LUNCH & LEARN WORKSHOP
Get Started with TypeScript

Get Started with TypeScript

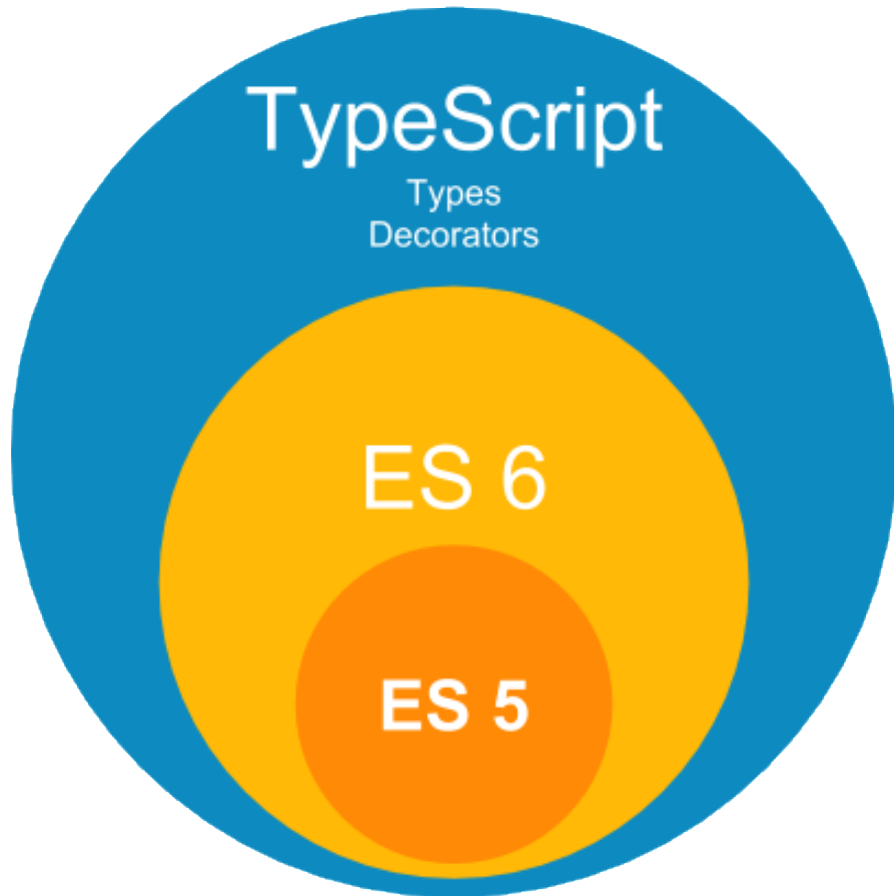Boda Zhao

Full-Stack Developer
IBM CIO – Leadership Insights
@boda.zhao

Get Started with TypeScript
Definition

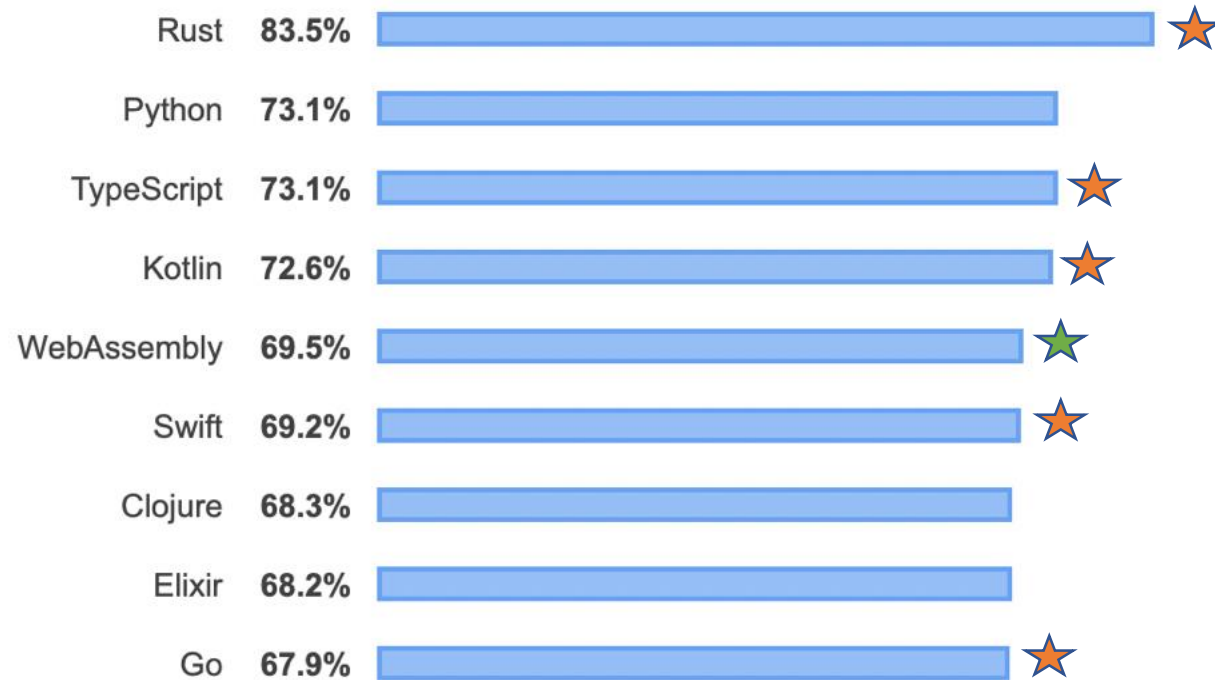

TypeScript is a javascript superset

TypeScript: JavaScript that scales

- Superset of JavaScript (all JavaScript programs are valid TypeScript), and adds optional static typing to the language.

- Designed for large applications and transcompiles (like Babel) to JavaScript.

- Like JavaScript, it works with both client-side and serve-side executions.

Get Started with TypeScript

Developers love typed languages

Rust	**83.5%**	⭐
Python	**73.1%**	
TypeScript	**73.1%**	⭐
Kotlin	**72.6%**	⭐
WebAssembly	**69.5%**	⭐
Swift	**69.2%**	⭐
Clojure	**68.3%**	
Elixir	**68.2%**	
Go	**67.9%**	⭐

*Developer's most loved languages - StackOverflow 2019*

⭐ *Statically typed languages*

⭐ *Can be compiled from TypeScript through AssemblyScript*

Get Started with TypeScript
Community

- Developer's 3rd most loved language at StackOverflow 2019 survey (JS at 11th)

- VSCode, number one most contributed Github repo, 90%+ TypeScript coverage

- PayPal - every new web project has to use TypeScript (source Kent C. Dodds)

- Node.js creator Ryan Dahl announced Deno (successor to Node) to use TypeScript

- Used by big projects in Microsoft/Google/Netflix/Slack/Uber…

- DefinitelyTyped – 10th most contributed Github community driven repo in 2019
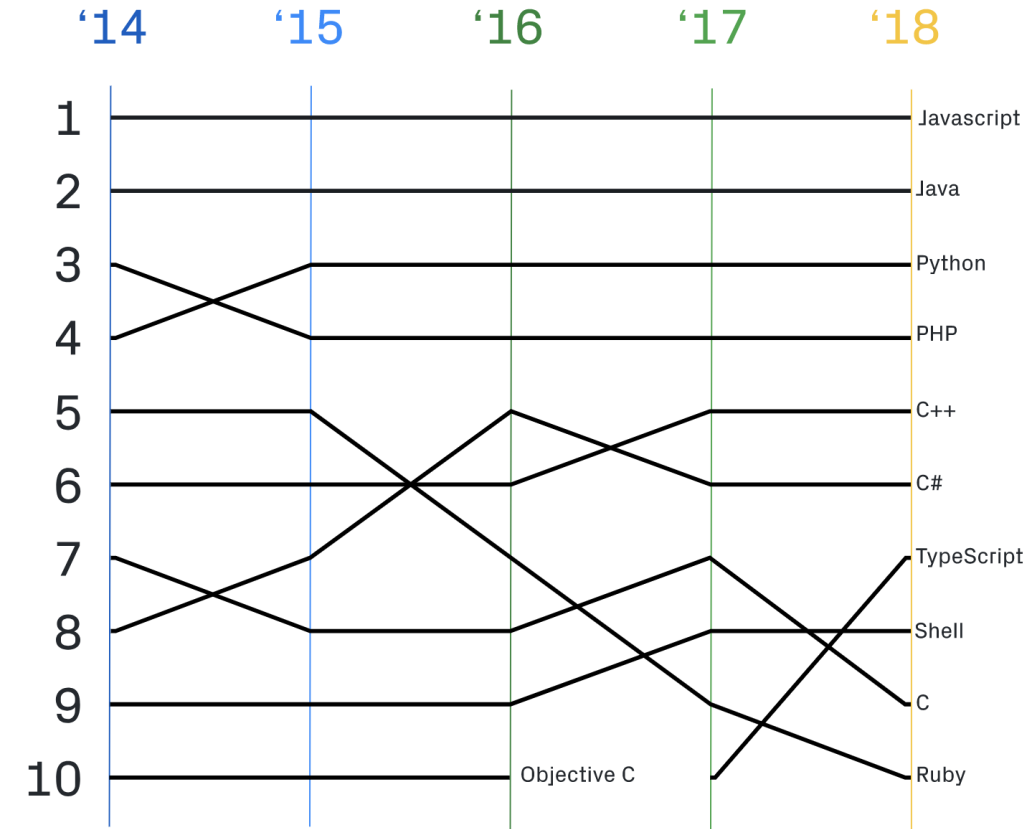
GitHub's top languages over time

LUNCH & LEARN WORKSHOP
Get Started with TypeScript
TypeScript: hello world example

Get Started with TypeScript

Advantages of TypeScript

- Types, interfaces, generics… (optional)

- Auto completion, linting errors

- Code as documentation (internal/external)

- Avoid common pitfalls (array method on string)

- Excellent editor and community support

- More consistent code between developers

- Lower barrier to entry

- Closely following the ECMAScript spec

- All JavaScript are valid TypeScript (low typing entry)

- Compile to different JavaScript (like Babel)

- Compiler will eliminate errors/bugs

- Promote best practices

- First class support in React/Angular/Vue…

- Clearer communication for teamwork

- Innovations in type system

- Reduce cognitive load

Get Started with TypeScript

DEMO TIME

Get Started with TypeScript

DEMO 1: Enjoy TypeScript without TypeScript today!

Step 1: Install TypeScript globally

npm i -g typescript

Step 2: Initalise `tsconfig.json`

tsc --init

Step 3: Add comment with JSDoc

// @ts-check

Done!

Get Started with TypeScript

DEMO 2: Enjoy IntelliSense and code completions!

Get Started with TypeScript

DEMO 3: Spot error quicker and reduce cognitive load

Get Started with TypeScript

DEMO 4: What data is being used from the backend APIs in my JavaScript application?

Get Started with TypeScript

Migration Strategy

1. Introduce minimal typing to the codebase

2. Add strong typing to specific area/files

3. Move onto the next area

4. Incrementally adding types as we go

Get Started with TypeScript

Why people are not using TypeScript?

It looks scary
Advanced use of TypeScript involves interfaces, type declarations and enums…
JavaScript developers never had to learn them, but they are nothing new for Java, C# developers

It takes time to switch to TypeScript
Migrate gradually (line by line, file by file…)

Still new and lacks of support in X area
Fast and regular development cycles, works with majority use-cases

Alternatives:
Flow – stricter module dependencies, no transcompilations, limited support from community

Get Started with TypeScript

Summary:

- Code suggestions

- Spot the error as soon as possible

- Self-documenting code

- TypeScript = JavaScript + missing stuff

- Great migrating experience

Get Started with TypeScript

TypeScript

JavaScript

Flow

Babel

ESlint

TDD

Documentation

…

Get Started with TypeScript

Resources to get started with TypeScript

TypeScript Handbook

TypeScript Playground

TypeScript Deep Dive

TypeScript React Cheat sheet

DefinitelyTyped (example https://github.com/DefinitelyTyped/DefinitelyTyped/blob/master/types/node/events.d.ts)

Awesome TypeScript

Get Started with TypeScript

QA