Understanding TypeScript

In this lesson, we learn what TypeScript is and start to understand the benefits it brings to a React app. We also learn how mature and popular TypeScript is.

WE'LL COVER THE FOLLOWING

What is TypeScript?

TypeScript is built and maintained by Microsoft. Microsoft's tagline for TypeScript is "*JavaScript that scales*," as it helps you write large JavaScript based programs.

TypeScript is a superset of JavaScript which means that any feature in JavaScript is available in TypeScript. TypeScript adds a powerful type system to the JavaScript we already know and love that enables code editors to provide code refactoring and navigation features along with type checking.

TypeScript doesn't directly execute in the browser. Like JSX, it needs to be converted to JavaScript first. TypeScript has a compiler that can do this after type checking the code. The Babel compiler can also convert TypeScript code to JavaScript as well.

TypeScript is not limited to browser-based apps; it can be used on the backend to write nodejs based apps.

Easier maintenance

Easier maintenance

When the codebase of a React app grows, it can become difficult to read and maintain. Often, we need to run and debug an app to understand what values a component's props have. Navigating the codebase is tricky and slow. Refactoring code can be time-consuming and risky. Very often, simple errors like incorrectly named properties escape our checks.

We will see how TypeScript helps navigate and refactor code in the next lesson, and throughout the course, we will see how TypeScript prevents typos. Ultimately, TypeScript makes our codebase easier to maintain.

Mature and still rapidly developing

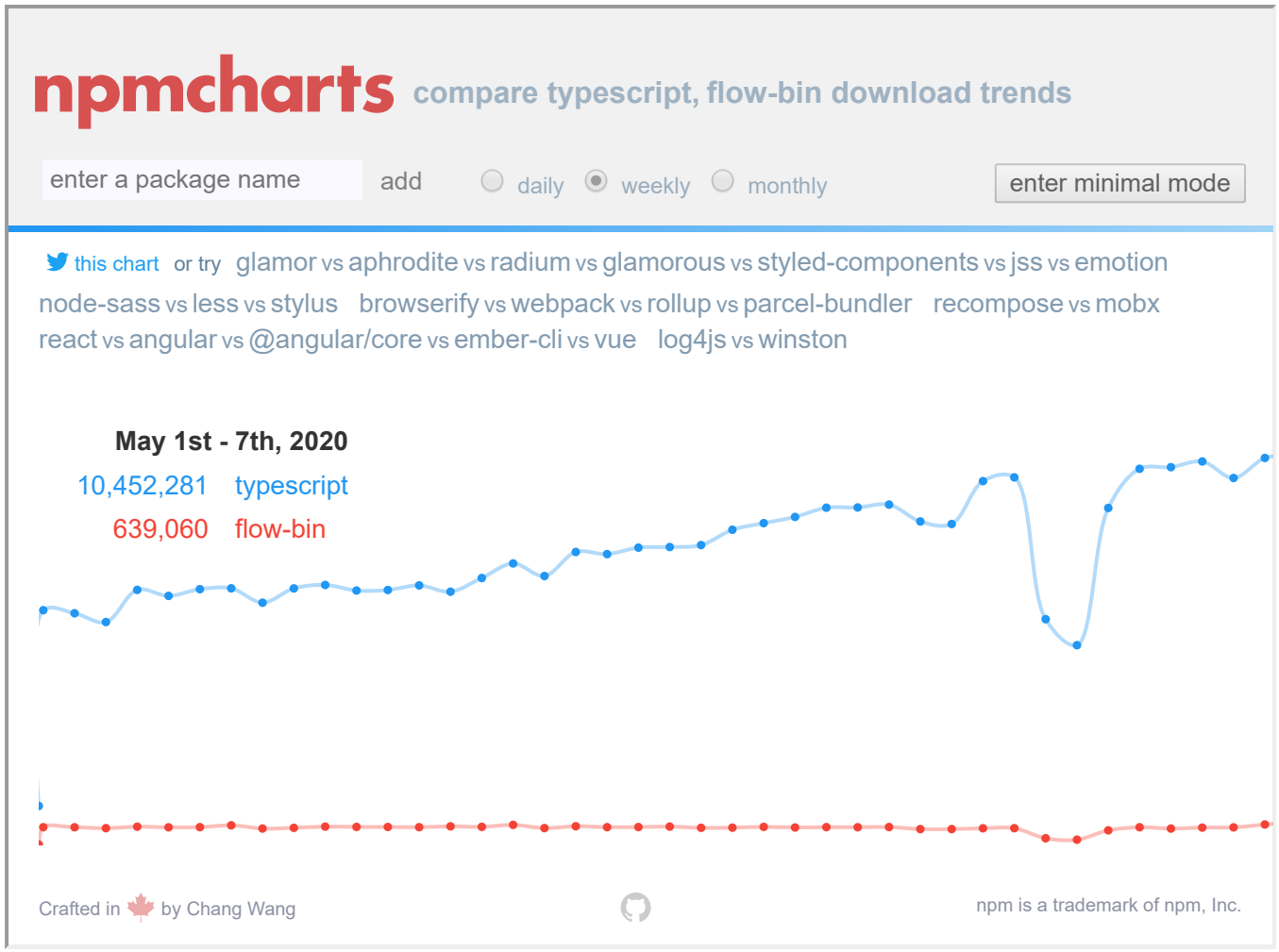
TypeScript is built and maintained by Microsoft. It was first released in 2012 and is still rapidly developing, with at least one release per month.

Powerful and flexible type system

The type system is incredibly flexible, which is essential for writing generic and reusable code. Both *Angular* and *Vue* are now using TypeScript to build their framework, which highlights just how flexible it is. It also works brilliantly with React!

Huge community

TypeScript has a big community that is still growing. Have a look at npm trends and compare the download rate with flow, which is another static type checking tool for React.



Wrap up

Congratulations - you completed the first lesson!

Now that we are starting to understand what TypeScript is, we will begin to understand the benefit it brings to React apps in the next lesson.