Creating a basic project

In this lesson, we will create a new React and TypeScript project using the popular Create React App tool.

WE'LL COVER THE FOLLOWING

Technical requirements

We are going to use the following tools in this lesson:

- **Node.js** and **npm**. These can be installed from https://nodejs.org/en/download/. **npm** needs to be at least at version 5.2.
- A code editor such as **Visual Studio Code**. Visual Studio Code can be installed from https://code.visualstudio.com/

Introducing Create React App

Create React App (CRA) is a command-line tool built by the developers at Facebook to help us quickly build React applications. It sets up many useful dependencies for us and has the option to create a React project with TypeScript.

Installing and running Create React app

CRA is an npm package that can be installed and executed. We can do this in one go using the **npx** command.

In our code editor, in a folder where we want to create our project, let's run the following command in a Terminal:

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

The above command will create a project called *my-app*, but this can be changed to any name of our choice.

After a minute or so, the project will be created.

Understanding the project

Where do you think the root HTML file is located in the project?

Show Answer

Where exactly does the React app get injected into the root HTML file?

Show Answer

The React app is injected into `index.html` by the following line of code in `index.tsx`:

```
ReactDOM.render(<App />, document.getElementById('root'));
```

Do you notice any differences between `index.tsx` in this project and the corresponding file in a React project without TypeScript?

Show Answer

> TypeScript files that contain JSX must have a `.tsx` extension. TypeScript files that just contain code have a `.ts` extension.

Therefore, the root React component that gets rendered is a component called `App` which is defined in `App.tsx`.

Apart from the file extension, do you notice any differences between `App.tsx` in this project and the corresponding file in a React project without TypeScript?

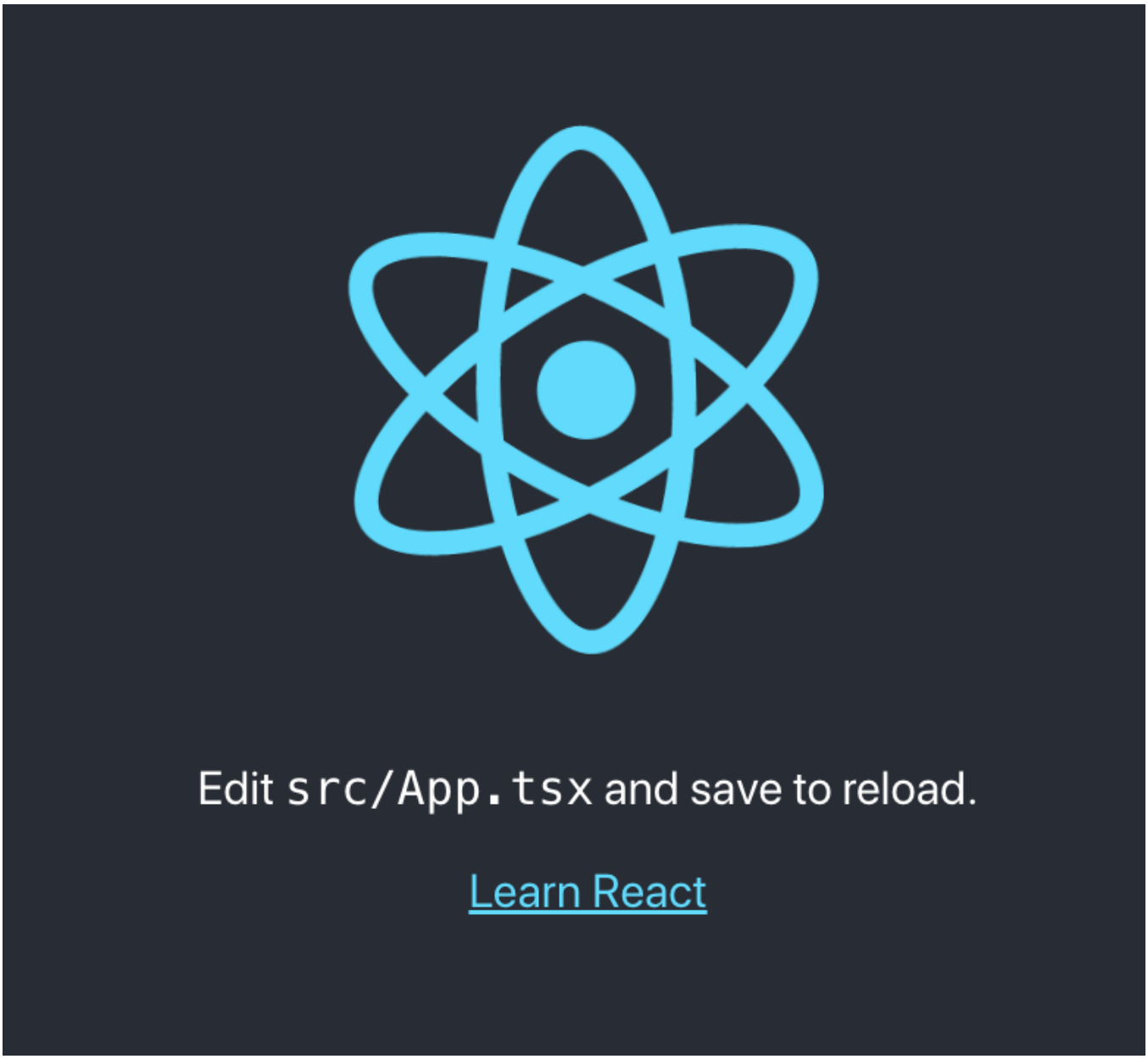
Show Answer

Running the app

The app can be run in development mode by first navigating to the root folder of the project and then running the `start` npm script in the Terminal:

```
cd my-app
npm start
```

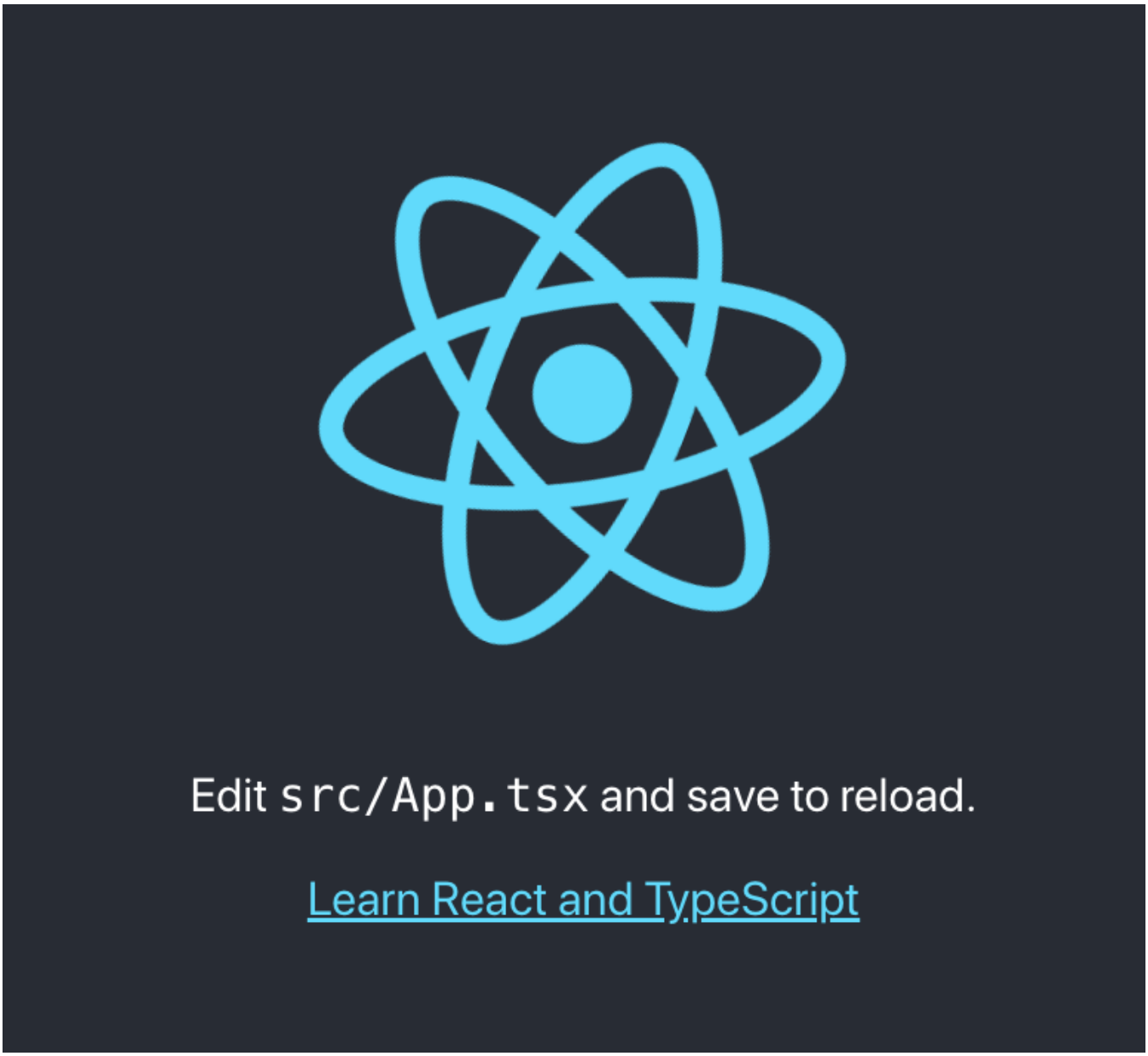
After a few seconds, the app will appear running in our default browser:



Let's change the text that is output from the `App` component while the app is still running. We'll change *Learn React* to *Learn React and TypeScript*

```
const App: React.FC = () => {
  return (
    <div ... >
      <header ... >
        ...
        <a ... >
          Learn React and TypeScript
        </a>
      </header>
    </div>
  );
}
```

After a second, the app will be refreshed in the browser to include our change:



That's neat!

That completes this lesson. In the next lesson, we will add a tool to autoformat the code in the project.

Wrap up

CRA can create a React project with TypeScript using the `--typescript` option. In React and TypeScript projects, files that contain JSX should have a `.tsx` file extension and files that just contain TypeScript should have a `.ts` file extension.

Keep this project safe because we will add linting and code formatting to it in the next lesson.