

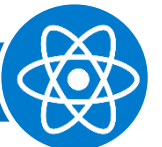


# Higher Order Component

#React Notes

# Higer Order Component

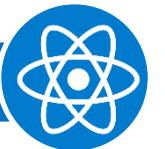
- React 16.8 introduces the concept of higher-order components.
- A higher-order component is a function that takes a component and returns a new component.
- **A higher-order component (HOC) is the advanced technique in React.js for reusing a component logic.**
- Higher-Order Components are not part of the React API. They are the pattern that emerges from React's compositional nature.
- The component transforms props into UI, and a higher-order component converts a component into another component.



# The Problem HOCs Solve

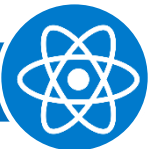
- HOCs basically incorporate the don't-repeat-yourself (DRY) principle of programming.

```
2  // DRY – DO NOT REPEAT YOURSELF
3
4  console.log('I will not repeat myself')
5  console.log('I will not repeat myself')
6  console.log('I will not repeat myself')
7  console.log('I will not repeat myself')
8  console.log('I will not repeat myself')
9  console.log('I will not repeat myself')
10 console.log('I will not repeat myself')
11 console.log('I will not repeat myself')
12 console.log('I will not repeat myself')
13
```



# HOC

- It is a component.
- It takes another component as an argument.
- Then, it returns a new component.
- The component it returns can render the original component that was passed to it.
- A HOC is used to compose components for code reuse.



## OPEN EDITORS

X Js HighOrder.js src U

Js App.js src M

Js index.js src

## MY-REACT-APP

&gt; node\_modules

&gt; public

src

App.css

Js App.js M

App.test.js

Js HighOrder.js U

index.css

Js index.js

\* logo.svg

Js reportWebVitals.js

Js setupTests.js

.gitignore

package-lock.json

package.json

i README.md

src &gt; Js HighOrder.js &gt; default

```
1  import React from 'react'
2
3  const EnhancedComponent = (OriginalComponent) => {
4      class NewComponent extends React.Component {
5          // Logic here
6          render() {
7              // Pass the callable props to Original component
8              return <OriginalComponent name="Akash" />
9          }
10     }
11     // Returns the new component
12     return NewComponent
13 }
14
15 export default EnhancedComponent;
```



EXPLORER



## OPEN EDITORS

JS HigherOrder.js src U

X JS App.js src M

JS index.js src

## MY-REACT-APP

&gt; node\_modules

&gt; public

src

App.css

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.gitignore

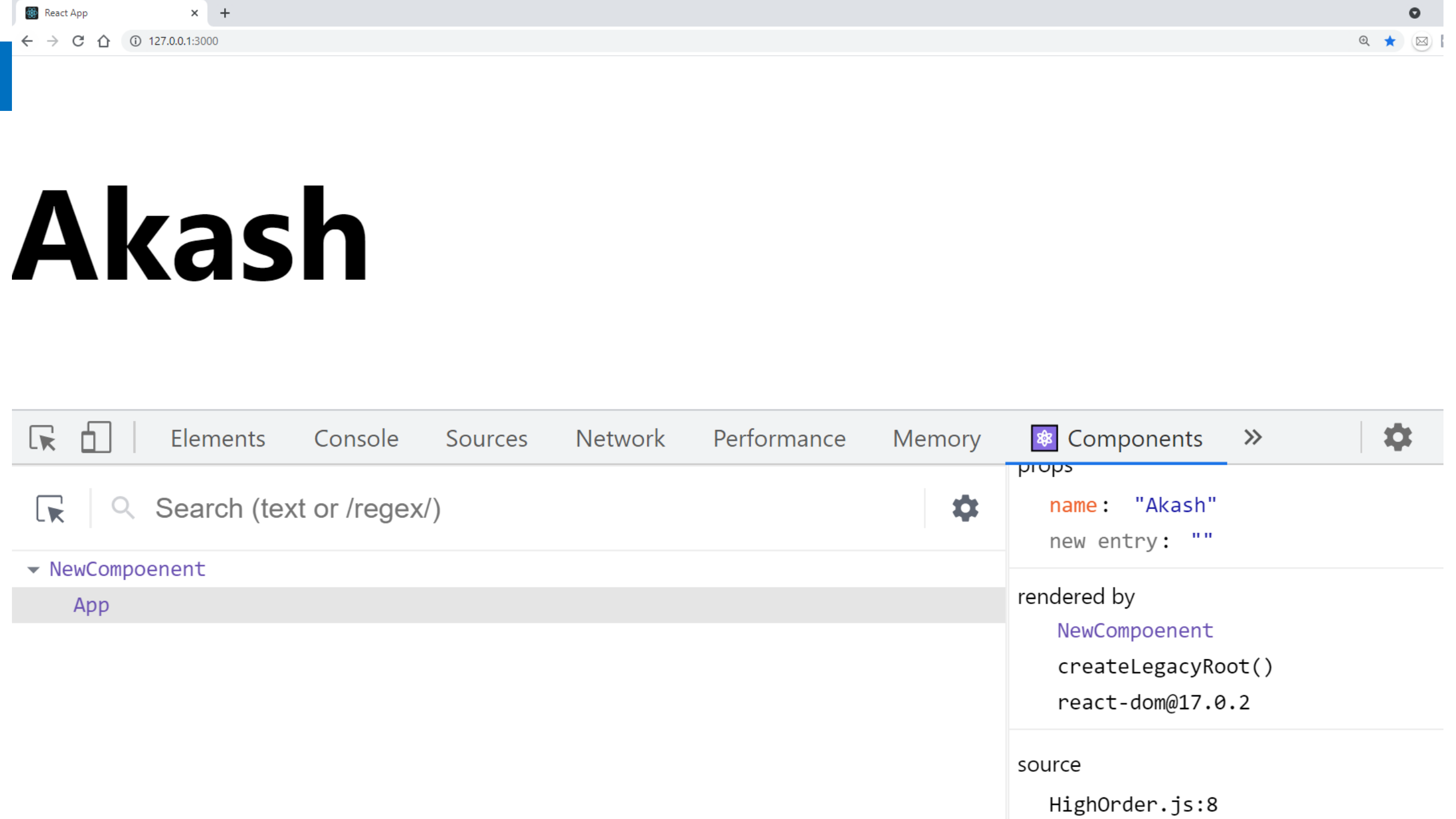
package-lock.json

package.json

i README.md

src &gt; JS App.js &gt; App

```
1 import React from "react";
2 import EnhancedComponent from './HigherOrder'
3
4 class App extends React.Component {
5   render() {
6     // Call the props from originalComponent
7     return <h1>{this.props.name}</h1>
8   }
9 }
10
11 // Passed the originalcomponent
12 export default EnhancedComponent(App);
```



# Akash

Elements

Console

Sources

Network

Performance

Memory

Components



Search (text or /regex/)

▼ NewComponent

App

props

name: "Akash"

new entry: ""

rendered by

NewComponent

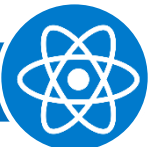
createLegacyRoot()

react-dom@17.0.2

source

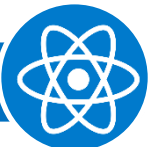
HigherOrder.js:8

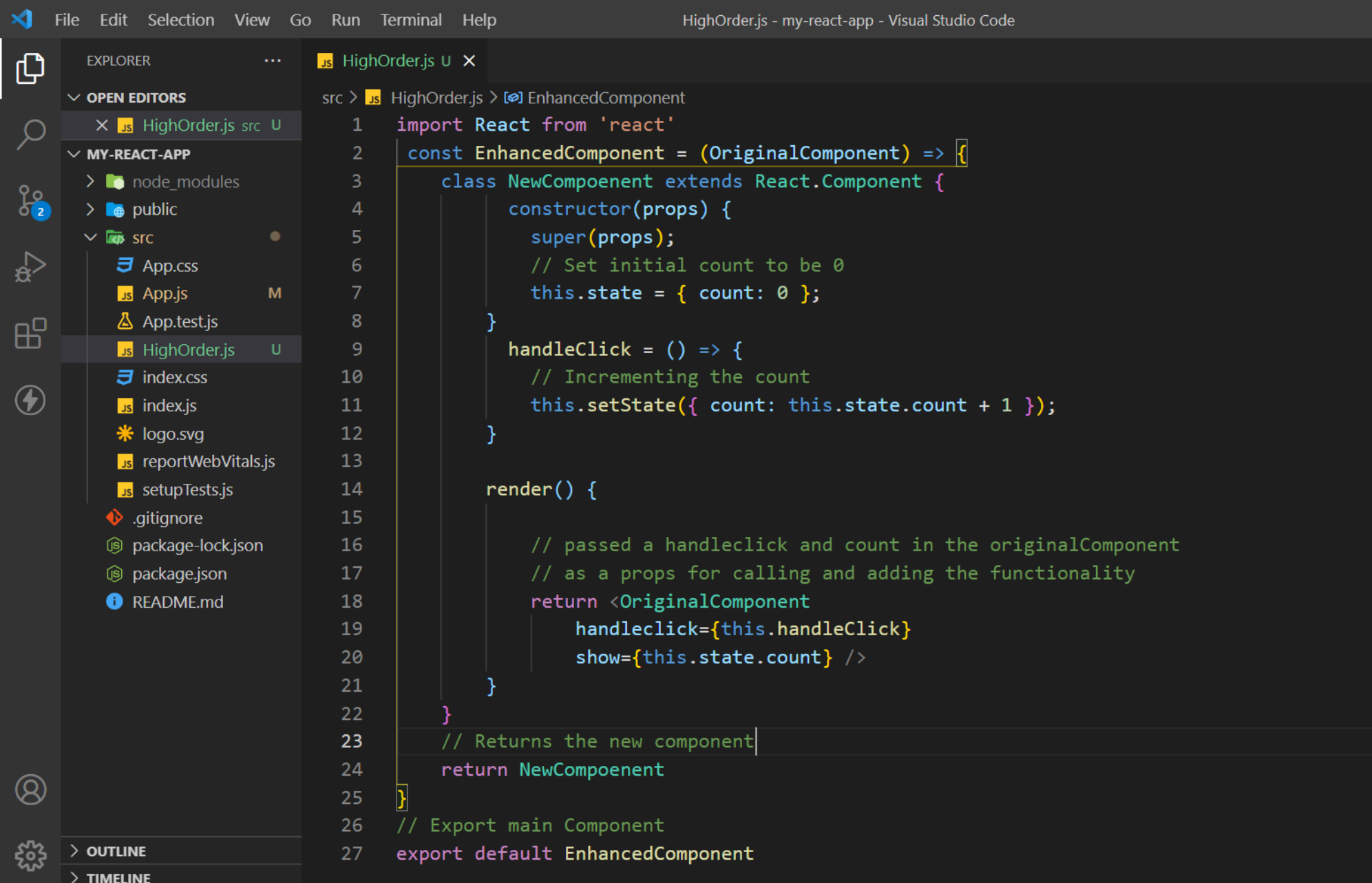
- import React from 'react'
- 
- const EnhancedComponent = (OriginalComponent) => {
- class NewComponent extends React.Component {
- // Logic here
- render() {
- // Pass the callable props to Original component
- return <OriginalComponent name="Akash" />
- }
- }
- // Returns the new component
- return NewComponent
- }
- 
- export default EnhancedComponent;





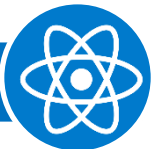
- import React from "react";
- import EnhancedComponent from './HighOrder'
- 
- class App extends React.Component {
- render() {
- // Call the props from originalComponent
- return <h1>{this.props.name}</h1>
- }
- }
- 
- // Passed the originalcomponent
- export default EnhancedComponent(App);





The image shows a Visual Studio Code editor window with the title bar "HighOrder.js - my-react-app - Visual Studio Code". The Explorer sidebar on the left shows the project structure for "MY-REACT-APP", including a "src" directory with files like App.css, App.js, App.test.js, HighOrder.js (selected), index.css, index.js, logo.svg, reportWebVitals.js, and setupTests.js. The main editor area displays the code for "HighOrder.js" with the following content:

```
src > JS HighOrder.js > EnhancedComponent
1  import React from 'react'
2  const EnhancedComponent = (OriginalComponent) => {
3      class NewComponent extends React.Component {
4          constructor(props) {
5              super(props);
6              // Set initial count to be 0
7              this.state = { count: 0 };
8          }
9          handleClick = () => {
10             // Incrementing the count
11             this.setState({ count: this.state.count + 1 });
12         }
13
14         render() {
15
16             // passed a handleClick and count in the originalComponent
17             // as a props for calling and adding the functionality
18             return <OriginalComponent
19                 handleClick={this.handleClick}
20                 show={this.state.count} />
21         }
22     }
23     // Returns the new component
24     return NewComponent
25 }
26 // Export main Component
27 export default EnhancedComponent
```



EXPLORER

OPEN EDITORS

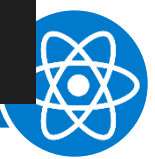
- JS `HighOrder.js` src U
- X JS `App.js` src M

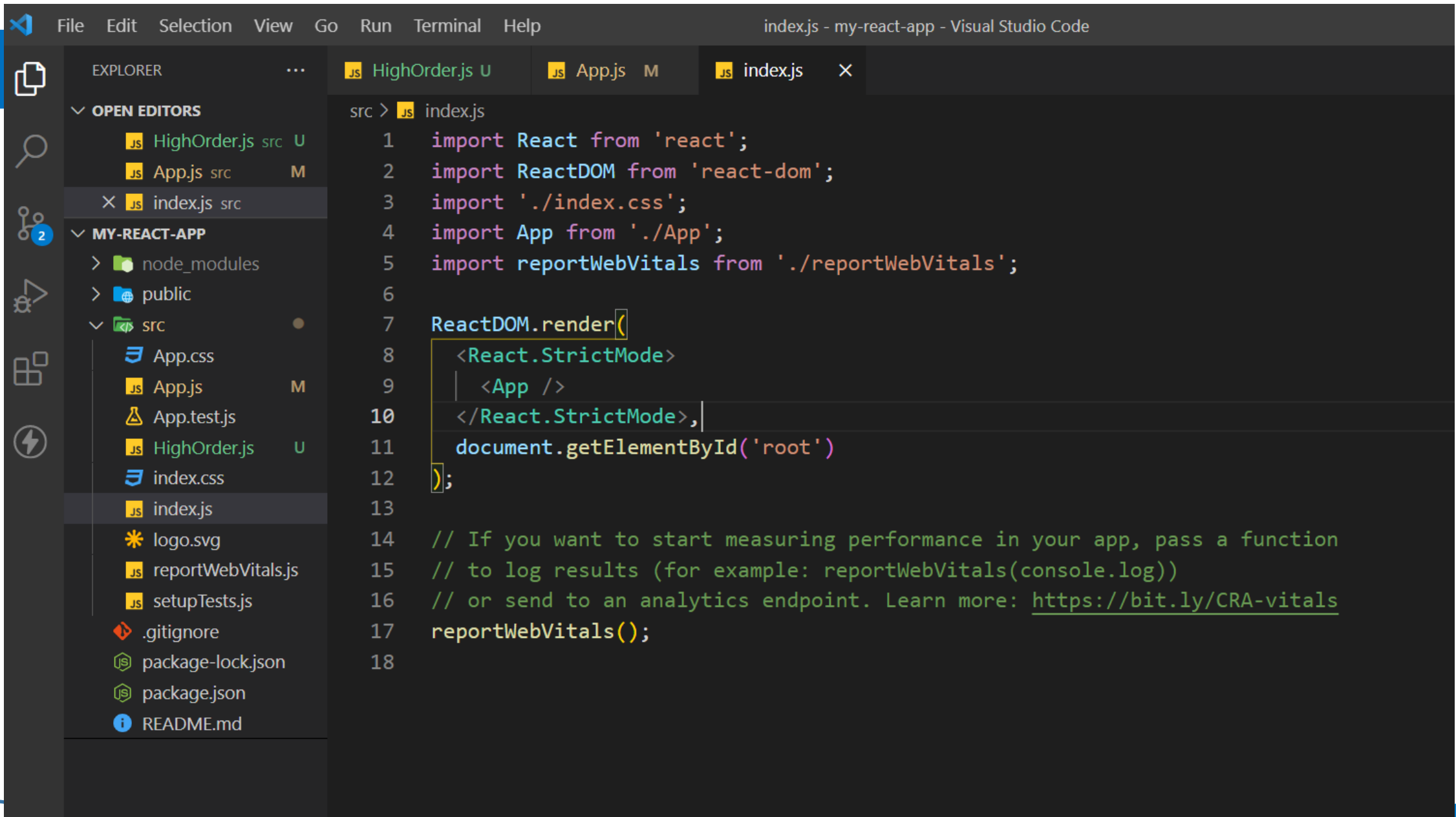
MY-REACT-APP

- > node\_modules
- > public
- src
  - App.css
  - JS `App.js` M
  - App.test.js
  - JS `HighOrder.js` U
  - index.css
  - JS `index.js`
  - logo.svg
  - JS `reportWebVitals.js`
  - JS `setupTests.js`
  - .gitignore
  - package-lock.json
  - package.json
  - README.md

JS `HighOrder.js` UJS `App.js` M Xsrc > JS `App.js` > App

```
1  import React from 'react'
2  // importing HighOrder file
3  import EnhancedComponent from './HighOrder'
4
5  class App extends React.Component {
6    render() {
7      // Destructuring the props
8      const { show, handleClick } = this.props
9
10     // Calling out the props
11     return <button onClick={handleClick}>{show}
12     </button>
13   }
14 }
15
16
17 export default EnhancedComponent(App);
```





```
File Edit Selection View Go Run Terminal Help index.js - my-react-app - Visual Studio Code

EXPLORER
OPEN EDITORS
  JS HigherOrder.js src U
  JS App.js src M
  X JS index.js src
MY-REACT-APP
  > node_modules
  > public
  > src
    App.css
    JS App.js M
    App.test.js
    JS HigherOrder.js U
    index.css
    JS index.js
    logo.svg
    JS reportWebVitals.js
    JS setupTests.js
    .gitignore
    package-lock.json
    package.json
    README.md

src > JS index.js
1 import React from 'react';
2 import ReactDOM from 'react-dom';
3 import './index.css';
4 import App from './App';
5 import reportWebVitals from './reportWebVitals';
6
7 ReactDOM.render(
8   <React.StrictMode>
9     <App />
10  </React.StrictMode>,
11  document.getElementById('root')
12 );
13
14 // If you want to start measuring performance in your app, pass a function
15 // to log results (for example: reportWebVitals(console.log))
16 // or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
17 reportWebVitals();
18
```

React App

127.0.0.1:3000

5

Elements | Console | Sources | Network | Performance | Memory | Components

Search (text or /regex/)

NewComponent

App

App

props

handleclick: f () {}

show: 5

new entry: ""

rendered by

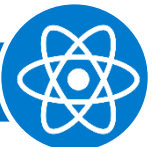
NewComponent

createLegacyRoot()

react-dom@17.0.2

source

HighOrder.js:21



```

import React from 'react'

const EnhancedComponent = (OriginalComponent) => {

  class NewComponent extends React.Component {

    constructor(props) {

      super(props);

      // Set initial count to be 0

      this.state = { count: 0 };

    }

    handleClick = () => {

      // Incrementing the count

      this.setState({ count: this.state.count + 1 });

    }

    render() {

      // passed a handleClick and count in the originalComponent

      // as a props for calling and adding the functionality

      return <OriginalComponent

        handleClick={this.handleClick}

        show={this.state.count} />

    }

  }

  // Returns the new component

  return NewComponent

}

// Export main Component

export default EnhancedComponent

```

```

import React from 'react'

// importing HighOrder file

import EnhancedComponent from './HighOrder'

class App extends React.Component {

  render() {

    // Destructuring the props

    const { show, handleClick } = this.props

    // Calling out the props

    return <button onClick={handleClick}>{show}

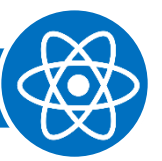
    </button>

  }

}

export default EnhancedComponent(App);

```



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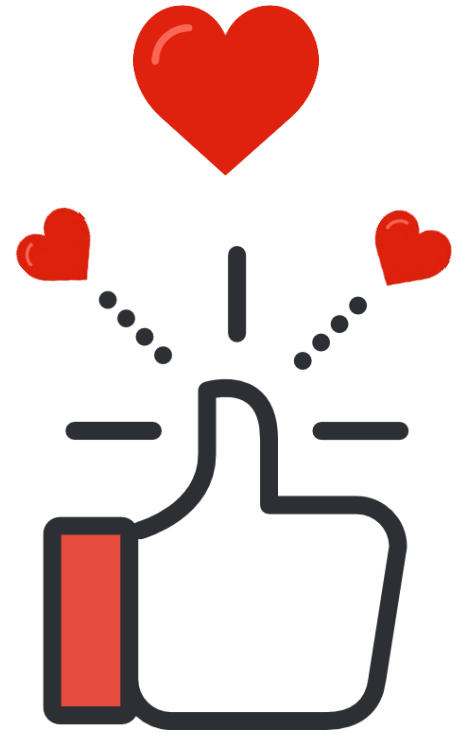
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