

## NPM USAGE

```
npm init # create a package.json
npm install package-name # install package
# & add --save to also add in package.json
npm install --save package-name
npm install # Install all req's in package.json
node file.js # Run a given file with node
```

## NODE TERMINOLOGY

**Node.js** Run-time spin-off from Chrome that allows us to use node on the “server side” (e.g. in the terminal)

**NPM** Node Package Manager - used for downloading JavaScript packages, and other JS-dev related tasks.

**dependencies** Packages that are required to be pre-installed for a given package to be able to run.

**node\_modules** Contains your downloaded dependencies.

**package.json** Contains meta-data, dependencies, and NPM configuration about a project.

## REACT TERMS

**JSX** JavaScript variant allowing HTML in JS

**Webpack** Tool that combines and processes JS, CSS and other static assets

**Babel** Tool that compiles or translates from one JS variant to another

**render** React renders templated HTML to the page.

**state** Keep the variables that change in state, and modify them with `setState` to rerender your page

## JSX EXAMPLES

```
// Single HTML element
const paragraph = (
  <p>Lorem ipsum</p>
);
```

```
// JSX Templating
const color = "green";
const pWithTemplating = (
  <p>Favorite color: {color}</p>
);
```

```
// Loops within JSX
const data = ["alice", "bob", "candice"];
const divOfParagraphs = (
  <div>
    {
      data.map(item => (
        <p>Name: {item} </p>
      ))
    }
  </div>
);
```

## FULL REACT EXAMPLE

```
import { useState, useEffect } from "react";

// CSS & images can be included "magically"
import "./App.css";
import sendIcon from "./images/envelope.png";

function App() {
  // Define starting state and corresponding set functions
  const [message, setMessage] = useState("");
  const [chatLog, setChatLog] = useState([]);

  // Define functions. Must have for forms.
  function onMessageChange(ev) {
    const value = ev.target.value;
    setMessage(value); // Modify state
  }

  // Special method called when page loads
  // useful for fetching initial data
  useEffect(() => {
    fetch("http://some.com/api/")
      .then(response => response.json())
      .then(data => {
        console.log("Data received:", data);
        setChatLog(data.messages);
      });
  }, []);

  // Temporary variables and debugging go here
  let messageCount = chatLog.length;
  console.log("render method", messageCount);

  // Return the JSX of what you want visible
  return (
    <div className="App">
      <h1>{messageCount} new messages</h1>
      {
        this.state.chatLog.map(text => (
          <p>Message: {text}</p>
        ))
      }
      <input onChange={this.onMessageChange}
        value={this.state.message} />
      <button onClick={() => alert("Hi")}>
        <img src={sendIcon} />
        Send message
      </button>
    </div>
  );
}
```