What is React.js?

React.js, commonly known as React, is an open-source JavaScript library for building user interfaces. Developed and maintained by Facebook, React has gained immense popularity in the web development community. It's often used to create dynamic and interactive web applications.

What You Need:

Before getting started with React, you'll need a few tools:

1. Node.js: React relies on Node.js for development and package management. You can download it from the official website and install it on your computer.

2. Code Editor: Choose a code editor of your preference, such as Visual Studio Code, Sublime Text, or Atom, for writing React code.

How to Install React:

To create React applications, you'll need to use the Node Package Manager (npm) or Yarn. Here's how to set up a basic React app:

1. Open your terminal.

2. Create a new React app using `npx`

npx create-react-app my-react-app

3. Navigate to your app's directory:

cd my-react-app

4. Start the development server:

npm start

File Structure:

A typical React app created using `create-react-app` will have the following file structure:

- `public/`: Contains the HTML file and other static assets.

- `src/`: Contains your React components and JavaScript files.

- `index.js`: Entry point for your React app.

- `App.js`: The main component where you can start building your app.

Components (Class & Function):

In React, everything is a component. Components are reusable pieces of UI that can be composed to create complex user interfaces.

- \*\*Class Components:\*\* Class components are ES6 classes that extend the `React.Component` class. They have a `render` method that returns JSX.

import React, { Component } from 'react';

class MyComponent extends Component {

render() {

return <div>Hello, I am a class component.</div>;

}

}

export default MyComponent;

- Function Components: Function components are simpler and more lightweight than class components. They are just JavaScript functions that return JSX.

import React from 'react';

function MyComponent() {

return <div>Hello, I am a function component.</div>;

}

export default MyComponent;

How to Run:

After creating your React app and starting the development server with `npm start`, your app will run locally at `http://localhost:3000` by default. You can access and interact with your app through your web browser.

State and Props:

- State: State in React allows you to store and manage data that can change over time. It's often used to keep track of the dynamic parts of your application.

- Props (Properties): Props are inputs to React components. They are used to pass data from parent to child components. Props are read-only and help make your components reusable.