React JS

Agenda

- HelloWorld program
- ReactJS
- JSX
- Class & Functional Component
- State & Props

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HelloWorld program

Step 1: Install React

```
PS C:\Users\pc\Desktop> npm install -g create-react-app
C:\Users\pc\AppData\Roaming\npm\create-react-app -> C:\Users\pc\AppData\Roaming\npm\node_modules\create-react-app\index.js
+ create-react-app@4.0.0
added 92 packages from 46 contributors in 6.112s
```

npm install -g create-react-app

Step 2: Create a new React project

```
PS C:\Users\pc\Desktop> create-react-app helloworld

Creating a new React app in C:\Users\pc\Desktop\HelloWorld\helloworld.

Installing packages. This might take a couple of minutes.
Installing react, react-dom, and react-scripts with cra-template...

[   ..............] \ fetchMetadata: sill resolveWithNewModule @csstools/normal
```

create-react-app helloworld

```
Success! Created helloworld at C:\Users\pc\Desktop\helloworld
Inside that directory, you can run several commands:

  npm start
    Starts the development server.

  npm run build
    Bundles the app into static files for production.

  npm test
    Starts the test runner.

  npm run eject
    Removes this tool and copies build dependencies, configuration files
    and scripts into the app directory. If you do this, you can't go back!

We suggest that you begin by typing:

  cd helloworld
  npm start

Happy hacking!
```

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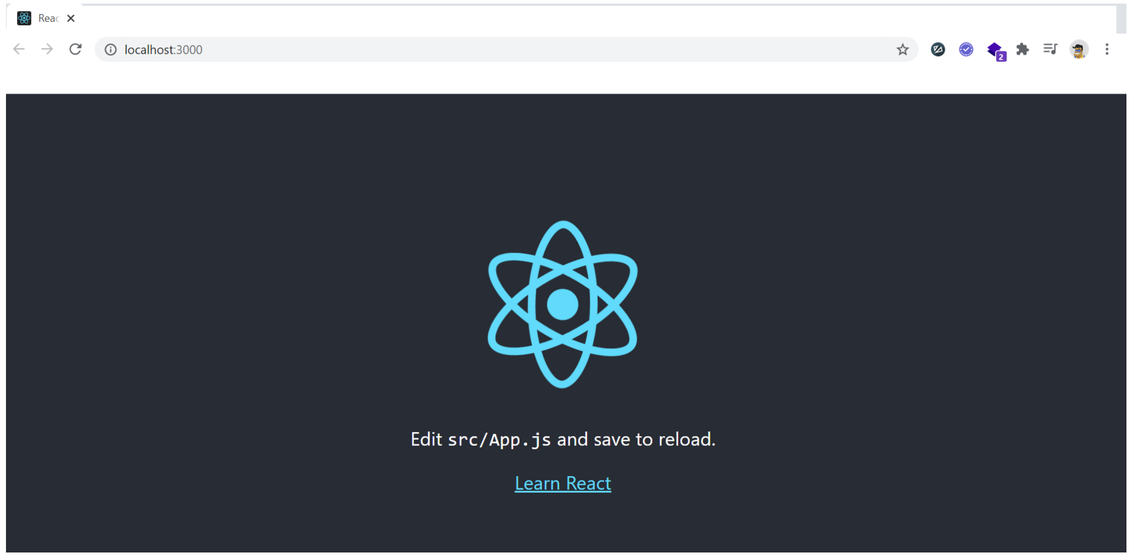
HelloWorld program

- Step 3: Run project

```
PS C:\Users\pc\Desktop\HelloWorld> npm start

  npm start
Compiled successfully!

You can now view helloworld in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://192.168.56.1:3000

Note that the development build is not optimized.
To create a production build, use npm run build.
```

npm start



Browser

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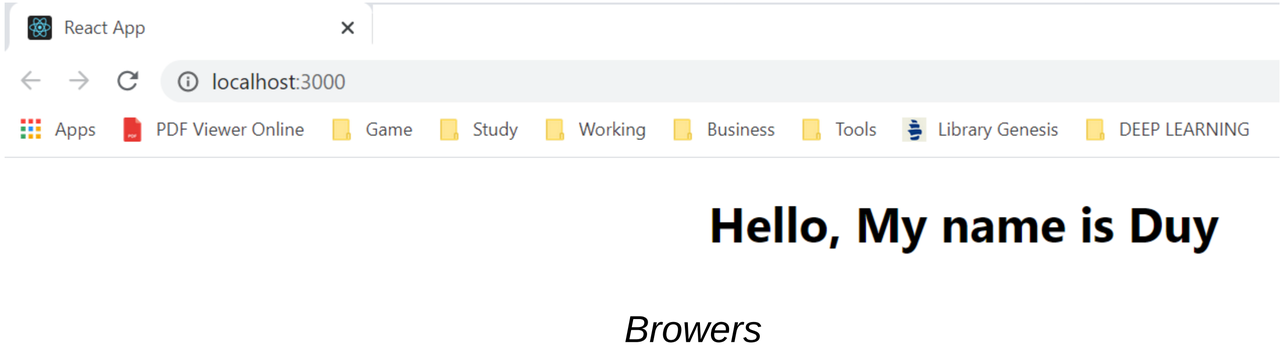
HelloWorld program

- Step 4: Edit code

```
src > JS App.js > App
1   import './App.css';
2
3   function App() {
4     return (
5       <div className="App">
6         <h1>Hello, My name is Duy</h1>
7       </div>
8     );
9   }
10
11  export default App;
```



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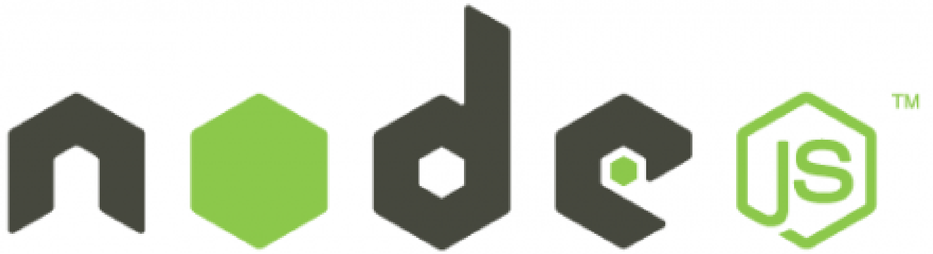
ReactJS

- A JavaScript library for building reusable UI components
- Created by Facebook in 2011, released 2013
- Auto compile code & Refresh Screen
- ReacteJS (for Web) & React Native (for mobile)
- Application : WhatsApp, Instagram, Facebook



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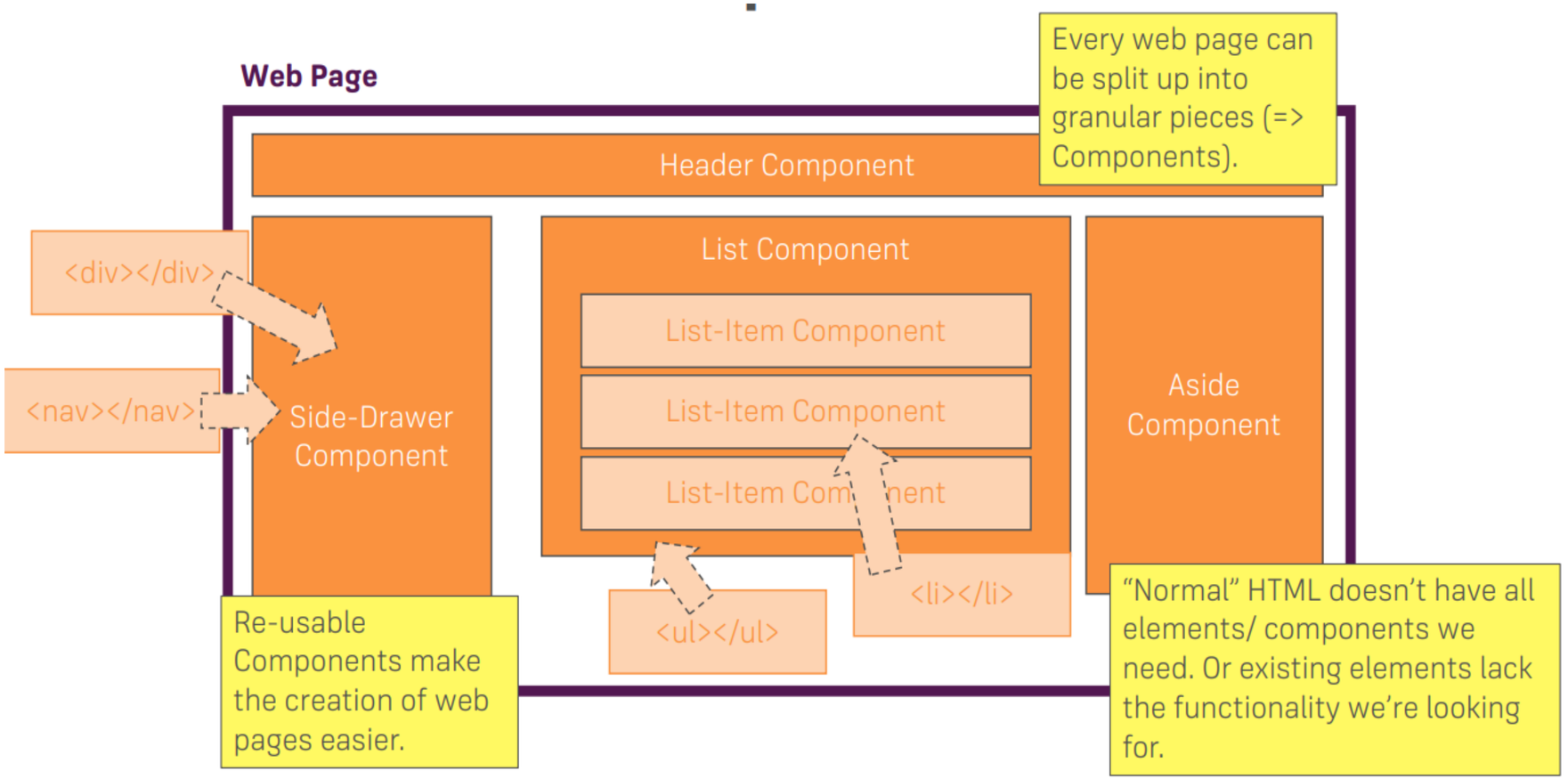
ReactJS

- Built around the component



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React Running Tools

- Visual Studio Code
- https://codepen.io/pen
- https://codesandbox.io/s/new

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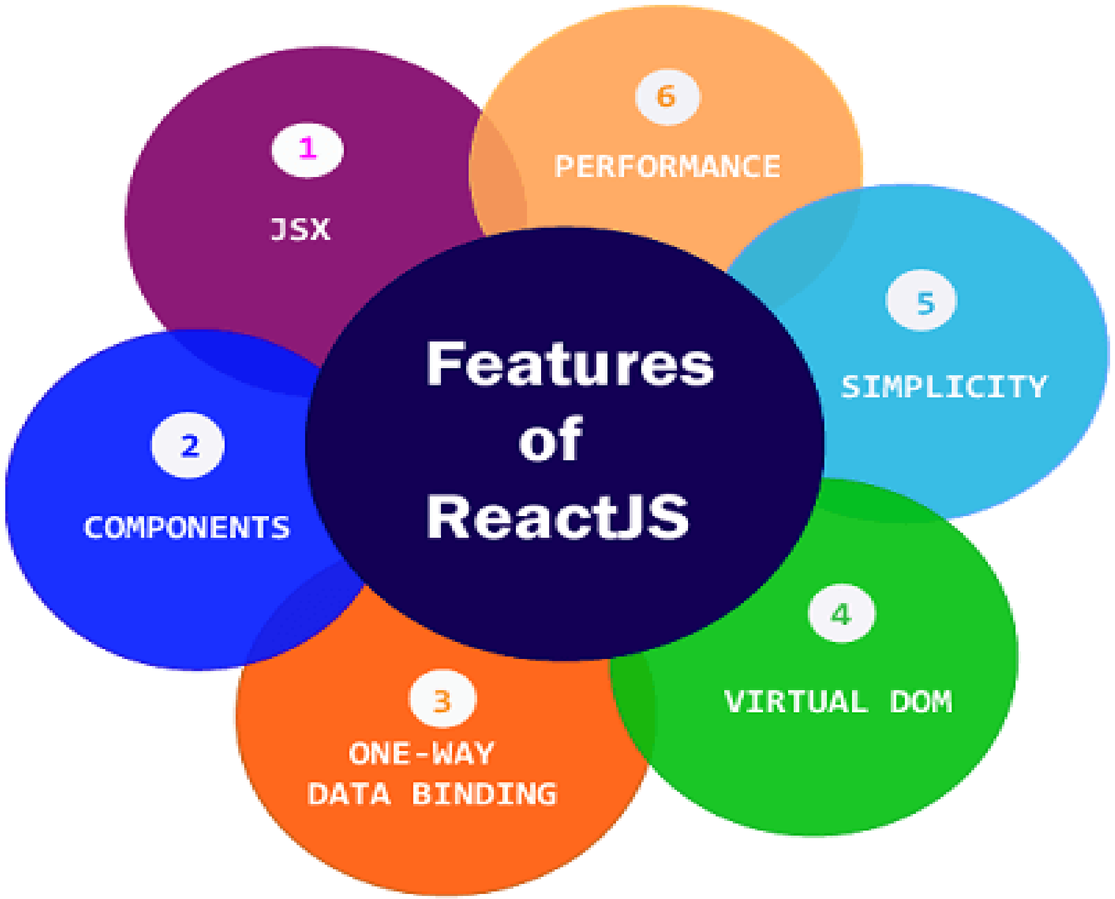
Feature



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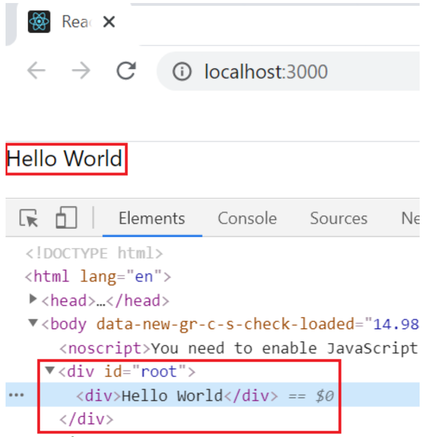
Non JSX

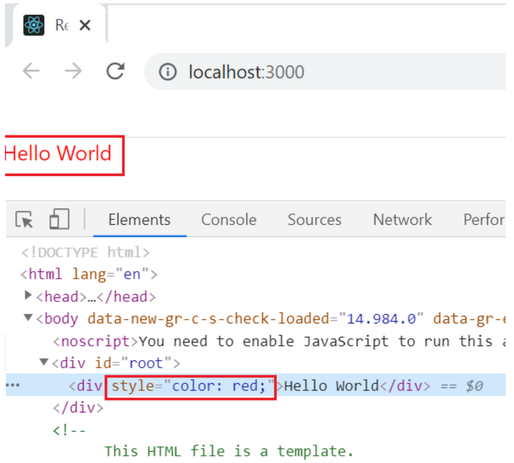
- React.createElement(component, props, ...children)

```
src > JS App.js > ...
1  import './App.css';
2  import React from 'react';
3
4  function App() {
5    return React.createElement("div", null, "Hello World");
6  }
7
8  export default App;
```



App.js

```
src > JS App.js > ...
1  import './App.css';
2  import React from 'react';
3
4  const divStyle = {
5    color: 'red'
6  };
7
8  function App() {
9    return React.createElement("div", { style: divStyle }, "Hello World");
10 }
11
12 export default App;
```



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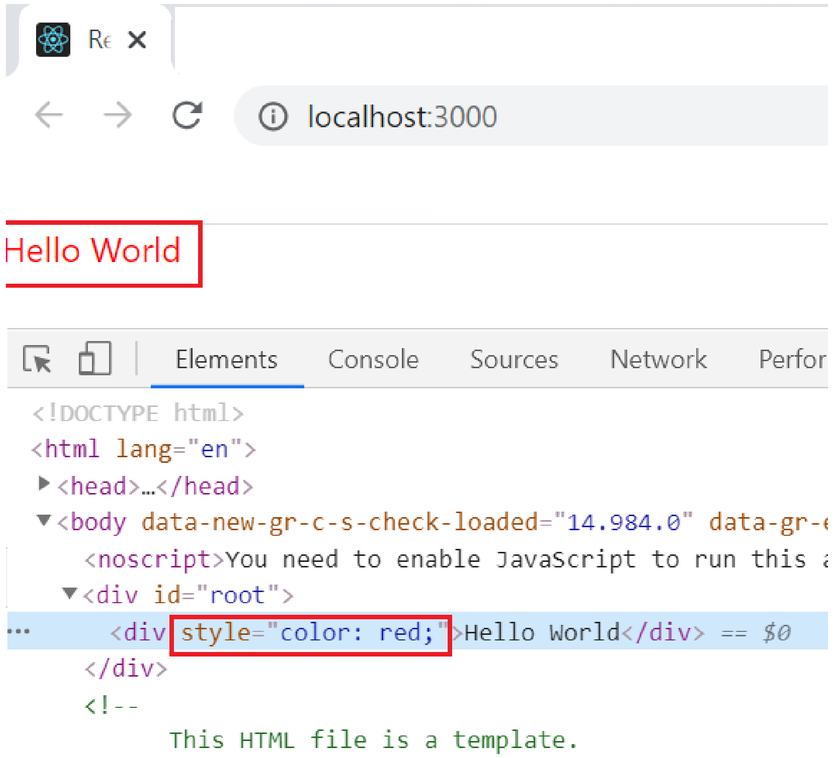
JSX

- Stands for JavaScript Extension
- JSX has a syntax similar to HTML
- JSX is in the sign {}

```
src > JS App.js > ...
1   import './App.css';
2
3   const divStyle = {
4     color: 'red'
5   }
6
7   function App() {
8     return (
9       <div style={divStyle}>Hello World</div>
10    );
11  }
12
13  export default App;
```



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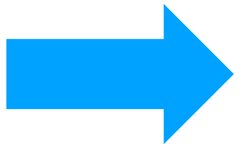
Non JSX & JSX

- Babel will compile JSX to React.createElement

```jsx
const element = (
  <h1 className="greeting">
    Hello, world!
  </h1>
);
```



```jsx
const element = React.createElement(
  'h1',
  {className: 'greeting'},
  'Hello, world!'
);
```

https://babeljs.io/repl/#?presets=react&code_lz=GYVwdgxgLglg9mABACwKYBt1wBQEpEDeAUIogE6pQhlIA8AJjAG4B8AEhlogO5xnr0AhLQD0jVgG4iAXyJA

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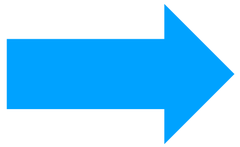
JSX’s Syntax

- only 1 parent tag

```
src > JS App.js > ...
1  import './App.css';
2
3  function App() {
4    return (                                  error
5      <div> Hello World</div>
6      <img src="https://www.w3schools.com/howto/img_avatar2.png"/>
7    );
8  }
9
10 export default App;
```



```
src > JS App.js > ...
1  import './App.css';
2
3  function App() {
4    return (
5      <div>
6        <div> Hello World</div>
7        <img src="https://www.w3schools.com/howto/img_avatar2.png"/>
8      </div>
9    );
10 }
11
12 export default App;
```

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HTML, Javascript & JSX Comparing

- Syntax

```
{/* HTML */}
<div onclick="handleClickDiv()">Hello World</div>

{/* JSX */}
<div onClick={handleClickDiv}>Hello World</div>
```

The properties and methods are both camelCase

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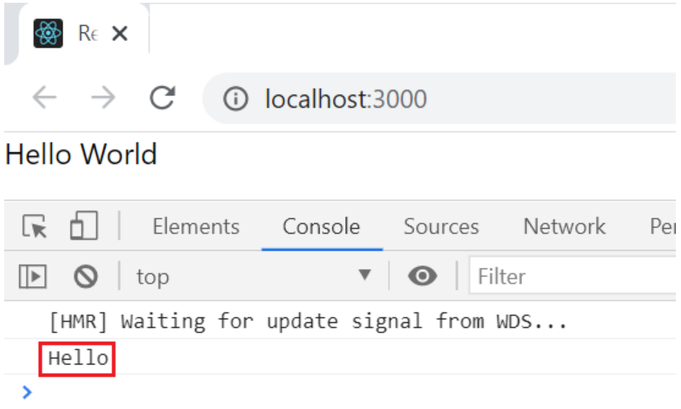
HTML, Javascript & JSX Comparing

- Example

App.js

```
src > App.js > ...
1  import './App.css';
2
3  function handleClickDiv() {
4    console.log('Hello');
5  }
6
7  function App() {
8    return (
9      <div onClick={handleClickDiv}>Hello World</div>
10   );
11 }
12
13 export default App;
```




```
{/* HTML */}
<div class="App">Hello World</div>

{/* JSX */}
<div className="App">Hello World</div>
```

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HTML, Javascript & JSX Comparing

- Style

- Way 1

```
{/* HTML */}
<div class="App">Hello World</div>

{/* JSX */}
<div className="App">Hello World</div>
```

Stylesheet

- Way 2

```
import './App.css';

var divStyle = {
  fontSize: 80,
  fontFamily: 'Courier',
  color: 'red'
}

function App() {
  return (
    <div style={divStyle}>Hello World</div>
  );
}

export default App;
```

*Auto apply **px***

Inline Style

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HTML, Javascript & JSX Comparing

Mô tả	Cấu trúc HTML	Cấu trúc JSX
Tên Class	<tag class="">	<tag className="">
Thuộc tính `value` <input />	<input value="" />	<input defaultValue="" />
Thuộc tính `for` của <label>	<label for="">	<label htmlFor="">
Giá trị của <select><option>	<option value="">	<option value={}>
Style trực tiếp bên trong tag	<tag style="width: 10%">	<tag style={{ width: '10%' }}>
Event	<tag onclick="functionName()">	<tag onClick={functionName}>
Khi viết về giá trị được gọi		<img src={path}> Hello {name}!

https://reactjs.org/docs/dom-elements.html

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JSX’s Syntax

- Value can use string or expression

```
{/* Expression */}
<img src={user.avatarUrl}/>

{/* String */}
<img src="https://www.w3schools.com/howto/img_avatar2.png"/>
```

```
function formatName(user) {
  return user.firstName + ' ' + user.lastName;
}

const user = {
  firstName: 'Harper',
  lastName: 'Perez'
};

const element = (
  <h1>
    Hello, {formatName(user)}!
  </h1>
);
```

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Component

- Class Component & Functional Component
- Props & State
- Composition & Inheritance

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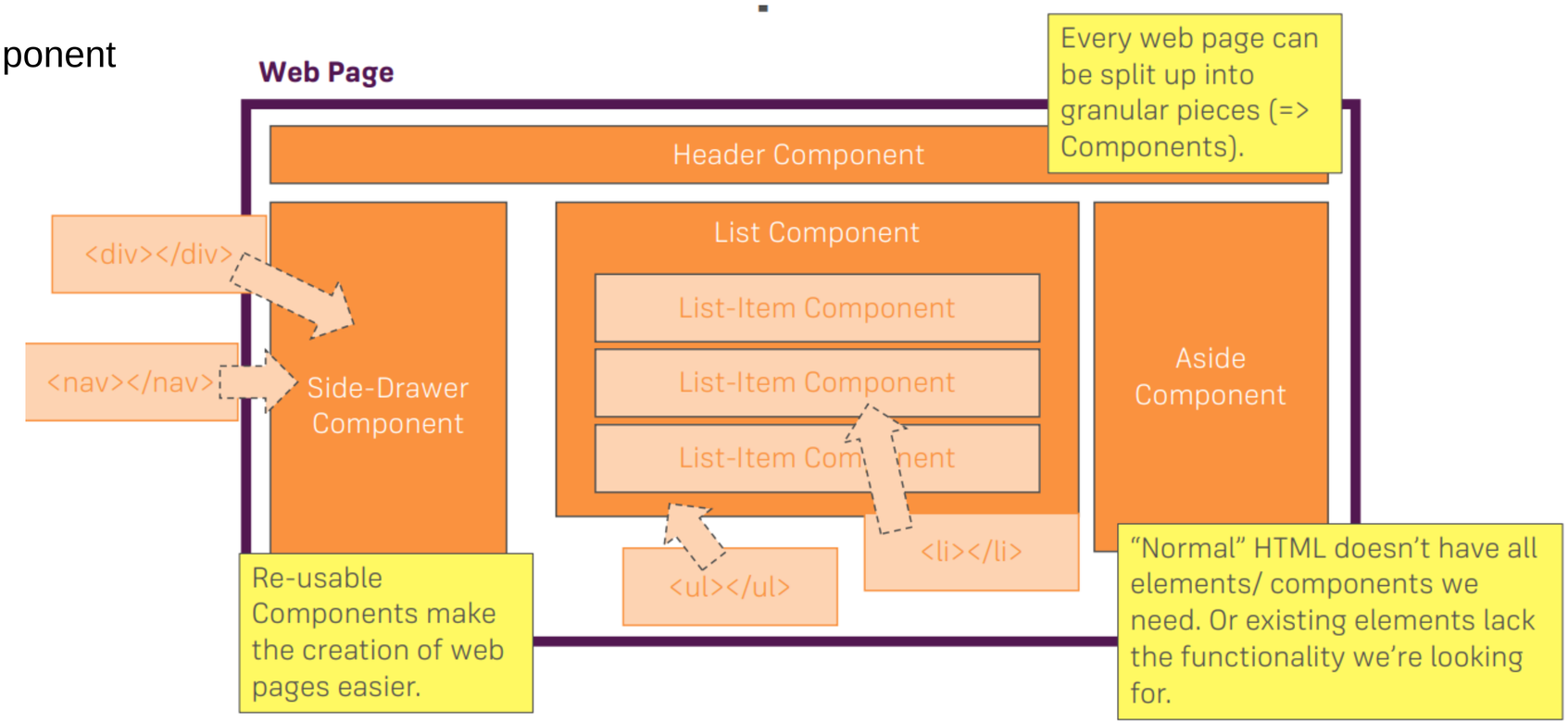
Component

- Everything in react is written as a component
- Reusable components
- Split logic



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Component

- 2 types
  - Class component
  - Functional component

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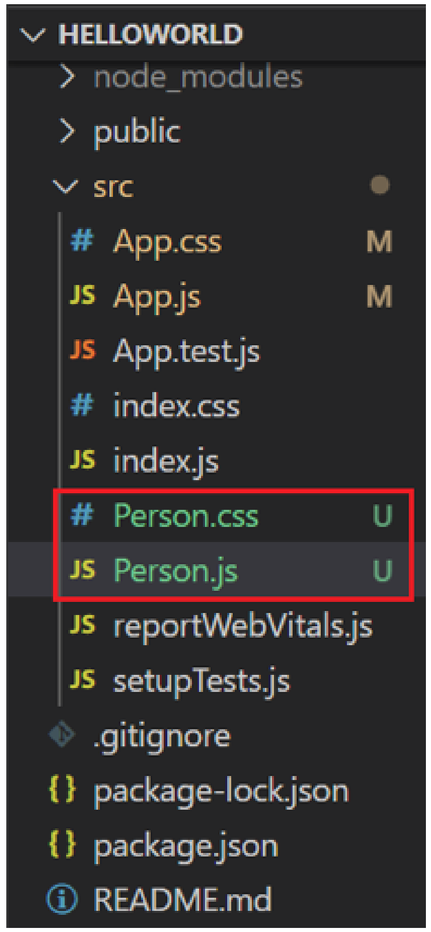
Class Component

- Example 1:



src > # Person.css > ...

```css
.person {
    display: inline-block;
    margin: 10px;
    border: 1px solid #eee;
    box-shadow: 0 2px 2px #ccc;
    padding: 20px;
}
```

src > JS Person.js > ...

```jsx
import './Person.css';
import React from 'react';

class Person extends React.Component {
    render() {
        return (
            <div className="person">
                <h1>Full Name: Nguyen Van A</h1>
                <p>Age: 25</p>
            </div>
        );
    }
}

export default Person;
```

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Class Component

- Example 2:

```
src > JS App.js > ...
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person/>
8      </div>
9    );
10 }
11
12 export default App;
```


```
src > JS App.js > ...
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person/>
8        <Person/>
9        <Person/>
10     </div>
11   );
12 }
13
14 export default App;
```

https://codepen.io/anon/pen/MELQaQ

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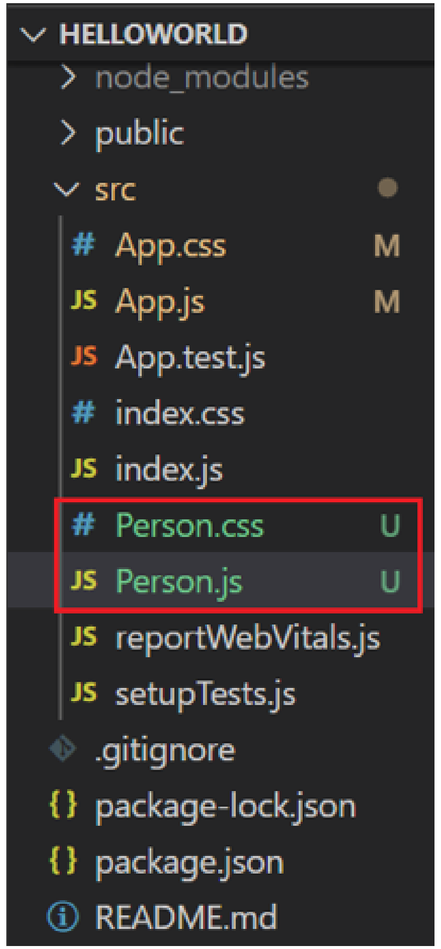
Functional Component

- Example 3:



src > # Person.css > ...

```css
.person {
    display: inline-block;
    margin: 10px;
    border: 1px solid #eee;
    box-shadow: 0 2px 2px #ccc;
    padding: 20px;
}
```

src > JS Person.js > ...

```jsx
import './Person.css';

function Person() {
    return (
        <div className="person">
            <h1>Full Name: Nguyen Van A</h1>
            <p>Age: 25</p>
        </div>
    );
}

export default Person;
```

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Functional Component

➢ Example 4:

src > JS App.js > ...

```
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person/>
8      </div>
9    );
10 }
11
12 export default App;
```

src > JS App.js > ...

```
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person/>
8        <Person/>
9        <Person/>
10     </div>
11   );
12 }
13
14 export default App;
```

https://codepen.io/anon/pen/MELQaQ

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Example

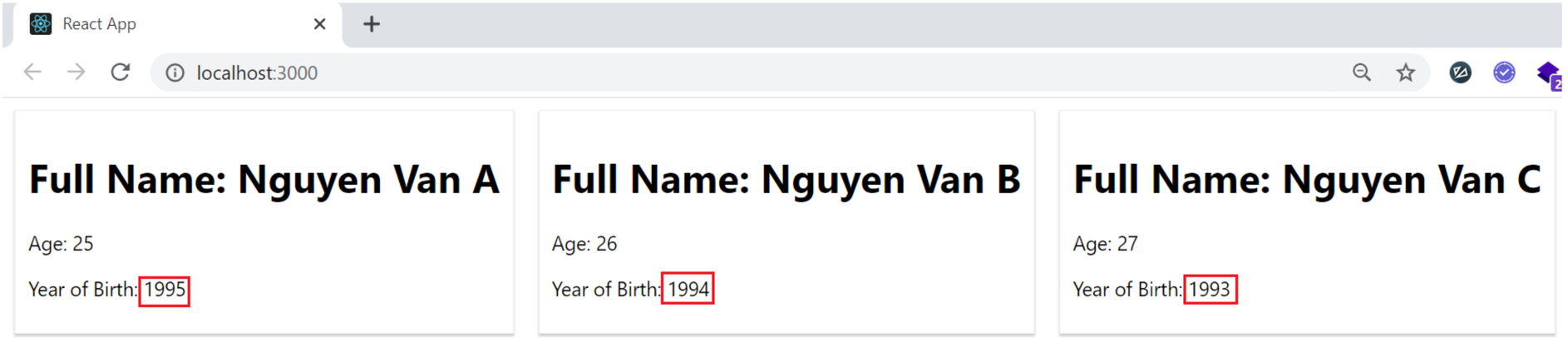
- Example 5: class component

src > JS App.js > ...

```
1  import React from "react"
2
3  import './App.css';
4  import Person from "./Person";
5
6  function App() {
7
8    return (
9      <div>
10       <Person fullname="Nguyen Van A" age="25" />
11       <Person fullname="Nguyen Van B" age="26" />
12       <Person fullname="Nguyen Van C" age="27" />
13     </div>
14   );
15 }
16
17 export default App;
```

src > JS Person.js > ...

```
1  import './Person.css';
2  import React from 'react';
3
4  class Person extends React.Component {
5
6      render() {
7          return (
8              <div className="person" >
9                  <h1>Full Name: {this.props.fullname}</h1>
10                 <p>Age: {this.props.age}</p>
11                 <p>Year of Birth: {new Date().getFullYear() - this.props.age}</p>
12             </div>
13         )
14     };
15 }
16
17 export default Person;
```



Send data to component

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Example

- Example 6: functional component

src > App.js > ...

```
1  import React from "react"
2
3  import './App.css';
4  import Person from "./Person";
5
6  function App() {
7
8    return (
9      <div>
10       <Person fullname="Nguyen Van A" age="25" />
11       <Person fullname="Nguyen Van B" age="26" />
12       <Person fullname="Nguyen Van C" age="27" />
13     </div>
14   );
15 }
16
17 export default App;
```

Person.js

helloworld > src > Person.js > ...

```
1  import React from 'react';
2  import './Person.css';
3
4  function Person(props) {
5      return (
6          <div className="person">
7              <h1>FullName: {props.fullName}</h1>
8              <p>Age: {props.age}</p>
9              <p>Year of Birth: {new Date().getFullYear() - props.age}</p>
10         </div>
11     );
12 }
13
14 export default Person;
```

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Component understanding

- The logic in {} can be implemented.

src > JS Person.js > ...

```
1   import './Person.css';
2   import React from 'react';
3
4   class Person extends React.Component {
5
6       render() {
7           return (
8               <div className="person" >
9                   <h1>Full Name: {this.props.fullname}</h1>
10                  <p>Age: {this.props.age}</p>
11                  <p>Year of Birth: {new Date().getFullYear() - this.props.age}</p>
12              </div>
13          )
14      };
15  }
16
17  export default Person;
```

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Component understanding

- render() method: render JSX to ReactDOM

src > JS Person.js > ...

```
1   import './Person.css';
2   import React from 'react';
3
4   class Person extends React.Component {
5       render() {
6           return (
7               <div className="person">
8                   <h1>Full Name: Nguyen Van A</h1>
9                   <p>Age: 25</p>
10              </div>
11          );
12      }
13  }
14
15  export default Person;
```

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Component understanding

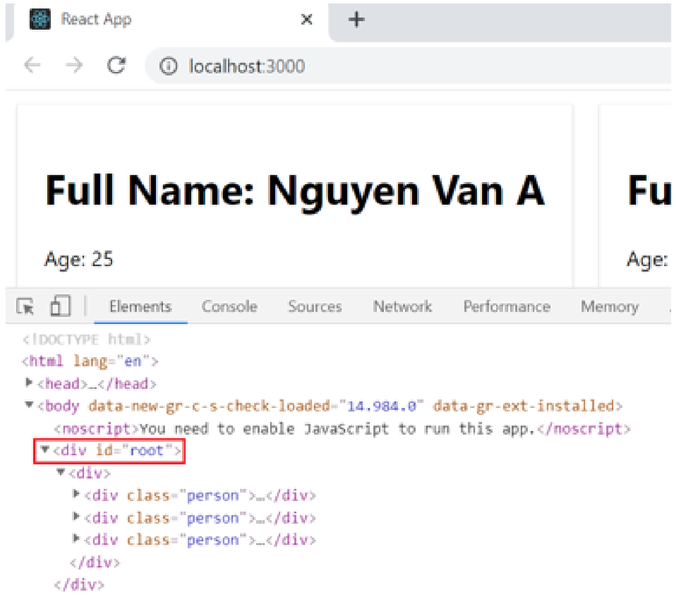
- App Component (root component)

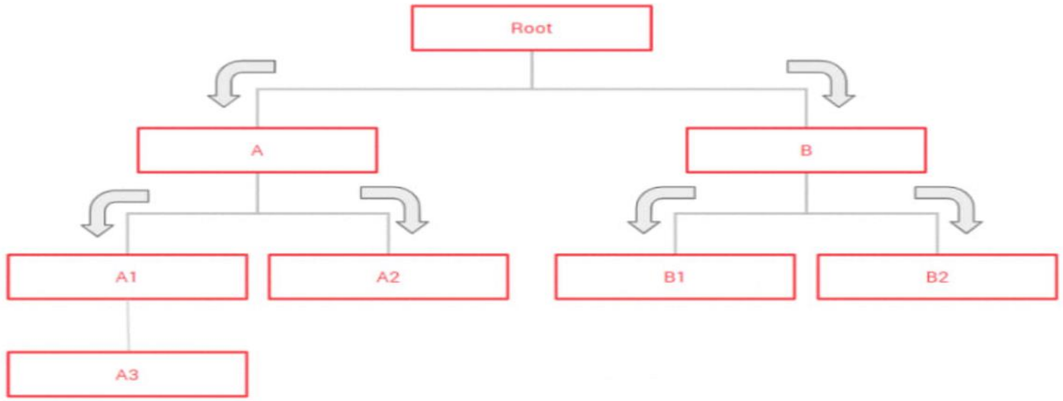
src > JS index.js

```
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();
```

src > JS App.js > ...

```
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person/>
8        <Person/>
9        <Person/>
10     </div>
11   );
12 }
13
14 export default App;
```





Component Tree

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Normal Variable & Arrow function

- **Class component**
  - Always use this keyword when calling variable, function
  - Declare the variable in the constructor
- **Function component**
  - DO NOT use this keyword when calling variable, function
  - Declare the variable, function with let/const keyword

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Normal Variable & Arrow function

src > JS Person.js > ...

```
1  import './Person.css';
2  import React from 'react';
3
4  class Person extends React.Component {
5
6      constructor(props) {
7          super(props);
8          this.firstName = "Nguyen Van";
9          this.lastName = "A";
10     }
11
12     getFullName = () => {
13         return this.firstName + " " + this.lastName;
14     }
15
16     render() {
17         return (
18             <div className="person">
19                 <h1>Full Name: {this.getFullName()}</h1>
20                 <p>Age: 25</p>
21             </div>
22         );
23     }
24 }
25
26 export default Person;
```

variable

Arrow function

using

Class component

src > JS Person.js > ...

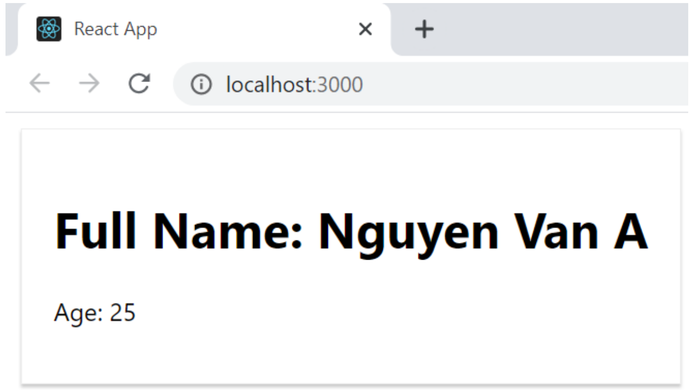
```
1  import './Person.css';
2  import React from 'react';
3
4  function Person() {
5
6      const firstName = "Nguyen Van";
7      const lastName = "A";
8
9      const getFullName = () => {
10         return firstName + " " + lastName;
11     }
12
13     return (
14         <div className="person">
15             <h1>Full Name: {getFullName()}</h1>
16             <p>Age: 25</p>
17         </div>
18     );
19 }
20
21 export default Person;
```

variable

function

using

Functional component



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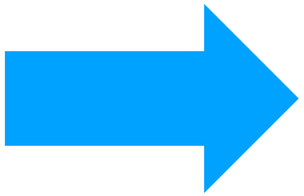
Best Practices

- Divided into smaller components

```
import React, {Component} from 'react';

class Table extends Component {
    render() {
        return (
            <table>
                <thead>
                    <tr>
                        <th>Name</th>
                        <th>Job</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>Charlie</td>
                        <td>Janitor</td>
                    </tr>
                    <tr>
                        <td>Mac</td>
                        <td>Bouncer</td>
                    </tr>
                    <tr>
                        <td>Dee</td>
                        <td>Aspiring actress</td>
                    </tr>
                    <tr>
                        <td>Dennis</td>
                        <td>Bartender</td>
                    </tr>
                </tbody>
            </table>
        );
    }
}

export default Table;
```



```
class Table extends Component {
    render() {
        return (
            <table>
                <TableHeader />
                <TableBody />
            </table>
        );
    }
}
```

```
const TableHeader = () => {
    return (
        <thead>
            <tr>
                <th>Name</th>
                <th>Job</th>
            </tr>
        </thead>
    );
}
```

```
const TableBody = () => {
    return (
        <tbody>
            <tr>
                <td>Charlie</td>
                <td>Janitor</td>
            </tr>
            <tr>
                <td>Mac</td>
                <td>Bouncer</td>
            </tr>
            <tr>
                <td>Dee</td>
                <td>Aspiring actress</td>
            </tr>
            <tr>
                <td>Dennis</td>
                <td>Bartender</td>
            </tr>
        </tbody>
    );
}
```

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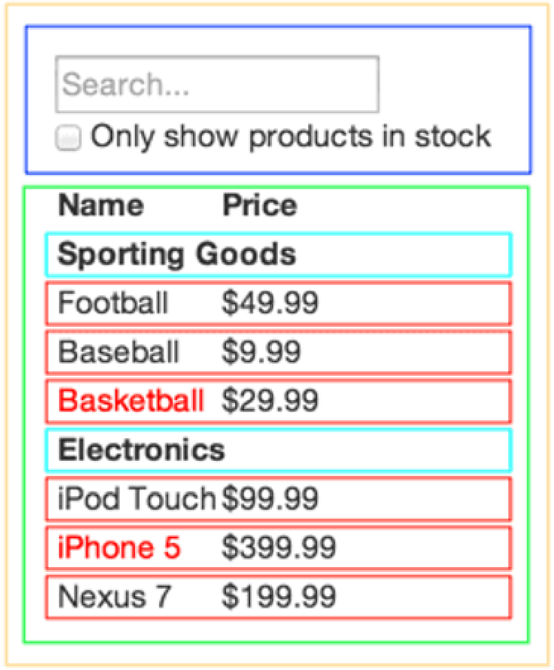
Best Practices



- `FilterableProductTable`
  - `SearchBar`
  - `ProductTable`
    - `ProductCategoryRow`
    - `ProductRow`

https://codepen.io/gaearon/pen/BwWzwm?editors=0010

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Best Practices

- DO NOT create base component

src > JS Person.js > ...

```
1   import './Person.css';
2   import React from 'react';
3                                   base component
4   class Person extends React.Component {
5
6       render() {
7           return (
8               <div className="person" >
9                   <h1>Full Name: {this.props.fullname}</h1>
10                  <p>Age: {this.props.age}</p>
11                  <p>Year of Birth: {new Date().getFullYear() - this.props.age}</p>
12              </div>
13          )
14      };
15  }
16
17  export default Person;
```

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Props

- Stand for **Properties**
- Similar to HTML’s attribute, parameter of function
- Read-only, immutable
- Send data between parent component and child component
- Type
  - {variable}
  - {expression JavaScript}
  - {props.children}

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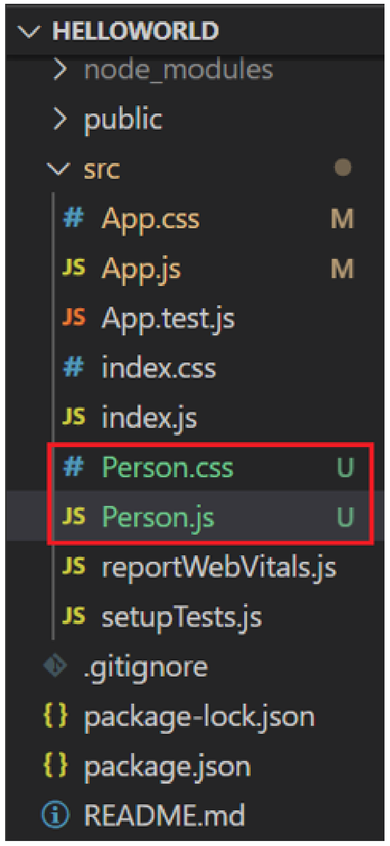
Props

- Functional component

- Example 1:




```
src > # Person.css > ...
1   .person {
2       display: inline-block;
3       margin: 10px;
4       border: 1px solid #eee;
5       box-shadow: 0 2px 2px #ccc;
6       padding: 20px;
7   }
```

```
src > JS Person.js > ...
1   import './Person.css';
2   import React from 'react';
3
4   function Person(props) {
5       return (
6           <div className="person">
7               <h1>Full Name: {props.fullname}</h1>
8               <p>Age: {props.age}</p>
9               <p>Year of Birth: {2020 - props.age}</p>
10              <p>Slogan: {props.children}</p>
11          </div>
12      );
13  }
14
15  export default Person;
```

```
src > JS App.js > ...
1   import Person from './Person';
2   import './App.css';
3
4   function App() {
5     return (
6       <div>
7         <Person fullname="Nguyen Van A" age="25" />
8         <Person fullname="Nguyen Van B" age="26">Làm để tiêu</Person>
9         <Person fullname="Nguyen Van C" age="27">Sống để ăn</Person>
10      </div>
11    );
12  }
13
14  export default App;
```

props

props.children

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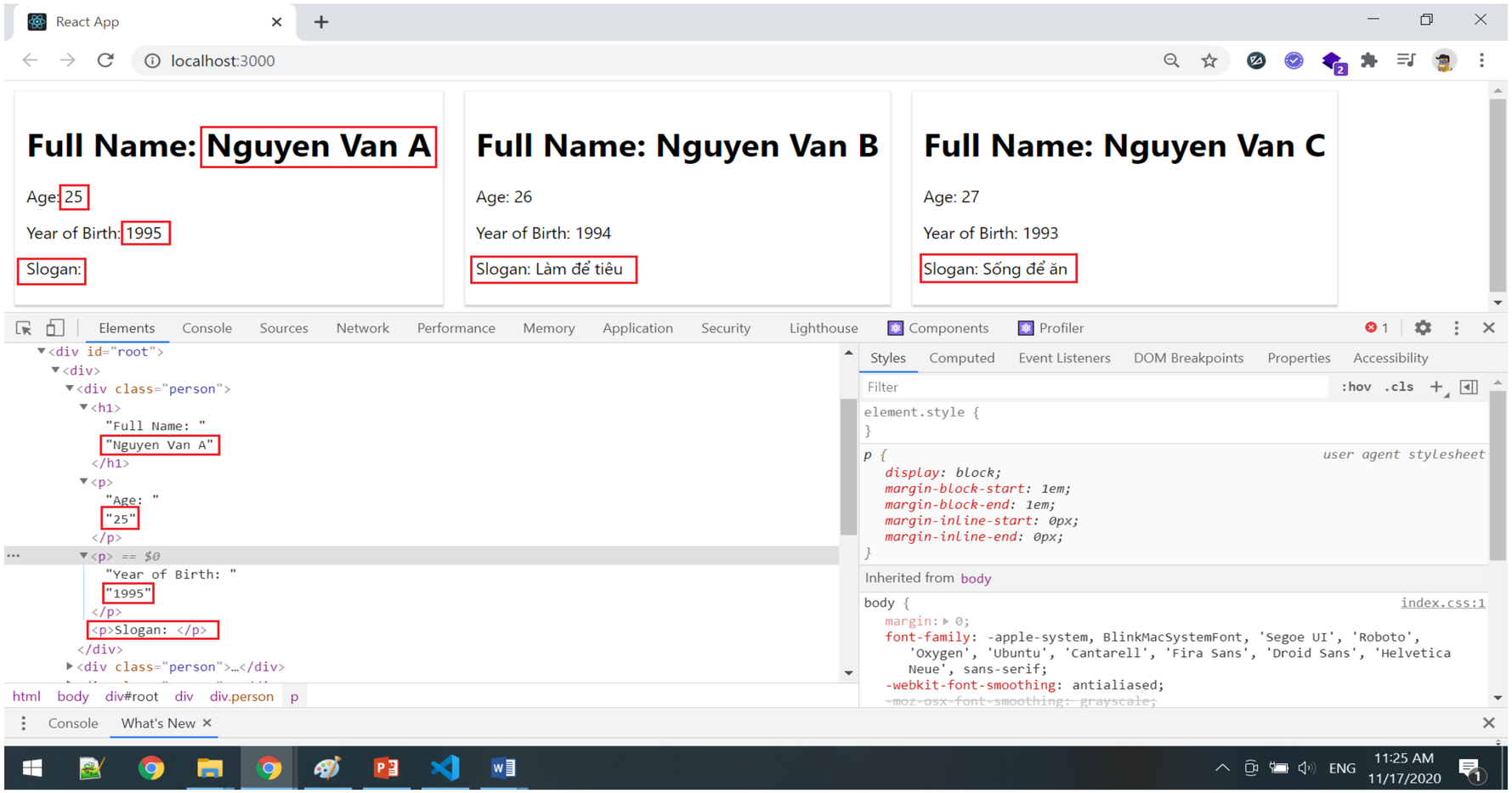
Props



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Props

- Class component

- Example 2:

src > JS Person.js > Person

```
1   import './Person.css';
2   import React from 'react';
3
4   class Person extends React.Component {
5       render() {
6           return (
7               <div className="person">
8                   <h1>Full Name: {this.props.fullname}</h1>
9                   <p>Age: {this.props.age}</p>
10                  <p>Year of Birth: {2020 - this.props.age}</p>
11                  <p>Slogan: {this.props.children}</p>
12              </div>
13          );
14      }
15  }
```

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Props

- Example 3:

```
class App extends Component {
    render() {
        const characters = [
            {
                'name': 'Charlie',
                'job': 'Janitor'
            },
            {
                'name': 'Mac',
                'job': 'Bouncer'
            },
            {
                'name': 'Dee',
                'job': 'Aspring actress'
            },
            {
                'name': 'Dennis',
                'job': 'Bartender'
            }
        ];

        return (
            <div className="container">
                <Table characterData={characters} />
            </div>
        );
    }
}
```

```
class Table extends Component {
    render() {
        const { characterData } = this.props;

        return (
            <table>
                <TableHeader />
                <TableBody characterData={characterData} />
            </table>
        );
    }
}
```

```
const TableHeader = () => {
    return (
        <thead>
            <tr>
                <th>Name</th>
                <th>Job</th>
            </tr>
        </thead>
    );
}
```

```
const TableBody = props => {
    const rows = props.characterData.map((row, index) => {
        return (
            <tr key={index}>
                <td>{row.name}</td>
                <td>{row.job}</td>
            </tr>
        );
    });

    return <tbody>{rows}</tbody>;
}
```

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Props

- Example 4: Pass component to component

```
function SplitPane(props) {
  return (
    <div className="SplitPane">
      <div className="SplitPane-left">
        {props.left}
      </div>
      <div className="SplitPane-right">
        {props.right}
      </div>
    </div>
  );
}

function App() {
  return (
    <SplitPane
      left={
        <Contacts />
      }
      right={
        <Chat />
      } />
  );
}
```

https://codepen.io/gaearon/pen/gwZOJp?editors=0010

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Props

- Example 5: defaultProps (Functional component)

src > JS App.js > ...

```
1  import Person from './Person';
2  import './App.css';
3
4  function App() {
5    return (
6      <div>
7        <Person fullname="Nguyen Van A" age="25" class="Rocket"/>
8        <Person fullname="Nguyen Van B" age="26"> Làm để tiêu </Person>
9        <Person fullname="Nguyen Van C" age="27">Sống để ăn</Person>
10     </div>
11   );
12 }
13
14 export default App;
```

src > JS Person.js > ...

```
1  import './Person.css';
2  import React from 'react';
3
4  Person.defaultProps = {
5      class: 'Railway'
6  };
7
8  function Person(props) {
9      return (
10         <div className="person">
11             <h1>Full Name: {props.fullname}</h1>
12             <p>Age: {props.age}</p>
13             <p>Year of Birth: {2020 - props.age}</p>
14             <p>Class: {props.class}</p>
15             <p>Slogan: {props.children}</p>
16         </div>
17     );
18 }
19
20 export default Person;
```

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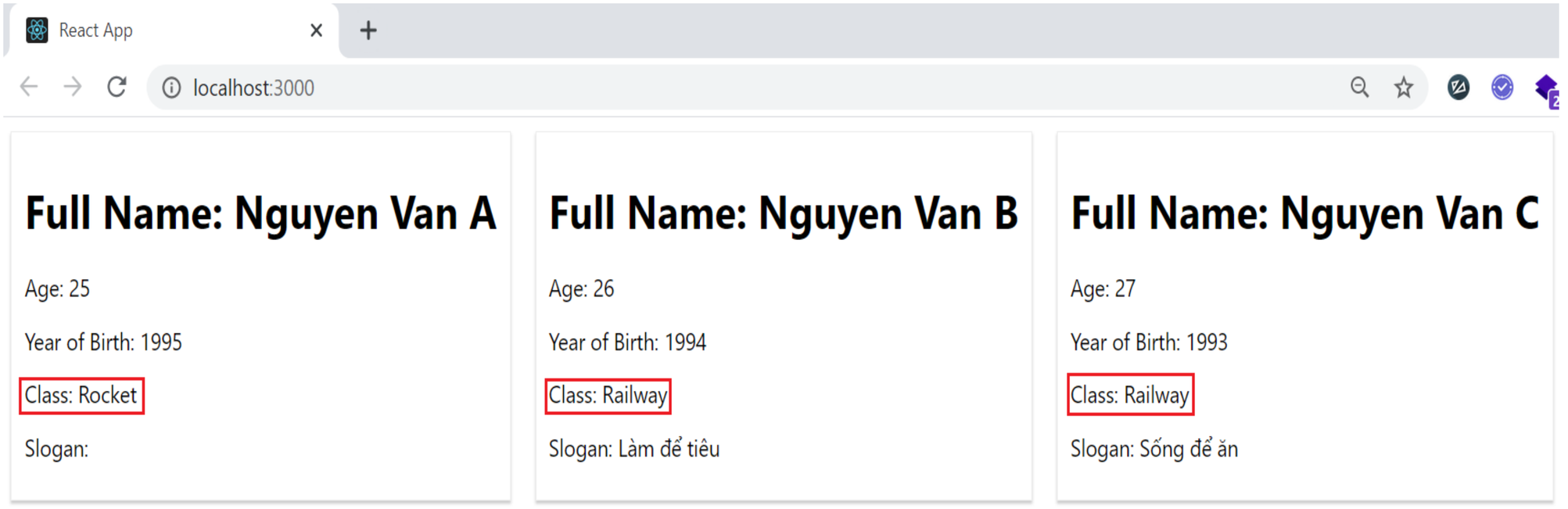
Props



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Props

- VD6: defaultProps (Class component)

src > JS Person.js > ...

```
1   import './Person.css';
2   import React from 'react';
3   import Clock from './Clock';
4
5   class Person extends React.Component {
6
7       static defaultProps = {
8           class: 'Railway'
9       };
10
11      constructor(props) {
12          super(props);
13          this.state = {
14              time: new Date()
15          };
16      }
17
18      render() {···
24      };
25  }
26
40  export default Person;
```

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State

- Save data, information in component & **auto re-render** when changing data
- Only using in **Class Component**
- Scope: only a Component

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State

- Example 1:

src > App.js > ...

```
1  import './App.css';
2  import Clock from './Clock';
3
4  function App() {
5    return (
6      <div>
7        <Clock/>
8      </div>
9    );
10 }
11
12 export default App;
```

src > Clock.js > Clock > updateTime

```
1  import React from 'react';
2
3  class Clock extends React.Component {
4
5      constructor(props) {
6          super(props);
7          this.state = {
8              time: new Date()
9          };
10     }
11
12     render() {
13         return (
14             <div>
15                 <h2>Time: {this.state.time.toLocaleTimeString()}.</h2>
16                 <button onClick={this.updateTime}>
17                     Update Time
18                 </button>
19             </div>
20         );
21     }
22
23     updateTime = () => {
24         this.setState(
25             {
26                 time: new Date()
27             }
28         );
29     }
30 }
31
32 export default Clock;
```

init state

using state

update state & re-render

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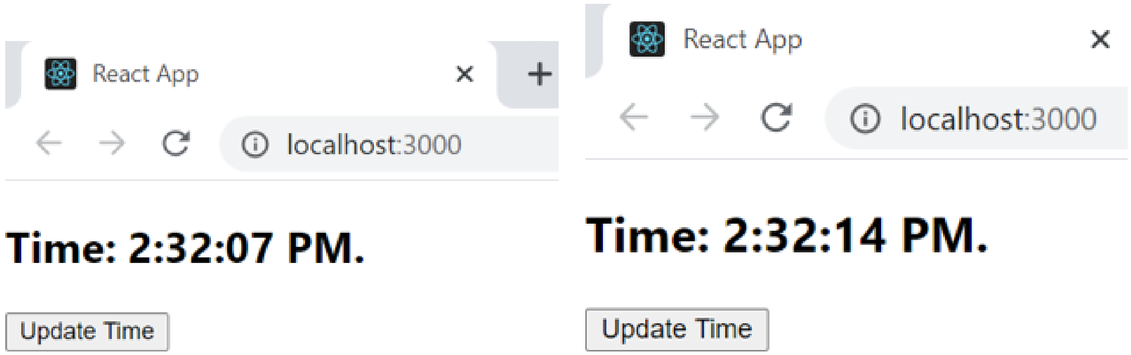
State



https://facebook.github.io/react-native/docs/state

https://www.javatpoint.com/react-state

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State

- Get old state before update new state

```
this.setState((state) => {
    return newValue;
});
```

Example: https://codepen.io/gaearon/pen/xEmzGg?editors=0010

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Best Practices

- Should initialize state in constructor

```
5   class Person extends React.Component {
6
7       constructor(props) {
8           super(props);
9           this.state = {
10              time: new Date()
11          };
12      }
13  }
```

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Best Practices

- Do not modify State directly (React will not re-render the component)

```
// incorrect
this.state.time = new Date();

// correct
this.setState(
    {
        time: new Date()
    }
);
```

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Best Practices

- Keep the state as simple as possible

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State & Props

SN	Props	State
1.	Props are read-only.	State changes can be asynchronous.
2.	Props are immutable.	State is mutable.
3.	Props allow you to pass data from one component to other components as an argument.	State holds information about the components.
4.	Props can be accessed by the child component.	State cannot be accessed by child components.
5.	Props are used to communicate between components.	States can be used for rendering dynamic changes with the component.
6.	Stateless component can have Props.	Stateless components cannot have State.
7.	Props make components reusable.	State cannot make components reusable.
8.	Props are external and controlled by whatever renders the component.	The State is internal and controlled by the React Component itself.

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State & Props

- Parent component: set State
- Child component: set Props
- Example 2:

src > JS Person.js > ...

```
1  import './Person.css';
2  import React from 'react';
3  import Clock from './Clock';
4
5  class Person extends React.Component {
6
7      static defaultProps = {
8          class: 'Railway'
9      };
10
11     constructor(props) {
12         super(props);
13         this.state = {
14             time: new Date()
15         };
16     }
17
18     updateTime = () => {
19         this.setState(
20             {
21                 time: new Date()
22             }
23         );
24     }
25
26     render() {
27         return (
28             <div className="person" >
29                 <h1>Full Name: {this.props.fullname}</h1>
30                 <p>Age: {this.props.age}</p>
31                 <p>Year of Birth: {2020 - this.props.age}</p>
32                 <p>Class: {this.props.class}</p>
33                 <p>Slogan: {this.props.children}</p>
34                 <Clock time={this.state.time} />
35                 <button onClick={this.updateTime}>
36                     Update Time
37                 </button>
38             </div>
39         )
40     };
41 }
42
43 export default Person;
```

set props.time = state.time

src > JS Clock.js > default

```
1  import React from 'react';
2
3  class Clock extends React.Component {
4      render() {
5          return (
6              <div>
7                  <h2>Time: {this.props.time.toLocaleTimeString()}.</h2>
8              </div>
9          );
10     }
11 }
12
13 export default Clock;
```

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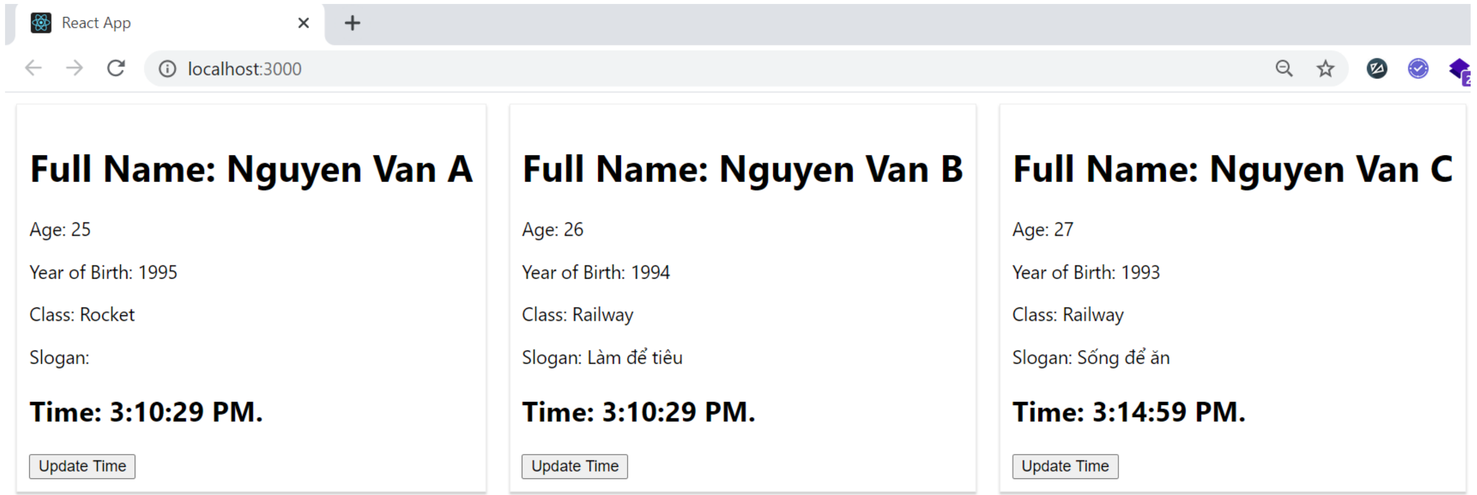
State & Props



➔ *To handle state we should use redux*

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