

What is React?

React is a **JavaScript library** created by **Facebook (Meta)** for building **user interfaces** — especially **single-page applications (SPAs)**.

It helps you build reusable **UI components** and update your web pages efficiently when data changes.

1. Prerequisites

Before starting React, make sure you know:

- Basic **HTML** and **CSS**
 - Basic **JavaScript** (variables, functions, ES6, etc.)
 - Basic **DOM** concepts
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2. Setting Up React

There are **two common ways** to start a React project:

Option 1: Using Vite (Recommended – Fast & Modern)

Vite is much faster than older tools like Create React App.

Step 1: Install Node.js

Download and install Node.js (includes npm):

<https://nodejs.org>

Then check versions in terminal:

```
node -v
```

```
npm -v
```

Step 2: Create React App using Vite

Run these commands:

```
npm create vite@latest my-react-app
```

When it asks:

- Select **React**
- Select **JavaScript**

Then:

```
cd my-react-app
```

```
npm install
```

```
npm run dev
```

You'll see something like:

Local: <http://localhost:5173/>

Open this link in your browser — your React app is running!

Option 2: Using Create React App (Older but still works)

```
npx create-react-app my-react-app
```

```
cd my-react-app
```

```
npm start
```

This also opens your app in the browser.

3. Project Structure Overview

Example structure:

my-react-app/

├ src/

| └ App.jsx

| └ index.jsx

| └ components/

| └ Header.jsx

└ public/

└ package.json

- **App.jsx** → Main React component
 - **index.jsx** → Entry point (renders your app)
 - **components/** → Folder for reusable components
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4. Simple Example

Let's make a simple app that displays a welcome message


App.jsx

```
function App() {  
  return (  
    <div>  
      <h1>Welcome to React </h1>  
    </div>  
  )  
}
```

```
<p>This is your first React app!</p>
</div>

);
}
```

```
export default App;
```

 **main.jsx (or index.jsx)**

```
import React from "react";
import ReactDOM from "react-dom/client";
import App from "./App";
```

```
ReactDOM.createRoot(document.getElementById("root")).render(<App />);
```

5. How React Works

- React builds **components** (like Header, Footer, Button).
 - Each component is a **function** that returns JSX (HTML + JS).
 - JSX gets converted into **JavaScript** and rendered to the DOM efficiently.
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6. Next Steps to Learn

Once you set up your first React app:

1. Learn **JSX syntax**
2. Learn **props** (passing data between components)
3. Learn **state** (useState hook)
4. Learn **events** (like onClick)
5. Learn **useEffect** for side effects
6. Learn **routing** using react-router-dom