Type Script

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Agenda

- Why Typescript
- Typescript modules

Why Typescript

- developers who are familiar with Object Oriented Programming (OOP) feeling very comfortable with TypeScript's classes and interfaces.

- There is a lot of value here in getting running quickly and feeling secure that you have written solid code.

Why Typescript

- *TypeScript* Has Great Tools
- The biggest selling point of TypeScript is tooling. It provides advanced autocompletion, navigation, and refactoring. Having such tools is almost a requirement for large projects.
- Without them the fear changing the code puts the code base in a semi-read-only state, and makes large-scale refactorings very risky and costly.

Why Typescript

- This is because building rich dev tools has to be an explicit goal from day one, which it has been for the TypeScript team.
- That is why they built language services that can be used by editors to provide type checking and autocompletion. (Not only compiler)
- why there are so many editors with great TypeScript supports? the answer is the language services.
- intellisense and basic refactorings (e.g., rename a symbol)

Why Typescript

- *TypeScript is a Superset of JavaScript*

Since TypeScript is a superset of JavaScript, you don’t need to go through a big rewrite to migrate to it. You can do it gradually, one module at a time.

TypeScript Intro

When Do I Need Classes?

Consider 3 main conditions where we consider a class, regardless of the language.

- Creating multiple new instances
- Using inheritance
- Singleton objects

Not necessary in Javascript but it's because they ***make it so much easier to do*** these things.

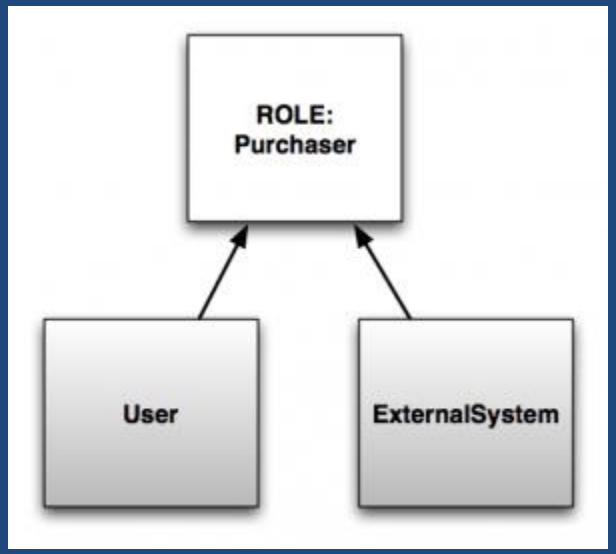
Interfaces

- TypeScript Makes Abstractions Explicit
- A good design is all about well-defined interfaces. And it is much easier to express the idea of an interface in a language that supports them.
- One of the coolest parts of TypeScript is how it allows you to define complex type definitions in the form of interfaces

Interfaces

- For instance, imagine a book-selling application where a purchase can be made by either a registered user through the UI or by an external system through some sort of an API.

Interfaces



As you can see, both classes play the role of a purchaser. Despite being extremely important for the application, the notion of a purchaser is not clearly expressed in the code. There is no file named purchaser.js. And as a result, it is possible for someone modifying the code to miss the fact that this role even exists.

Interfaces

- Defining an interface forces me to think about the API boundaries, helps me define the public interfaces of subsystems

Interfaces

TypeScript Makes Code Easier to Read and Understand

1. jQuery.ajax(url, settings)
2. ajax(url: string, settings?: JQueryAjaxSettings): JQueryXHR;

- The first argument of this function is a string.
- The settings argument is optional. We can see all the options that can be passed into the function, and not only their names, but also their types.
- The function returns a JQueryXHR object, and we can see its properties and functions.

Typescript modules

- Starting with the ECMAScript 2015, JavaScript has a concept of modules. TypeScript shares this concept.

- Modules are executed within their own scope, not in the global scope;
- this means that variables, functions, classes, etc. declared in a module are not visible outside the module unless they are explicitly exported using one of the export forms.
- Conversely, to consume a variable, function, class, interface, etc. exported from a different module, it has to be imported using one of the import forms.
- In TypeScript, just as in ECMAScript 2015, any file containing a top-level import or export is considered a module.