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**TypeScript vs. JavaScript: Which should you use?**

Plenty of coders, new and experienced, ask whether they should stick with JavaScript or migrate to TypeScript for their next project. If you're just getting started, you probably want to know where to focus your efforts. Below, we'll explore the differences between these two programming languages, along with their advantages and applications.

## **TypeScript vs. JavaScript: What's the difference?**

Before we get into their applications, let's briefly explore the differences between TypeScript and JavaScript. JavaScript is a popular, versatile programming language used for both front-end and back-end web development. It uses a document object model (DOM) and enables interactivity in web pages.

Because of its popularity, web browsers actually compete to process JavaScript the fastest. The other benefits to learning and coding with JavaScript include:

* Standardization, meaning you can use it for many different types of projects
* Many libraries and frameworks that make it easier to build complex programs
* Versatility across browsers and in back-end engineering

TypeScript is an open-source language and a superset of JavaScript — meaning that its code compiles into JavaScript. TypeScript was created after developers sought a better way to find errors in JavaScript constructs, as the language lacked type checking.

## **What applications use TypeScript?**

JavaScript's versatility enables a wide range of applications. Front-end developers use it (along with HTML and CSS) to design websites' visual elements and user interfaces. Back-end developers use JavaScript to manage the many background processes and servers that keep applications running. In another post, we take a closer look at what JavaScript is used for.

Because TypeScript is a superset of JavaScript, it can be used for many of the same purposes. But, additional features like its type annotation and type system make it quicker and easier to build more complex, larger-scale projects.

## **Why should you learn TypeScript?**

Imagine spending hours writing JavaScript code just to be faced with errors after you try to run the program. Then, you'd have to spend even more time going through your code line by line to find the problem. This was the reality for many JavaScript developers before TypeScript came along.

As we explain in our introduction to TypeScript course, the language's type system allows us to "spot potential bugs in, clarify the structure of, and help refactor our code." This is extremely helpful when your program contains thousands of lines of code, so if you're planning to undertake large projects, TypeScript might be right for you. As Josh G., one of our staff engineers, explains:

"If you're just getting started with JavaScript, or your project isn't bigger than a few files, TypeScript might not be a great match for you. It's got a bit of a learning curve, so jumping into it before you're ready can be painful — and any tech can be hard to learn even when you are ready. But if you're working on bigger stuff or just want to level up, I'd definitely recommend learning it." — Josh G., Codecademy staff engineer

You should also consider learning TypeScript if you're looking for skills that'll help you stand out in the job market. There's a growing demand for TypeScript developers, as illustrated by RedMonk's list of the most popular programming languages in which TypeScript earned 12th place — 5 ranks higher than the year before.

## **What companies use TypeScript?**

TypeScript is used by many companies, large and small. Asana, Lyft, Slack, Airbnb, and even Microsoft use TypeScript to develop their front-end applications. Other companies use Vue.js or Angular, which also support TypeScript. Take a look through the job postings from some companies you'd want to work for. If they use TypeScript, you'll want to add it to your tech stack.

## **TypeScript vs. JavaScript: Where to start?**

If you're entirely new to programming, you'll probably want to learn JavaScript first. Remember, TypeScript adds features to JavaScript, so start small and work your way up. Once you've got a handle on JavaScript, you're ready to tackle TypeScript.

If you're looking to make yourself more competitive as a web developer, TypeScript is a must — especially if you're interested in large, complex projects. It'll help you detect errors before runtime and build applications faster than you would with JavaScript alone.