

LECTURE #2

By: Aqib Rehman



OUTLINE

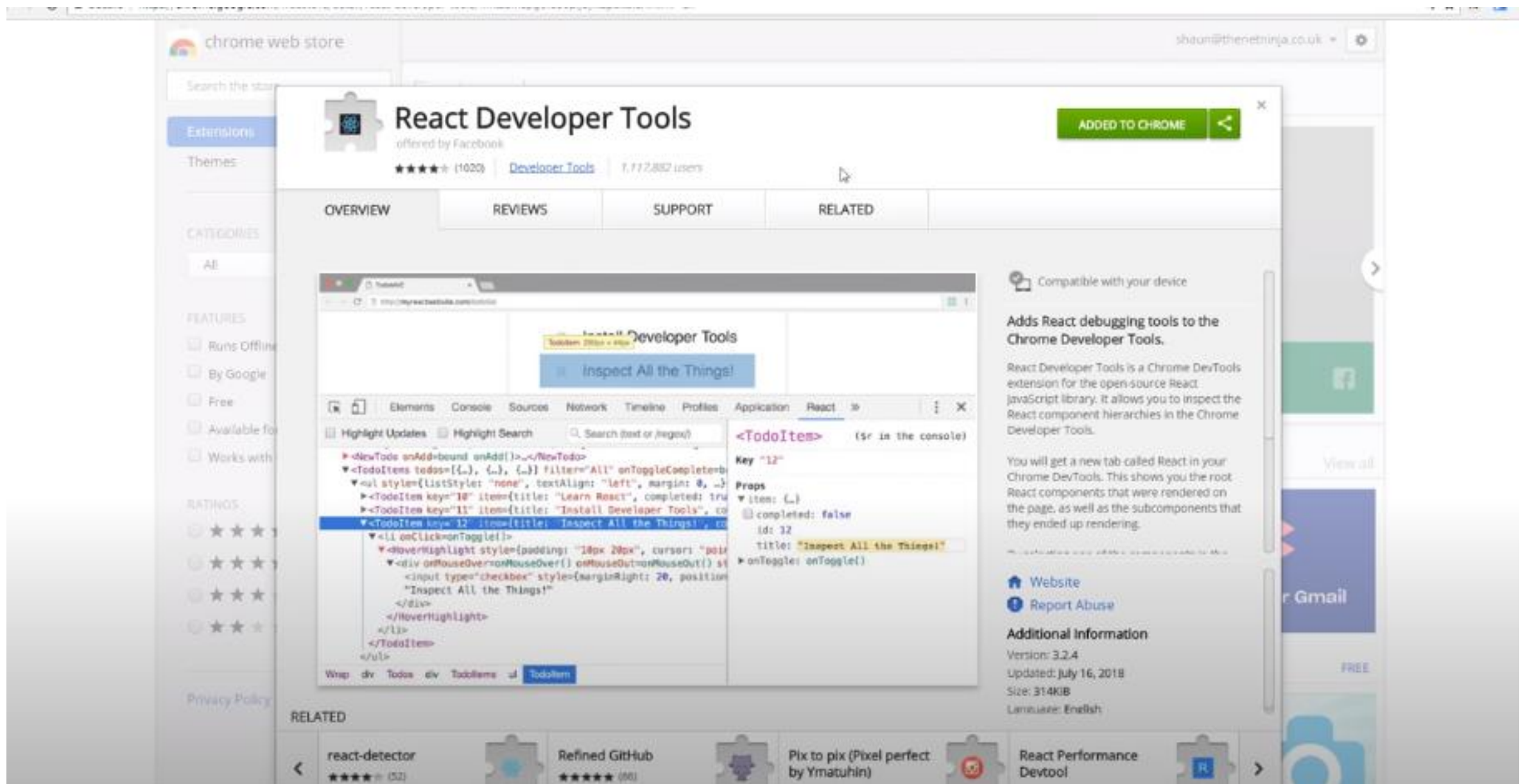
React Dev Tools

DOM Events

Changing State (and 'this')

REACT DEV TOOLS

To Interact with components



<https://chromewebstore.google.com/detail/react-developer-tools/fmkadmapgofadopljbjfkapdkoienihi?hl=en&pli=1>

Hey, ninjas

My name is: Crystal and I am 35

```
<html lang="en">
  <head>...</head>
  ... <body> == $0
    > <div id="app">...</div>
    > <script type="text/babel">...</script>
      <!-- Code injected by live-server -->
    > <script type="text/javascript">...</script>
  </body>
</html>
```

Styles >>

:hov .cls +

```
element.style
{
}
```

```
user agent sty...
body {
  display:
    block;
  margin: >
    8px;
}
```

gin 8

border -

padding -

625.333 * 650.667

-

-

8

React Developer ToolsDocumentReact - A JavaScript Library127.0.0.1:5500/index.html

Hey, ninjas

My name is: Crystal and I am 35

ElementsSourcesConsoleNetworkPerformanceMemory

>>1

ApplicationSecurityAuditsReact

.cls+

>>

>>

...<body> == \$0

>><div id="app">...</div>

>><script type="text/babel">...</script>

>><!-- Code injected by live-server -->

>><script type="text/javascript">...</script>

>></body>

>></html>

element.style

{

}

user agent style

body {

display: block;

margin: 8px;

}

margin 8

border -

padding -

434.667 x 650.667

-

-

8

React Developer Tools - xDocumentxReact - A JavaScript libraryx

127.0.0.1:5500/index.html

127.0.0.1:5500/index.html

Hey, ninjas

My name is: Crystal and I am 35

App | 434.66668701171875px x 76.10417175292969px

ElementsSourcesConsoleNetworkPerformanceReact>>1

Highlight UpdatesHighlight Search

Search (text or /regex/)

<App> == \$r

<div className="app-content">

<h1>Hey, ninjas</h1>

<p>

"My name is: "

"Crystal"

" and I am "

"35"

</p>

</div>

</App>

Props

Empty object

State

age: 35

name: "Crystal"

React Developer ToolsDocumentReact - A JavaScript Library127.0.0.1:5500/index.html

Hey, ninjas

My name is: Crystal and I am 35

ElementsSourcesConsoleNetworkPerformanceReact

Highlight UpdatesHighlight Search

Search (text or /regex/)

<App>...</App> == \$r

Props

Empty object

State

age: 35

name: "Crystal" I

React Developer Tools - xDocumentxReact - A JavaScript libx

127.0.0.1:5500/index.html

Hey, ninjas

My name is: Ryu and I am 35

ElementsSourcesConsoleNetworkPerformanceReact>>1

Highlight UpdatesHighlight Search

Search (text or /regex/)

<App>_</App> == \$r

Props

Empty object

State

age: 35

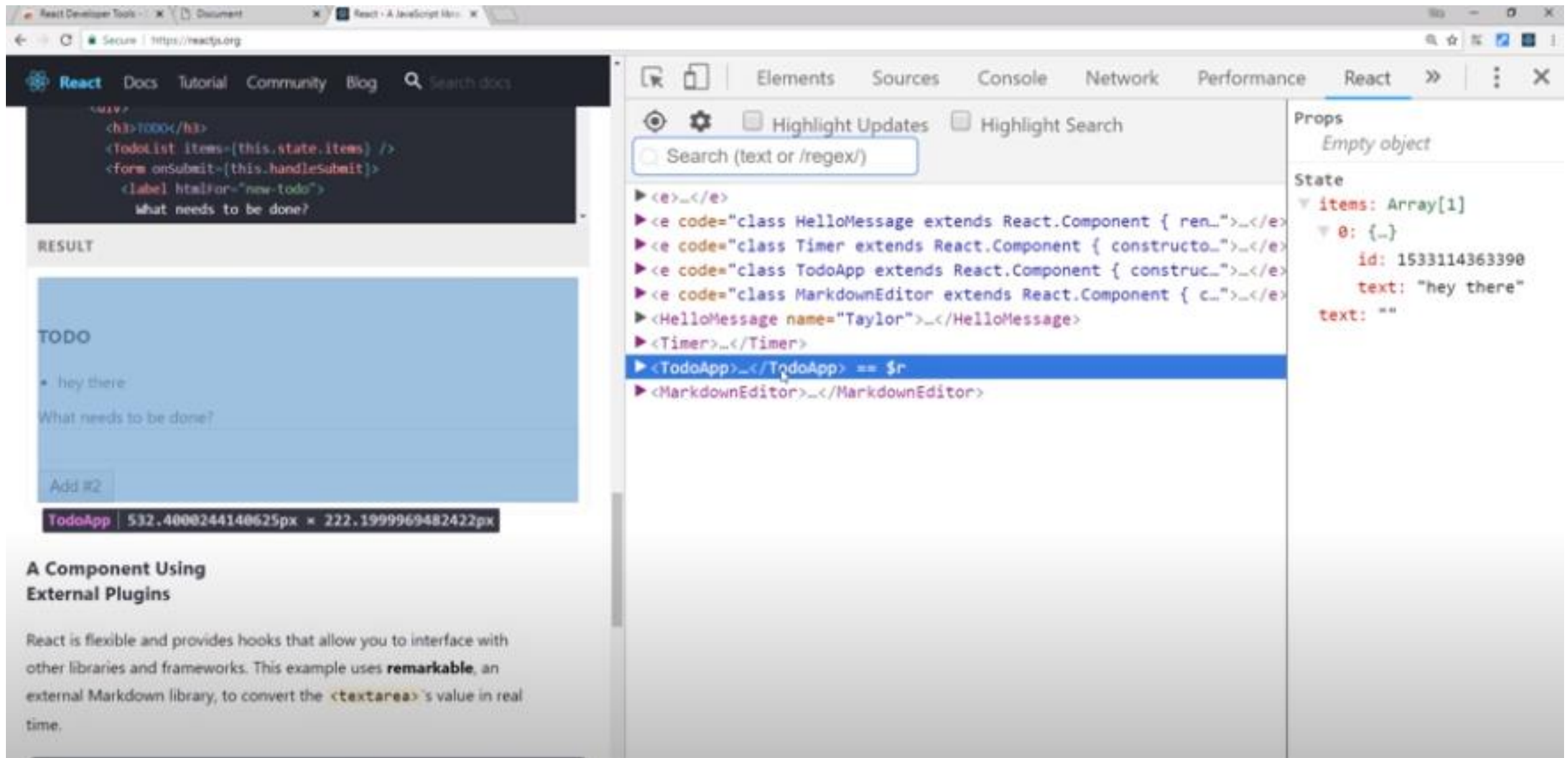
name: "Ryu"



Its not for end user

He/she will not interact with it like this

It is just for you to play around this



Production version of react
Sign color is black and blue

<https://legacy.reactjs.org/>

React Developer Tools

Document

React - A JavaScript library

Secure | https://reactjs.org

React Docs Tutorial Community Blog Search docs

```
<div>
  <h1>TODO</h1>
  <TodoList items={this.state.items} />
  <form onSubmit={this.handleSubmit}>
    <label htmlFor="new-todo">
      What needs to be done?
    </label>
  </form>
</div>
```

RESULT

TODO

- hey there

What needs to be done?

Add #2

A Component Using External Plugins

React is flexible and provides hooks that allow you to interface with other libraries and frameworks. This example uses **remarkable**, an external Markdown library, to convert the `<textarea>`'s value in real time.

Elements Sources Console Network Performance React

Highlight Updates Highlight Search

Search (text or /regex/)

```
<div>...</div>
<div code="class HelloMessage extends React.Component { ren...">...</div>
<div code="class Timer extends React.Component { constructo...">...</div>
<div code="class TodoApp extends React.Component { construc...">...</div>
<div code="class MarkdownEditor extends React.Component { c...">...</div>
<HelloMessage name="Taylor">...</HelloMessage>
<Timer>...</Timer>
<TodoApp>...</TodoApp> == $r
<MarkdownEditor>...</MarkdownEditor>
```

Props

Empty object

State

```
items: Array[1]
text: ""
```

React Developer Tools

Document

React - A JavaScript library

Secure | https://reactjs.org

React Docs Tutorial Community Blog Search docs

```
1: <div>
2:   <h3>TODO</h3>
3:   <TodoList items={this.state.items} />
4:   <form onSubmit={this.handleSubmit}>
5:     <label htmlFor="new-todo">
6:       What needs to be done?
7:     </label>
8:   </form>
9: </div>
```

RESULT

TODO

- hey there

What needs to be done?

buy m

Add #2

A Component Using External Plugins

React is flexible and provides hooks that allow you to interface with other libraries and frameworks. This example uses **remarkable**, an external Markdown library, to convert the `<textarea>`'s value in real time.

Elements Sources Console Network Performance React

Highlight Updates Highlight Search

Search (text or /regex/)

```
> <e>...</e>
> <e code="class HelloMessage extends React.Component { ren...">...</e>
> <e code="class Timer extends React.Component { constructo...">...</e>
> <e code="class TodoApp extends React.Component { construc...">...</e>
> <e code="class MarkdownEditor extends React.Component { c...">...</e>
> <HelloMessage name="Taylor">...</HelloMessage>
> <Timer>...</Timer>
> <TodoApp>...</TodoApp> == $r
> <MarkdownEditor>...</MarkdownEditor>
```

Props
Empty object

State
items: Array[1]
text: "buy m"



If type on right side states...

React Developer Tools

Document

React - A JavaScript library

Secure | https://reactjs.org

React Docs Tutorial Community Blog Search docs

```
<div>
  <h3>TODO</h3>
  <TodoList items={this.state.items} />
  <form onSubmit={this.handleSubmit}>
    <label htmlFor="new-todo">
      What needs to be done?
    </label>
  </form>
</div>
```

RESULT

TODO

- hey there

What needs to be done?

play video games

Add #2

A Component Using External Plugins

React is flexible and provides hooks that allow you to interface with other libraries and frameworks. This example uses **remarkable**, an external Markdown library, to convert the `<textarea>`'s value in real time.

Elements Sources Console Network Performance React >> ⋮ ✕

Highlight Updates Highlight Search

Search (text or /regex/)

> <e>...</e>

> <e code="class HelloMessage extends React.Component { ren..."</e>

> <e code="class Timer extends React.Component { constructo..."</e>

> <e code="class TodoApp extends React.Component { construc..."</e>

> <e code="class MarkdownEditor extends React.Component { c..."</e>

> <HelloMessage name="Taylor">...</HelloMessage>

> <Timer>...</Timer>

> <TodoApp>...</TodoApp> == \$r

> <MarkdownEditor>...</MarkdownEditor>

Props

Empty object

State

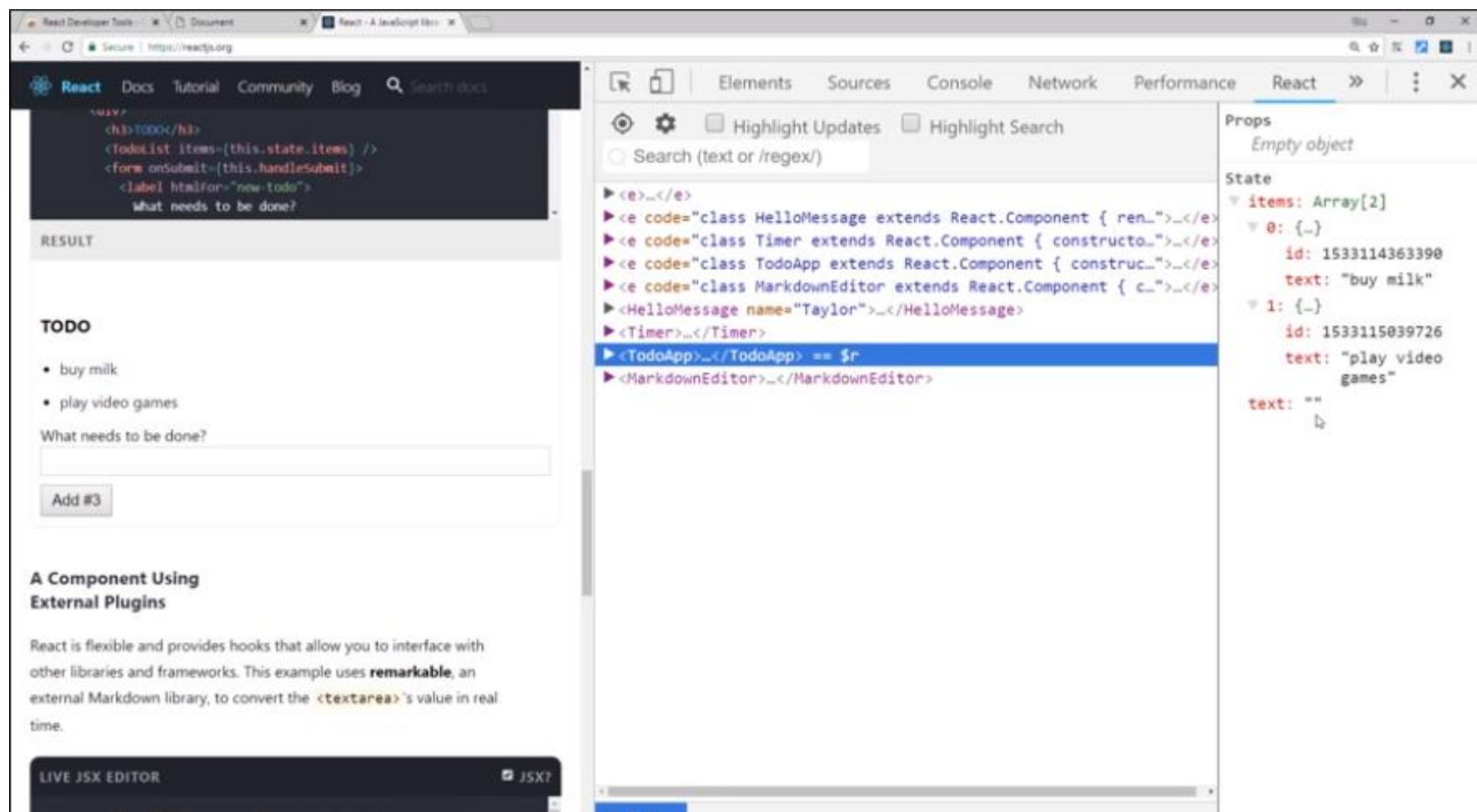
> items: Array[1]

> 0: {}

> id: 1533114363390

> text: "buy me I

> text: "play video games"



Nice tool for interaction with components

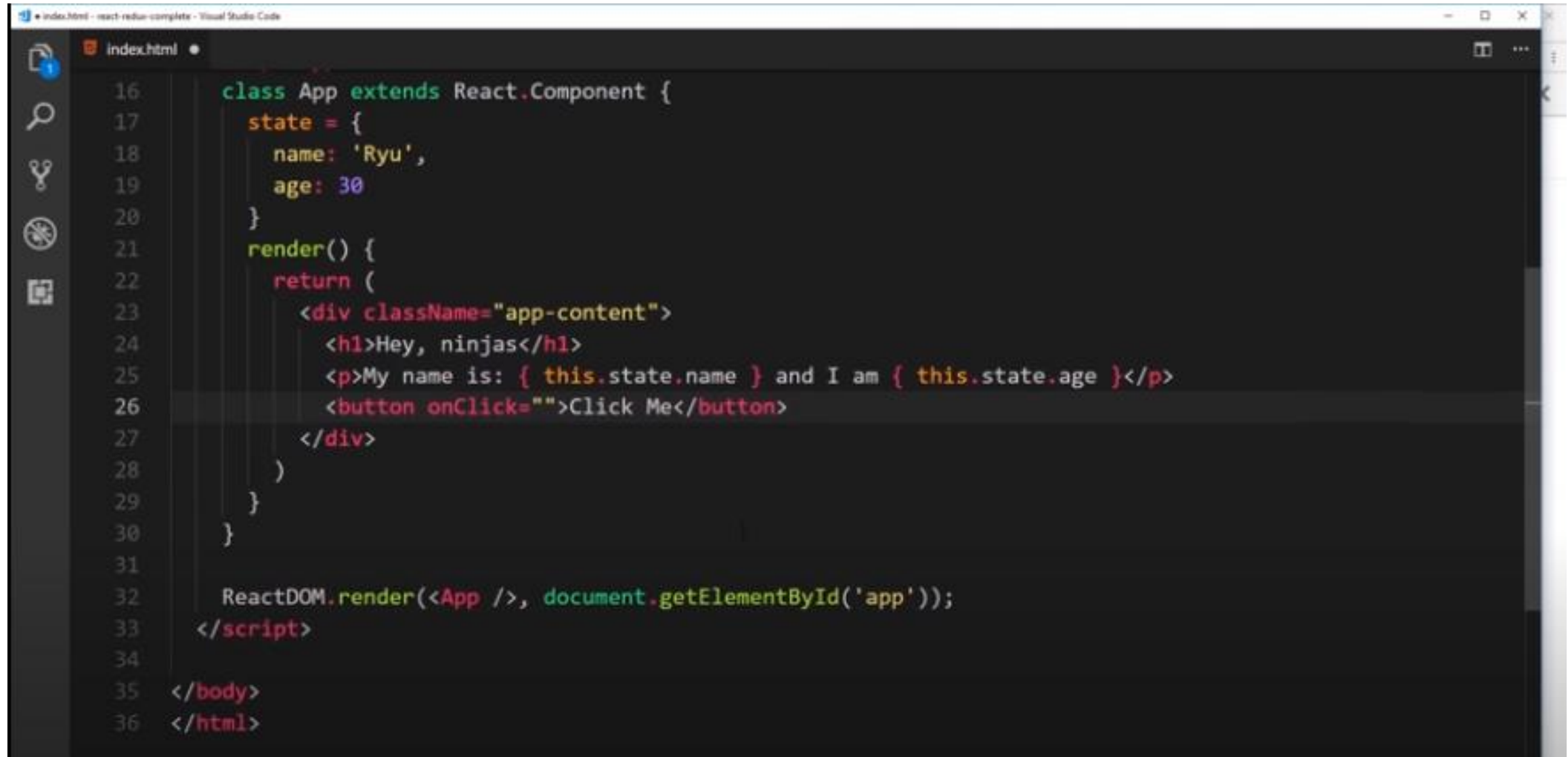


DOM EVENTS

```
16  class App extends React.Component {
17    state = {
18      name: 'Ryu',
19      age: 30
20    }
21    render() {
22      return (
23        <div className="app-content">
24          <h1>Hey, ninjas</h1>
25          <p>My name is: { this.state.name } and I am { this.state.age }</p>
26          <button></button>
27        </div>
28      )
29    }
30  }
31
32  ReactDOM.render(<App />, document.getElementById('app'));
33 </script>
34
35 </body>
36 </html>
```

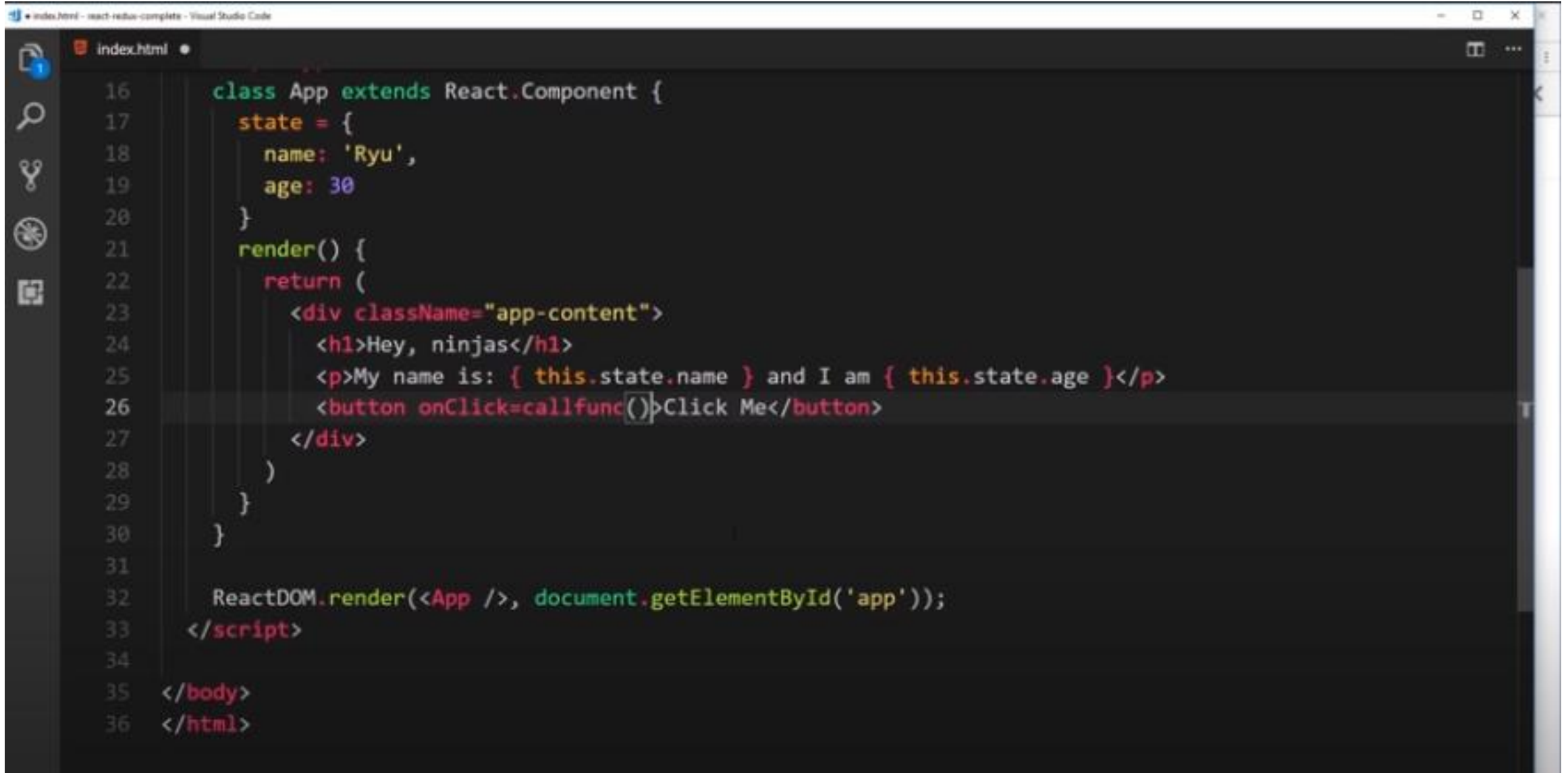
```
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     render() {
22       return (
23         <div className="app-content">
24           <h1>Hey, ninjas</h1>
25           <p>My name is: { this.state.name } and I am { this.state.age }</p>
26           <button>Click Me</button>
27         </div>
28       )
29     }
30   }
31
32   ReactDOM.render(<App />, document.getElementById('app'));
33 </script>
34
35 </body>
36 </html>
```

NOT WRITE LIKE THIS



```
index.html •  
16 class App extends React.Component {  
17   state = {  
18     name: 'Ryu',  
19     age: 30  
20   }  
21   render() {  
22     return (  
23       <div className="app-content">  
24         <h1>Hey, ninjas</h1>  
25         <p>My name is: { this.state.name } and I am { this.state.age }</p>  
26         <button onClick="">Click Me</button>  
27       </div>  
28     )  
29   }  
30 }  
31  
32 ReactDOM.render(<App />, document.getElementById('app'));  
33 </script>  
34  
35 </body>  
36 </html>
```

NOT WRITE LIKE THIS



```
index.html - react-redux-complete - Visual Studio Code
index.html
16  class App extends React.Component {
17      state = {
18          name: 'Ryu',
19          age: 30
20      }
21      render() {
22          return (
23              <div className="app-content">
24                  <h1>Hey, ninjas</h1>
25                  <p>My name is: { this.state.name } and I am { this.state.age }</p>
26                  <button onClick=callfunc()>Click Me</button>
27              </div>
28          )
29      }
30  }
31
32  ReactDOM.render(<App />, document.getElementById('app'));
33 </script>
34
35 </body>
36 </html>
```

```
16 class App extends React.Component {
17   state = {
18     name: 'Ryu',
19     age: 30
20   }
21   render() {
22     return (
23       <div className="app-content">
24         <h1>Hey, ninjas</h1>
25         <p>My name is: { this.state.name } and I am { this.state.age }</p>
26         <button onClick={()>Click Me</button>
27       </div>
28     )
29   }
30 }
31
32 ReactDOM.render(<App />, document.getElementById('app'));
33 </script>
34
35 </body>
36 </html>
```

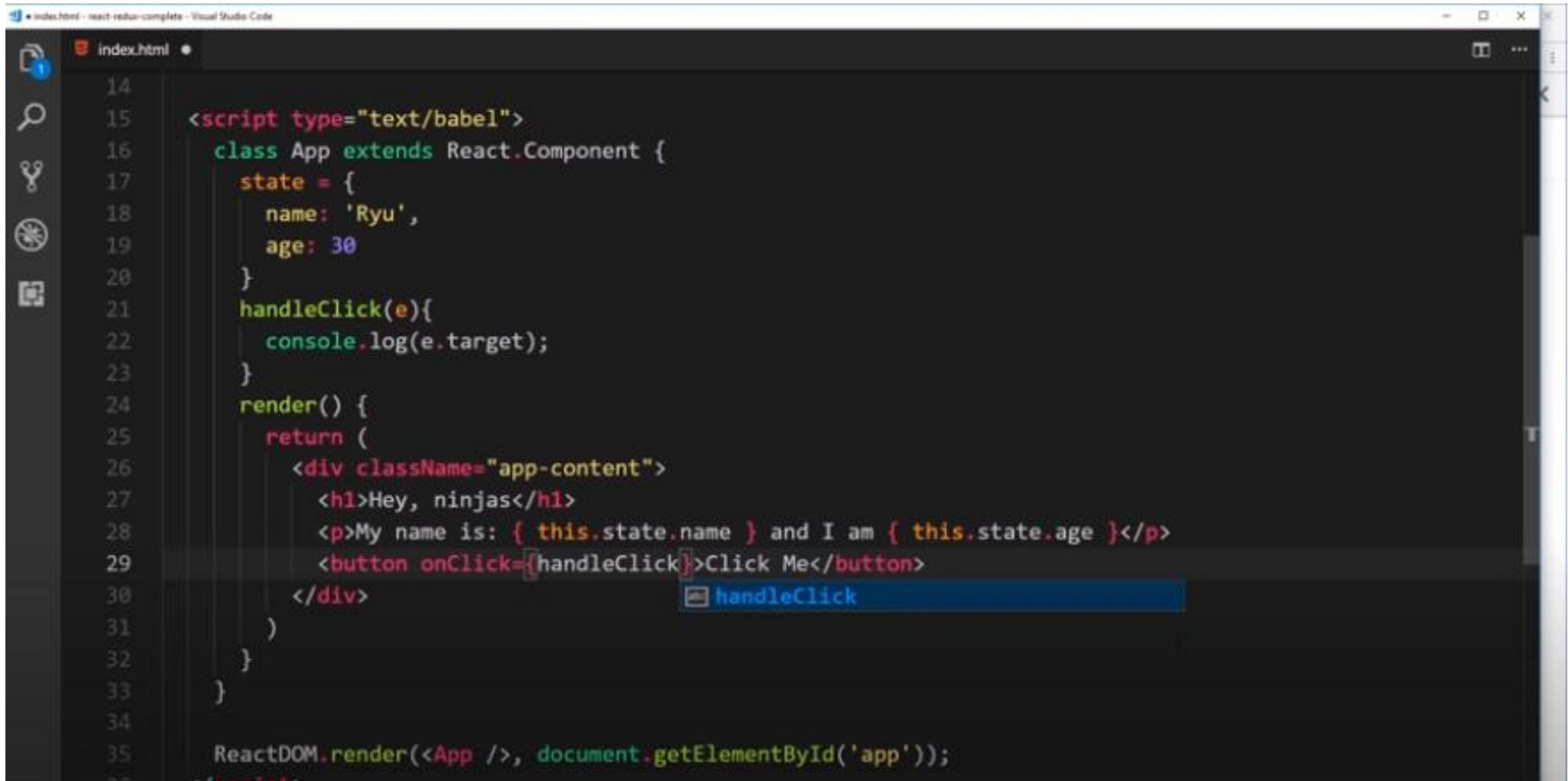


```
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       |
23     }
24     render() {
25       return (
26         <div className="app-content">
27           <h1>Hey, ninjas</h1>
28           <p>My name is: { this.state.name } and I am { this.state.age }</p>
29           <button onClick={}>Click Me</button>
30         </div>
31       )
32     }
33   }
34
35   ReactDOM.render(<App />, document.getElementById('app'));
```

index.html

```
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     render() {
25       return (
26         <div className="app-content">
27           <h1>Hey, ninjas</h1>
28           <p>My name is: { this.state.name } and I am { this.state.age }</p>
29           <button onClick={}>Click Me</button>
30         </div>
31       )
32     }
33   }
34
35   ReactDOM.render(<App />, document.getElementById('app'));
36 </script>
```

Not like this



```
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     render() {
25       return (
26         <div className="app-content">
27           <h1>Hey, ninjas</h1>
28           <p>My name is: { this.state.name } and I am { this.state.age }</p>
29           <button onClick={handleClick}>Click Me</button>
30         </div>
31       )
32     }
33   }
34
35   ReactDOM.render(<App />, document.getElementById('app'));
```

```
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     render() {
25       return (
26         <div className="app-content">
27           <h1>Hey, ninjas</h1>
28           <p>My name is: { this.state.name } and I am { this.state.age }</p>
29           <button onClick={this.handleClick}>Click Me</button>
30         </div>
31       )
32     }
33   }
34
35   ReactDOM.render(<App />, document.getElementById('app'));
```

Document

SyntheticEvent - React

127.0.0.1:5500/index.html

Hey, ninjas

My name is: Ryu and I am 30

Click Me

ElementsSourcesConsoleNetwork

top

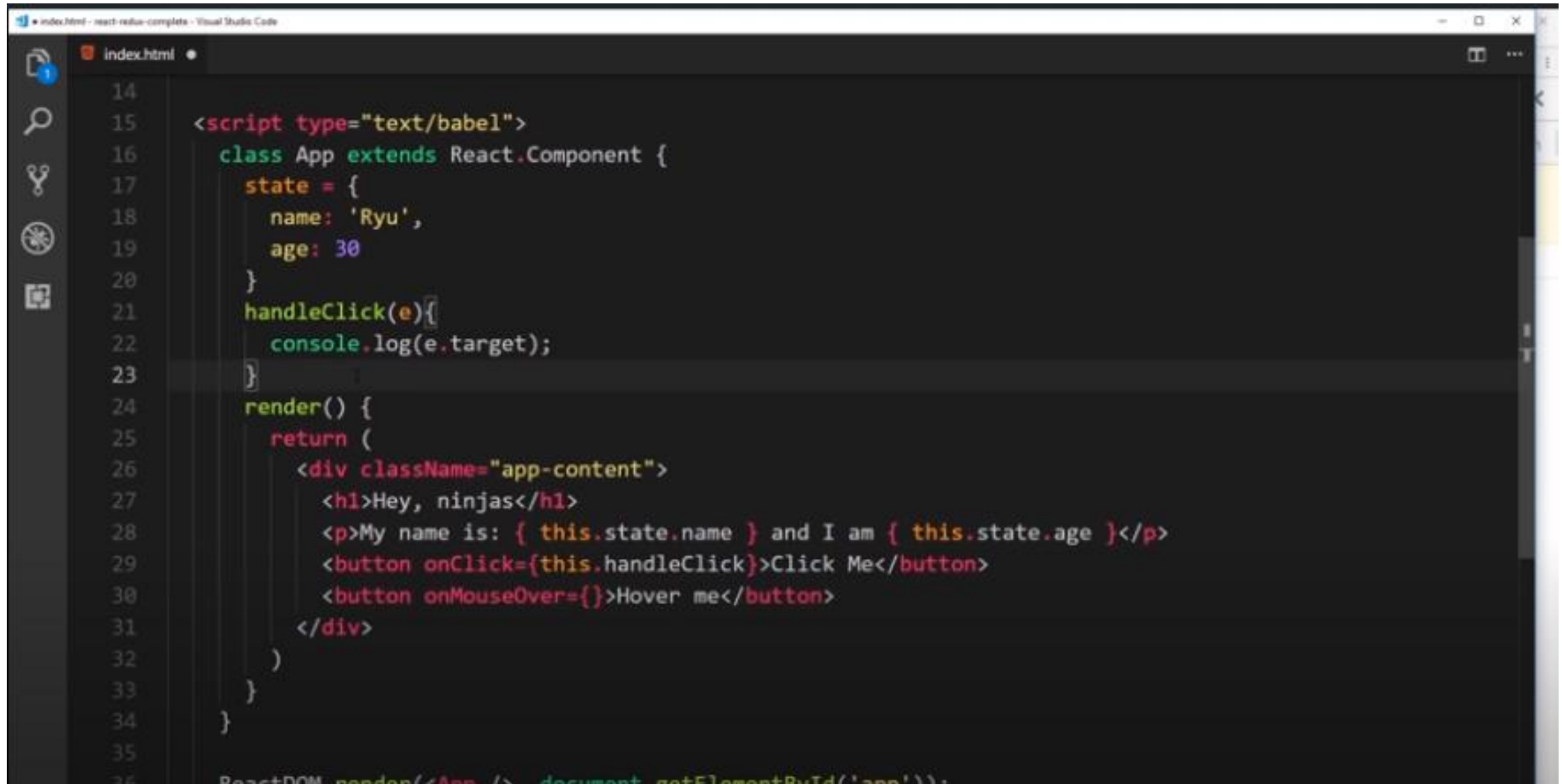
FilterDefault levelsGroup similar1 hidden

⚠ You are using the in-browser Babel transformer. Be sure to precompile your scripts for production - <https://babeljs.io/docs/setup/>

<button>Click Me</button>Inline Babel script:8

>

Another Event



```
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     render() {
25       return (
26         <div className="app-content">
27           <h1>Hey, ninjas</h1>
28           <p>My name is: { this.state.name } and I am { this.state.age }</p>
29           <button onClick={this.handleClick}>Click Me</button>
30           <button onMouseOver={}>Hover me</button>
31         </div>
32       )
33     }
34   }
35
36   ReactDOM.render(<App />, document.getElementById('app'));
```

```
index.html - react-redux-complete - Visual Studio Code
index.html
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     handleMouseOver(e){
25       console.log(e)
26     }
27     render() {
28       return (
29         <div className="app-content">
30           <h1>Hey, ninjas</h1>
31           <p>My name is: { this.state.name } and I am { this.state.age }</p>
32           <button onClick={this.handleClick}>Click Me</button>
33           <button onMouseOver={this.handleMouseOver}>Hover me</button>
34         </div>
35       )
36     }
37   }
38   ReactDOM.render(<App />, document.getElementById('root'))
39 </script>
```

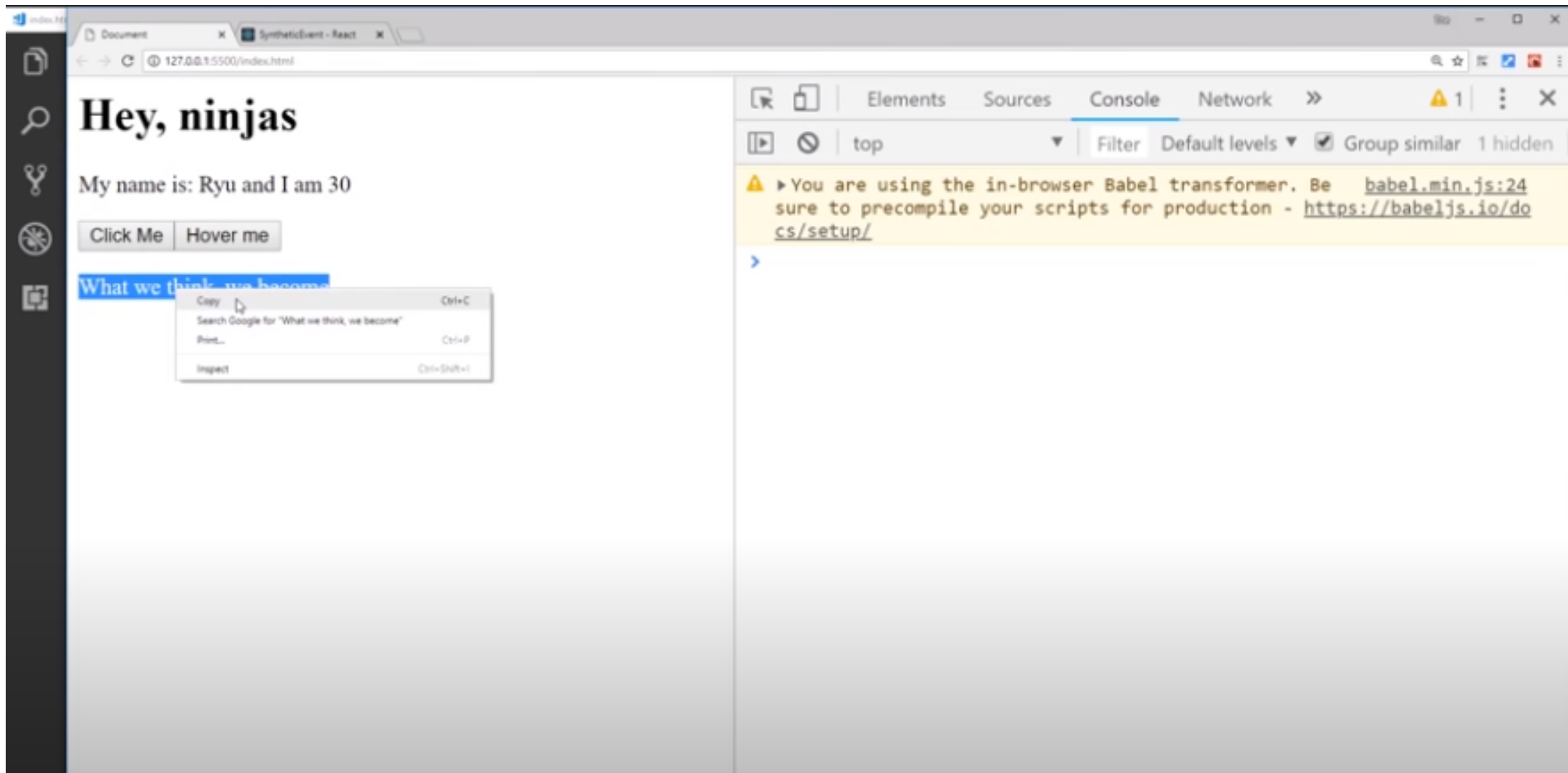


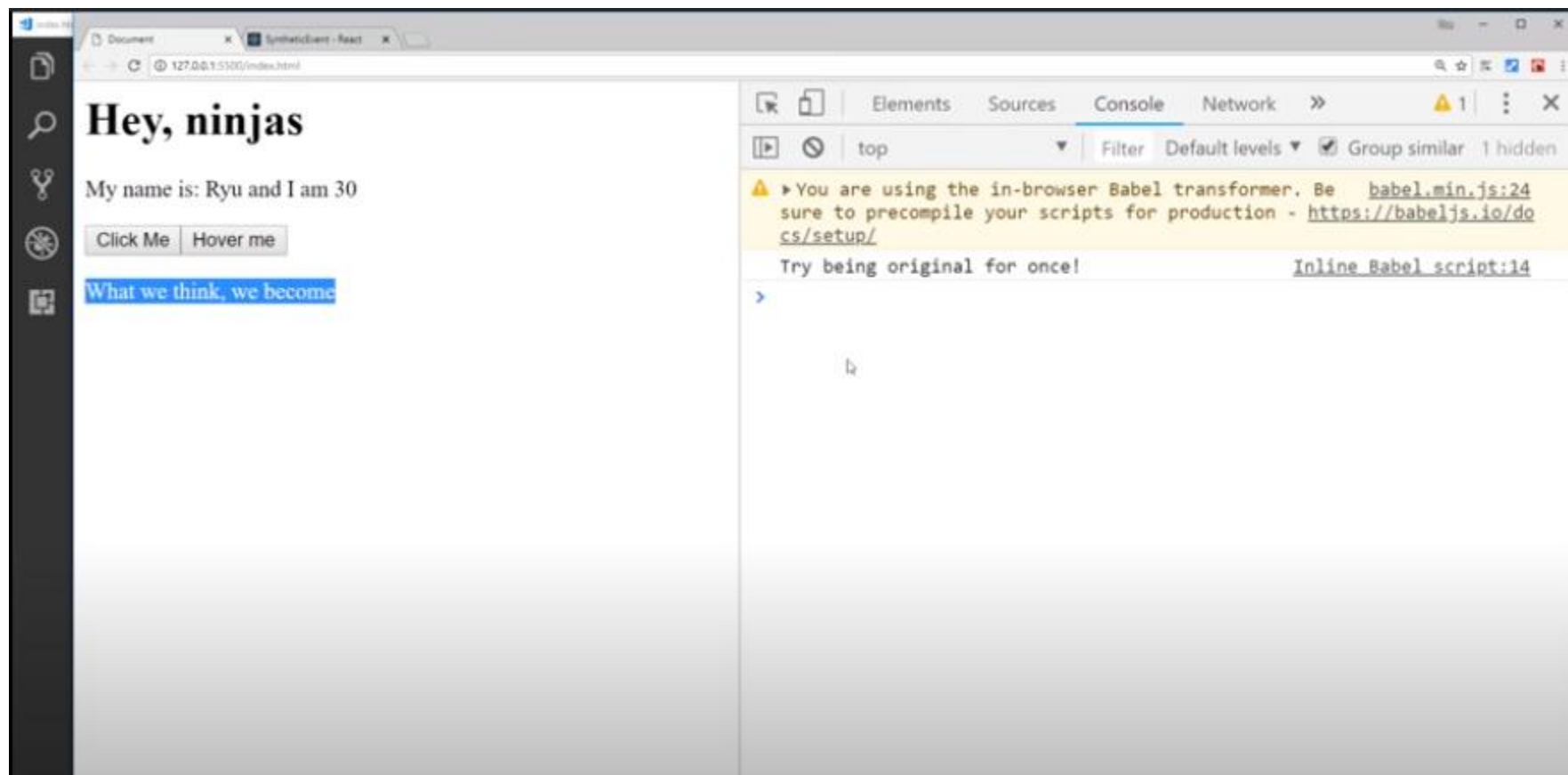
```
index.html •
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     handleMouseOver(e){
25       console.log(e.target, e.pageX)
26     }
27     render() {
28       return (
29         <div className="app-content">
30           <h1>Hey, ninjas</h1>
31           <p>My name is: { this.state.name } and I am { this.state.age }</p>
32           <button onClick={this.handleClick}>Click Me</button>
33           <button onMouseOver={this.handleMouseOver}>Hover me</button>
34           <p onCopy={}>What we think, we become</p>
35         </div>
```



```
index.html • react-redux-complete - Visual Studio Code
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick(e){
22       console.log(e.target);
23     }
24     handleMouseOver(e){
25       console.log(e.target, e.pageX)
26     }
27     handleCopy(e){
28       console.log('Try being original for once!');
29     }
30     render() {
31       return (
32         <div className="app-content">
33           <h1>Hey, ninjas</h1>
34           <p>My name is: { this.state.name } and I am { this.state.age }</p>
35           <button onClick={this.handleClick}>Click Me</button>
36           <button onMouseOver={this.handleMouseOver}>Hover me</button>
```

```
index.html - react-redux-complete - Visual Studio Code
index.html
20 }
21 handleClick(e){
22   console.log(e.target);
23 }
24 handleMouseOver(e){
25   console.log(e.target, e.pageX)
26 }
27 handleCopy(e){
28   console.log('Try being original for once!');
29 }
30 render() {
31   return (
32     <div className="app-content">
33       <h1>Hey, ninjas</h1>
34       <p>My name is: { this.state.name } and I am { this.state.age }</p>
35       <button onClick={this.handleClick}>Click Me</button>
36       <button onMouseOver={this.handleMouseOver}>Hover me</button>
37       <p onCopy={this.handleCopy}>What we think, we become</p>
38     </div>
39   )
40 }
41 }
```

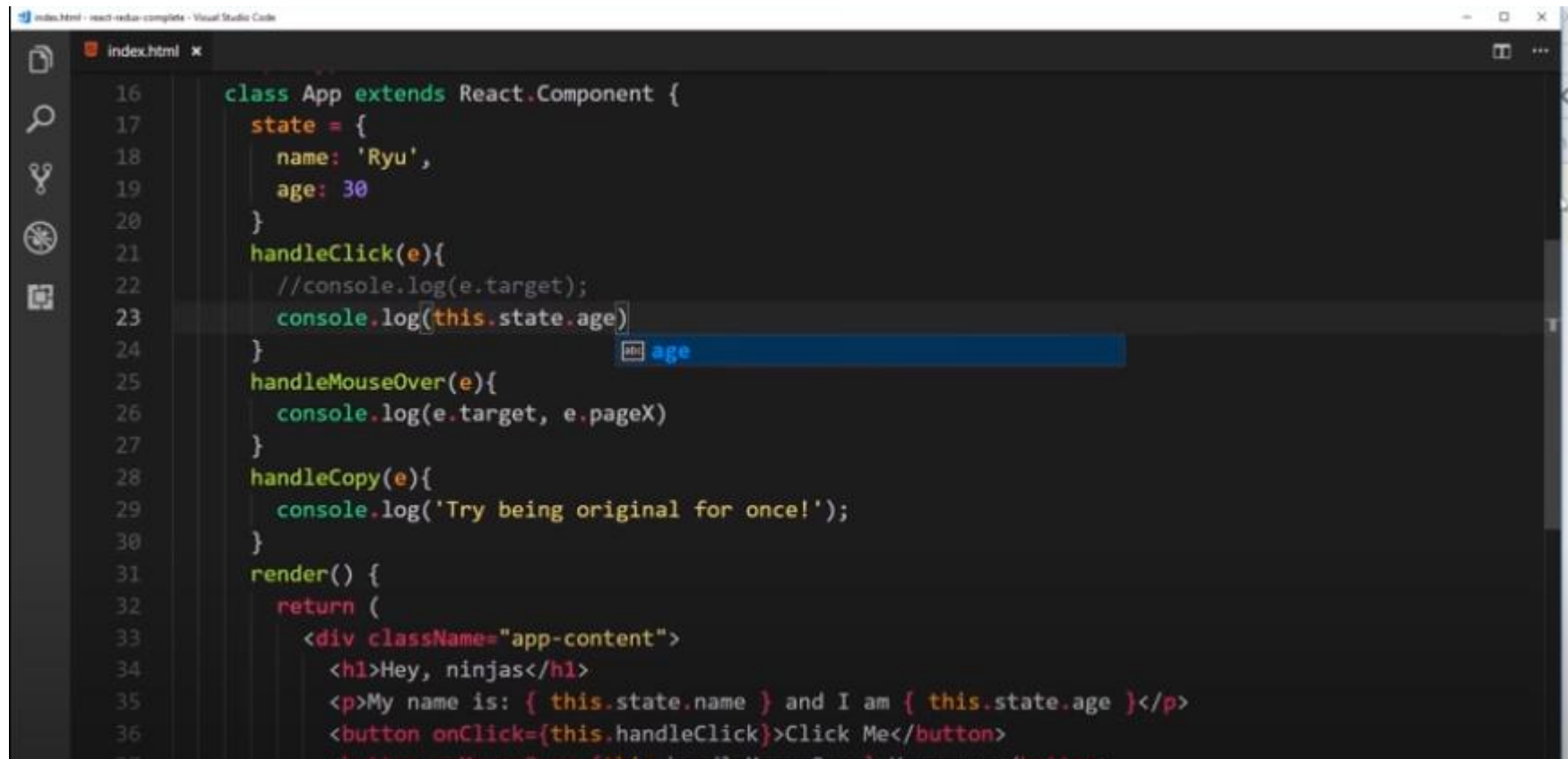






Events in React

<https://reactjs.org/docs/events.html#supported-events>



```
16 class App extends React.Component {
17   state = {
18     name: 'Ryu',
19     age: 30
20   }
21   handleClick(e){
22     //console.log(e.target);
23     console.log(this.state.age)
24   }
25   handleMouseOver(e){
26     console.log(e.target, e.pageX)
27   }
28   handleCopy(e){
29     console.log('Try being original for once!');
30   }
31   render() {
32     return (
33       <div className="app-content">
34         <h1>Hey, ninjas</h1>
35         <p>My name is: { this.state.name } and I am { this.state.age }</p>
36         <button onClick={this.handleClick}>Click Me</button>
37         <button onMouseOver={this.handleMouseOver}>Hover me</button>
```

Can we access state like this?

Document

SyntheticEvent - React

127.0.0.1:5500/index.html

Hey, ninjas

My name is: Ryu and I am 30

Click Me Hover me

What we think, we become

ElementsSourcesConsoleNetwork

topFilterDefault levelsGroup similar1 hidden

ocs/setup/

Uncaught TypeError: Cannot read property 'state' of undefined

Inline Babel script:9

at handleClick (<anonymous>:35:24)

at HTMLUnknownElement.callCallback (react-dom.development.js:140)

at Object.invokeGuardedCallbackDev (react-dom.development.js:178)

at Object.invokeGuardedCallback (react-dom.development.js:227)

at Object.invokeGuardedCallbackAndCatchFirstError (react-dom.development.js:241)

at executeDispatch (react-dom.development.js:599)

at executeDispatchesInOrder (react-dom.development.js:621)

at executeDispatchesAndRelease (react-dom.development.js:719)

at executeDispatchesAndReleaseTopLevel (react-dom.development.js:730)

at forEachAccumulated (react-dom.development.js:700)

Uncaught TypeError: Cannot read property 'state' of undefined

react-dom.development.js:280

at handleClick (<anonymous>:35:24)

at HTMLUnknownElement.callCallback (react-dom.development.js:140)

at Object.invokeGuardedCallbackDev (react-dom.development.js:178)

at Object.invokeGuardedCallback (react-dom.development.js:227)

at Object.invokeGuardedCallbackAndCatchFirstError (react-dom.development.js:241)

at executeDispatch (react-dom.development.js:599)

at executeDispatchesInOrder (react-dom.development.js:621)

at executeDispatchesAndRelease (react-dom.development.js:719)

Context of this is loss

In render func React handle it by self

But in our custom functions we have to deal with it manually



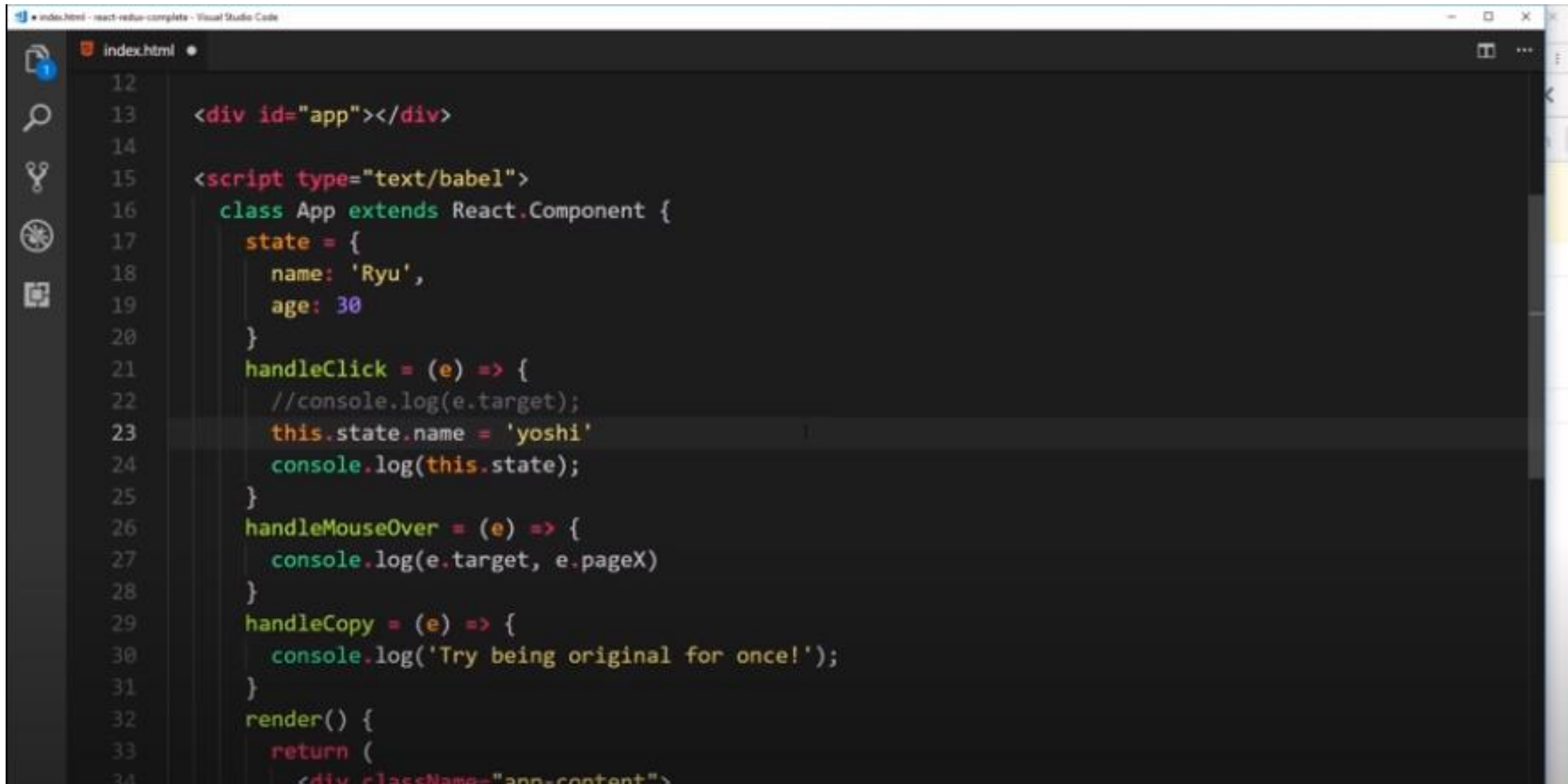
ARROW FUNCTIONS

```
index.html - react-redux-complete - Visual Studio Code
index.html x
18     name: 'Ryu',
19     age: 30
20   }
21   handleClick = (e) => {
22     //console.log(e.target);
23     console.log(this.state);
24   }
25   handleMouseOver(e){
26     console.log(e.target, e.pageX)
27   }
28   handleCopy(e){
29     console.log('Try being original for once!');
30   }
31   render() {
32     return (
33       <div className="app-content">
34         <h1>Hey, ninjas</h1>
35         <p>My name is: { this.state.name } and I am { this.state.age }</p>
36         <button onClick={this.handleClick}>Click Me</button>
37         <button onMouseOver={this.handleMouseOver}>Hover me</button>
38         <p onCopy={this.handleCopy}>What we think, we become</p>
39       </div>
```

```
index.html - react-redux-complete - Visual Studio Code
index.html
12
13 <div id="app"></div>
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick = (e) => {
22       //console.log(e.target);
23       console.log(this.state);
24     }
25     handleMouseOver = (e) => {
26       console.log(e.target, e.pageX)
27     }
28     handleCopy = (e) => {
29       console.log('Try being original for once!');
30     }
31     render() {
32       return (
33         <div className="app-content">
34           <h1>Hey, nice!</h1>
35         </div>
36       )
37     }
38   }
39   ReactDOM.render(<App />, document.getElementById('app'))
40 </script>
```

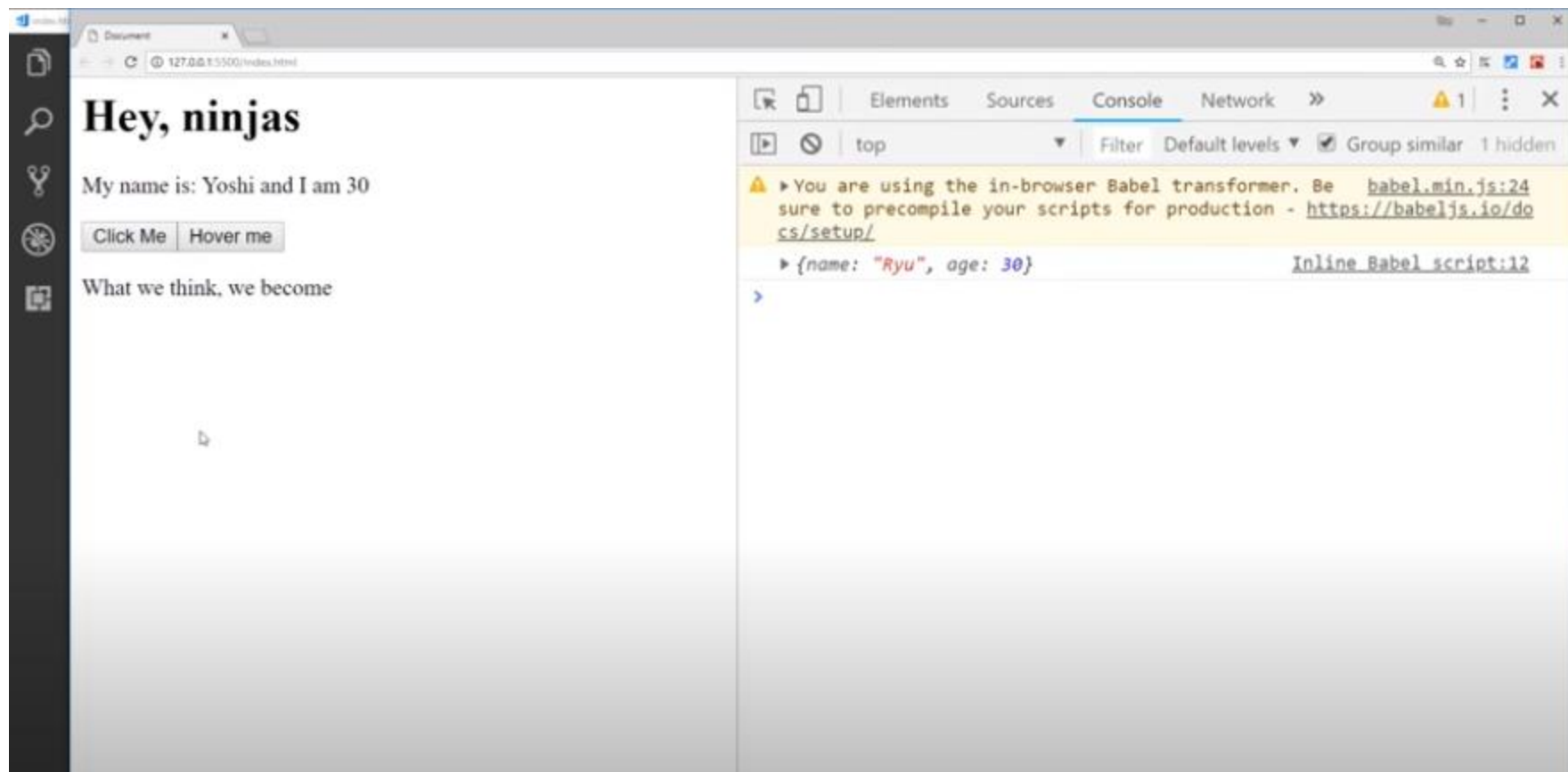
CHANGING STATE (AND 'THIS')

Not a good Practice



```
index.html •
12
13 <div id="app"></div>
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick = (e) => {
22       //console.log(e.target);
23       this.state.name = 'yoshi'
24       console.log(this.state);
25     }
26     handleMouseOver = (e) => {
27       console.log(e.target, e.pageX)
28     }
29     handleCopy = (e) => {
30       console.log('Try being original for once!');
31     }
32     render() {
33       return (
34         <div className="app-content">
```

```
index.html - react-redux-complete - Visual Studio Code
index.html
12
13 <div id="app"></div>
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick = (e) => {
22       //console.log(e.target);
23       this.setState({
24         name: 'Yoshi'
25       });
26       console.log(this.state);
27     }
28     handleMouseOver = (e) => {
29       console.log(e.target, e.pageX)
30     }
31     handleCopy = (e) => {
32       console.log('Try being original for once!');
33     }
34     render() {
```



```
index.html - react-redux-complete - Visual Studio Code
index.html
12
13 <div id="app"></div>
14
15 <script type="text/babel">
16   class App extends React.Component {
17     state = {
18       name: 'Ryu',
19       age: 30
20     }
21     handleClick = (e) => {
22       //console.log(e.target);
23       this.setState({
24         name: 'Yoshi',
25         age: 25
26       });
27       console.log(this.state);
28     }
29     handleMouseOver = (e) => {
30       console.log(e.target, e.pageX)
31     }
32     handleCopy = (e) => {
33       console.log('Try being original for once!');
34     }
35   }
36 }
37 </script>
```