Typescript Vs Javascript

**What is JavaScript?**

JavaScript is a scripting language which helps you create interactive web pages. It followed rules of client-side programming, so it runs in the user's web browser without the need of any resources forms the web server. You can also use Javascript with other technologies like REST APIs, XML, and more.

The idea behind developing this script is to make it a complementary scripting language like Visual Basic was to C++ in Microsoft's language families. However, JavaScript is not designed for large complex applications. It was developed for applications with a few hundred lines of code!

## What is Typescript?

Typescript is a modern age Javascript development language. It is a statically compiled language to write clear and simple Javascript code. It can be run on Node js or any browser which supports ECMAScript 3 or newer versions.

Typescript provides optional static typing, classes, and interface. For a large JavaScript project adopting Typescript can bring you more robust software and easily deployable with a regular JavaScript application.

[TypeScript](https://www.typescriptlang.org/) is an [open source](https://github.com/Microsoft/TypeScript) syntactic superset of JavaScript that [compiles](https://www.npmjs.com/package/typescript-compiler) to JavaScript (EcmaScript 3+). TypeScript offers type annotations which provide optional, static type checking at compile time. Since it is a superset of JavaScript, all JavaScript is syntactically valid TypeScript.

## KEY DIFFERENCE

* JavaScript is a scripting language which helps you create interactive web pages whereas Typescript is a superset of JavaScript.
* Typescript code needs to be compiled while JavaScript code doesn’t need to compile.
* Typescript supports a feature of prototyping while JavaScript doesn't support this feature.
* Typescript uses concepts like types and interfaces to describe data being used whereas JavaScript has no such concept.
* Typescript is a powerful type system, including generics & JS features for large size project whereas JavaScript is an ideal option for small size project.

### **Benefits of TypeScript**

#### **Type Annotations**

TypeScript [was created to](https://github.com/Microsoft/TypeScript/wiki/TypeScript-Design-Goals) “statically identify constructs that are likely to be errors”. This allows us to make safe assumptions about state during execution.

#### **Language Features**

In addition to static type analysis, TypeScript also adds the following features to JavaScript:

* [Interfaces](https://www.typescriptlang.org/docs/handbook/interfaces.html)
* [Generics](https://www.typescriptlang.org/docs/handbook/generics.html)
* [Namespaces](https://www.typescriptlang.org/docs/handbook/namespaces.html)
* [Null checking](https://www.typescriptlang.org/docs/handbook/release-notes/typescript-2-0.html)
* [Access Modifiers](https://www.typescriptlang.org/docs/handbook/classes.html)