

Creating a React Application

Node.js and npm, creating a new project with Vite, project structure, package.json, npm run dev, and the difference between development and production.

Beginner 10 min

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Read online: <https://www.learnforgex.com/en/topics/creating-a-react-application>

Creating a React Application

In "What Is React?" we saw what React actually is. In this lesson, we'll look at how to create a real React project on your computer. We still won't write any React code -- we're just learning how to set up and run a project. We'll start writing code in the "JSX" lesson.

What Are Node.js and npm?

React projects run on your computer first (during development), not just in the browser. For that you need **Node.js** -- a program that lets you run JavaScript outside the browser.

Node.js comes bundled with **npm** (Node Package Manager). npm lets you add ready-made code packages ("libraries") written by other people to your project -- React itself is one such package.

```
node --version
npm --version
```

These two commands show whether Node.js and npm are installed on your computer, and which version.

Creating a New Project with Vite

The easiest way to start a new React project is with **Vite**. Vite sets up the project for you and runs fast during development.

```
npm create vite@latest my-first-app -- --template react
cd my-first-app
npm install
```

- The first line creates a new React project named `my-first-app`.
- The second line moves into that folder.
- The third line downloads all the packages the project needs.

An older tool called "Create React App" (CRA) used to be the standard way to do this. CRA is no longer maintained -- Vite is the right choice for a new project today.

Project Structure

Once `npm create vite` finishes, you'll see a folder structure like this:

```
my-first-app/
├── node_modules/    (all downloaded packages live here -- you never touch this)
├── public/          (files copied as-is, e.g. a favicon)
├── src/
│   ├── App.jsx      (the app's main component)
│   └── main.jsx      (the file where the app starts)
├── index.html        (the single HTML file the browser opens)
└── package.json      (the project's name, dependencies, and commands)
```

You'll spend most of your time in the `src/` folder -- that's where you'll write your own components.

What Is `package.json`?

`package.json` is like a React project's "ID card." It lists the project's name, which packages it needs, and which commands it can run:

```
{
  "name": "my-first-app",
  "scripts": {
    "dev": "vite",
    "build": "vite build"
  },
  "dependencies": {
    "react": "^19.0.0",
    "react-dom": "^19.0.0"
  }
}
```

The `react` and `react-dom` entries under `dependencies` are the two core packages the project downloads to be able to use React. The `dev` and `build` entries under `scripts` are shortcuts for the commands we'll see below.

Running the App: npm run dev

Once the project is set up, start the development server with:

```
npm run dev
```

This prints an address in the terminal (usually `http://localhost:5173`). Open that address in your browser to see your React app. When you change something in `src/App.jsx`, the browser updates **automatically** -- you never need to refresh it by hand.

Development vs. Production

The version you run with `npm run dev` is the **development** version -- it includes features that make development easier, like instant reloads, but it isn't meant for real users (it's larger and slower).

When your app is ready for real users:

```
npm run build
```

This creates a `dist/` folder -- minified files, fast to load, ready for **production**. We'll return to "production" and "deployment" with a real example later in this course.

Summary and Glossary

Setting up a React project needs Node.js/npm; you create the project with Vite; `npm run dev` runs it during development; `npm run build` prepares it for production.

Glossary

Node.js — A program that lets you run JavaScript outside the browser.

npm (Node Package Manager) — A tool for adding ready-made code packages to your project.

Vite — A tool for creating a new React project and running it fast during development.

package.json — The file that lists a project's name, dependencies, and commands.

Development — The mode you use while writing code -- fast, but not optimized.

Production — The minified, optimized version served to real users.