

# React

# What is React?

React is a declarative, efficient, and flexible **JavaScript** library for building user interfaces. It lets you compose complex UIs from small and isolated pieces of code called “components”.

<https://reactjs.org/>

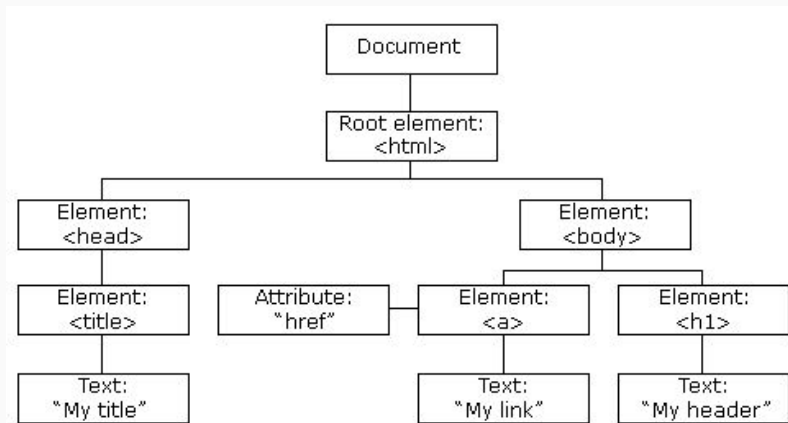
# Why ANOTHER library?

The University of Arkansas has been contacted by many companies asking about react coders. By demonstrating you understand the basics of react it will put you in line for new opportunities.

NEVER feel like you've learned enough libraries or code bases! Libraries come and go!

# Why React?

- React is made for pages with large amounts of data where individual items can change often.
- React uses a Virtual DOM - calculating and changing only what is necessary making it super efficient.



# React Terminology

**JSX** - Javascript XML. Allows you to create elements. (Similar to createElement)

**Render** - Allows you to put elements onto a page. (Similar to append)

**Component** - A function call but gets way more complicated.

**Props** - Allows you to call the properties of an element.

# React Terminology

```
function Welcome(props) {  
  return <h1>Hello, {props.name}</h1>;  
}
```

Component

Prop

```
const root = ReactDOM.createRoot(document.getElementById('root'));
```

```
const element = <Welcome name="Jordan" />;
```

JSX

```
root.render(element);
```

Render

# React Requirements

React must be installed on your environment to use it properly.

For today, we will use a work-around.

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

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

```
<script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>
```

# React Hello World

First React Program!

Create a Hello World page where the “Hello World” text is generated by React

**Hello World!**



# Lets try it

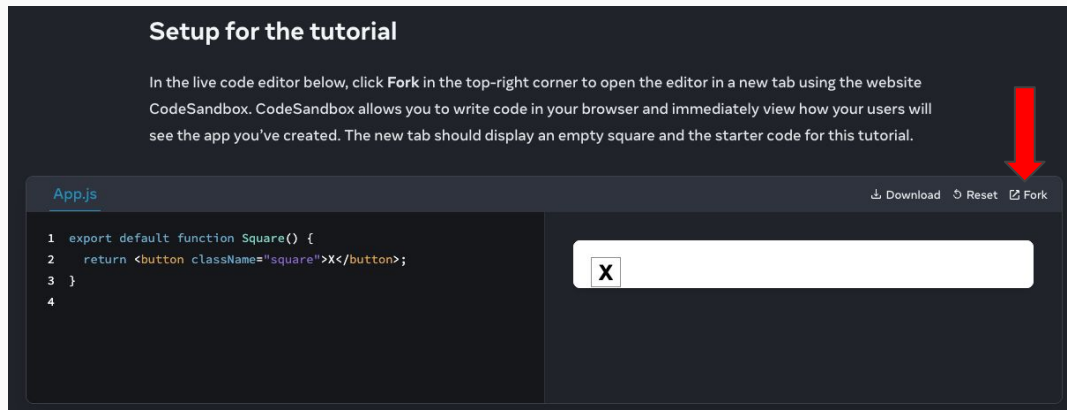
```
1  <!DOCTYPE html>
2  <html>
3
4  <head>
5  |   <title>React Hello World</title>
6  </head>
7
8  <body>
9  |   <div id="root">
10 |     </div>
11
12 |   <!-- React Code -->
13 |   <script src='https://unpkg.com/react/umd/react.development.js'></script>
14 |   <script src='https://unpkg.com/react-dom/umd/react-dom.development.js'></script>
15 |   <script>
16 |     |   const root = ReactDOM.createRoot(document.getElementById('root'));
17 |     |   const element = React.createElement("h1", null, "Hello World!");
18 |     |   root.render(element);
19 |   </script>
20 </body>
21 </html>
```

# React Tic Tac Toe

Now that we've knocked out the essential hello world let's dive in

<https://beta.reactjs.org/learn/tutorial-tic-tac-toe>

We will use the online code editor so we have the full react environment.



# Homework

Finish the hello world exercise and tic-tac-toe tutorial.