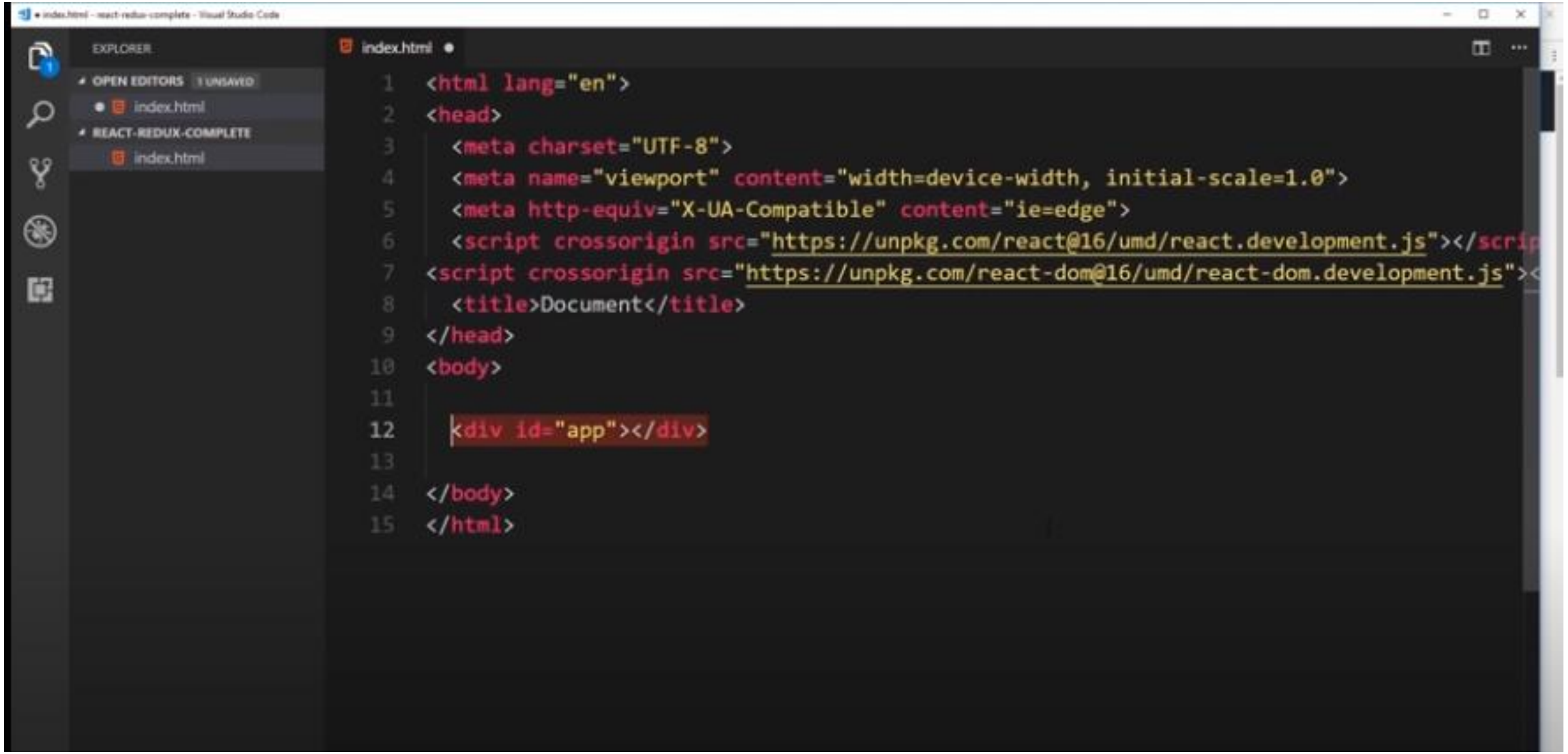
<script crossorigin
src="https://unpkg.com/react@18/umd/react.development.js"></script>

<script crossorigin src="https://unpkg.com/react-dom@18/umd/react-
dom.development.js"></script>
```

+ VS Code editor - https://code.visualstudio.com/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index.html
REACT-REDUX-COMPLETE
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index.html
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7 <script crossorigin src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"><
8 <title>Document</title>
9 </head>
10 <body>
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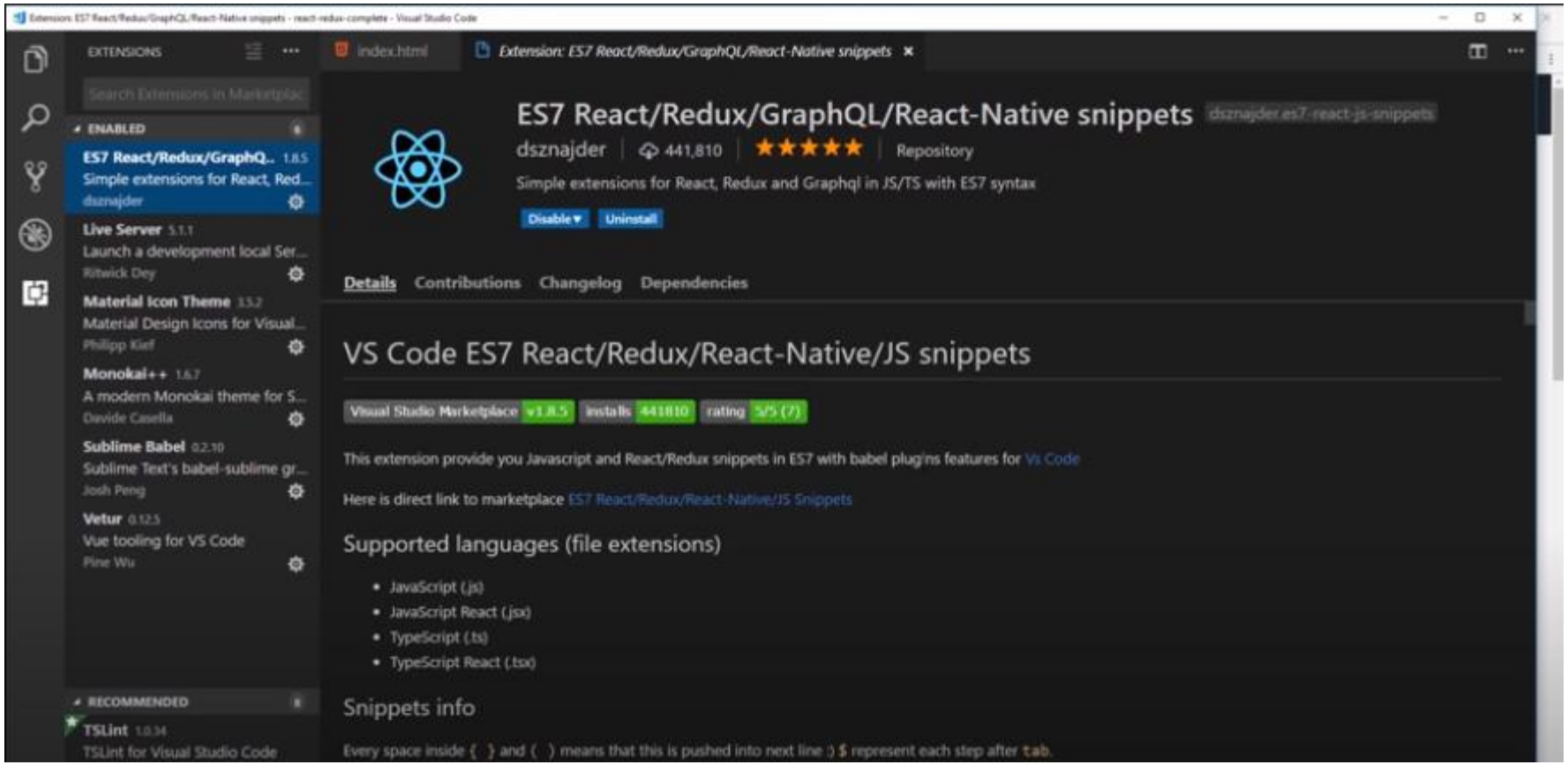
14 </body>
15 </html>

PACKAGES IN VS-CODE


EXTENSIONS
Search Extensions in Marketplac
ENABLED
ES7 React/Redux/GraphQ... 1.8.5
Simple extensions for React, Red...
dsznajder
Live Server 5.1.1
Launch a development local Ser...
Ritwick Dey
Material Icon Theme 3.5.2
Material Design Icons for Visual...
Philipp Kief
Monokai++ 1.6.7
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TSLint for Visual Studio Code
index.html
Extension: ES7 React/Redux/GraphQL/React-Native snippets
ES7 React/Redux/GraphQL/React-Native snippets
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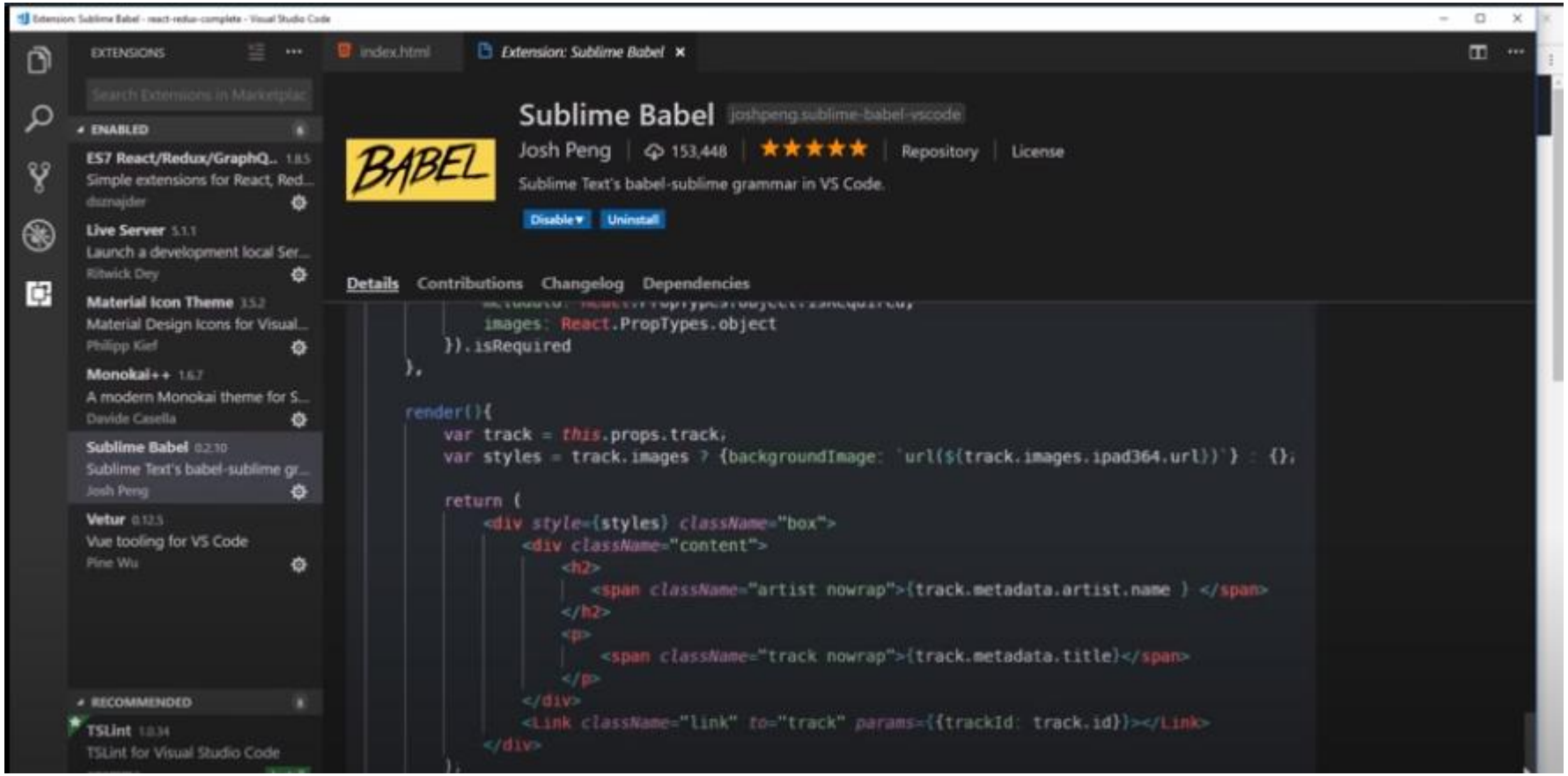
Repository
Simple extensions for React, Redux and Graphql in JS/TS with ES7 syntax
Disable
Uninstall
Details
Contributions
Changelog
Dependencies
VS Code ES7 React/Redux/React-Native/JS snippets
Visual Studio Marketplace v1.8.5
installs 441810
rating 5/5 (7)
This extension provide you Javascript and React/Redux snippets in ES7 with babel plugins features for Vs Code
Here is direct link to marketplace ES7 React/Redux/React-Native/JS Snippets
Supported languages (file extensions)
JavaScript (.js)
JavaScript React (.jsx)
TypeScript (.ts)
TypeScript React (.tsx)
Snippets info
Every space inside { } and ( ) means that this is pushed into next line ; $ represent each step after tab.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index.html
Extension: Sublime Babel
Sublime Babel
joshpeng.sublime-babel-vscode
Josh Peng
153,448
Repository
License
Sublime Text's babel-sublime grammar in VS Code.
Disable
Uninstall
Details
Contributions
Changelog
Dependencies
images: React.PropTypes.object
}).isRequired
},
render(){
var track = this.props.track;
var styles = track.images ? {backgroundImage: `url(${track.images.ipad364.url})`} : {};
return (

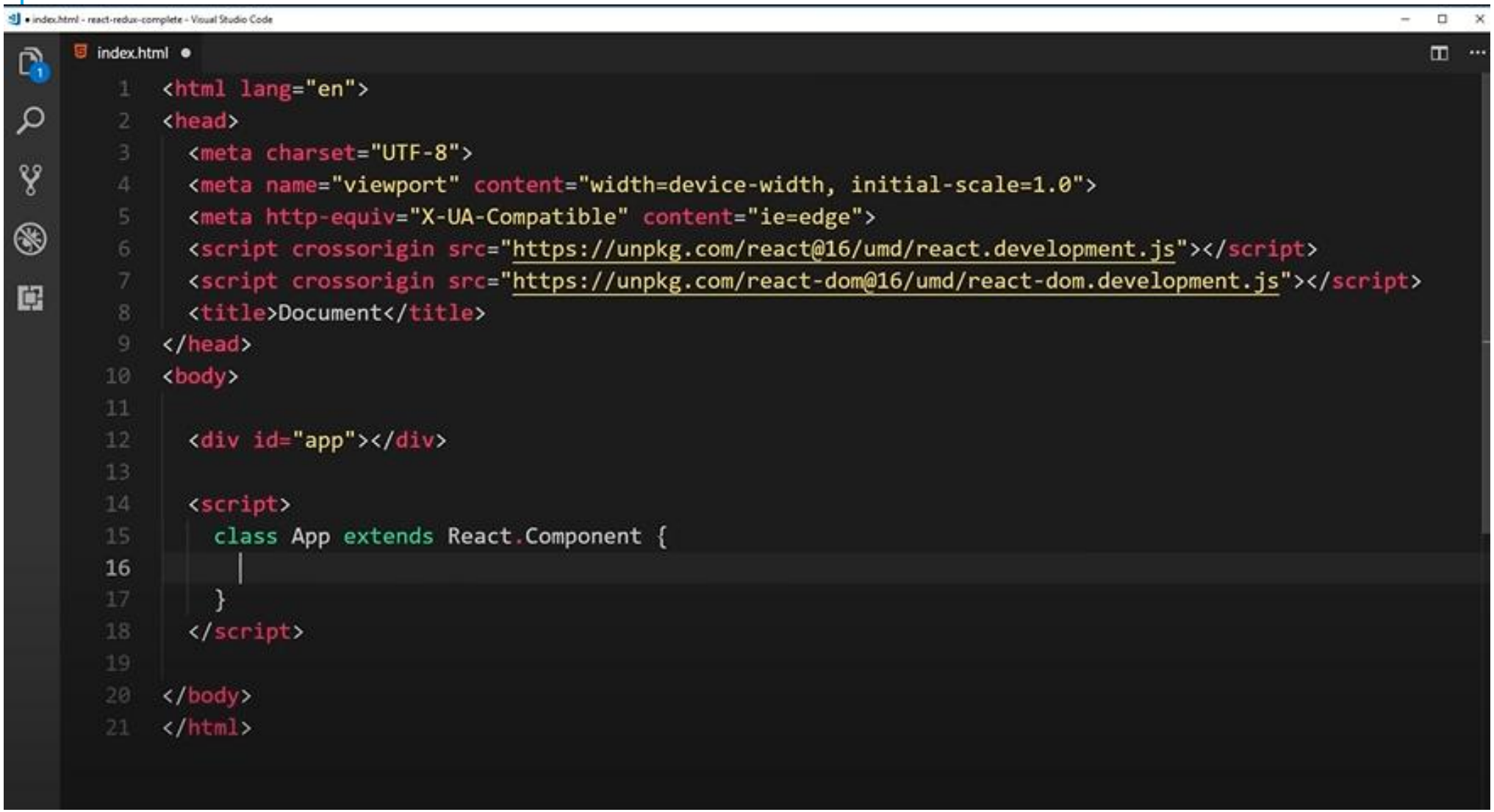
<h2>
{track.metadata.artist.name }
</h2>

{track.metadata.title}

<Link className="link" to="track" params={{trackId: track.id}}></Link>

REACT COMPONENT

CLASS BASED COMPONENT



React.component= React will be used from React library and React.Component will get all the basics of component

In 2018 conference hooks introduced.

React 16.8.0 is the first release to support Hooks (launch in 2019).

In 2023 new documentation website launch for React 18 and onwards.

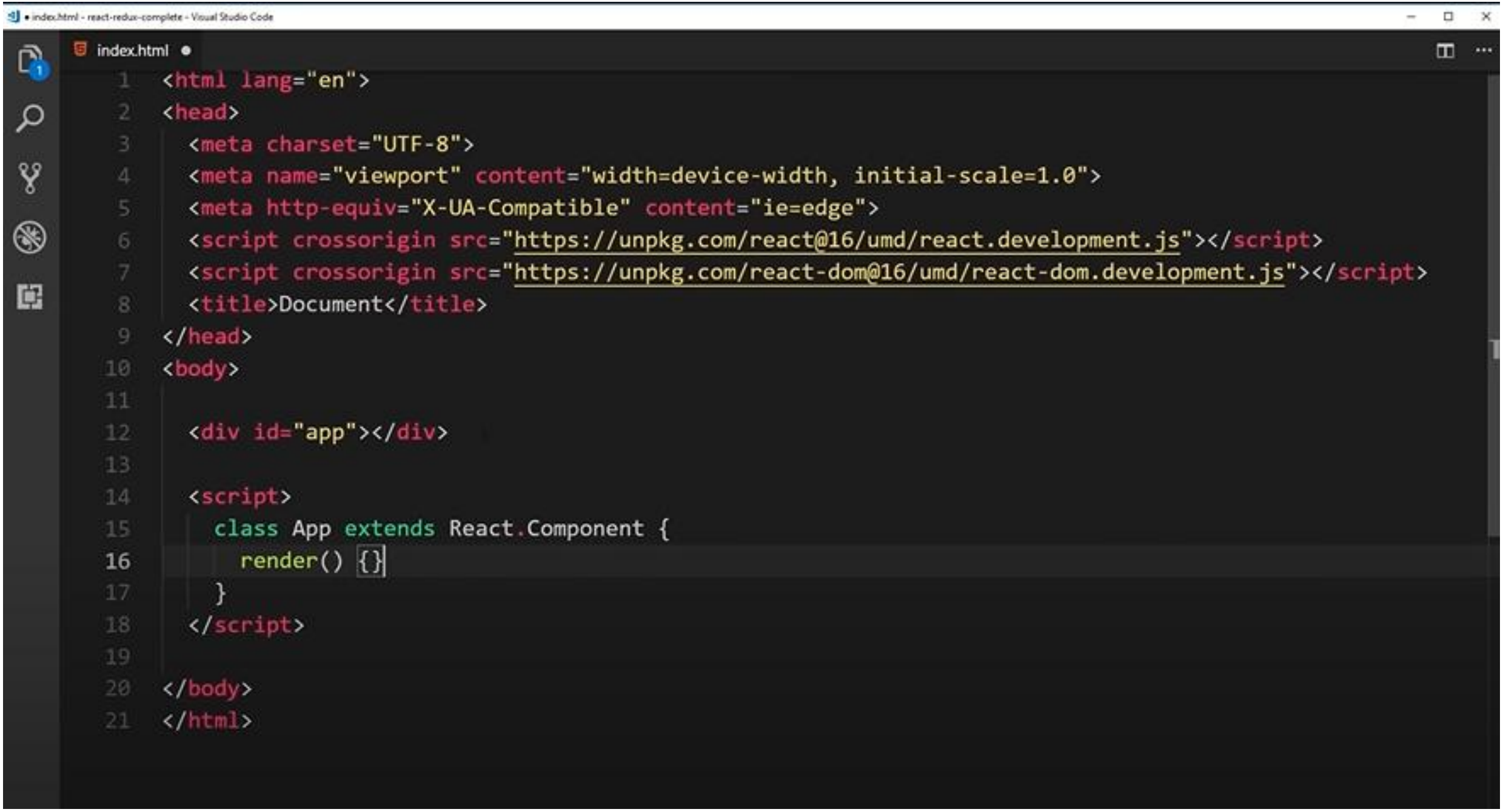
https://legacy.reactjs.org/docs/hooks-intro.html

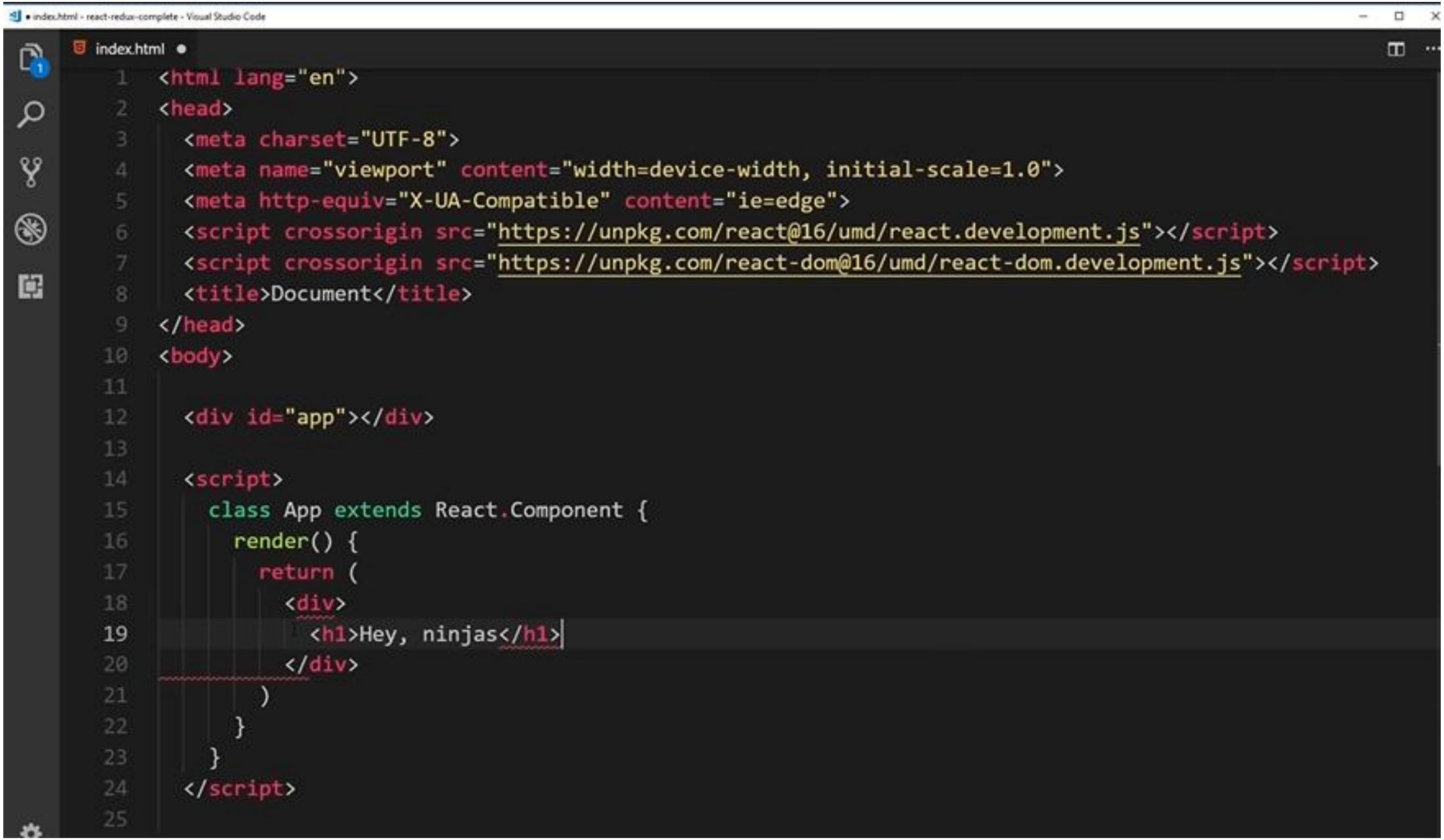
https://react.dev/versions

There are no plans to remove classes from React.

https://legacy.reactjs.org/docs/hooks-intro.html

A class based component must have atleast 1 function that is render


• index.html - react-redux-complete - Visual Studio Code
index.html
1 <html lang="en">
2 <head>
3 <meta charset="UTF-8">
4 <meta name="viewport" content="width=device-width, initial-scale=1.0">
5 <meta http-equiv="X-UA-Compatible" content="ie=edge">
6 <script crossorigin src="https://unpkg.com/react@16/umd/react.development.js"></script>
7 <script crossorigin src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"></script>
8 <title>Document</title>
9 </head>
10 <body>
11
12
13
14 <script>
15 class App extends React.Component {
16 render() {}
17 }
18 </script>
19
20 </body>
21 </html>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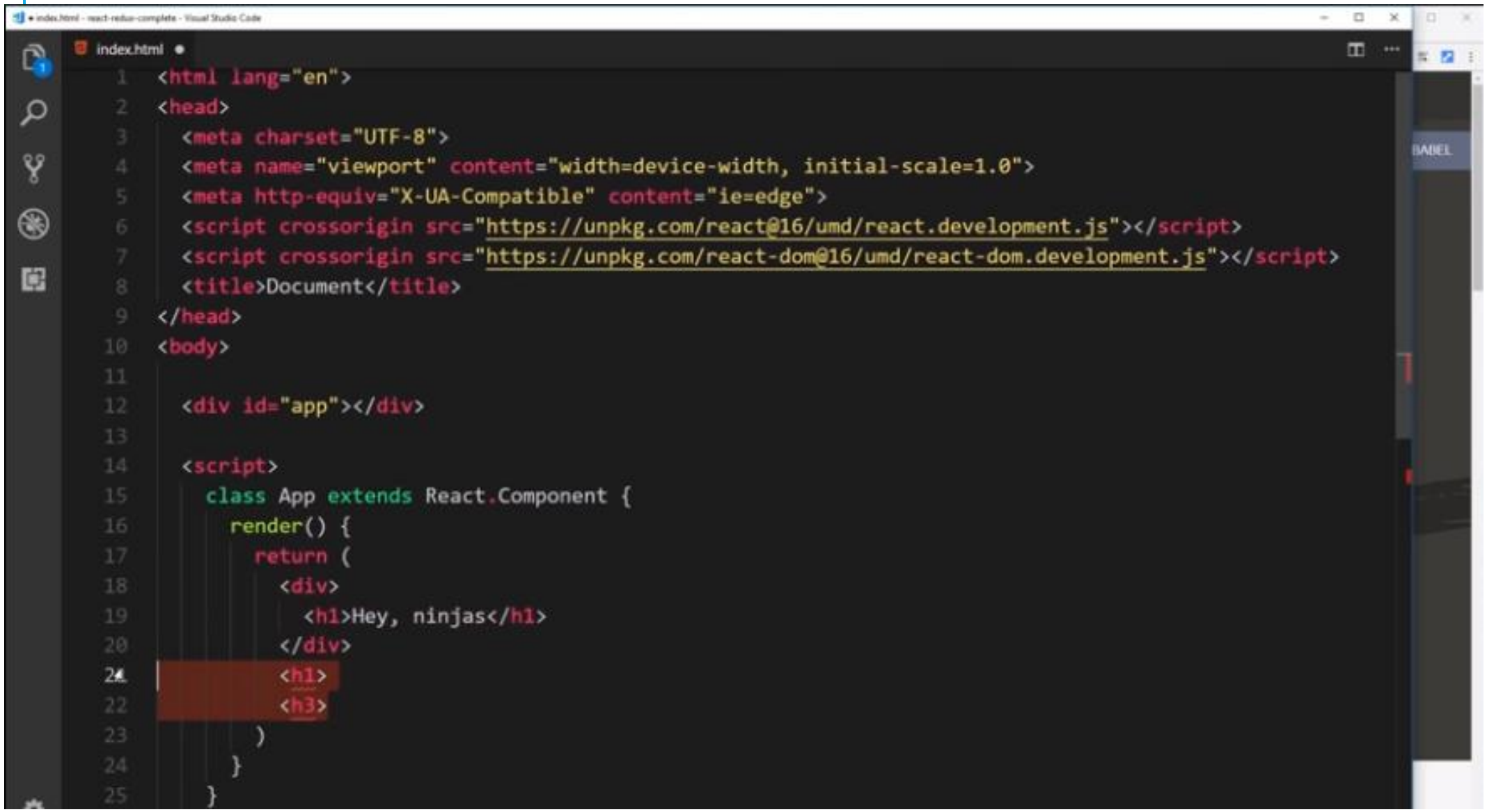
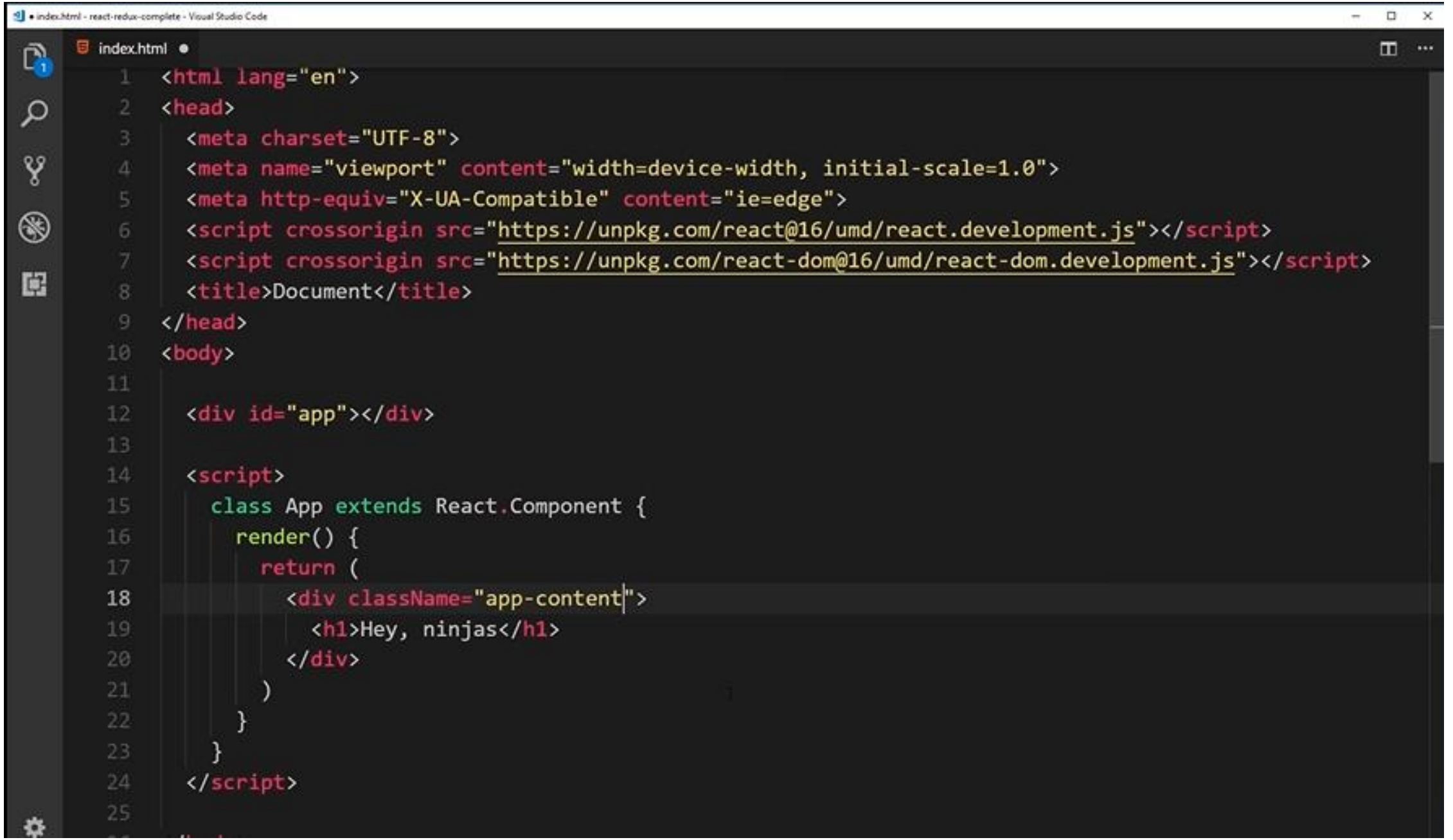
12
13
14 <script>
15 class App extends React.Component {
16 render() {
17 return (
18
19 <h1>Hey, ninjas</h1>
20
21)
22 }
23 }
24 </script>
25

In jsx only one root element can be defined

CAN'T USED LIKE THIS



Instead of class in javascript we will use classname in jsx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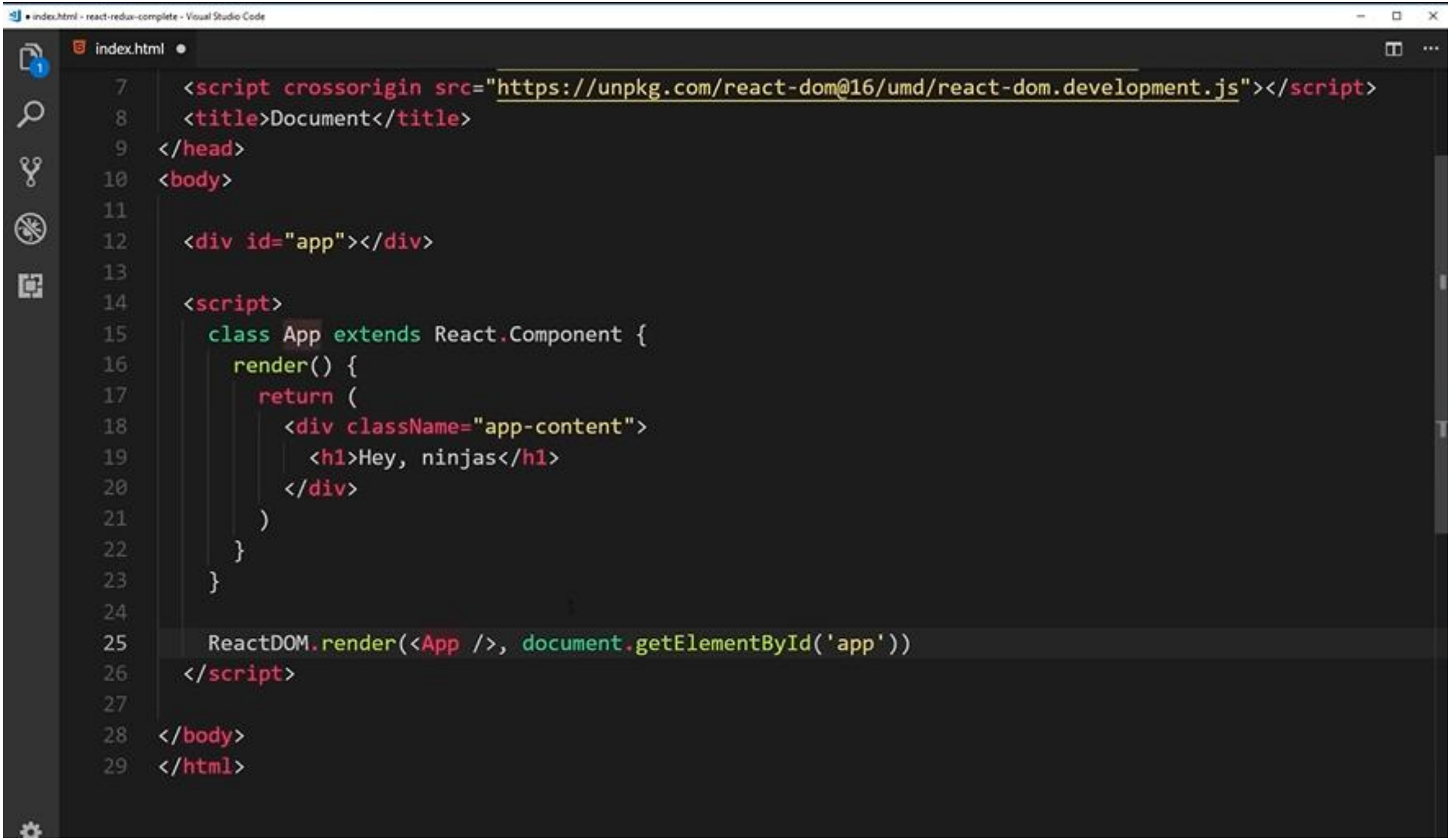
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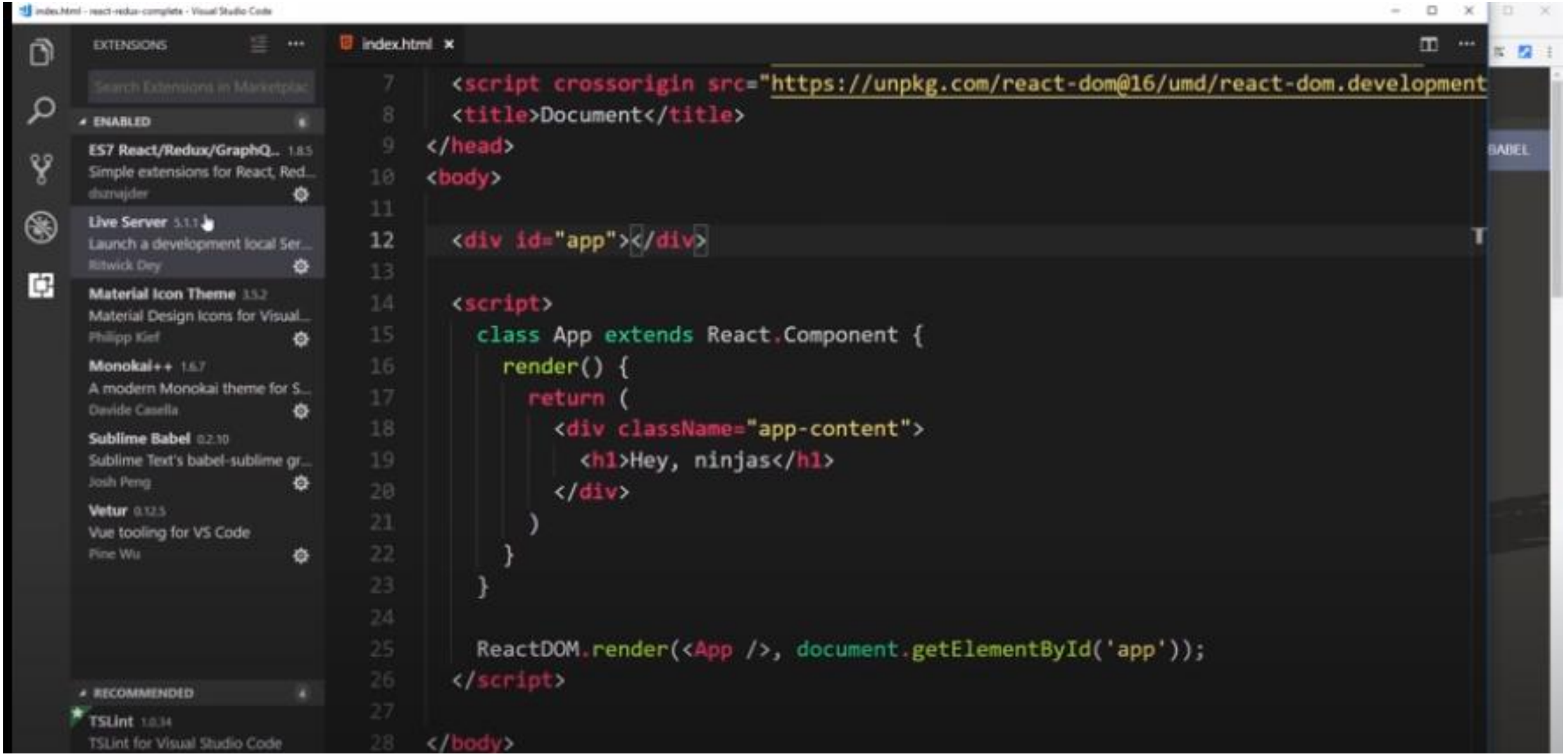
}
ReactDOM.render(<App />, document.getElementById('app'))
</script>
</body>
</html>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EXTENSIONS
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21)
22 }
23 }
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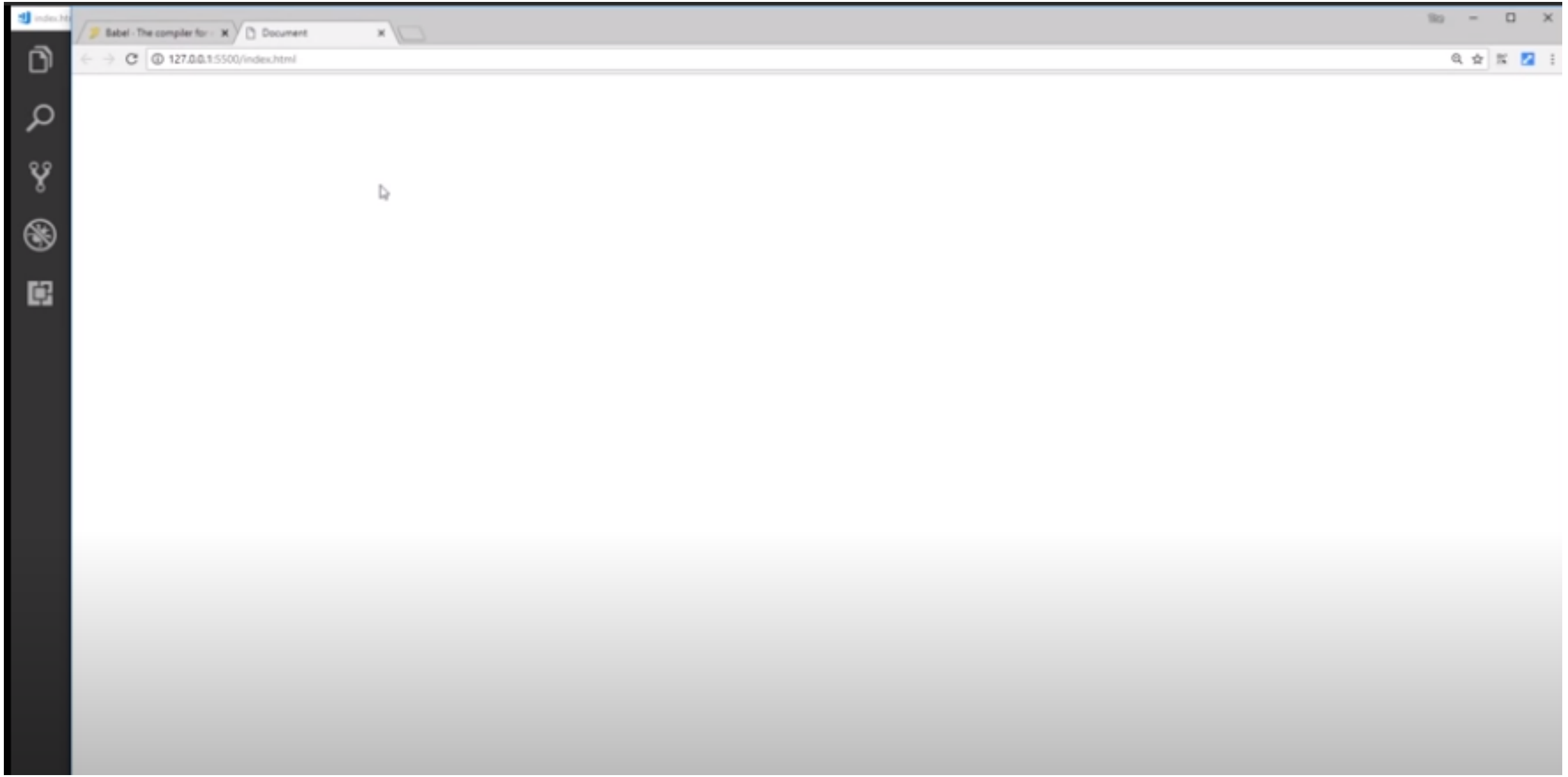
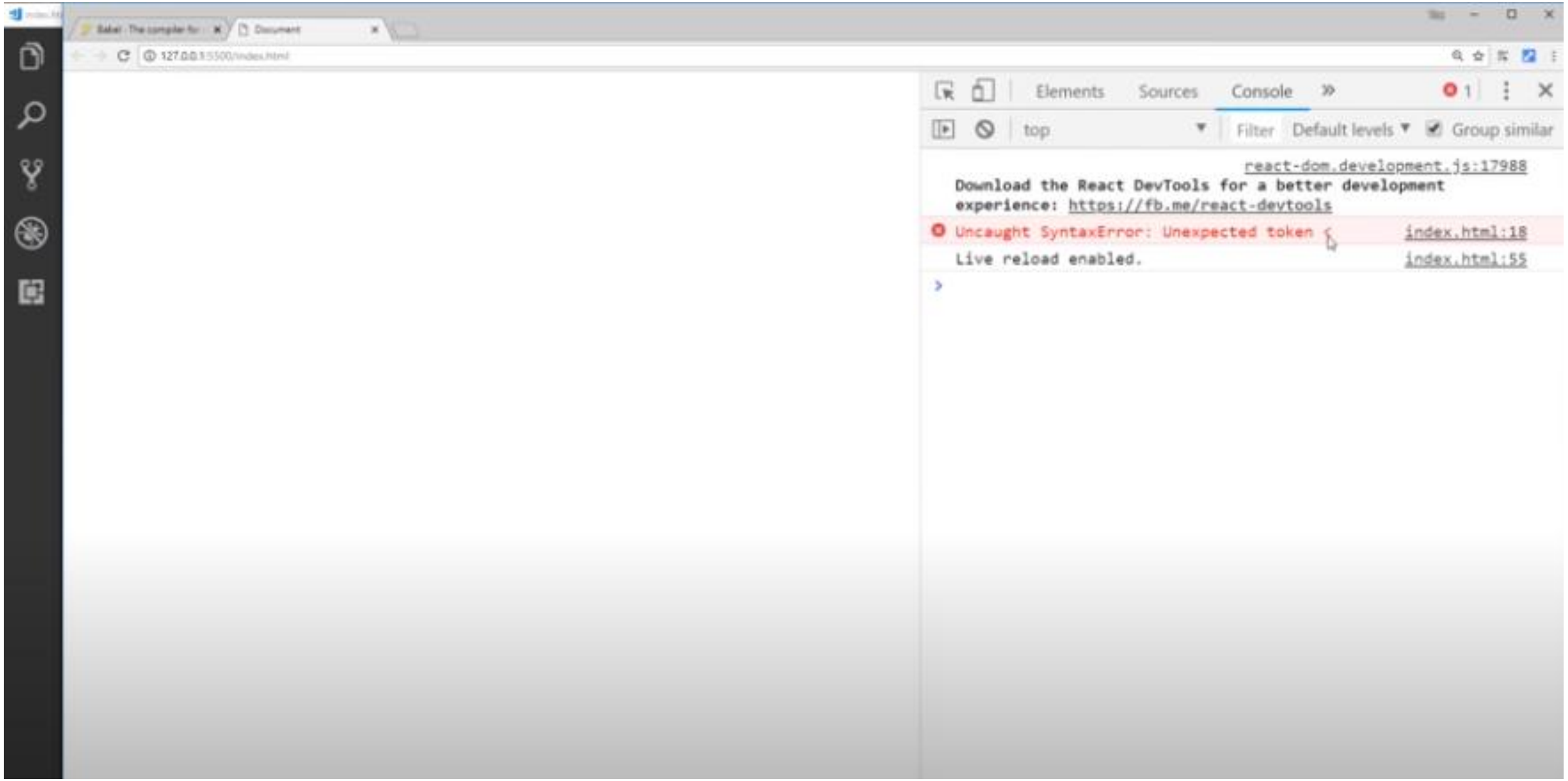
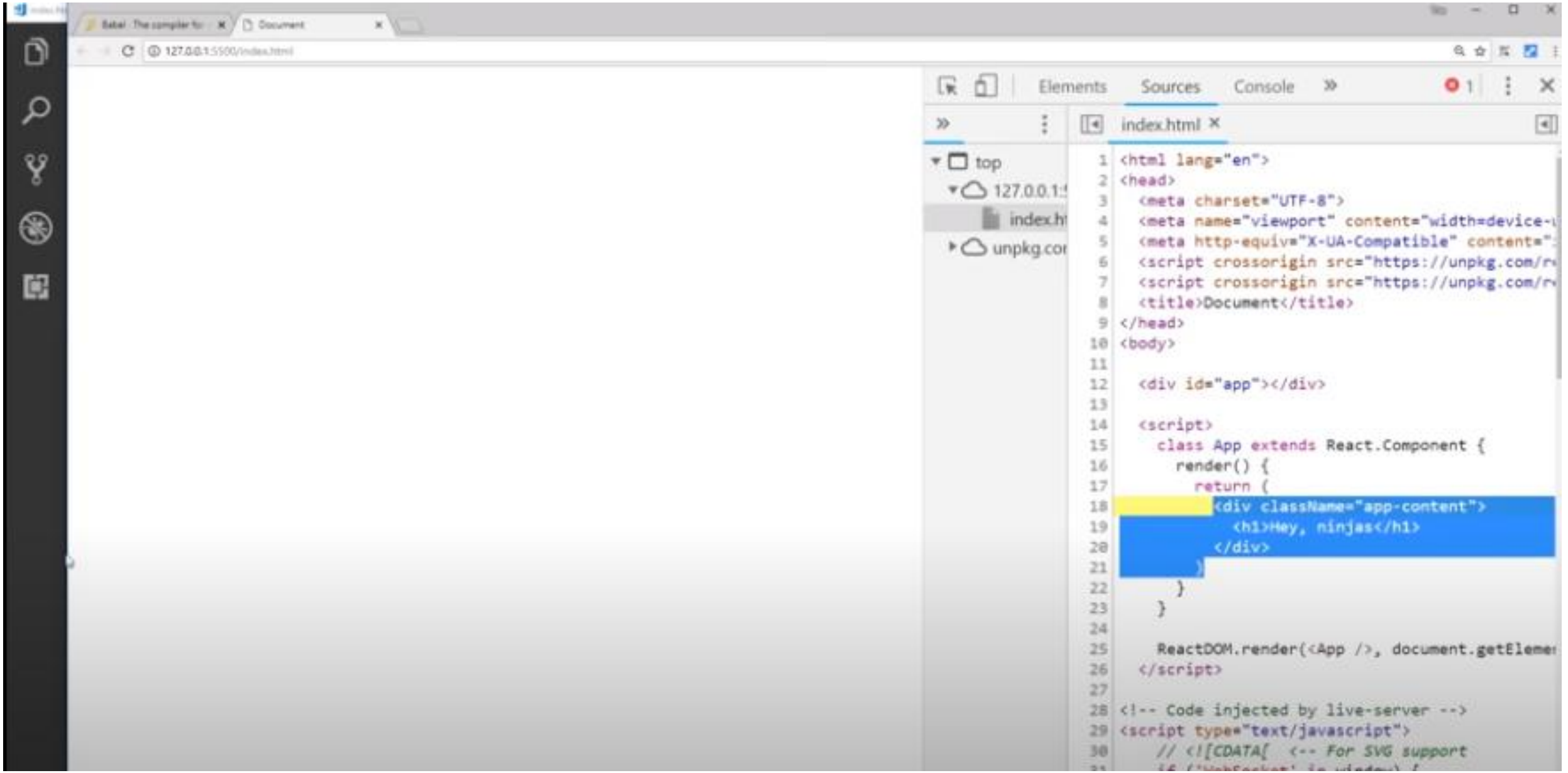
25 ReactDOM.render(<App />, document.getElementById('app'));
26 </script>
27
28 </body>
BABEL

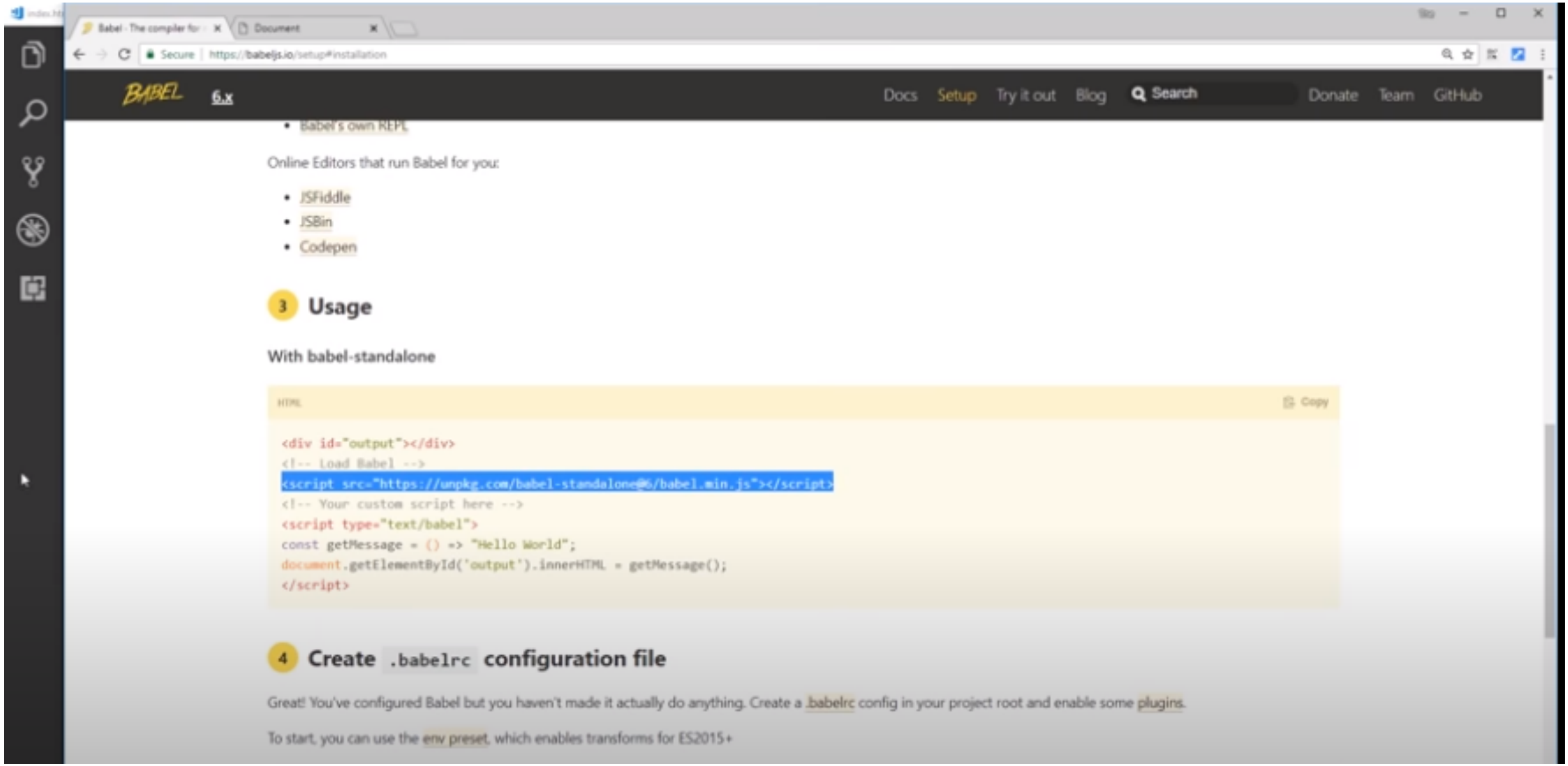


Right click: open in live server

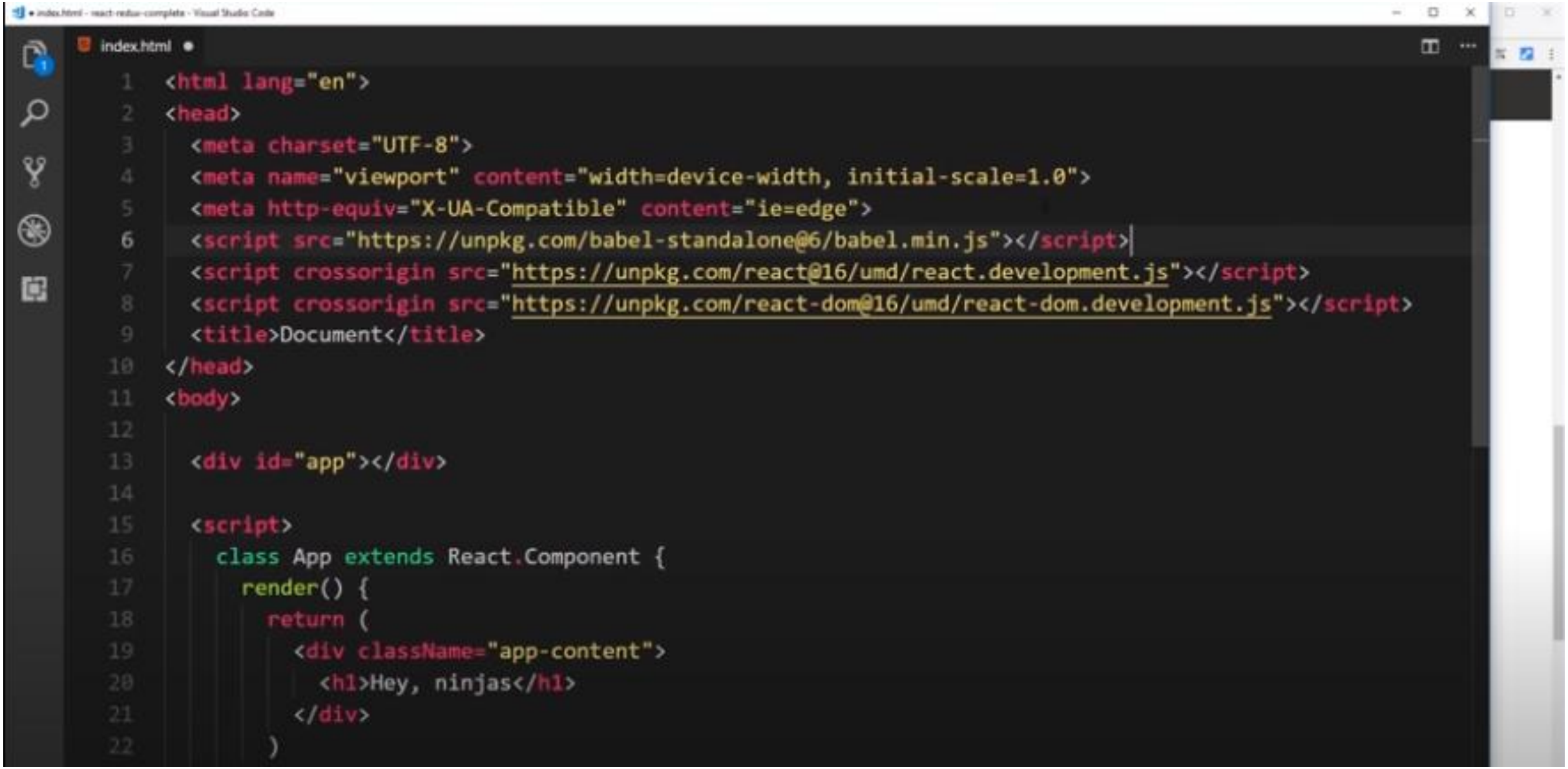

Document
127.0.0.1:5500/index.html
Elements
Sources
Console
top
Filter
Default levels
Group similar
react-dom.development.js:17988
Download the React DevTools for a better development experience: https://fb.me/react-devtools
Uncaught SyntaxError: Unexpected token <
index.html:18
Live reload enabled.
index.html:55



Not understanding jsx: because jsx is not supported in browsers


Babel - The compiler for
Document
Secure | https://babeljs.io/setup#installation
BABEL 6.x
Docs Setup Try it out Blog Search Donate Team GitHub
Babel's own REPL
Online Editors that run Babel for you:
JSFiddle
JSBin
Codepen
3 Usage
With babel-standalone
HTML
Copy

<!-- Load Babel -->
<script src="https://unpkg.com/babel-standalone@6/babel.min.js"></script>
<!-- Your custom script here -->
<script type="text/babel">
const getMessage = () => "Hello World";
document.getElementById('output').innerHTML = getMessage();
</script>
4 Create .babelrc configuration file
Great! You've configured Babel but you haven't made it actually do anything. Create a .babelrc config in your project root and enable some plugins.
To start, you can use the env preset, which enables transforms for ES2015+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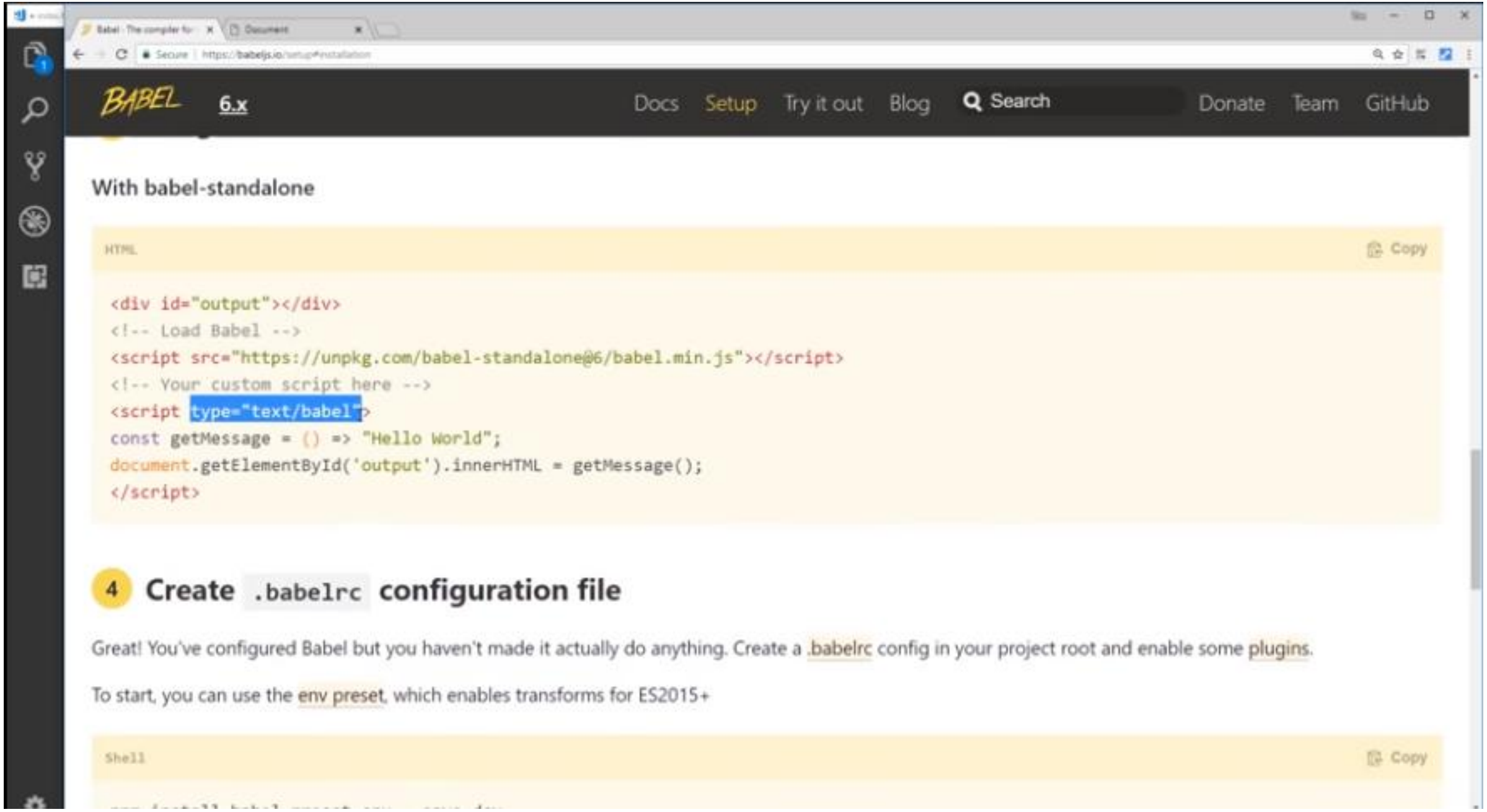
BABEL 6.x
Docs Setup Try it out Blog Search Donate Team GitHub
With babel-standalone
HTML
Copy

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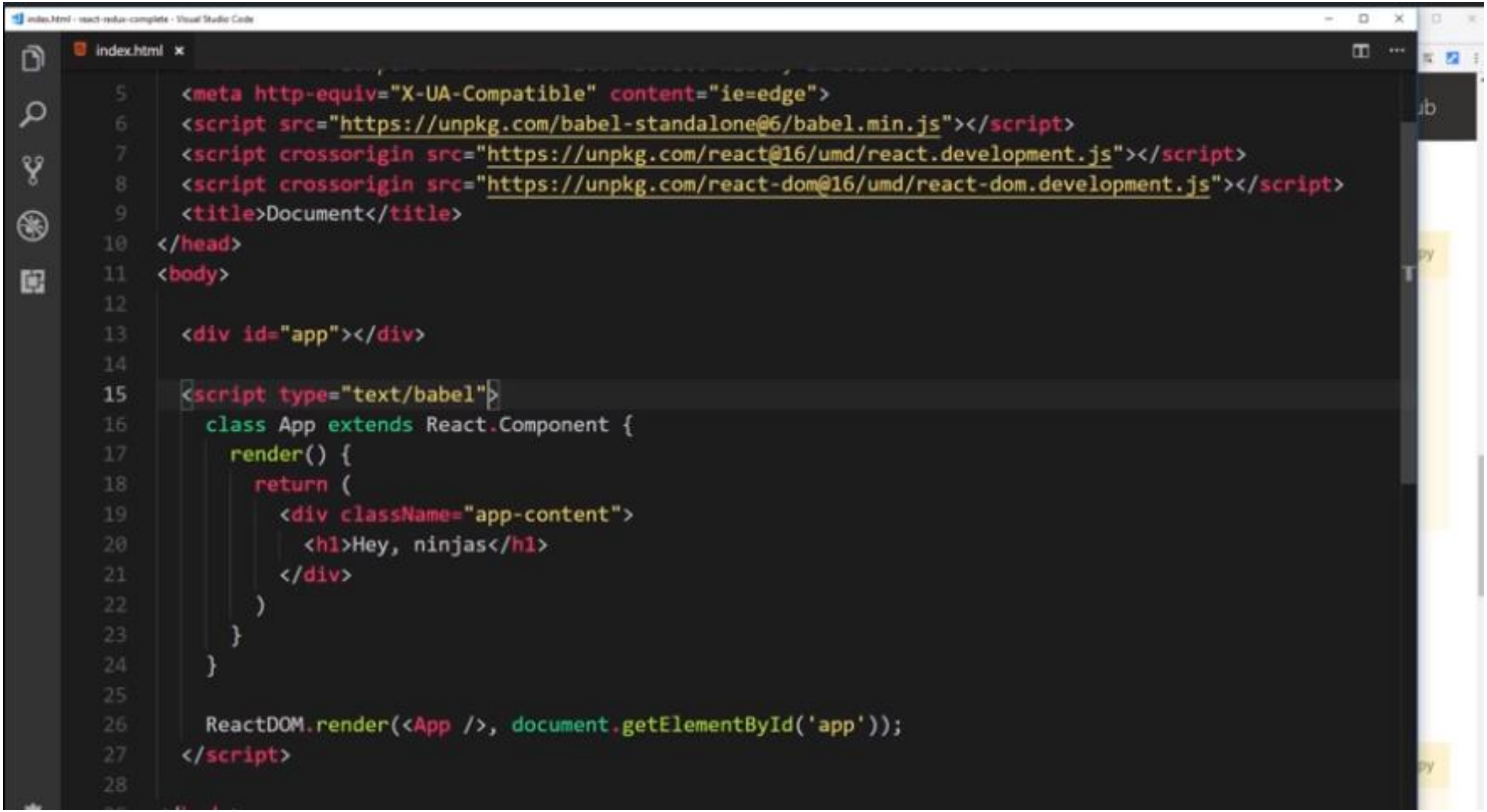
Copy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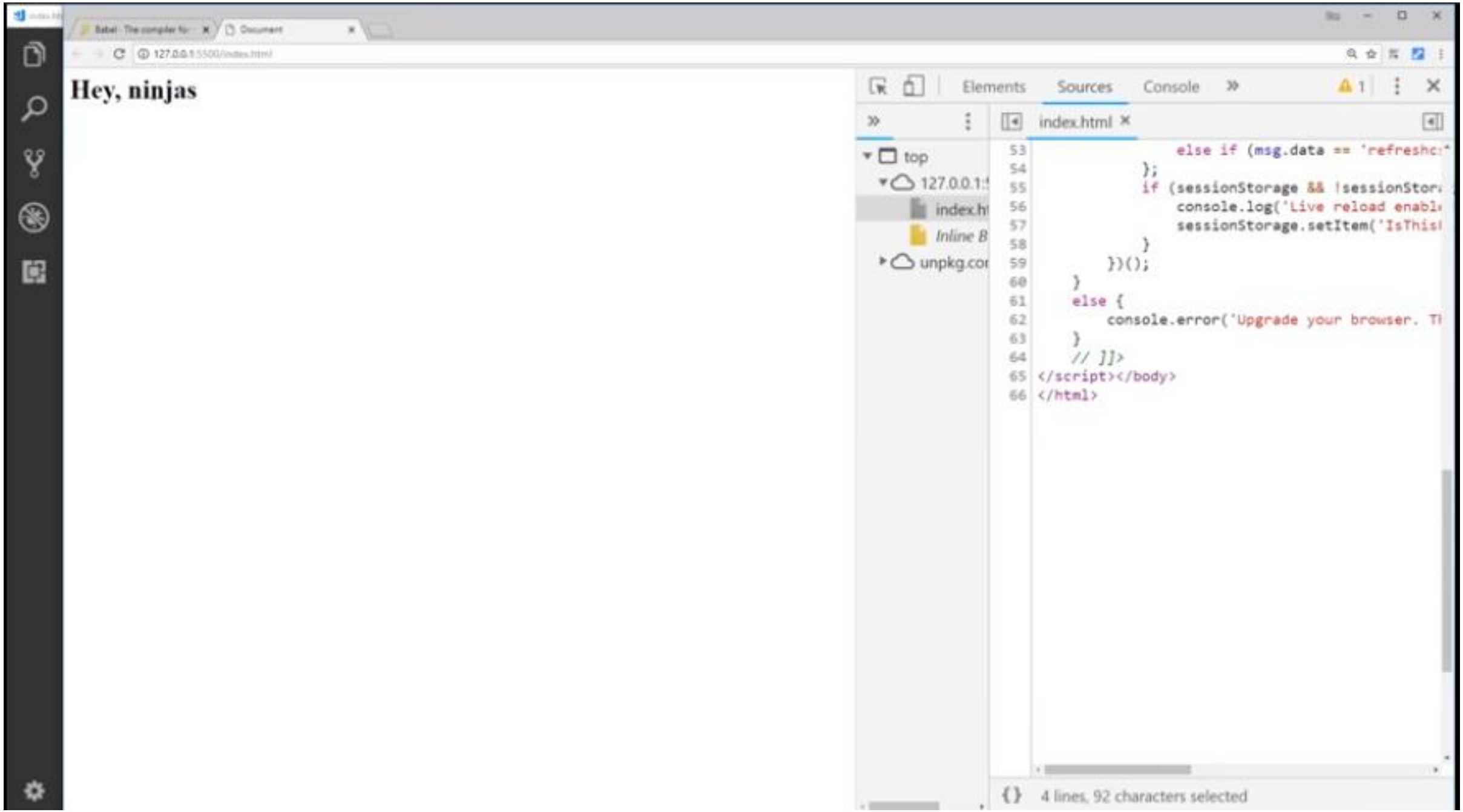
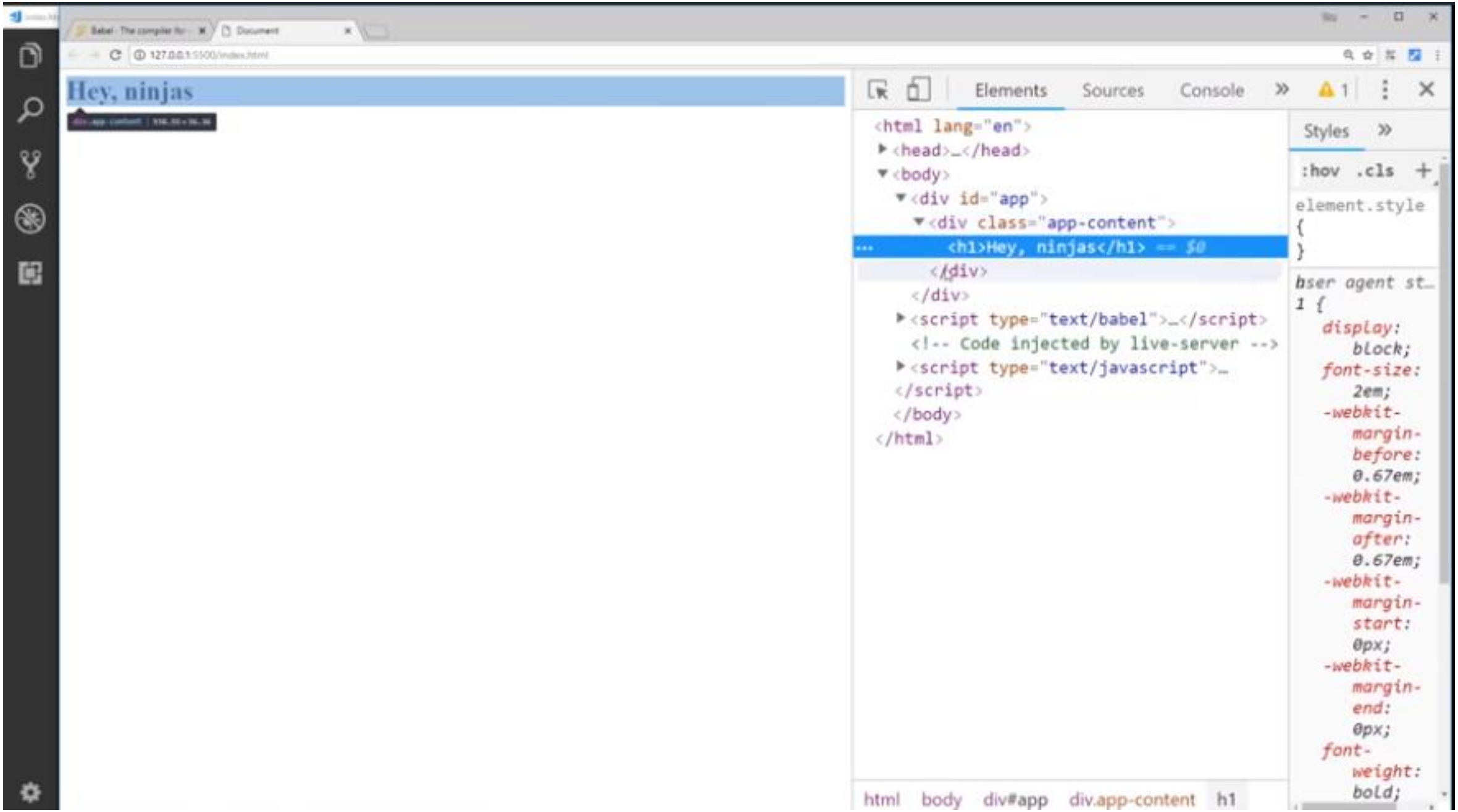
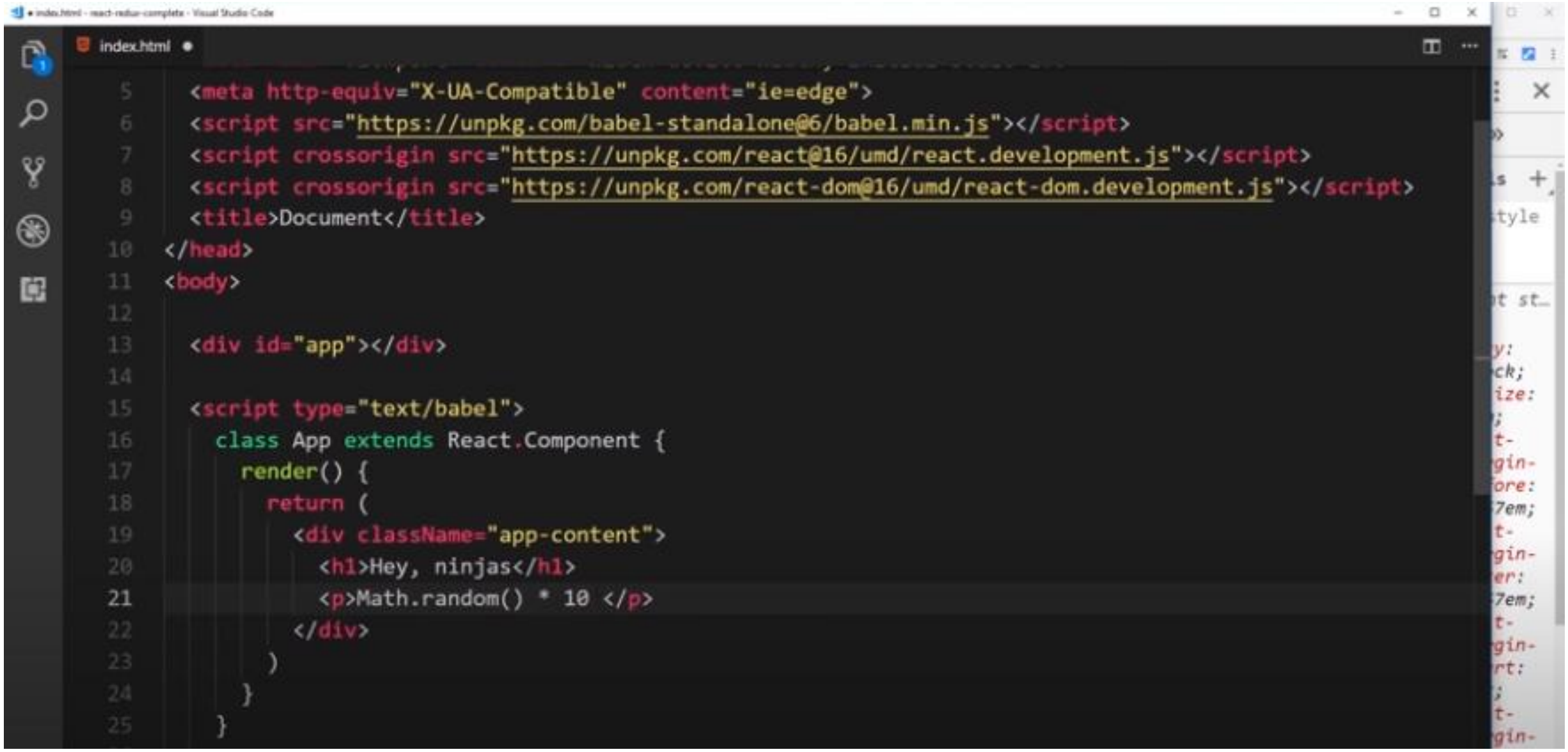
}
ReactDOM.render(<App />, document.getElementById('app'));
</script>


Hey, ninjas
Elements
Sources
Console
index.html
top
127.0.0.1:
index.ht
Inline B
unpkg.cor
else if (msg.data == 'refreshc
};
if (sessionStorage && !sessionStor
console.log('Live reload enabl
sessionStorage.setItem('IsThis
}
})();
}
else {
console.error('Upgrade your browser. T
}
//]]>
</script></body>
</html>
4 lines, 92 characters selected


Hey, ninjas
Elements
Sources
Console
Styles
<html lang="en">
<head>…</head>
<body>

<h1>Hey, ninjas</h1> == $0

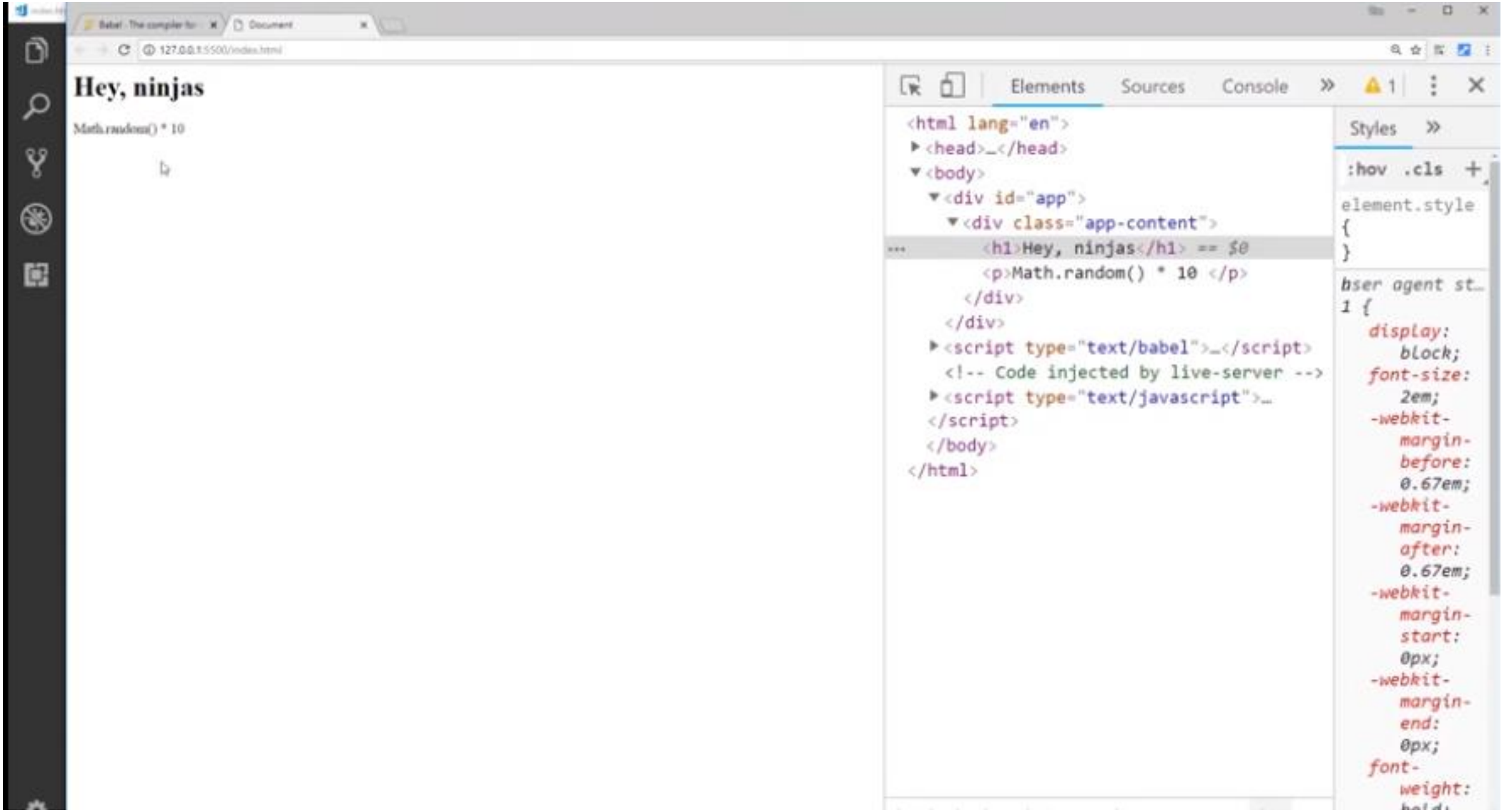
<script type="text/babel">…</script>
<!-- Code injected by live-server -->
<script type="text/javascript">…
</script>
</body>
</html>
:hov .cls
element.style
{
}
user agent st…
h1 {
display: block;
font-size: 2em;
-webkit-margin-before: 0.67em;
-webkit-margin-after: 0.67em;
-webkit-margin-start: 0px;
-webkit-margin-end: 0px;
font-weight: bold;
html
body
div#app
div.app-content
h1


index.html
<meta http-equiv="X-UA-Compatible" content="ie=edge">
<script src="https://unpkg.com/babel-standalone@6/babel.min.js"></script>
<script crossorigin src="https://unpkg.com/react@16/umd/react.development.js"></script>
<script crossorigin src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"></script>
<title>Document</title>
</head>
<body>

<script type="text/babel">
class App extends React.Component {
render() {
return (

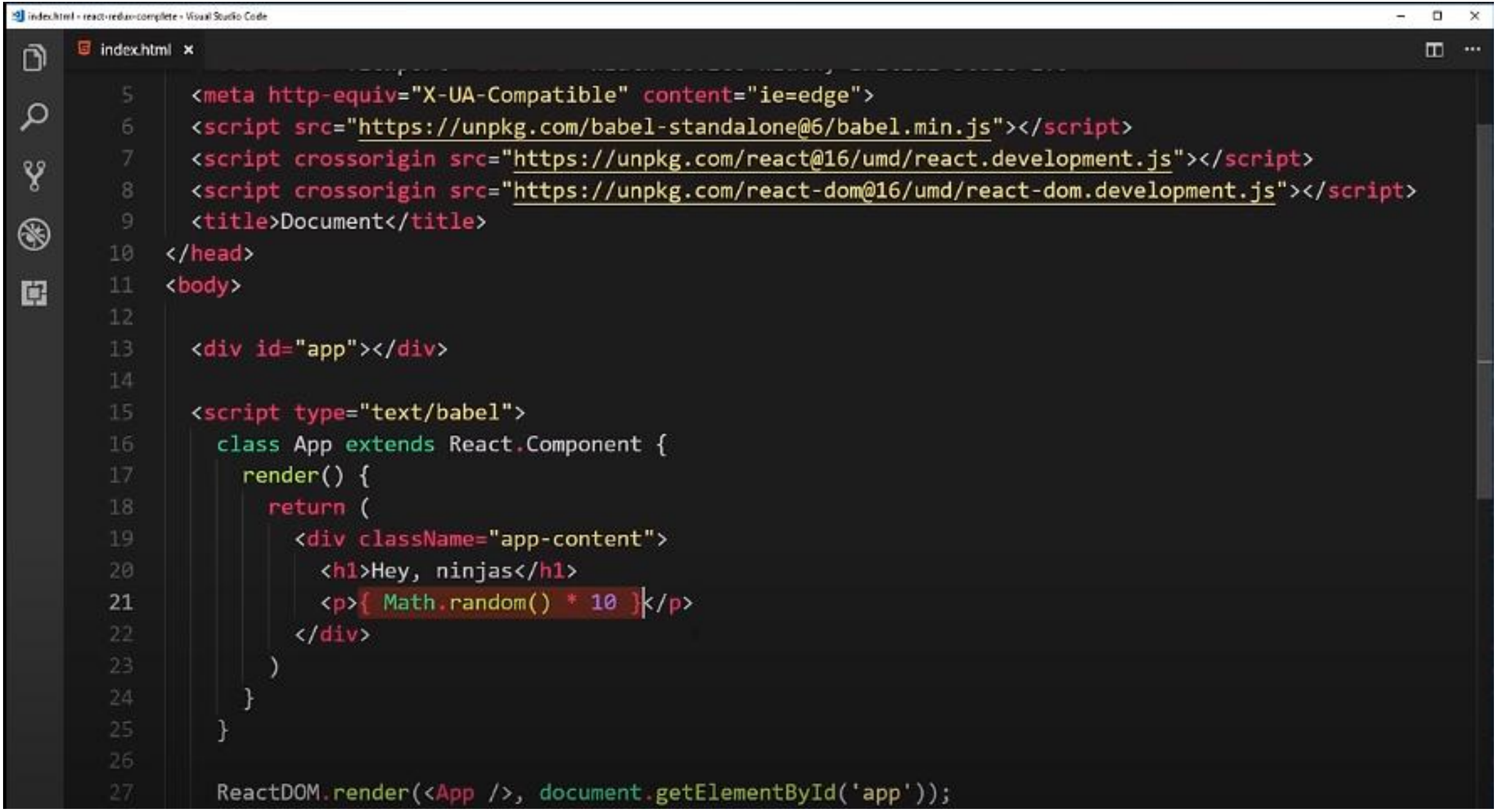
<h1>Hey, ninjas</h1>
Math.random() * 10

)
}
}


Hey, ninjas
Math.random() * 10
Elements
Sources
Console
<html lang="en">
<head>…</head>
<body>

<h1>Hey, ninjas</h1> == $0
Math.random() * 10

<script type="text/babel">…</script>
<!-- Code injected by live-server -->
<script type="text/javascript">…
</script>
</body>
</html>
Styles
:hov .cls
element.style
{
}
user agent st…
1 {
display:
block;
font-size:
2em;
-webkit-
margin-
before:
0.67em;
-webkit-
margin-
after:
0.67em;
-webkit-
margin-
start:
0px;
-webkit-
margin-
end:
0px;
font-
weight:


index.html - react-redux-complete - Visual Studio Code
index.html
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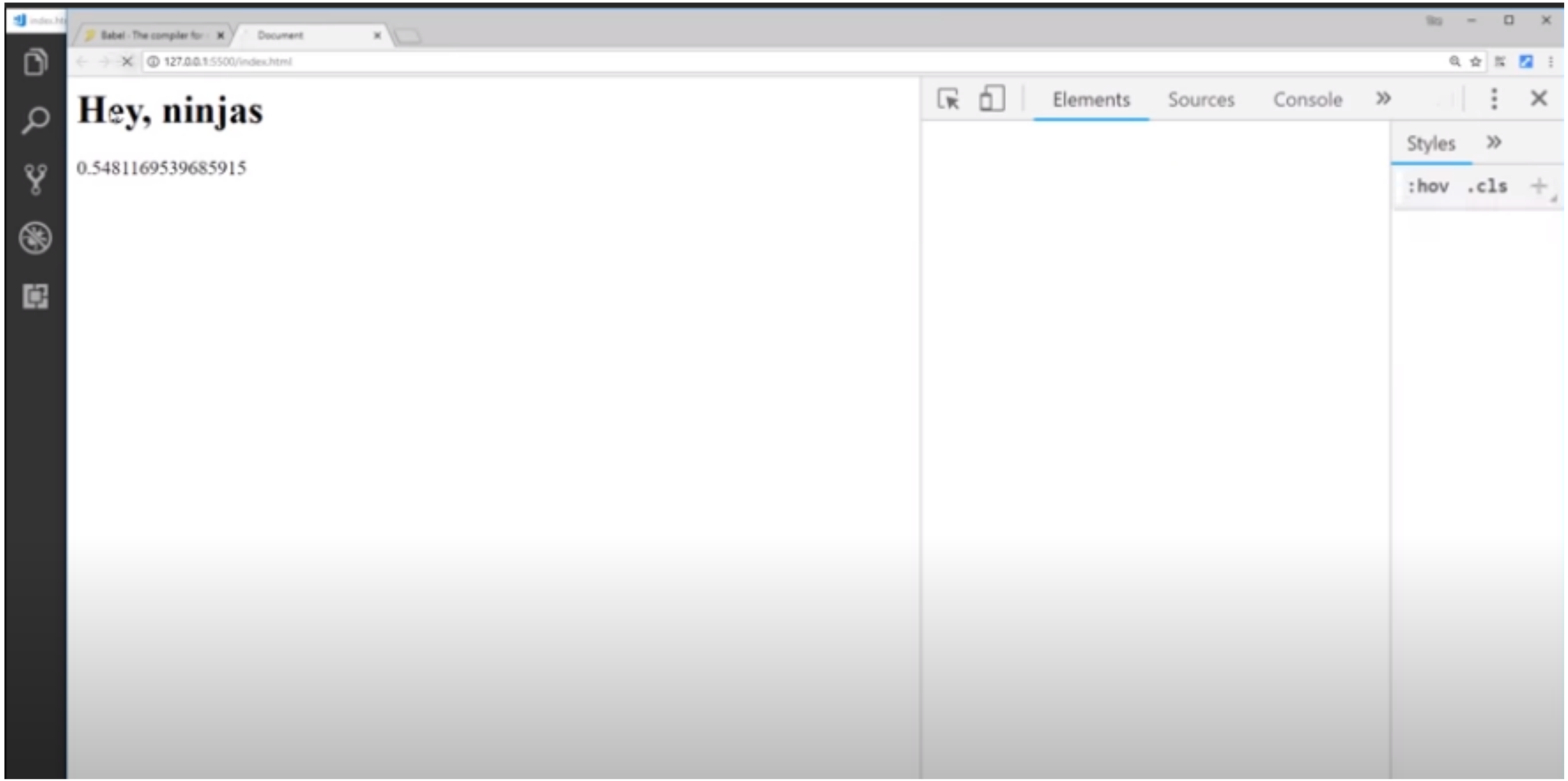
render() {
return (

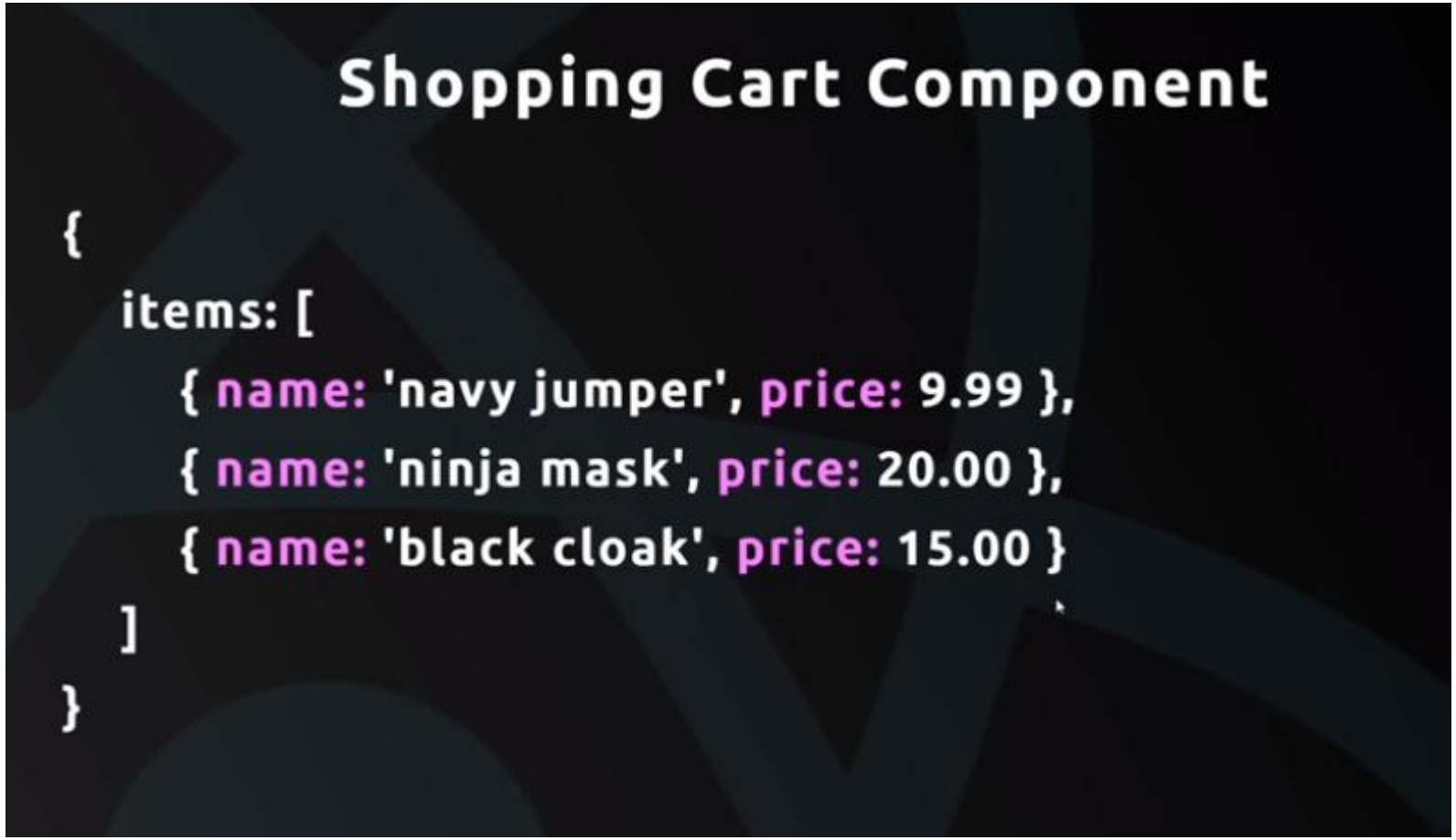
<h1>Hey, ninjas</h1>
{ Math.random() * 10 }

)
}
}
ReactDOM.render(<App />, document.getElementById('app'));


Babel · The compiler for
Document
127.0.0.1:5500/index.html
Hey, ninjas
0.5481169539685915
Elements
Sources
Console
Styles
:hov .cls

Component State

- JavaScript Object
- Describes the current state of the component
  - data, UI-state
- The state of a component can be updated over time
  - a modal could close
  - the data we output could change

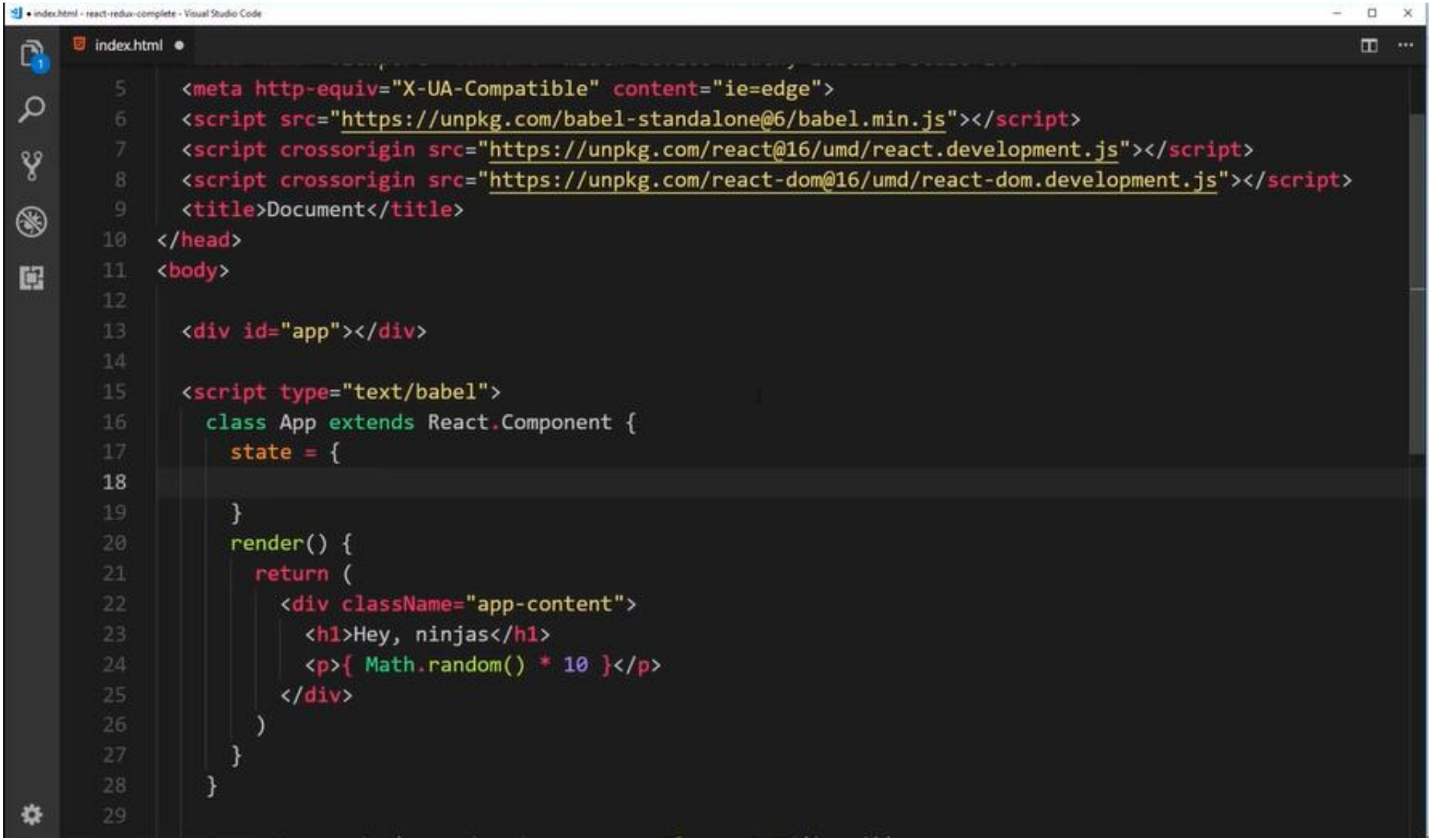


State will be changed if an other item will be added in the items

Popup Component

```
{
  showPopup: true
}

{
  showPopup: false
}
```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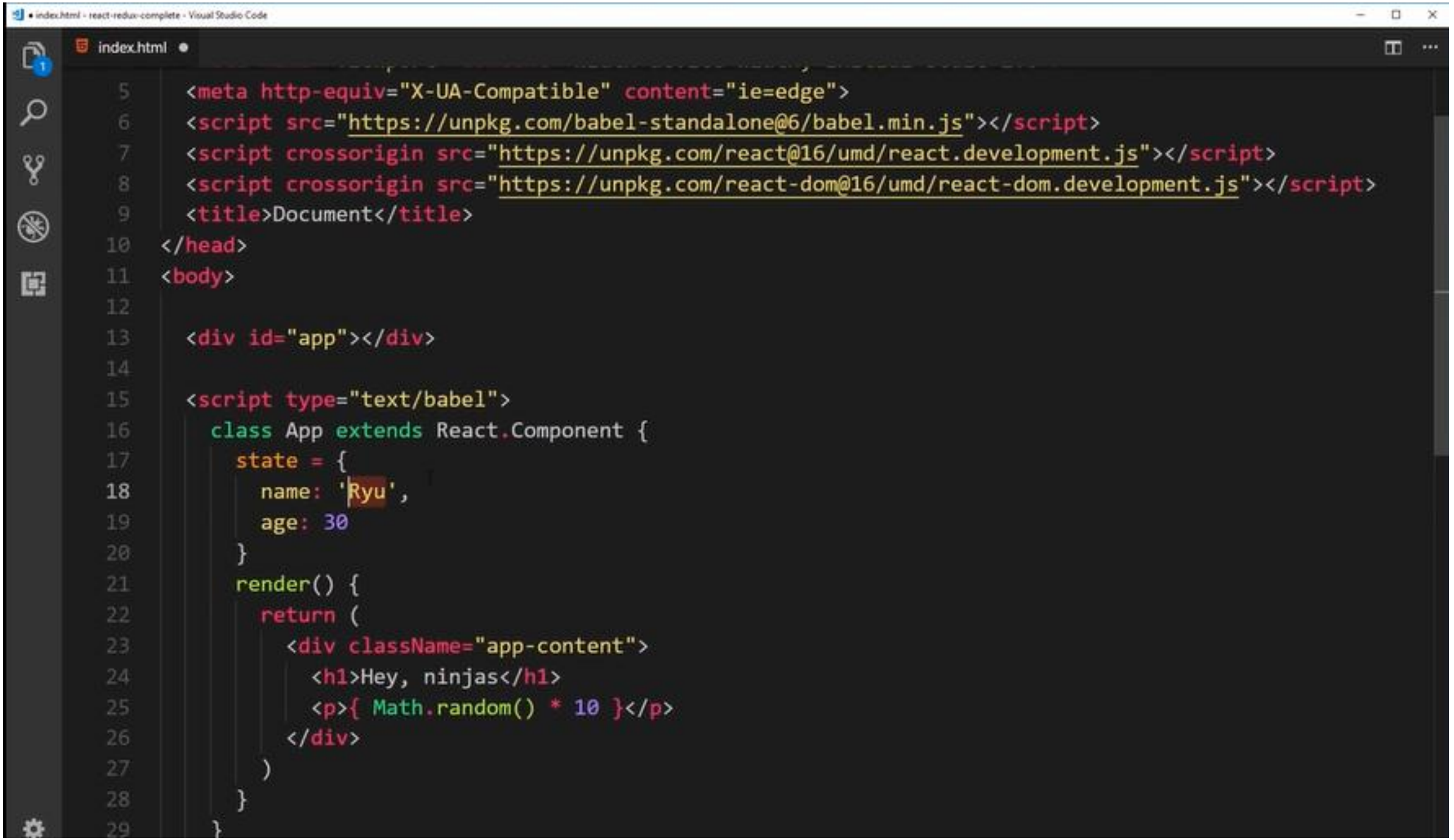
class App extends React.Component {
state = {
}
render() {
return (

<h1>Hey, ninjas</h1>
{ Math.random() * 10 }

)
}
}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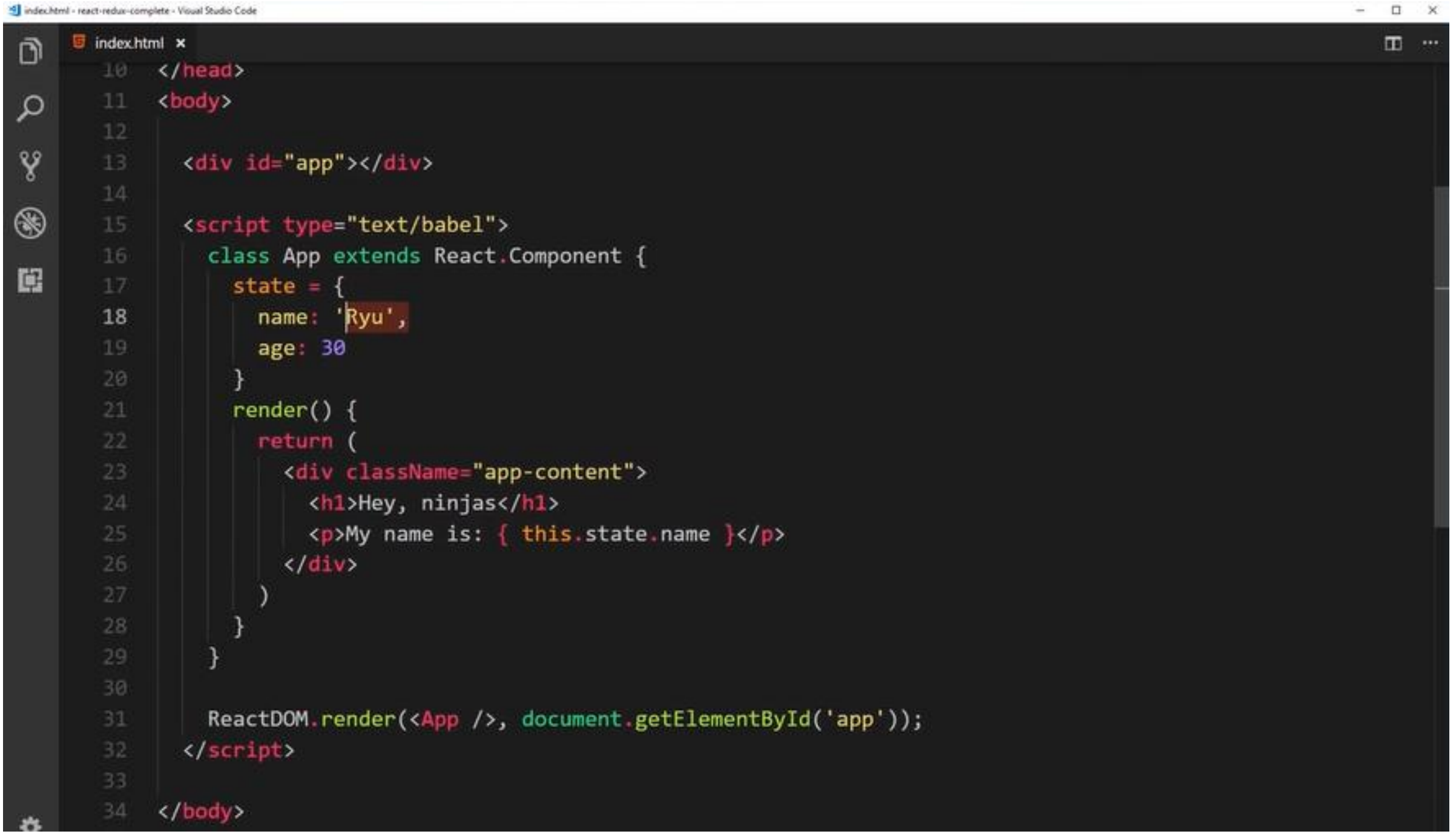
<script crossorigin src="https://unpkg.com/react-dom@16/umd/react-dom.development.js"></script>
<title>Document</title>
</head>
<body>

<script type="text/babel">
class App extends React.Component {
state = {
name: 'Ryu',
age: 30
}
render() {
return (

<h1>Hey, ninjas</h1>
{ Math.random() * 10 }

)
}
}

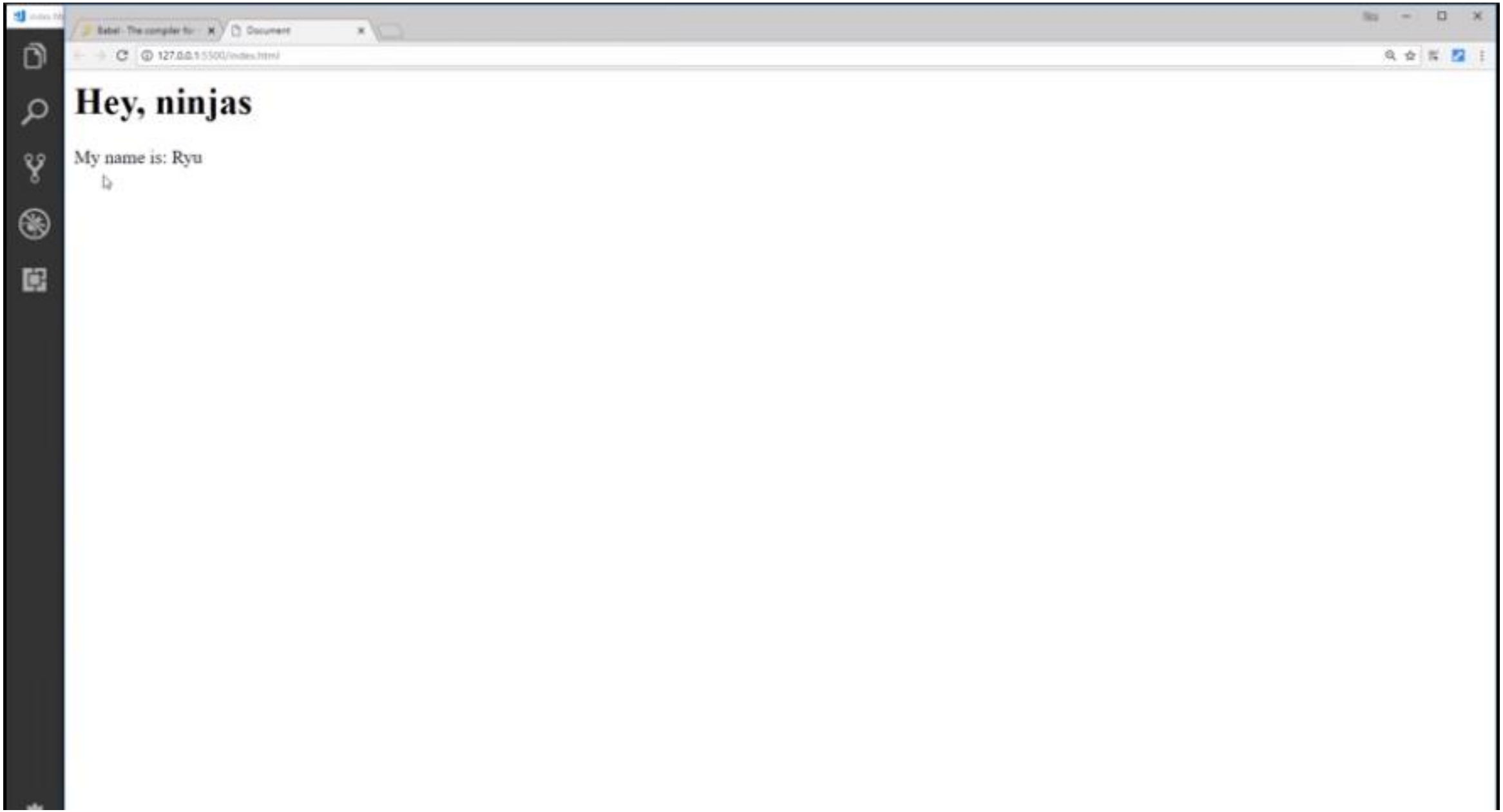

Hey, ninjas
0.6223783597790855

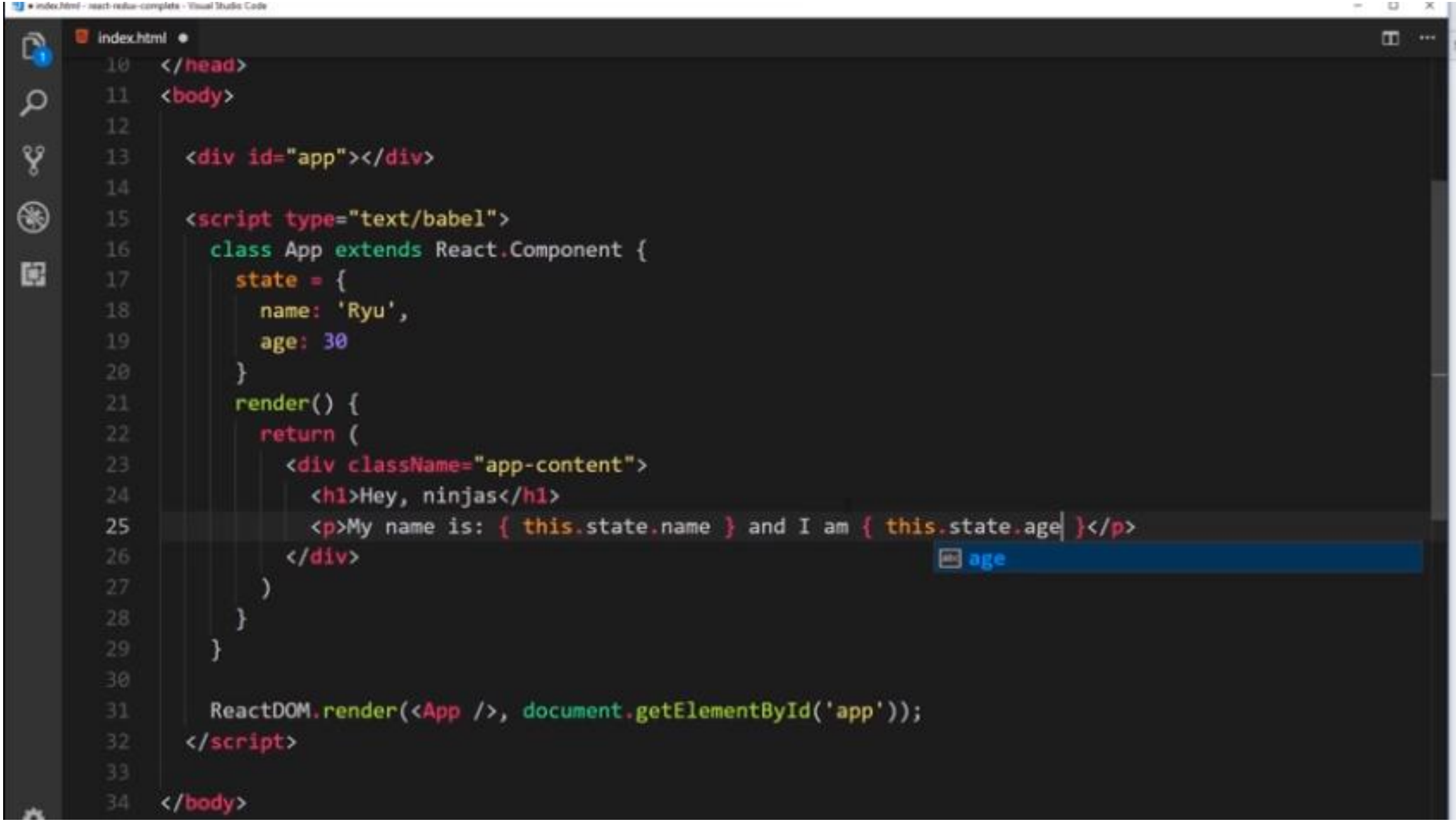

index.html - react-redux-complete - Visual Studio Code
index.html
</head>
<body>

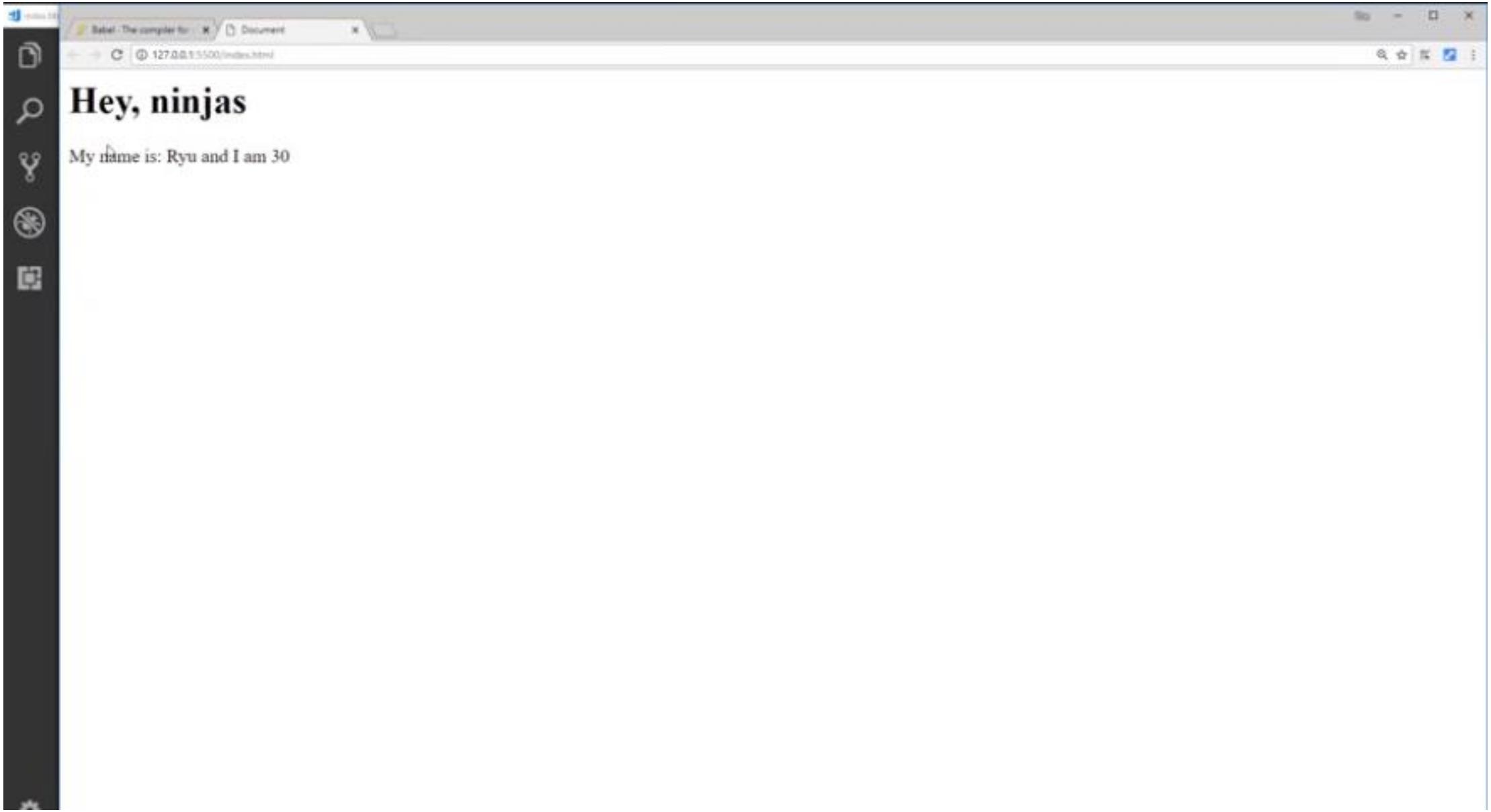
<script type="text/babel">
class App extends React.Component {
state = {
name: 'Ryu',
age: 30
}
render() {
return (

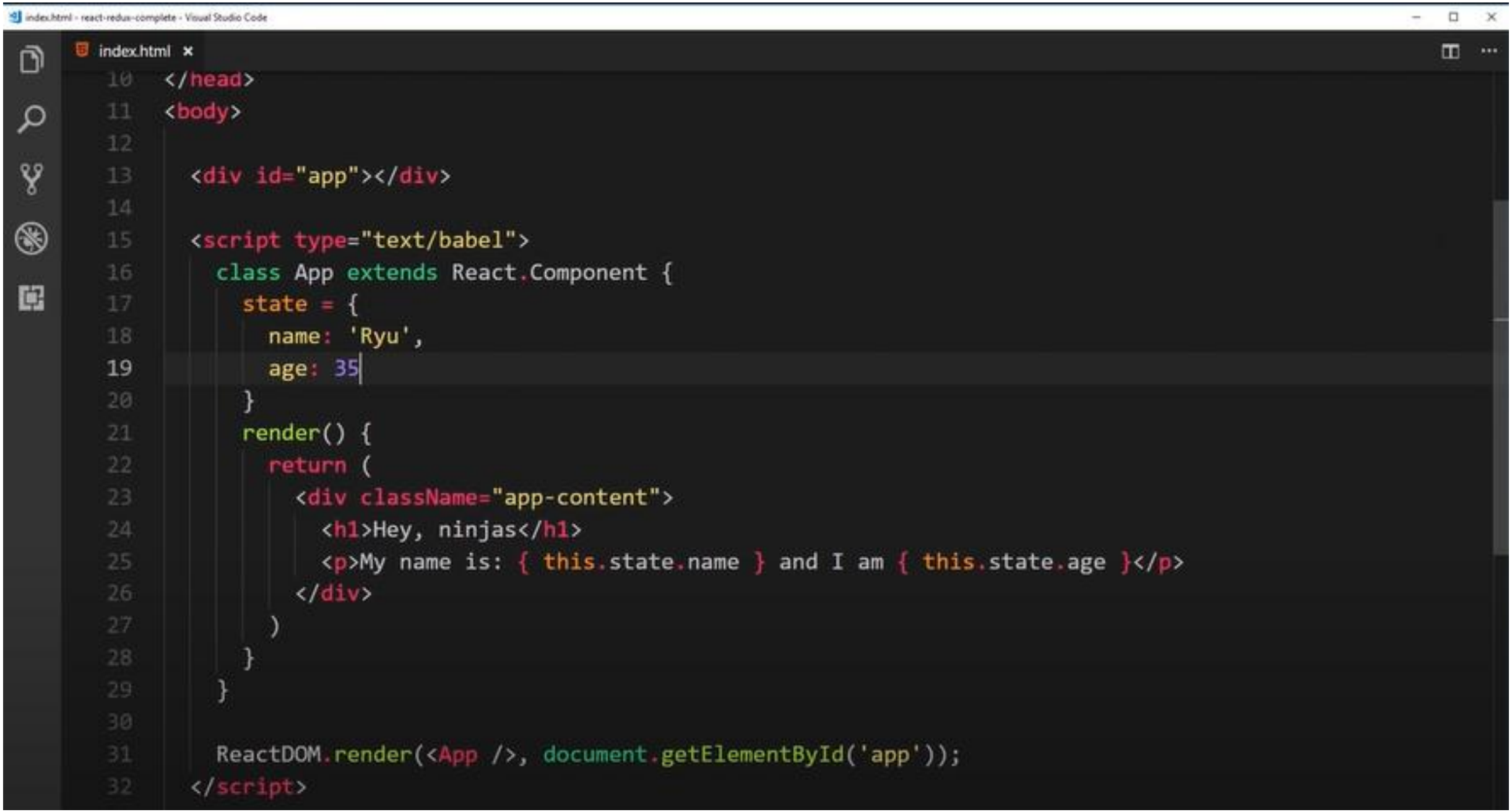
<h1>Hey, ninjas</h1>
My name is: { this.state.name }

)
}
}
ReactDOM.render(<App />, document.getElementById('app'));
</script>
</body>


Document
127.0.0.1:5500/index.html
Hey, ninjas
My name is: Ryu


index.html
10 </head>
11 <body>
12
13
14
15 <script type="text/babel">
16 class App extends React.Component {
17 state = {
18 name: 'Ryu',
19 age: 30
20 }
21 render() {
22 return (
23
24 <h1>Hey, ninjas</h1>
25 My name is: { this.state.name } and I am { this.state.age }
26
27)
28 }
29 }
30
31 ReactDOM.render(<App />, document.getElementById('app'));
32 </script>
33
34 </body>
age

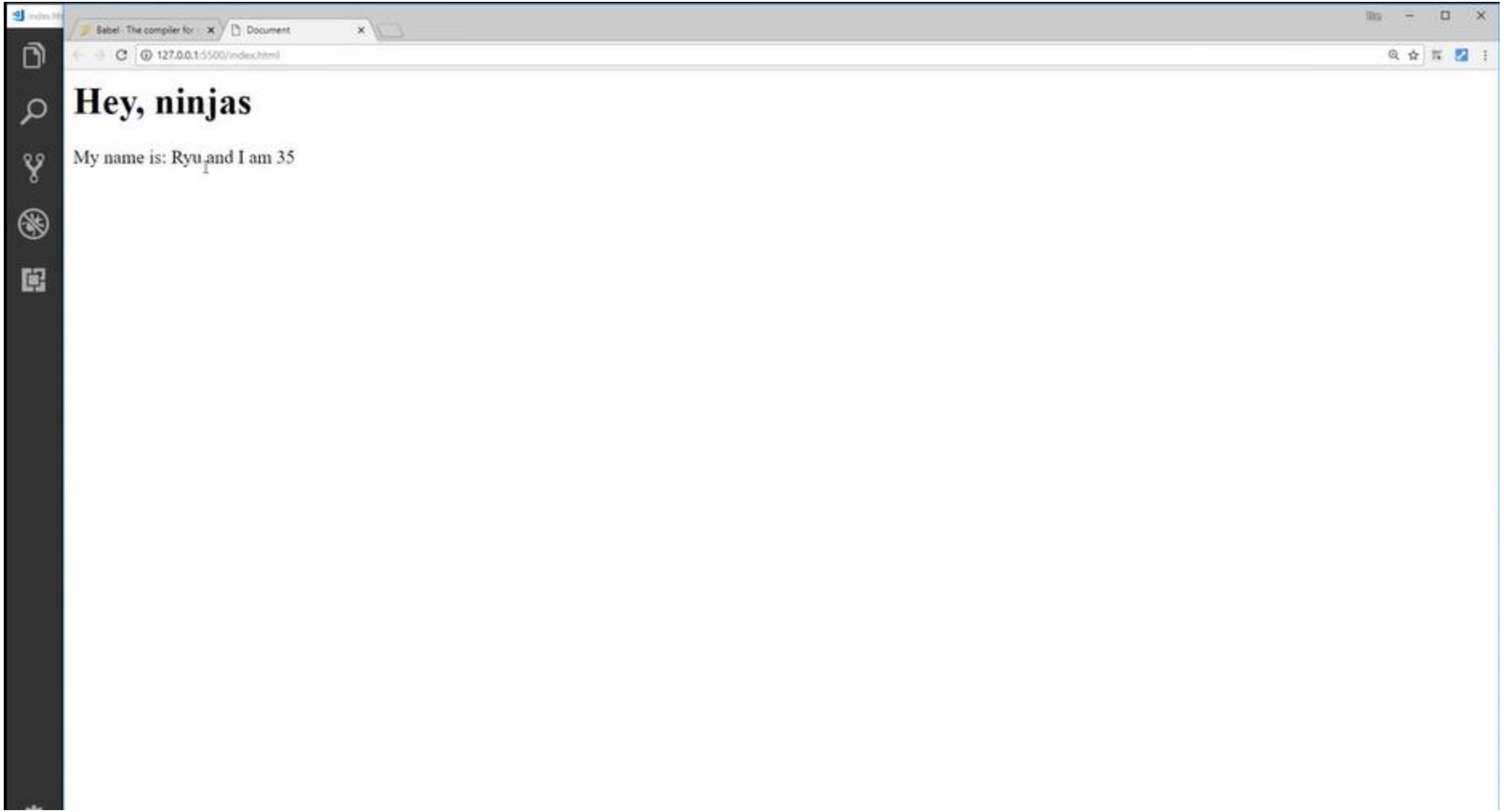

Hey, ninjas
My name is: Ryu and I am 30


index.html - react-redux-complete - Visual Studio Code
index.html
</head>
<body>

<script type="text/babel">
class App extends React.Component {
state = {
name: 'Ryu',
age: 35
}
render() {
return (

<h1>Hey, ninjas</h1>
My name is: { this.state.name } and I am { this.state.age }

)
}
}
ReactDOM.render(<App />, document.getElementById('app'));
</script>


Babel · The compiler for
Document
127.0.0.1:5500/index.html
Hey, ninjas
My name is: Ryu and I am 35

Whenever a state will be changed a data will be changed in the UI