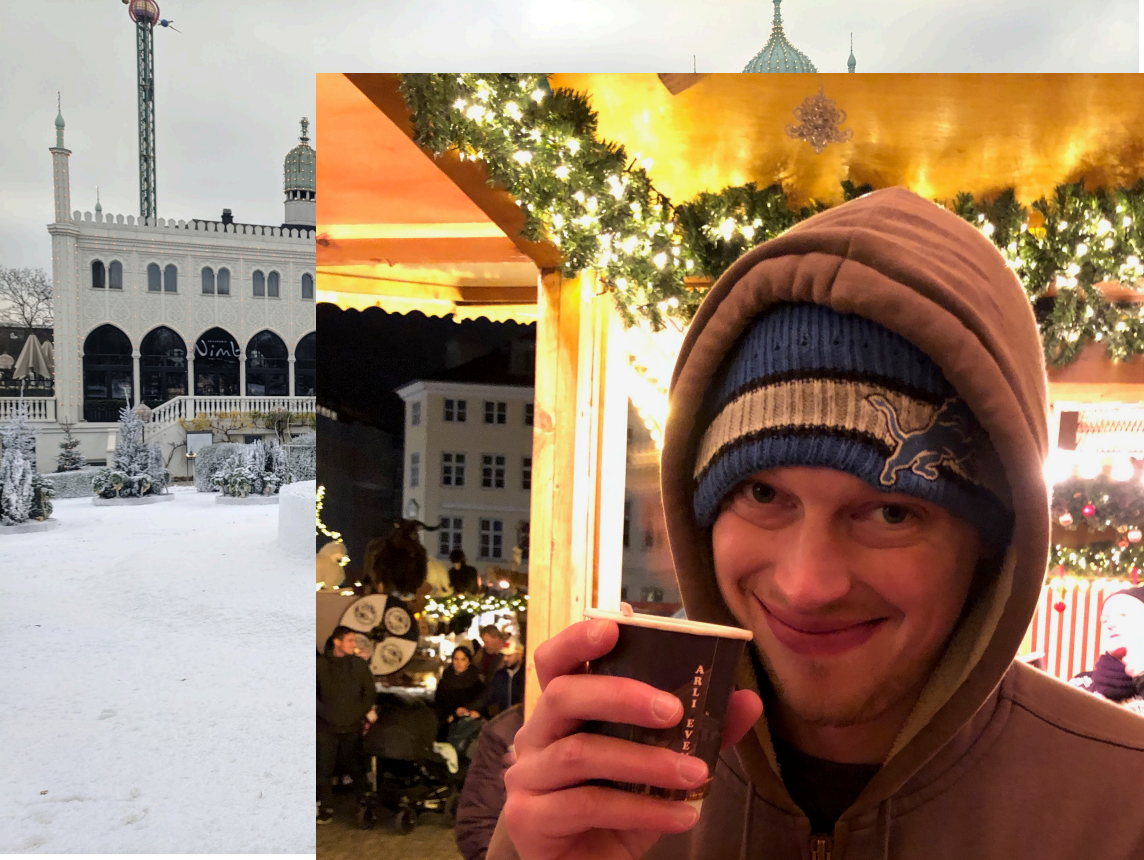
Why I Was Wrong About TypeScript

TJ VanToll

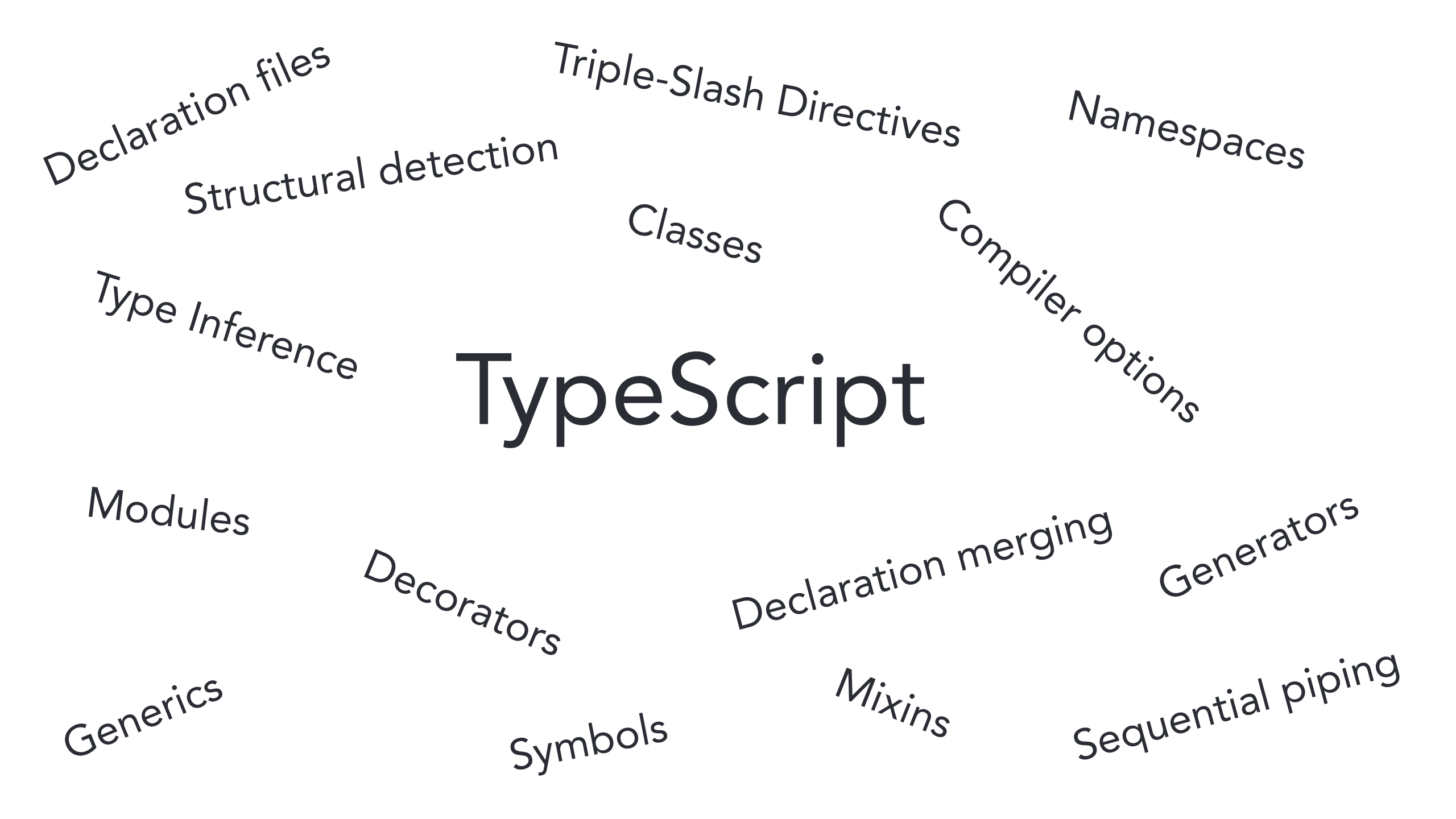


Hear
H. C. Andersen
Talk

About Me

- Developer Advocate at Progress
- I was on the jQuery team
- Level 40 Pokémon GO player
- Once ate a whole large pizza by myself

TypeScript


Declaration files
Triple-Slash Directives
Namespaces
Structural detection
Classes
Compiler options
Type Inference
TypeScript
Modules
Decorators
Declaration merging
Generators
Generics
Symbols
Mixins
Sequential piping

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Triple-Slash Directives

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Modules

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Generators

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Symbols

Mixins

Sequential piping

Why I Was Wrong About TypeScript

Whether TypeScript is a good fit for your next project

Why I Was Wrong About TypeScript

"A typed superset of JavaScript that compiles to plain JavaScript"

"A typed superset of JavaScript that **compiles to** plain **JavaScript**"

World Wide Web

Geo for Bootstrap, a Timeless

Not Secure | code.divshot.com/geo-bootstrap/

Geo Download GitHub Guestbook Tweet Free Static Web Hosting

Geo for Bootstrap

A theme for Twitter Bootstrap, from Divshot.

To get started, download the "bootstrap.css" or "bootstrap.min.css" file and include it in yc

Typography | Navbar | Buttons | Forms | Tables | Miscellaneous

Typography

h1. Heading 1
h2. Heading 2
h3. Heading 3
h4. Heading 4
h5. Heading 5
h6. Heading 6

Example body text

Nullam quis risus eget urna mollis ornare vel eu leo. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Nullam id dolor id nibh ultricies vehicula ut id elit.

Vivamus sagittis lacus vel augue laoreet rutrum faucibus dolor auctor. Duis mollis, est non commodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Donec sed odio dui.

Example addresses

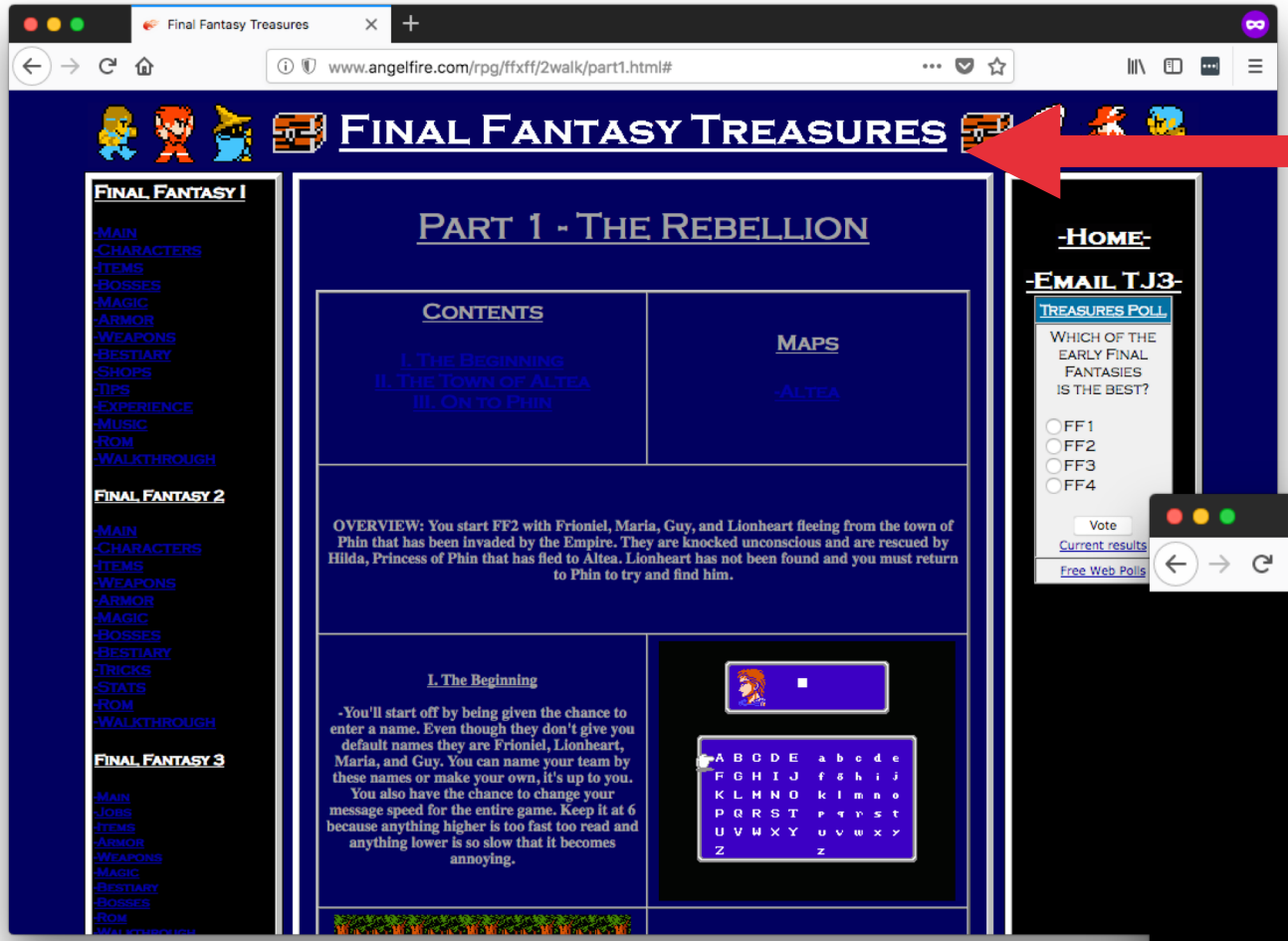
Twitter, Inc.
795 Folsom Ave, Suite 600
San Francisco, CA 94107
P: (123) 456-7890

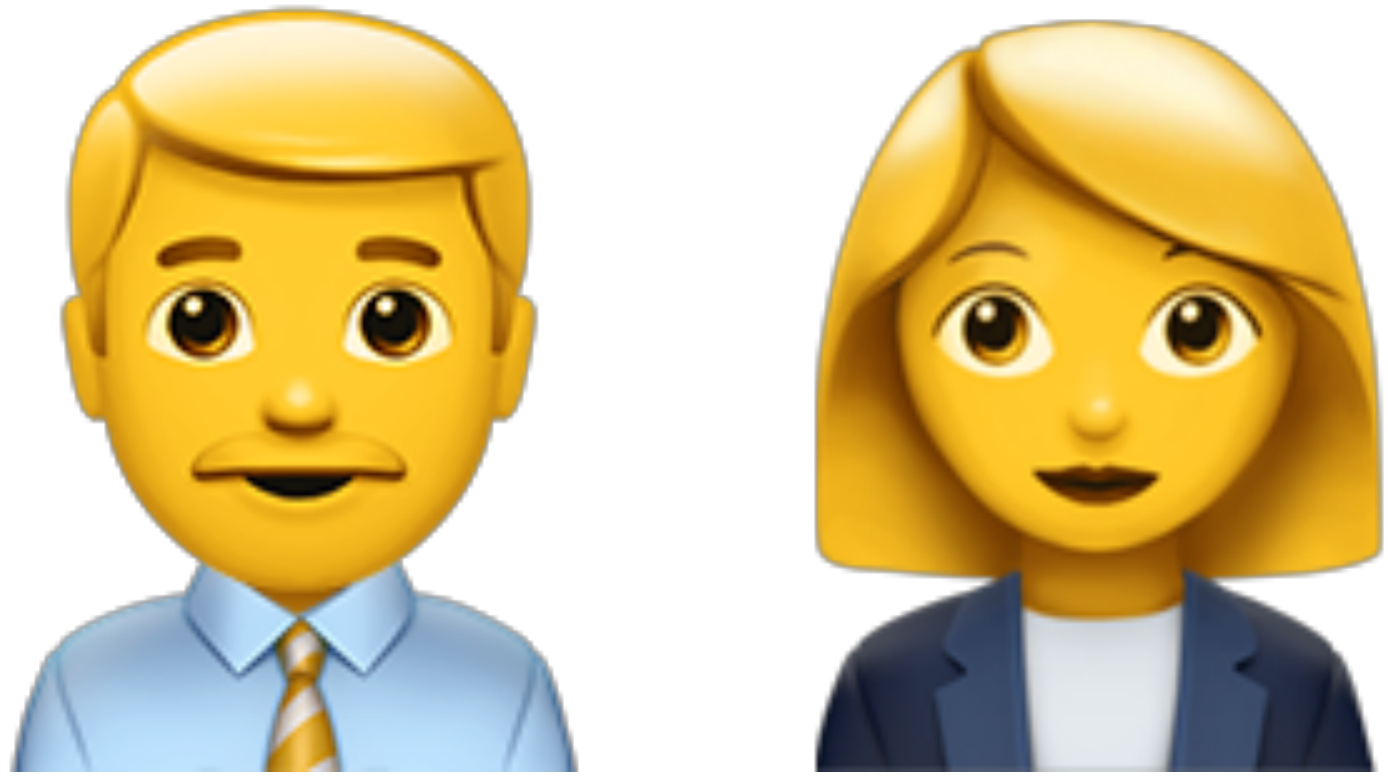
Full Name
first.last@gmail.com

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.

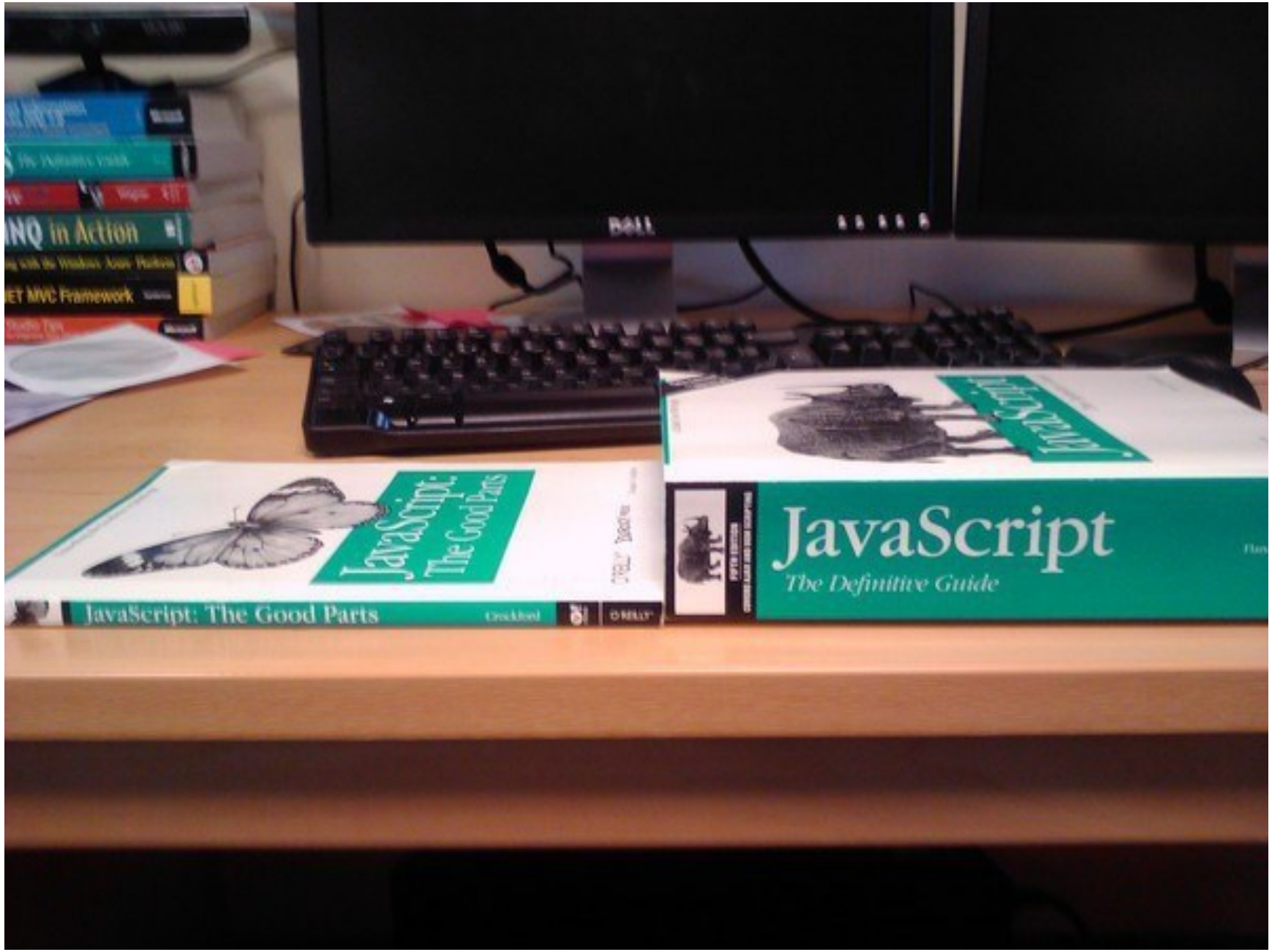
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer posuere erat a ante.

Actual web sites
I built.





```
1  true == 1                  → true
2  true == "1"                → true
3  false == 0                 → true
4  false == "0"               → true
5
6  false == undefined         → false
7  false == null              → false
8
9  null == undefined          → true
```


NQ in Action
ET MVC Framework
JavaScript: The Good Parts
JavaScript
The Definitive Guide

Compile to JavaScript tools

- There are a lot.
  - 345
  - Source: https://github.com/jashkenas/coffeescript/wiki/List-of-languages-that-compile-to-JS
- Ruby, Python, Erlang, Java, Scala, C#, F#, Lisp, Scheme, Haskell, Smalltalk, C, C++, Basic, Go, PHP, and way more.

Fun names of compile-to-JS tools

- treehugger
- jangaroo
- Waterbear

The
WATERBEAR
welcomes you!

Waterbear is a toolkit for making programming more accessible and fun. Having a visual language means you don't have to focus on learning a syntax to start programming.

Try it out

http://waterbearlang.com/

Compile to JavaScript tools

- There are a lot.
  - 345
  - Source: https://github.com/jashkenas/coffeescript/wiki/List-of-languages-that-compile-to-JS
- Ruby, Python, Erlang, Java, Scala, C#, F#, Lisp, Scheme, Haskell, Smalltalk, C, C++, Basic, Go, PHP, and way more.

CoffeeScript is a little language that compiles into JavaScript. Underneath that awkward Java-esque patina, JavaScript has always had a gorgeous heart. CoffeeScript is an attempt to expose the good parts of JavaScript in a simple way.

The golden rule of CoffeeScript is: *"It's just JavaScript"*. The code compiles one-to-one into the equivalent JS, and there is no interpretation at runtime. You can use any existing JavaScript library seamlessly from CoffeeScript (and vice-versa). The compiled output is readable, pretty-printed, and tends to run as fast or faster than the equivalent handwritten JavaScript.

The CoffeeScript compiler goes to great lengths to generate output JavaScript that runs in every JavaScript runtime, but there are exceptions. Use generator functions, `for…from`, or tagged template literals only if you know that your target runtimes can support them. If you use modules, you will need to use an additional tool to resolve them.

Latest Version: 1.12.5

```
npm install -g coffee-script
```

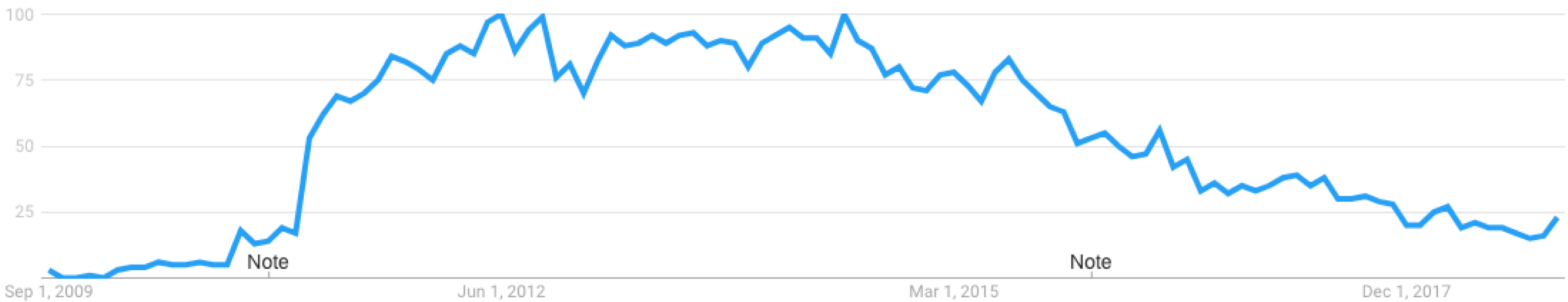
CoffeeScript 2 is coming! It adds support for ES2015 classes, `async/await`, and generates JavaScript using ES2015+ syntax. Learn more.

CoffeeScript
Programming language

+ Compare

United States | 9/1/09 - 11/8/18 | All categories | Web Search

Interest over time



Caffeinated Rhythms: Playing Drums With CoffeeScript

Ancillary Technologies Node.js, Continental 4

Giles Bowkett (at large)

Any developer working on OS X can write CoffeeScript
other platforms but won't be within the scope of this t
Find out how, with a simple overview of the ubiquitous
makes it easy. Read more.

A Sip of CoffeeScript

Pure Languages, Continental 2-3

Workshop **Please note:** to attend, your registration must include Workshops.

Carlos Souza (Code School), Gregg Pollack (Open SourceCraft)

Average rating: ★★★★☆ (4.36, 14 ratings)

If you enjoy writing JavaScript then you'll really enjoy CoffeeScript, a new language which transcompiles into JavaScript. Inspired by languages like Ruby, Python, and Haskell, it allows you to write less code to get more done. In this course students will learn the basics of CoffeeScript using the Code School in-browser challenge engine. Read more.

The Trello Stack

Share Your Stack (10 Minute Case Studies), Continental 2-3

Brett Kiefer (Fog Creek Software)

Average rating: ★★★★★ (4.57, 7 ratings)

Trello.com is a new organization tool built completely in CoffeeScript using Node.js, Backbone.js, and WebSockets. Learn how and why we built it as we did, hear our war stories, marvel at the folly. Read more.

SpineJS - Moving State to the Client

JavaScript in the Browser, Continental 4

Alex MacCaw (Twitter)

Average rating: ★★☆☆☆ (2.24, 21 ratings)

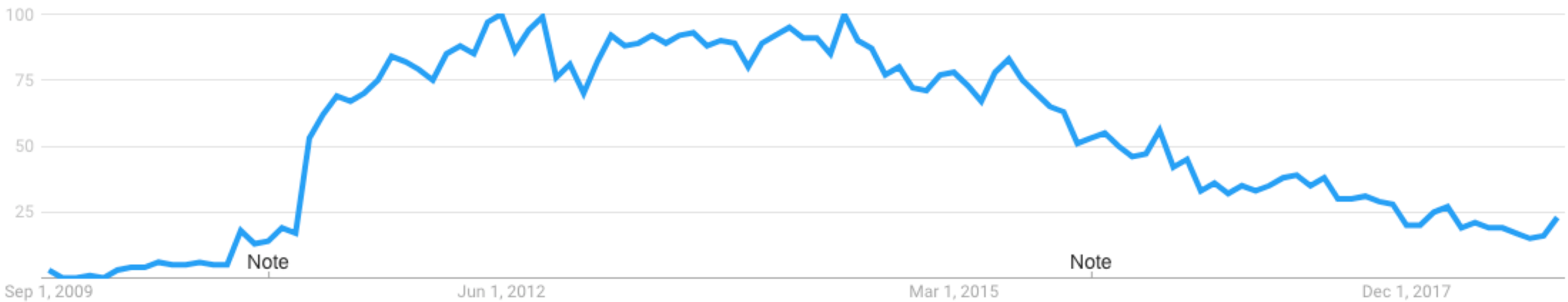
SpineJS is a client-side framework, written in CoffeeScript, developed to help you build awesome web applications. During this talk, Alex MacCaw, the author of SpineJS, will take you through some of the key concepts to Spine such as MVC, the main differentiating factors with other frameworks, and the future of client-side applications as a whole. Read more.

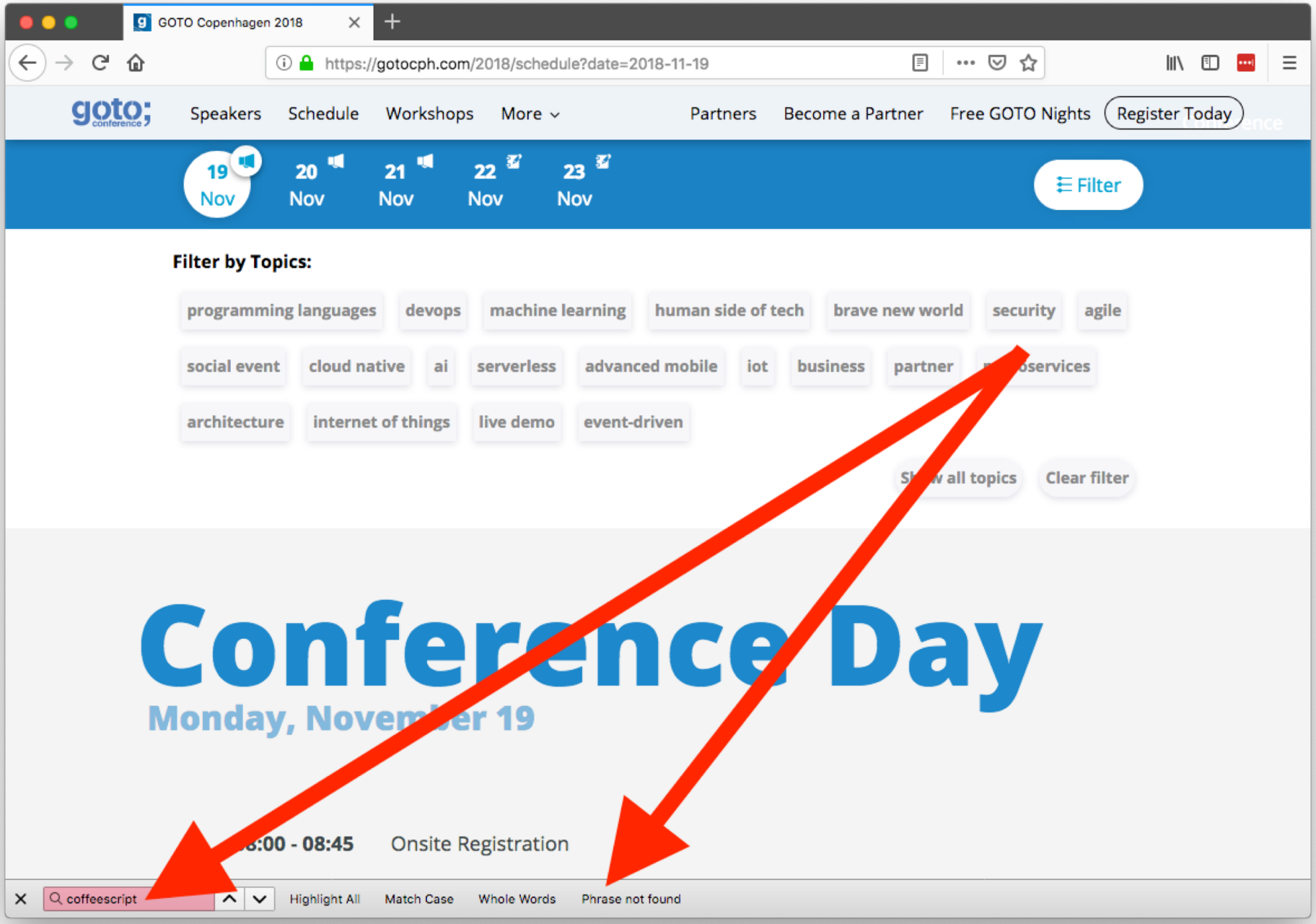
CoffeeScript
Programming language

+ Compare

United States | 9/1/09 - 11/8/18 | All categories | Web Search

Interest over time

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Speakers
Schedule
Workshops
More
Partners
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security
agile
social event
cloud native
ai
serverless
advanced mobile
iot
business
partner
architecture
internet of things
live demo
event-driven
Clear filter
Conference Day
Monday, November 19
Onsite Registration
coffeescript
Highlight All
Match Case
Whole Words
Phrase not found

```coffeescript
# Objects:
math =
  root:   Math.sqrt
  square: square
  cube:   (x) -> x * square x

# Splats:
race = (winner, runners...) ->
  print winner, runners

# Existence:
alert "I knew it!" if elvis?

# Array comprehensions:
cubes = (math.cube num for num in list)
```

Dart | Get Started | Language | Libraries | Tools | Community | Search

Watch the videos for Dart Developer Summit 2016.

Open in DartPad

```dart
import 'dart:async';
import 'dart:math' show Random;

main() async {
  print('Compute π using the Monte Carlo method.');
  await for (var estimate in computePi()) {
    print('π ≅ $estimate');
  }
}

/// Generates a stream of increasingly accurate estimates of π.
Stream<double> computePi({int batch: 1000000}) async* {
  var total = 0;
  var count = 0;
  while (true) {
    var points = generateRandom().take(batch);
    var inside = points.where((p) => p.isInsideUnitCircle);
    total += batch;
    count += inside.length;
    var ratio = count / total;
    // Area of a circle is A = π·r², therefore π = A/r².
    // So, when given random points with x ∈ <0,1>,
```

Dart is an application programming language that's easy to learn, easy to scale, and deployable everywhere.

Google depends on Dart to make very large apps.

Get Started Install Dart

[Click underlined text or code to learn more.]

News
Follow the latest.

API
Browse core libraries.

Pub
Find packages.

Dart webdev
Build browser apps.

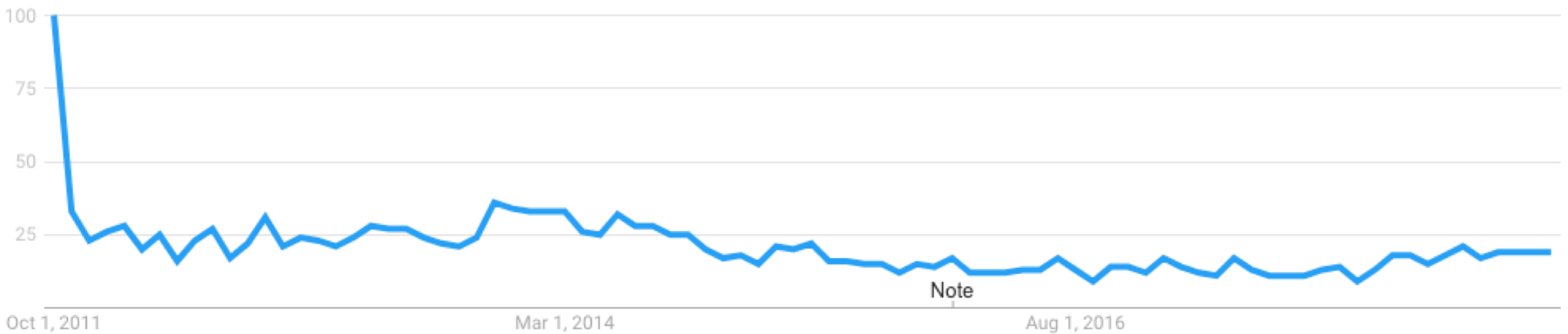
Flutter
Build mobile apps.

Dart
Programming language

+ Compare

United States | 10/1/11 - 11/8/18 | All categories | Web Search

Interest over time



Google launches Dart as a JavaScript killer

The new Dart programming language can be used for both small Web projects as well as large ones, company engineers said

By Joab Jackson
U.S. Correspondent, IDG News Service | OCT 10, 2011

Google has launched a preview version of a new Web programming language, called Dart, which the company's engineers hope will address some of the shortcomings of the widely used JavaScript language.

Google's goals for Dart are to create "a structured yet flexible language for Web programming," wrote Lars Bak, who is a software engineer for Google's Dart team, in a blog post officially announcing the language Monday.

[Also on InfoWorld: Google Dart aims to supplant 'fundamentally flawed' JavaScript. | Keep up with software development issues and trends with InfoWorld's Fatal Exception blog. | Master the latest in Java development with our JavaWorld Enterprise Java newsletter.]

[Also on InfoWorld: 6 best JavaScript IDEs and 10 best JavaScript editors. | Keep up with hot topics in programming with InfoWorld's App Dev Report

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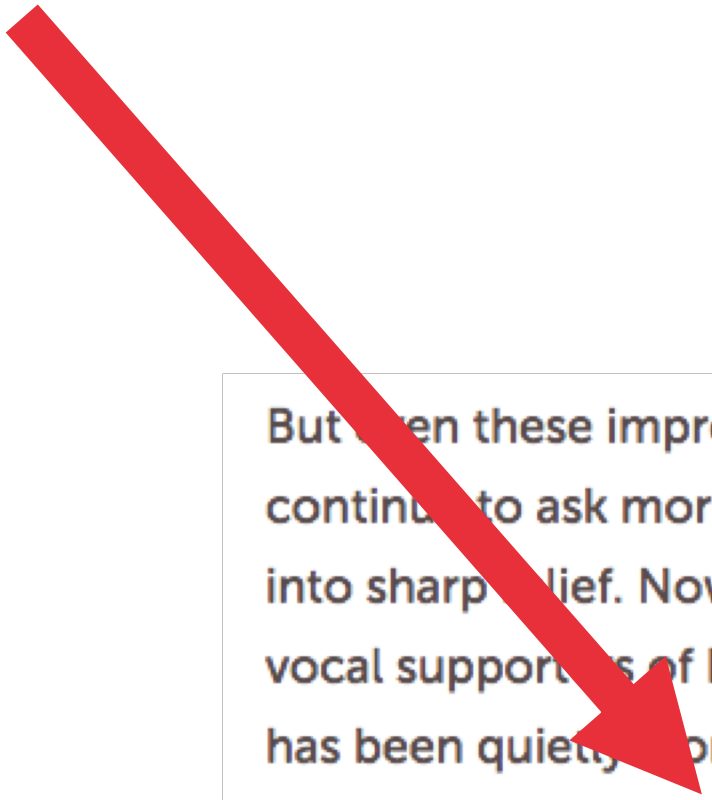
What's new in Google's Dart 2 language

9 cutting-edge programming languages worth learning now

The best Go language IDEs and editors

VIDEO
JavaScript creator Brendan Eich, on the genesis of the popular programming...



But even these improvements don't seem to be enough. As developers continue to ask more and more of JavaScript, its limitations are thrown into sharp relief. Now comes news that Google, long one of the most vocal supporters of browser-based applications over desktop software, has been quietly working on a new language called Dart, to be unveiled at the upcoming Goto Conference in Denmark, that's designed to overcome JavaScript's "fundamental flaws" by replacing it altogether.

AARHUS
INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE 2011
goto; conference
Conference: Oct 10-12 // Training: Oct 9, 13-14
www.gotocon.com

Presentation: "Opening Keynote: Dart, a new programming language for structured web programming" Tweet

Time: Monday 09:00 - 09:50 / Location: To be announced

Breaking news: Google to unveil World News at GOTO Aarhus. The whole world will be on alert when Google presents a new programming language "Dart" in the opening keynote speak on conference monday. Join us and GOTO Aarhus and get all the details.

Download slides

GILAD BRACHA, TWEET

SOFTWARE ENGINEER, GOOGLE INC.

Biography: Gilad Bracha

Gilad Bracha is the creator of the Newspeak programming language and a software engineer at Google. Previously, he was a VP at SAP Labs, a Distinguished Engineer at Cadence, and a Computational Theologist and Distinguished Engineer at Sun. He is co-author of the Java Language Specification, and a researcher in the area of object-oriented programming languages. Prior to joining Sun, he worked on Strongtalk, the Animorphic Smalltalk System. He received his B.Sc in Mathematics and Computer Science from Ben Gurion University in Israel and a Ph.D. in Computer Science from the University of Utah.

Twitter: @Gilad_Bracha

LARS BAK, TWEET

VETERAN OF HIGH PERFORMANCE OBJECT-ORIENTED VIRTUAL MACHINES, TECH LEAD

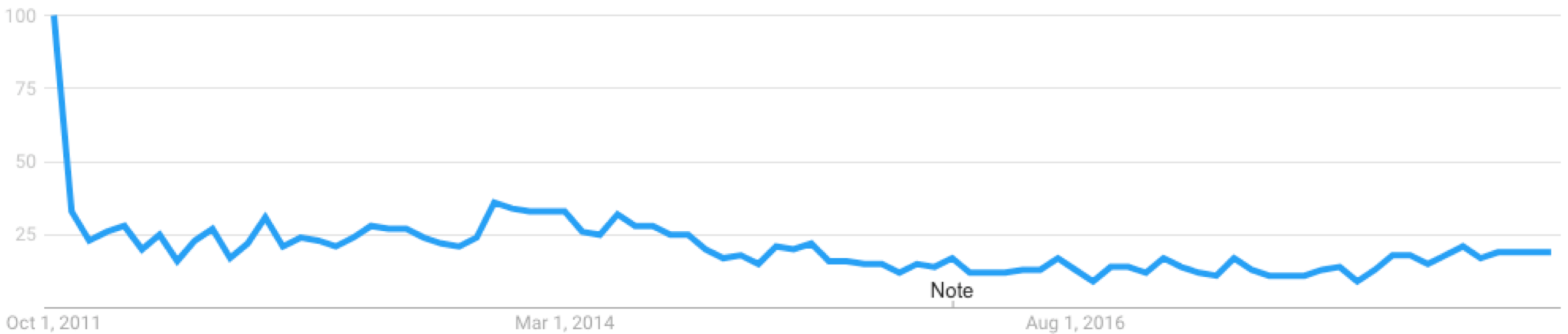
GOTO Newsletter

Dart
Programming language

+ Compare

United States | 10/1/11 - 11/8/18 | All categories | Web Search

Interest over time



```
// Copyright (c) 2011, the Dart project authors.  Please see the AUT
// for details. All rights reserved. Use of this source code is gove
// BSD-style license that can be found in the LICENSE file.
// Simple test program invoked with an option to eagerly
// compile all code that is loaded in the isolate.
// VMOptions=--compile_all

class HelloDartTest {
  static testMain() {
    print("Hello, Darter!");
  }
}


main() {
  HelloDartTest.testMain();
}
```

Compiles to 17259 lines of JavaScript code. Now, most of it is just the library core, but it shows what you have to do to bolt static typing on top of a prototype-based, dynamic, truly object-oriented language.

```
// Copyright (c) 2011, the Dart project authors.  Please see the AUT
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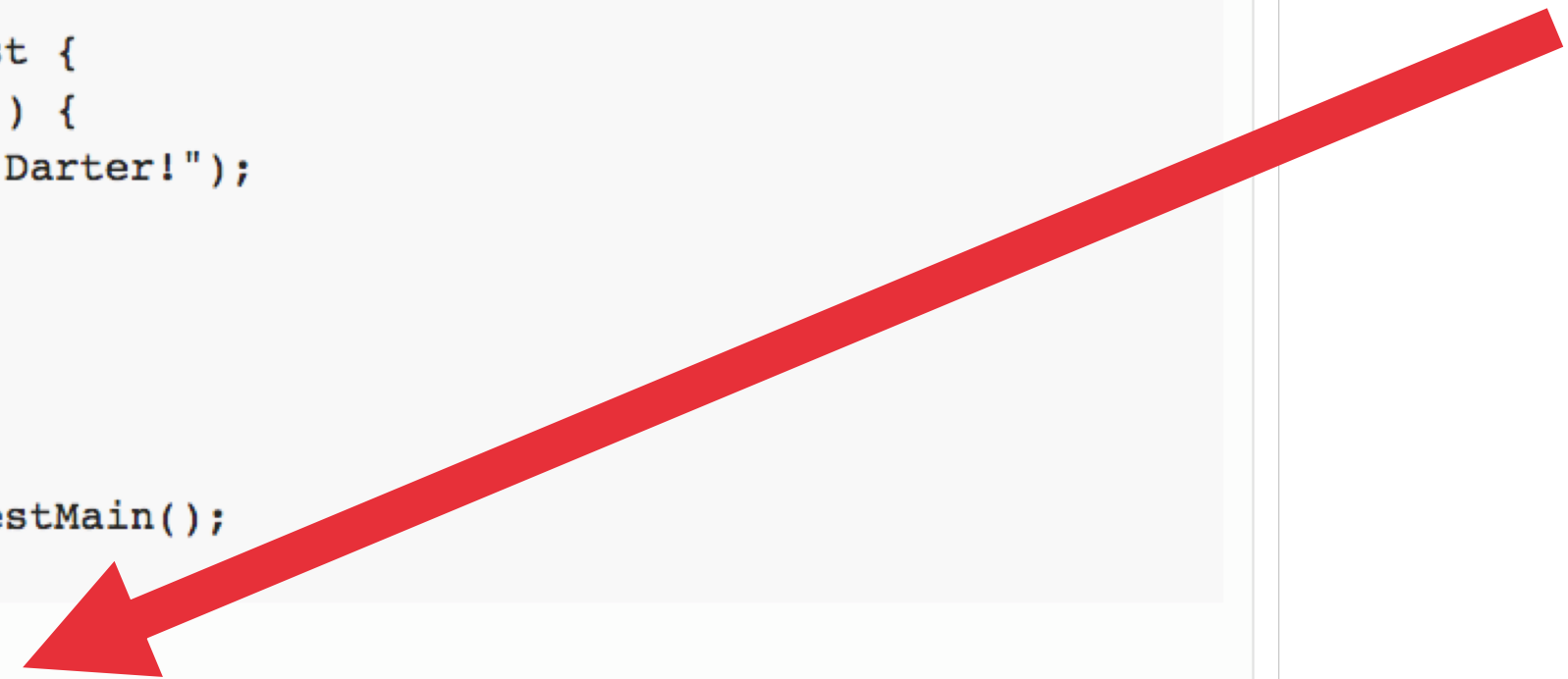

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Dart Conference

https://events.dartlang.org/2018/dartconf/

DartConf Los Angeles

Conference Speakers Program Venue Info WATCH TALKS

DartConf Los Angeles JAN 2018

Dart Conference

Including Flutter and AngularDart

January 23-24, 2018

Dart's mission is to make it possible to build next-generation user experiences — on the web, on iOS, on Android, everywhere. DartConf is the premier event that connects Flutter and AngularDart developers together, and to the Google engineers who work on these projects.

WATCH TALKS

Microsoft augments JavaScript for large-scale development

In an extension to JavaScript, Microsoft provides static typing, classes and modularization

By IDG News Service staff

IDG News Service | OCT 1, 2012

TypeScript

Programming Language

+ Compare

Worldwide | 10/1/12 - 12/31/14 | All categories | Web Search

Interest over time

Why I Was Wrong About TypeScript

Progress®

NativeScript / NativeScript

Watch 726 | Unstar 15,339 | Fork 1,144

Code | Issues 389 | Pull requests 16 | Wiki | Insights

NativeScript is an open source framework for building truly native mobile apps with JavaScript. Use web skills, like Angular and Vue.js, FlexBox and CSS, and get native UI and performance on iOS and Android. https://www.nativescript.org

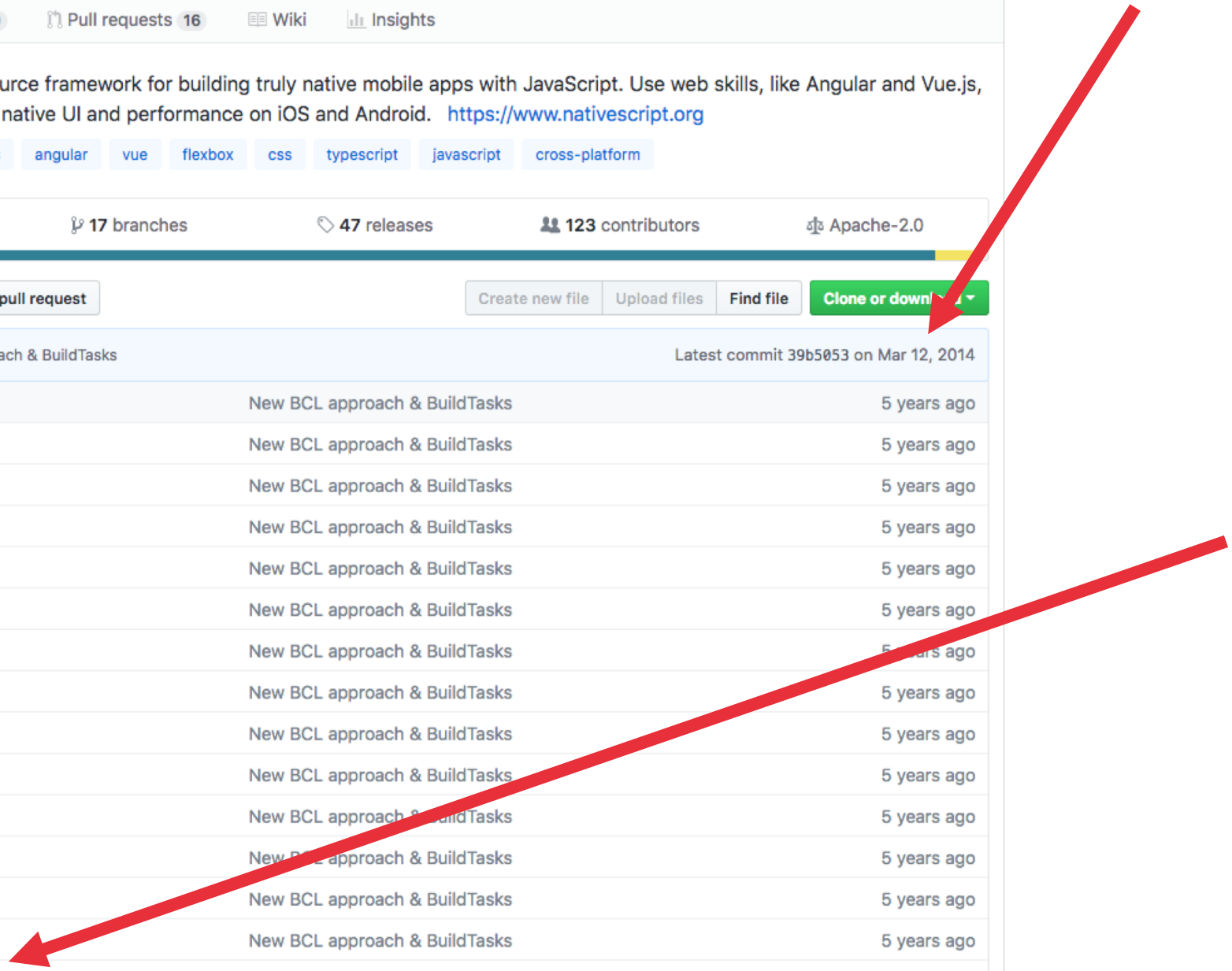
nativescript android ios angular vue flexbox css typescript javascript cross-platform

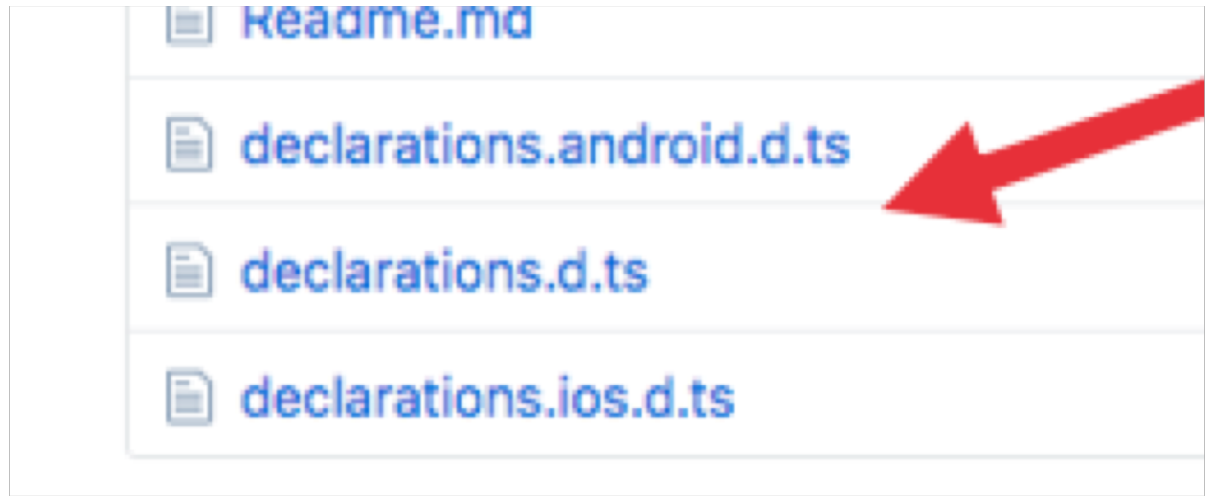
1 commit | 17 branches | 47 releases | 123 contributors | Apache-2.0

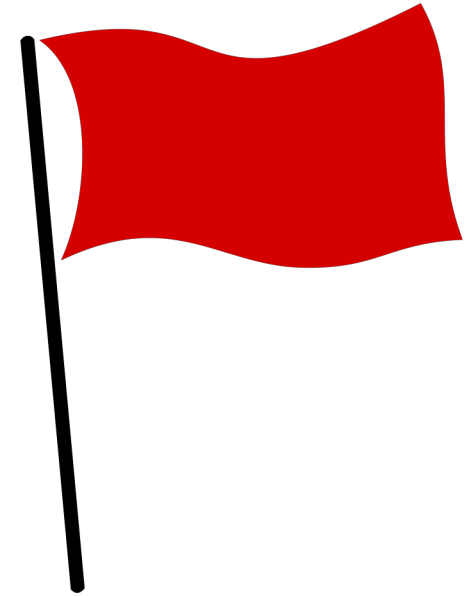
Tree: 39b505384a | New pull request | Create new file | Upload files | Find file | Clone or download

atanasovg New BCL approach & BuildTasks — Latest commit 39b5053 on Mar 12, 2014

Application	New BCL approach & BuildTasks	5 years ago
Camera	New BCL approach & BuildTasks	5 years ago
Database	New BCL approach & BuildTasks	5 years ago
FileSystem	New BCL approach & BuildTasks	5 years ago
Image	New BCL approach & BuildTasks	5 years ago
Location	New BCL approach & BuildTasks	5 years ago
UserPreferences	New BCL approach & BuildTasks	5 years ago
Utils	New BCL approach & BuildTasks	5 years ago
WebClient	New BCL approach & BuildTasks	5 years ago
.gitignore	New BCL approach & BuildTasks	5 years ago
BCL.csproj	New BCL approach & BuildTasks	5 years ago
BCL.sln	New BCL approach & BuildTasks	5 years ago
Readme.md	New BCL approach & BuildTasks	5 years ago
declarations.android.d.ts	New BCL approach & BuildTasks	5 years ago
declarations.d.ts	New BCL approach & BuildTasks	5 years ago
declarations.ios.d.ts	New BCL approach & BuildTasks	5 years ago




Readme.md
declarations.android.d.ts
declarations.d.ts
declarations.ios.d.ts



TypeScript

Programming Language

+ Compare

Worldwide | 10/1/12 - 12/31/14 | All categories | Web Search

Interest over time

Microsoft

Visual
Studio

“We risk a lot by building our core on top of TypeScript.”

“I don’t hear anyone talking about TypeScript.”

I'll be honest. I'm one of those web developers that has traditionally seen all of these compile-to-JavaScript frameworks as unnecessary. I like to keep my JavaScript pure, as God intended. I'm far more interested in a preprocessor that stays as true to JavaScript as possible (e.g. Babel), than one that introduces types and tooling.

Build better NativeScript apps with TypeScript

TypeScript is a first-class citizen in NativeScript.
TypeScript is a typed superset of JavaScript that compiles to plain JavaScript. In addition to the great features you like about JavaScript, TypeScript offers benefits of special interest to developers coming from Strongly Typed, or Object Oriented backgrounds.

Why TypeScript?

"TypeScript helped us to reuse the team's knowledge and to keep the same team velocity by providing the same excellent developer experience as C# ... A huge improvement over plain JavaScript."

TypeScript
Programming Lan...

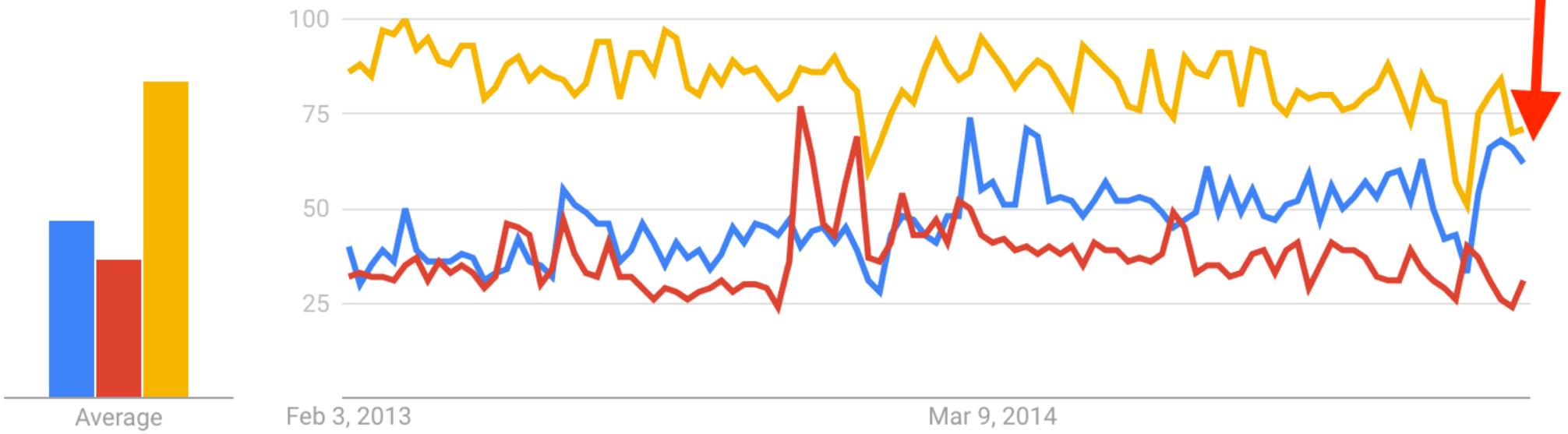
Dart
Programming lang...

CoffeeScript
Programming Lan...

+

Worldwide | 2/1/13 - 2/7/15 | All categories | Web Search

Interest over time



TypeScript
Programming language

Dart
Programming language

CoffeeScript
Programming language

+ Add comparison

United States | 2/1/15 - 11/9/18 | All categories | Web Search

Interest over time

Why I Was Wrong About TypeScript

Microsoft And Google Collaborate On Angular 2 Framework, TypeScript Language

Posted Mar 5, 2015 by Frederic Lardinois (@fredericl)

Next S

todo.ts

```
import {Component, Template} from 'annotations';
import {bootstrap, Foreach} from 'angular2/angular2';
import {bind} from 'angular2/di';
import {AngularFire, FirebaseArray} from 'firebase/AngularFire';

@Component({
    selector: 'todo-app',
    componentServices: [
        AngularFire,
        bind(Firebase).toValue(new Firebase('https://webapi.firebaseio-demo.com/test'))
    ]
})
@Template({
        url: '/todo.html',
        directives: [For]
    })
class TodoApp {
    todoService: FirebaseArray;
```

```
Foreach        alias
FormData       interface
```

ADVERTISEMENT

Crunchbase

Microsoft Launches Visual Studio Code, A Free Cross-Platform Code Editor For OS X, Linux And Windows

Posted Apr 29, 2015 by ***Frederic Lardinois*** *(@fredericl)*

Next Story

At its Build developer conference, Microsoft today announced the launch of Visual Studio Code, a lightweight cross-platform code editor for writing modern web and cloud applications that will run on OS X, Linux and Windows. The application is still officially in preview, but you can now download it here.

Crunchbase

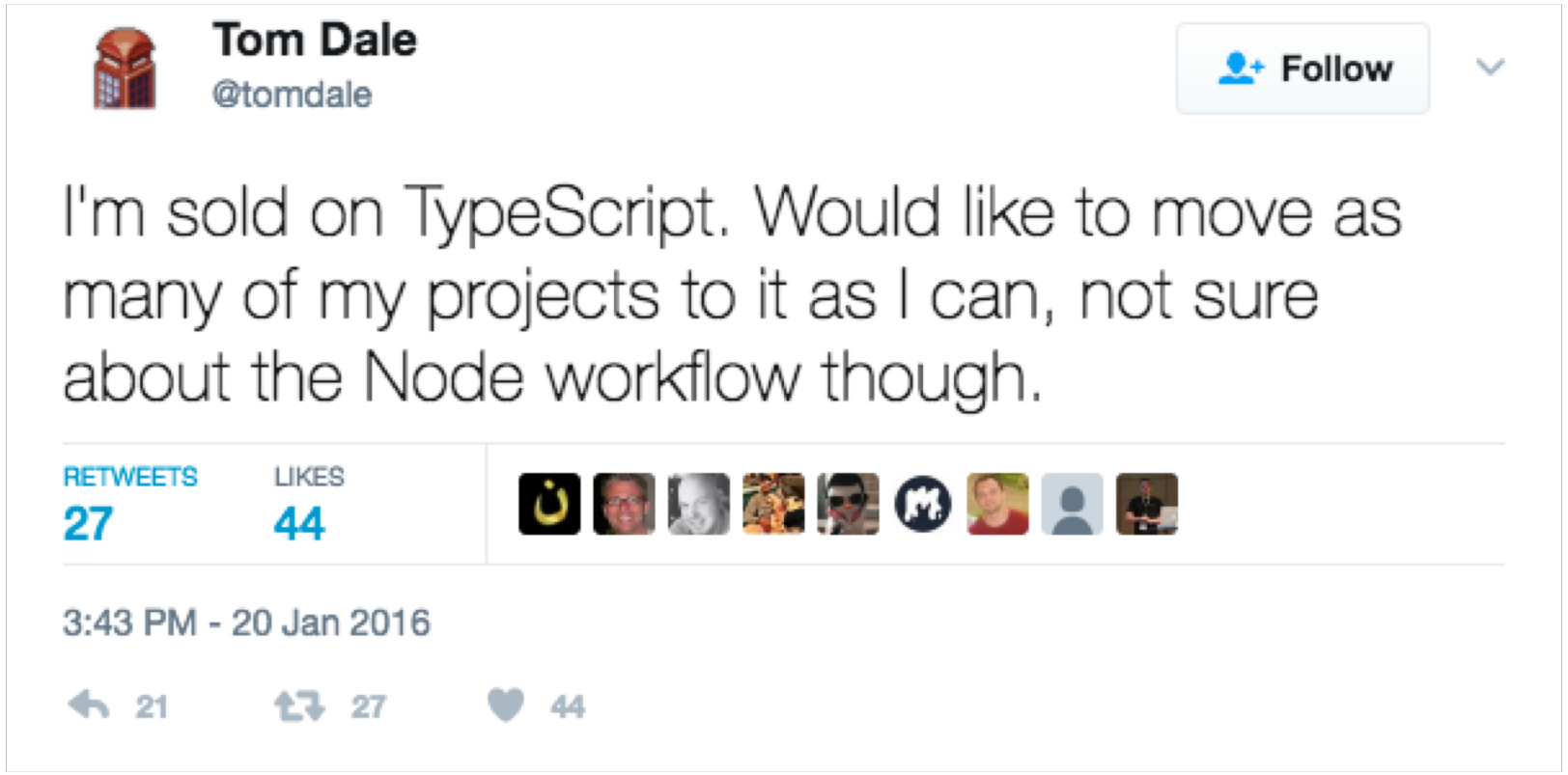
Microsoft –

FOUNDED
1974

OVERVIEW
Microsoft is an American multinational corporation that develops, manufactures, licenses, supports, and sells a range of software products and services. Microsoft's devices and consumer (D&C) licensing segment licenses Windows operating system and related software; Microsoft Office for consumers; and Windows Phone operating system. The company's computing and gaming hardware segment provides ...

LOCATION
Redmond, WA

CATEGORIES
Collaboration, Developer Tools, Cloud Computing,


Tom Dale
@tomdale
Follow
I'm sold on TypeScript. Would like to move as many of my projects to it as I can, not sure about the Node workflow though.
RETWEETS
27
LIKES
44
3:43 PM - 20 Jan 2016
21
27
44

Dave Herman @littlecalculist

I ported my first nontrivial JS lib to @typescriptlang and it was a pure joy. What a lovely piece of technology.

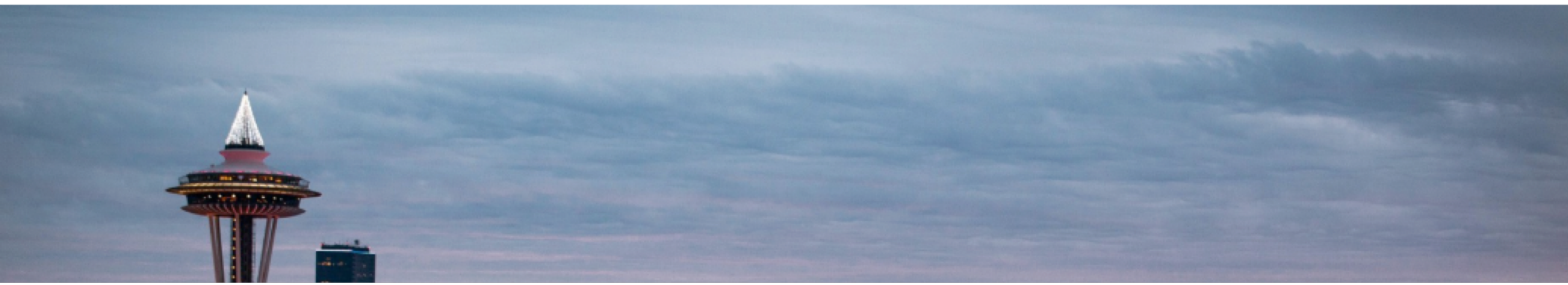
Felix Rieseberg Follow

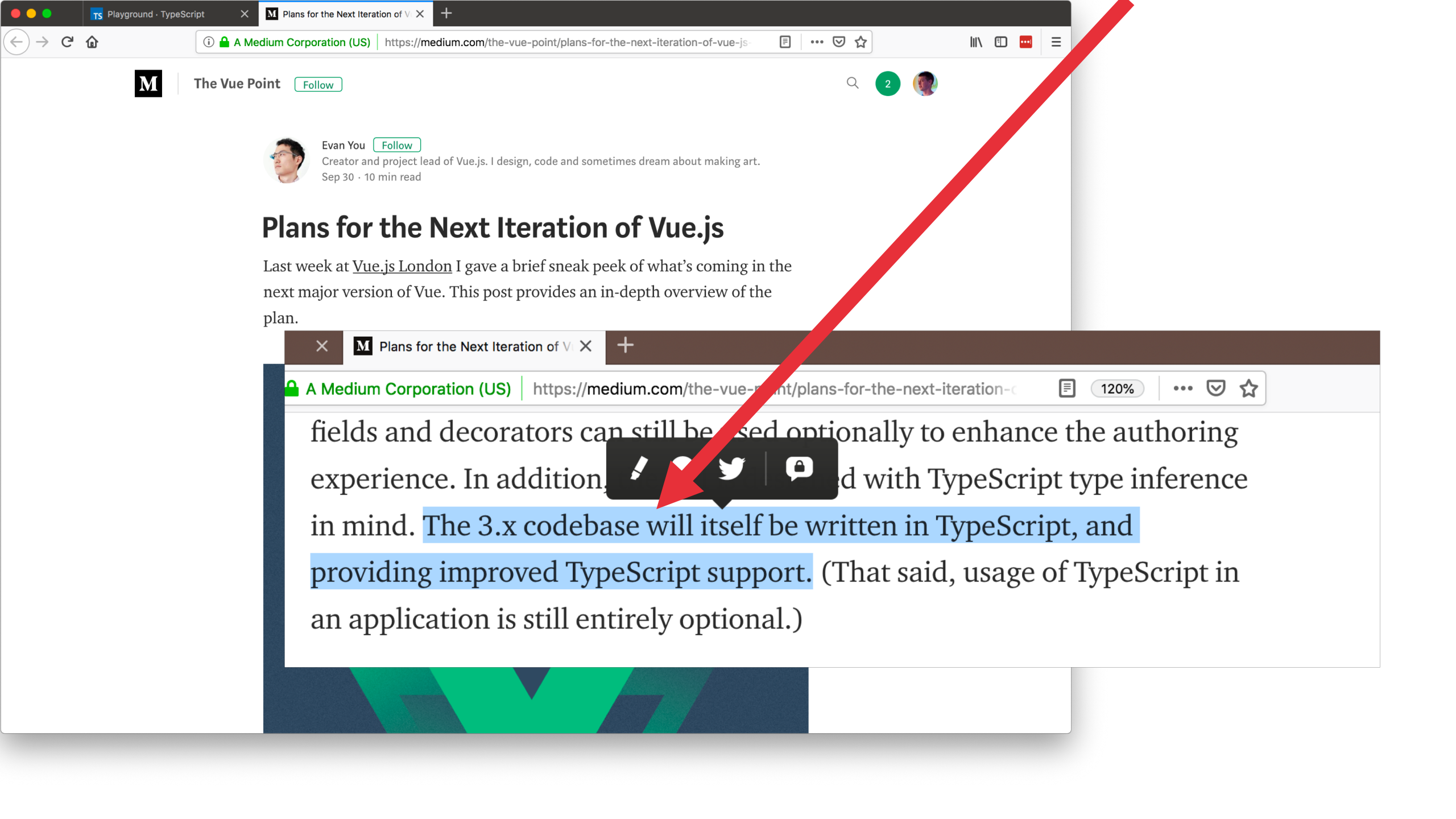
Desktop Engineer @Slack. @TryGhost Core Team. || Previously open source @Microsoft, exec edito...

Apr 11 · 7 min read

TypeScript at Slack

Or, How I Learned to Stop Worrying & Trust the Compiler

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The Vue Point
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Evan You
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Creator and project lead of Vue.js. I design, code and sometimes dream about making art.
Sep 30 · 10 min read
Plans for the Next Iteration of Vue.js
Last week at Vue.js London I gave a brief sneak peek of what's coming in the next major version of Vue. This post provides an in-depth overview of the plan.
Plans for the Next Iteration of V
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nt/plans-for-the-next-iteration-
120%
fields and decorators can still be
sed optionally to enhance the authoring
experience. In addition,
d with TypeScript type inference
in mind. The 3.x codebase will itself be written in TypeScript, and
providing improved TypeScript support. (That said, usage of TypeScript in
an application is still entirely optional.)

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https://twitter.com/sulco/status/1057222100128329729

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@sulco

#TypeScript · #JavaScript · @Angular trainer & Angular Tricity co-organizer · @StackBlitz team · Making frontend easy one post at a time ___🖋

Warsaw, Poland

medium.com/@tomsu

Joined December 2008

Tomek Sułkowski
@sulco

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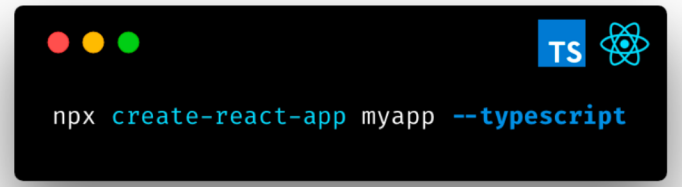
#React Create App now officially supports #TypeScript!

I'm so happy this will make it much easier for devs to start with, well, both of these great pieces of tech! 🤩



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Why?

Developer Relations

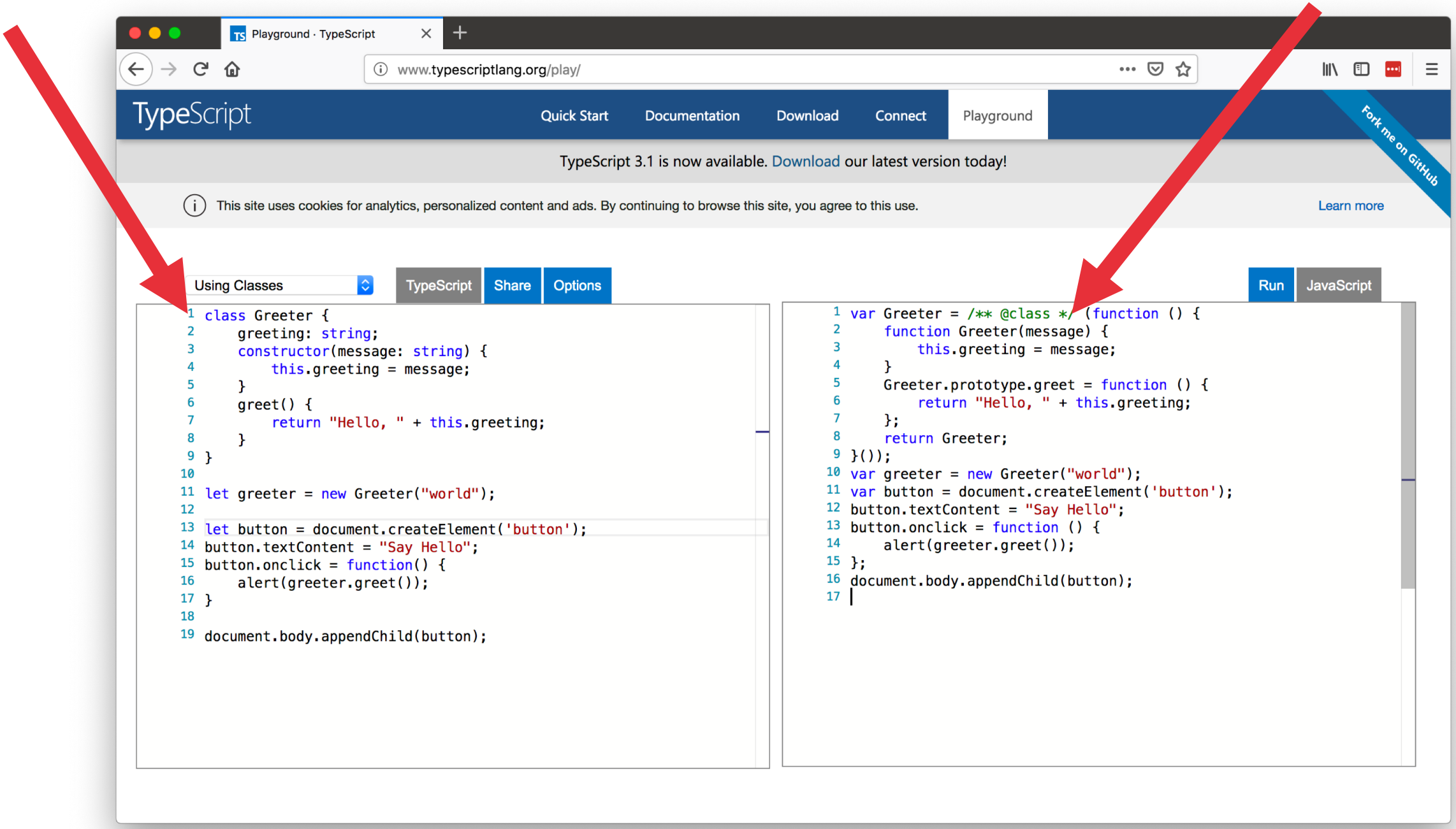
Engineering

Marketing

3 reasons

1) Commitment to the ECMAScript standard

“Some examples [of compile-to-JavaScript frameworks], like Dart, portend that JavaScript has fundamental flaws and to support these scenarios requires a “clean break” from JavaScript in both syntax and runtime. We disagree with this point of view. We believe that with committee participant focus, the standards runtime can be expanded and the syntactic features necessary to support **JavaScript at scale can be built upon the existing JavaScript standard**.”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Learn more
Using Classes
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Share
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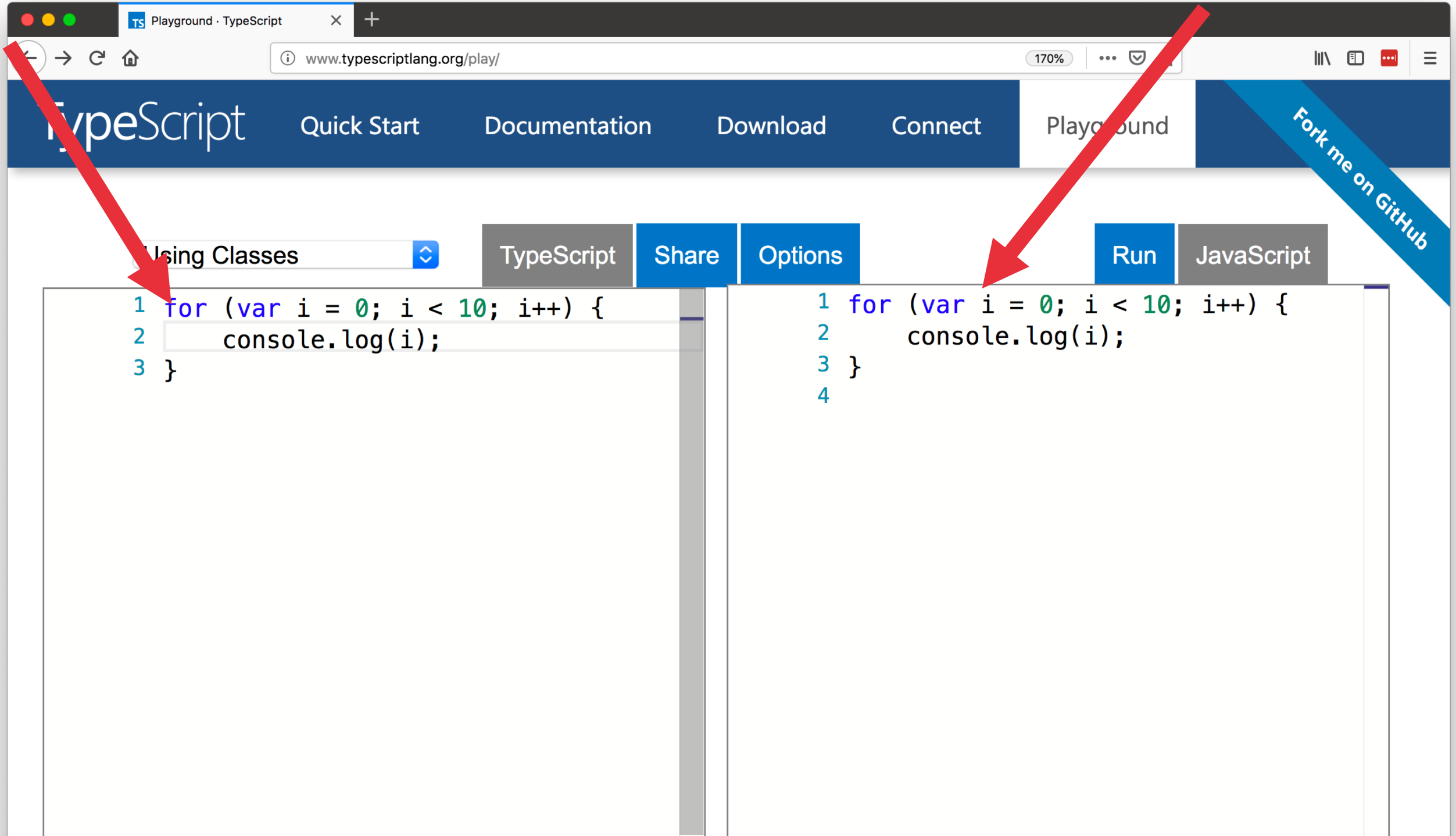
Run
JavaScript
class Greeter {
greeting: string;
constructor(message: string) {
this.greeting = message;
}
greet() {
return "Hello, " + this.greeting;
}
}
let greeter = new Greeter("world");
let button = document.createElement('button');
button.textContent = "Say Hello";
button.onclick = function() {
alert(greeter.greet());
}
document.body.appendChild(button);
var Greeter = /** @class */ (function () {
function Greeter(message) {
this.greeting = message;
}
Greeter.prototype.greet = function () {
return "Hello, " + this.greeting;
};
return Greeter;
}());
var greeter = new Greeter("world");
var button = document.createElement('button');
button.textContent = "Say Hello";
button.onclick = function () {
alert(greeter.greet());
};
document.body.appendChild(button);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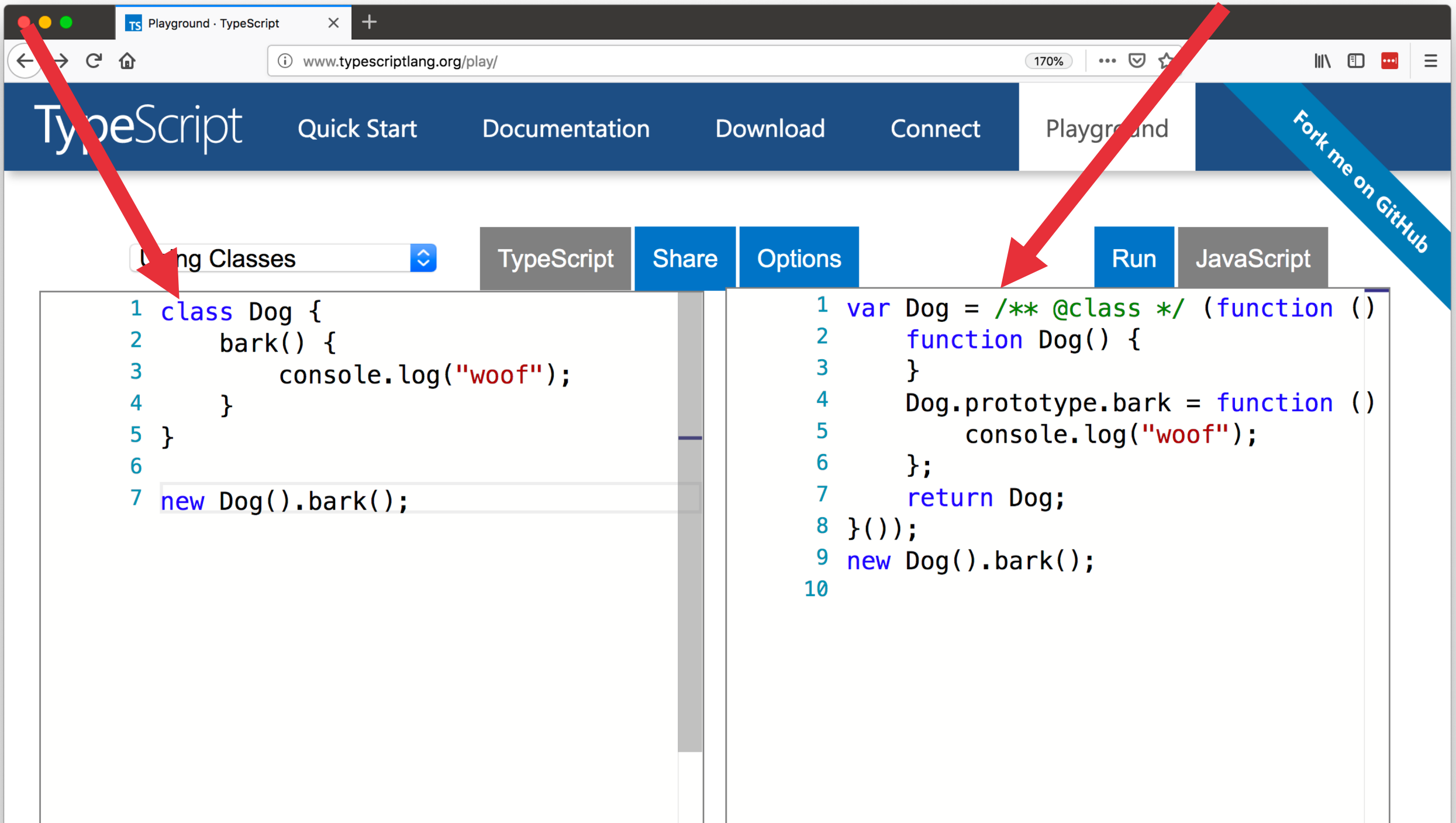
Run
JavaScript
1 for (var i = 0; i < 10; i++) {
2 console.log(i);
3 }
1 for (var i = 0; i < 10; i++) {
2 console.log(i);
3 }
4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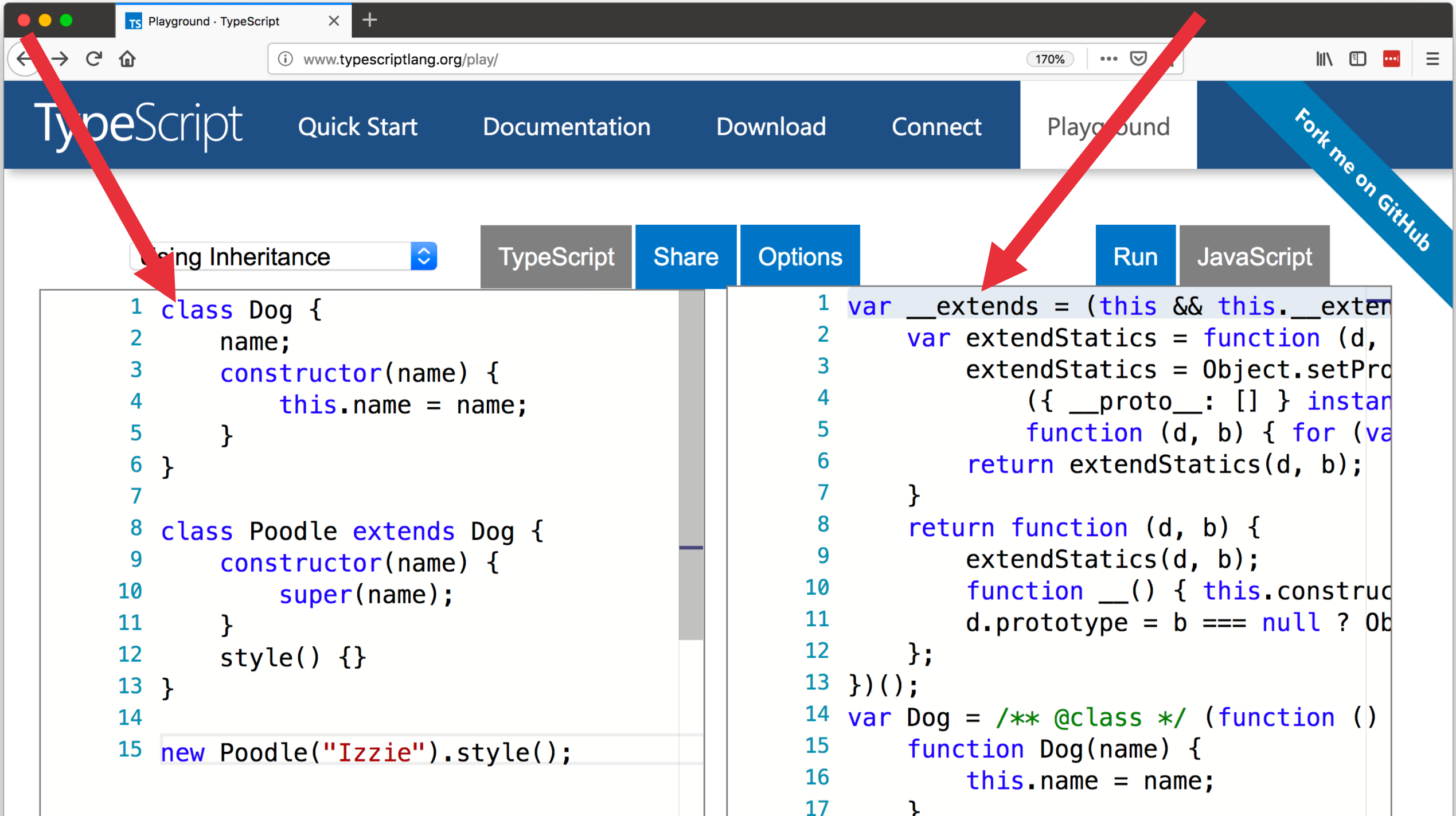
ng Classes
TypeScript
Share
Options
Run
JavaScript
1 class Dog {
2 bark() {
3 console.log("woof");
4 }
5 }
6
7 new Dog().bark();
1 var Dog = /** @class */ (function ()
2 function Dog() {
3 }
4 Dog.prototype.bark = function ()
5 console.log("woof");
6 };
7 return Dog;
8 }());
9 new Dog().bark();
10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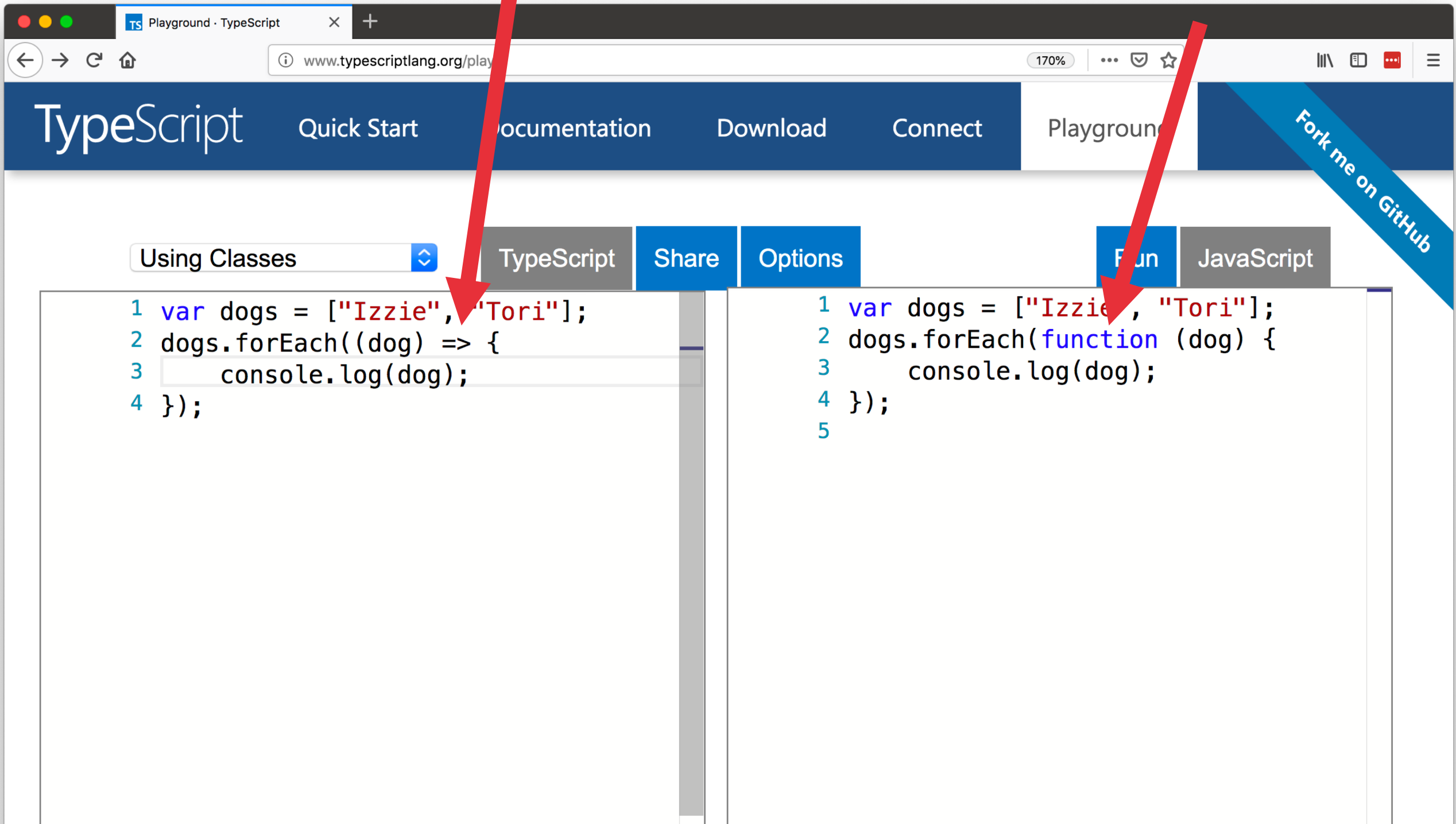
ing Inheritance
TypeScript
Share
Options
Run
JavaScript
1 class Dog {
2 name;
3 constructor(name) {
4 this.name = name;
5 }
6 }
7
8 class Poodle extends Dog {
9 constructor(name) {
10 super(name);
11 }
12 style() {}
13 }
14
15 new Poodle("Izzie").style();
1 var __extends = (this && this.__exten
2 var extendStatics = function (d,
3 extendStatics = Object.setPro
4 ({ __proto__: [] } instan
5 function (d, b) { for (va
6 return extendStatics(d, b);
7 }
8 return function (d, b) {
9 extendStatics(d, b);
10 function __() { this.construc
11 d.prototype = b === null ? Ob
12 };
13 })();
14 var Dog = /** @class */ (function ()
15 function Dog(name) {
16 this.name = name;
17 }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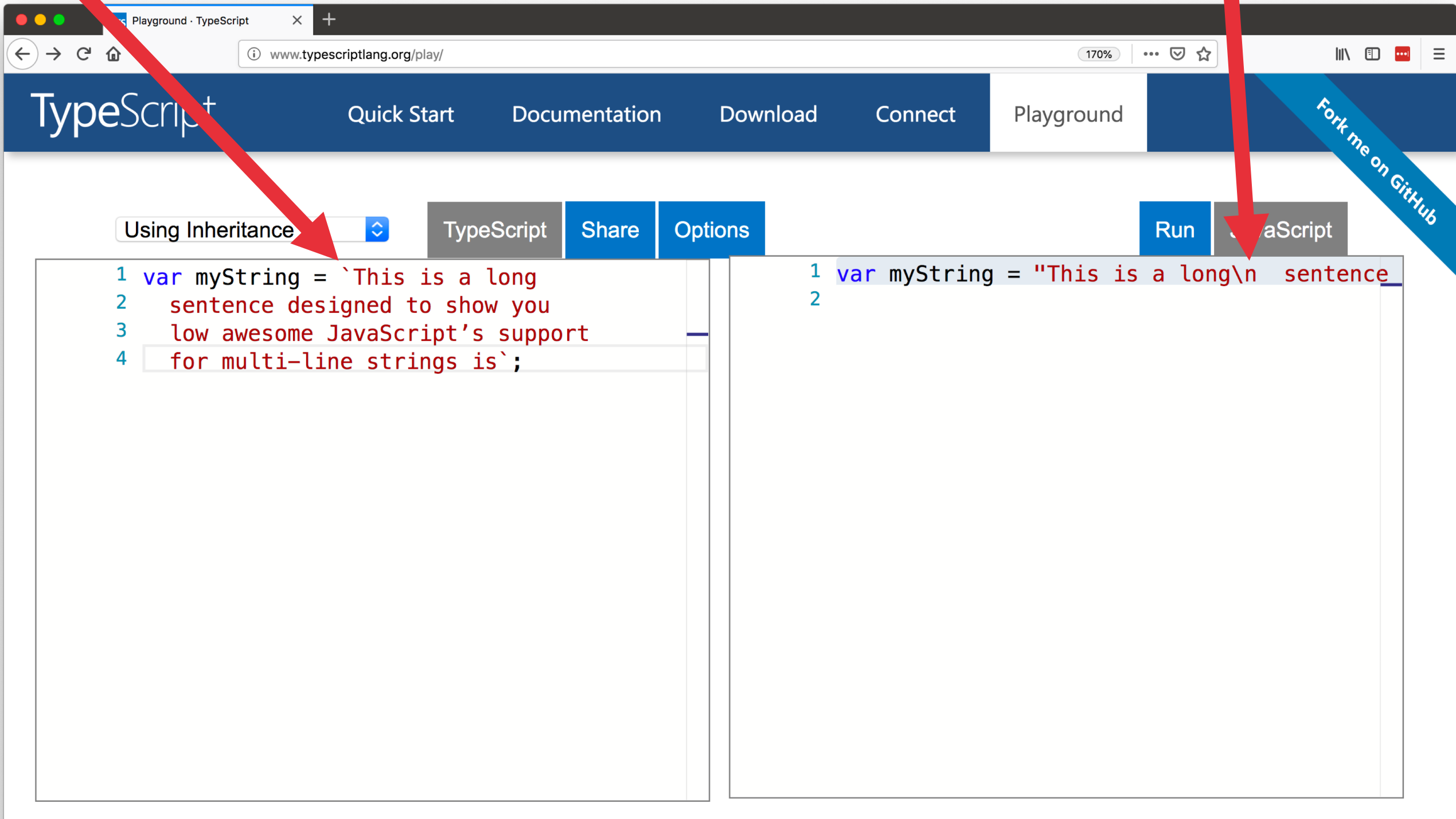
Run
JavaScript
1 var dogs = ["Izzie", "Tori"];
2 dogs.forEach((dog) => {
3 console.log(dog);
4 });
1 var dogs = ["Izzie", "Tori"];
2 dogs.forEach(function (dog) {
3 console.log(dog);
4 });
5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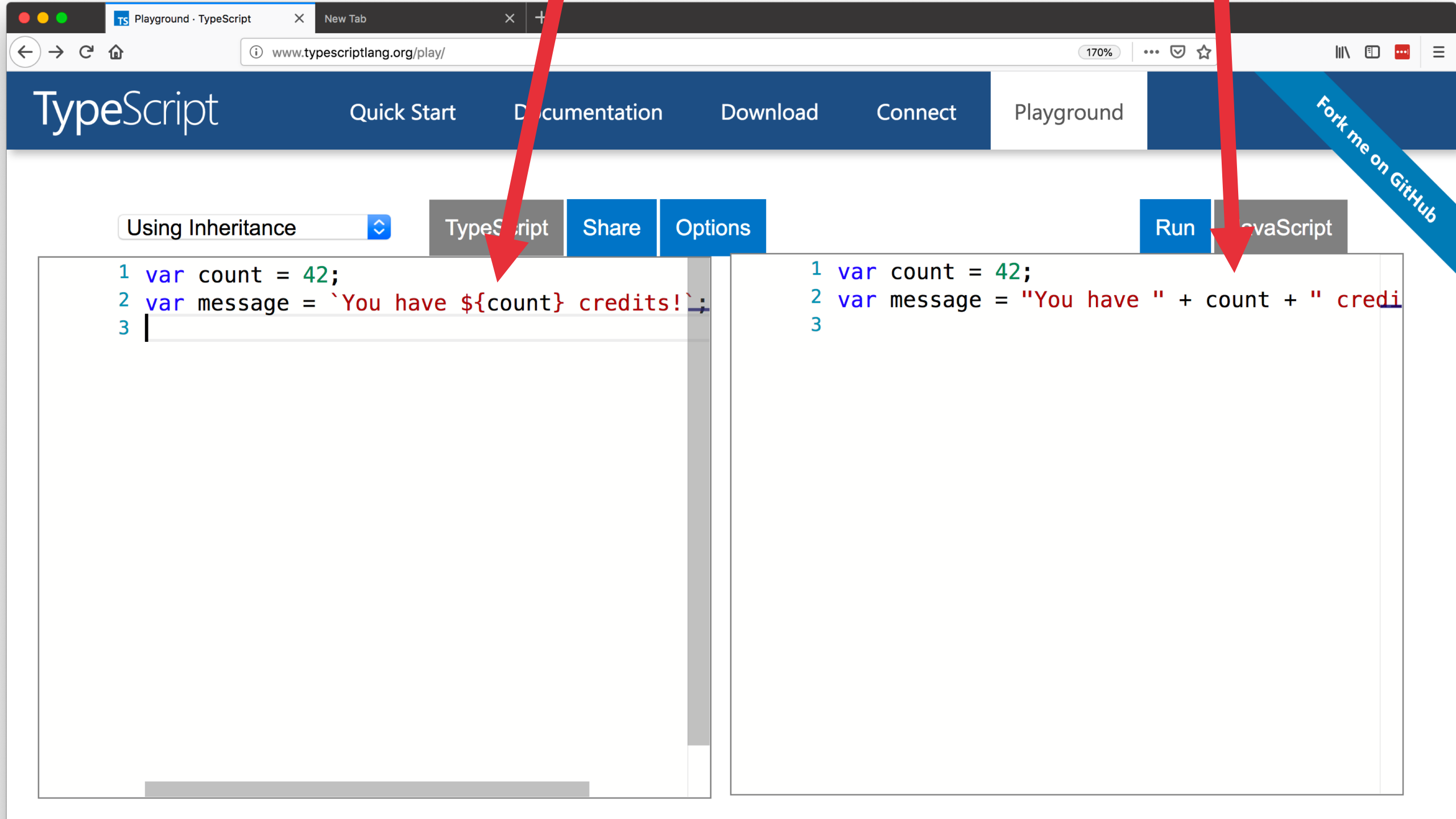
Using Inheritance
TypeScript
Share
Options
Run
JavaScript
1 var myString = `This is a long
2 sentence designed to show you
3 low awesome JavaScript's support
4 for multi-line strings is`;
1 var myString = "This is a long\n sentence
2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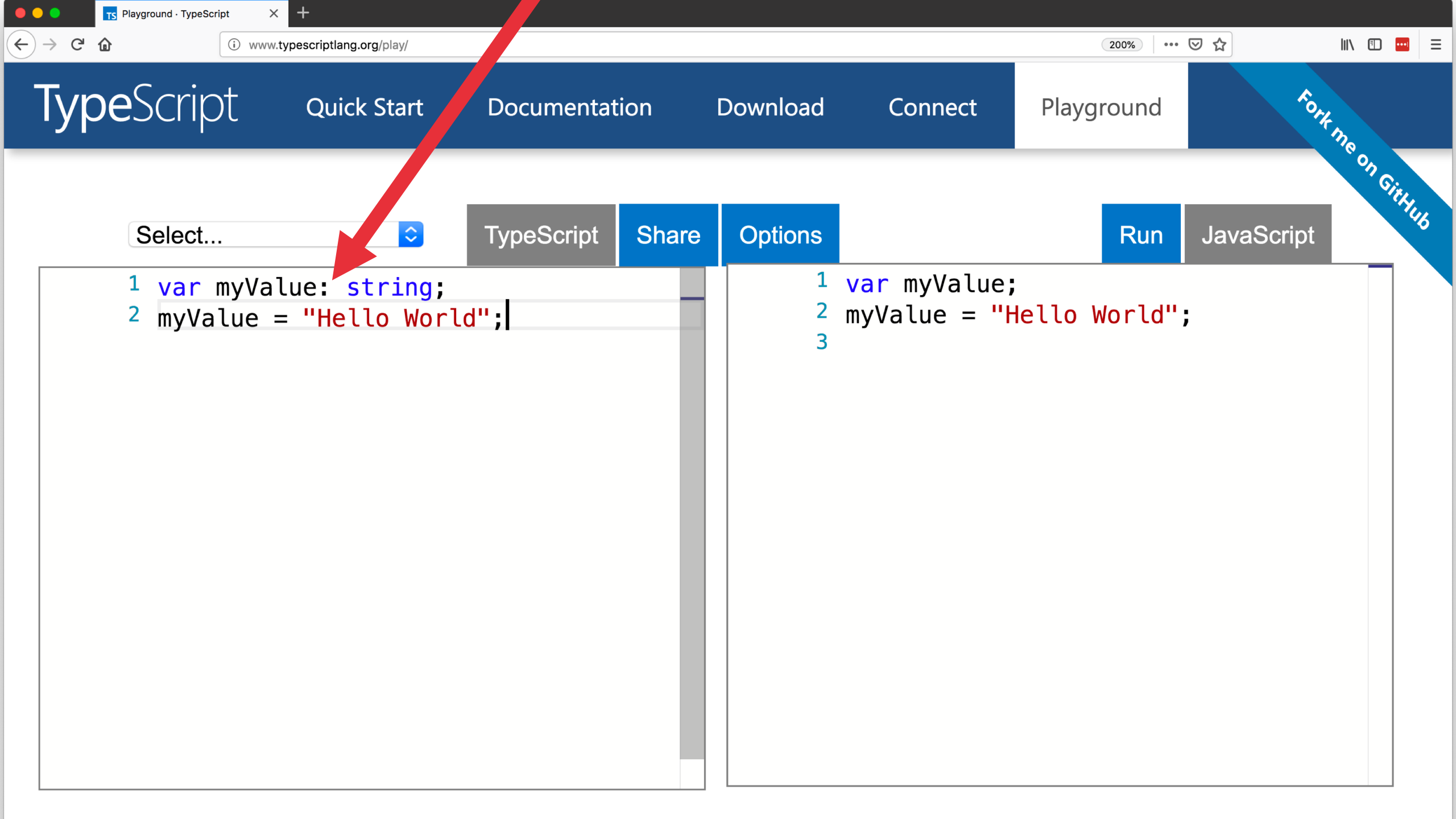
Using Inheritance
TypeScript
Share
Options
Run
JavaScript
1 var count = 42;
2 var message = `You have ${count} credits!`;
3
1 var count = 42;
2 var message = "You have " + count + " credi
3

`--suppressExcessPropertyErrors`	`boolean`	`false`	Suppress excess property checks for literals.
`--suppressImplicitAnyIndexErrors`	`boolean`	`false`	Suppress `--noImplicitAny` errors for indexing objects lacking index signatures. See issue #1232 for more details.
`--target` `-t`	`string`	`"ES3"`	Specify ECMAScript target version: `"ES3"` (default), `"ES5"`, `"ES6"` / `"ES2015"`, `"ES2016"`, `"ES2017"` or `"ESNext"`. Note: `"ESNext"` targets latest supported ES proposed features.
`--traceResolution`	`boolean`	`false`	Report module resolution log messages.
`--types`	`string[]`		List of names of type definitions to include. See @types, –typeRoots and –types for more details.
`--typeRoots`	`string[]`		List of folders to include type definitions from. See @types, –typeRoots and –types

2) Types are opt-in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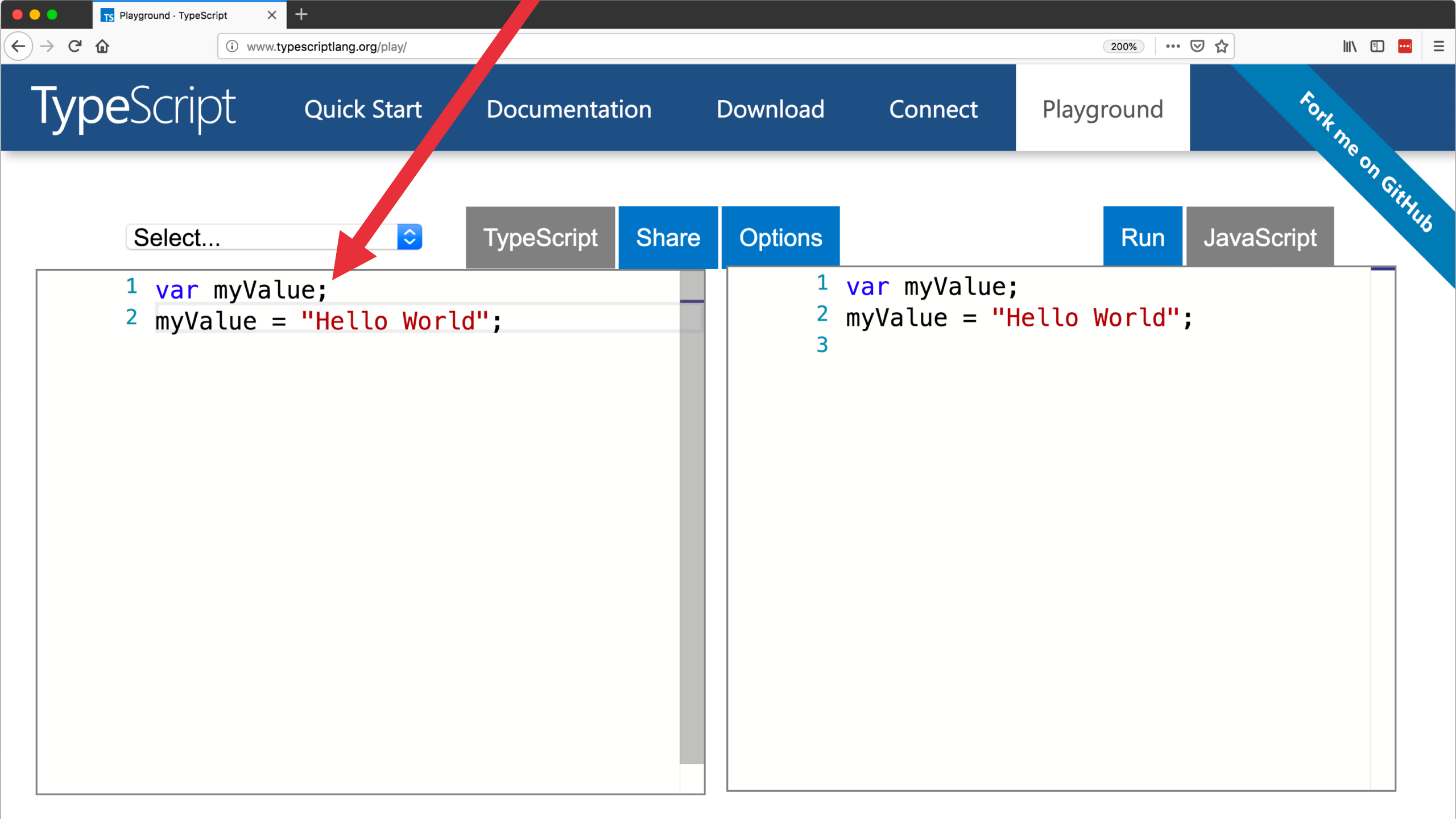
TypeScript
Share
Options
Run
JavaScript
1 var myValue: string;
2 myValue = "Hello World";
1 var myValue;
2 myValue = "Hello World";
3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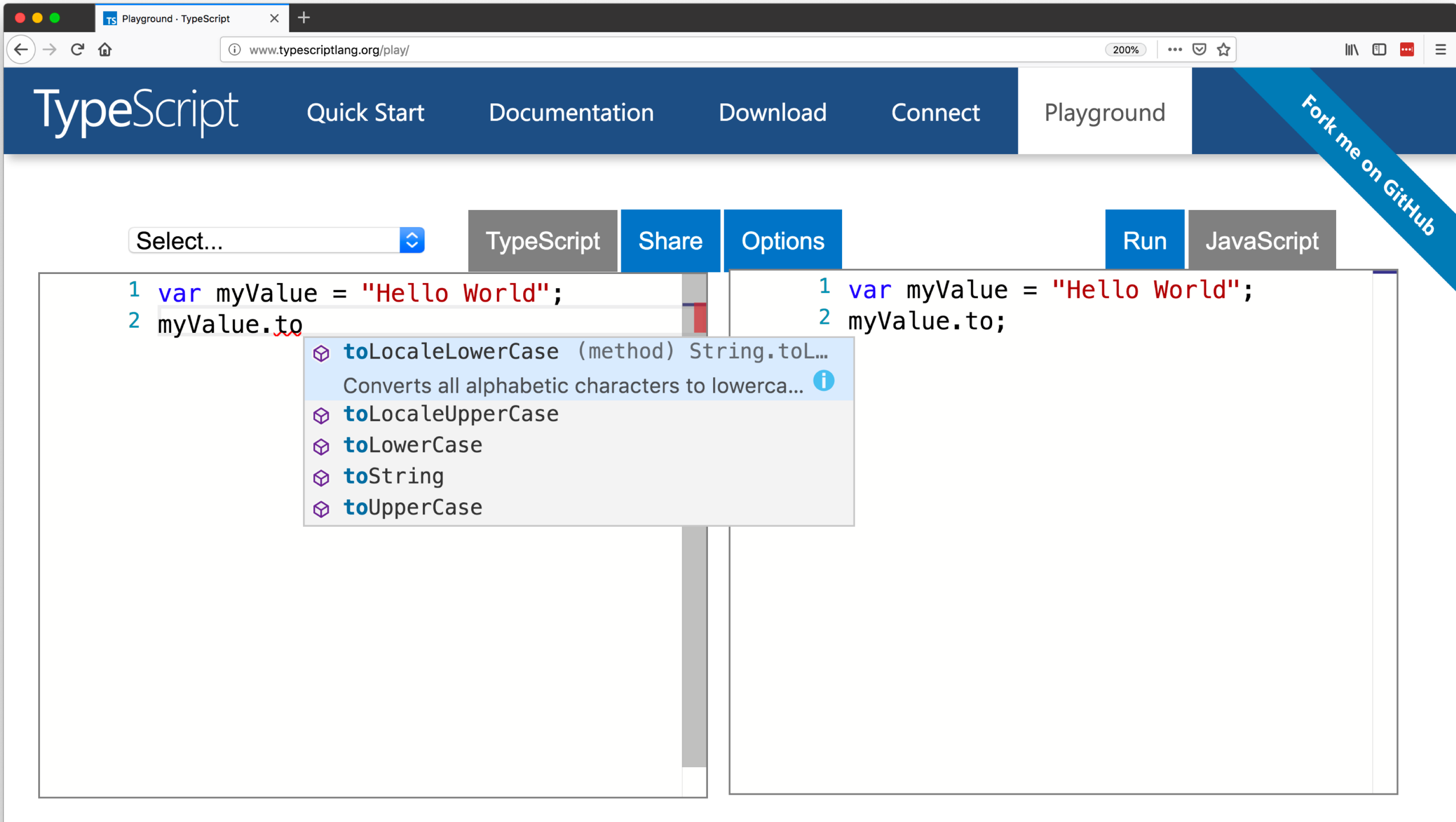
TypeScript
Share
Options
Run
JavaScript
1 var myValue;
2 myValue = "Hello World";
1 var myValue;
2 myValue = "Hello World";
3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TypeScript
Quick Start
Documentation
Download
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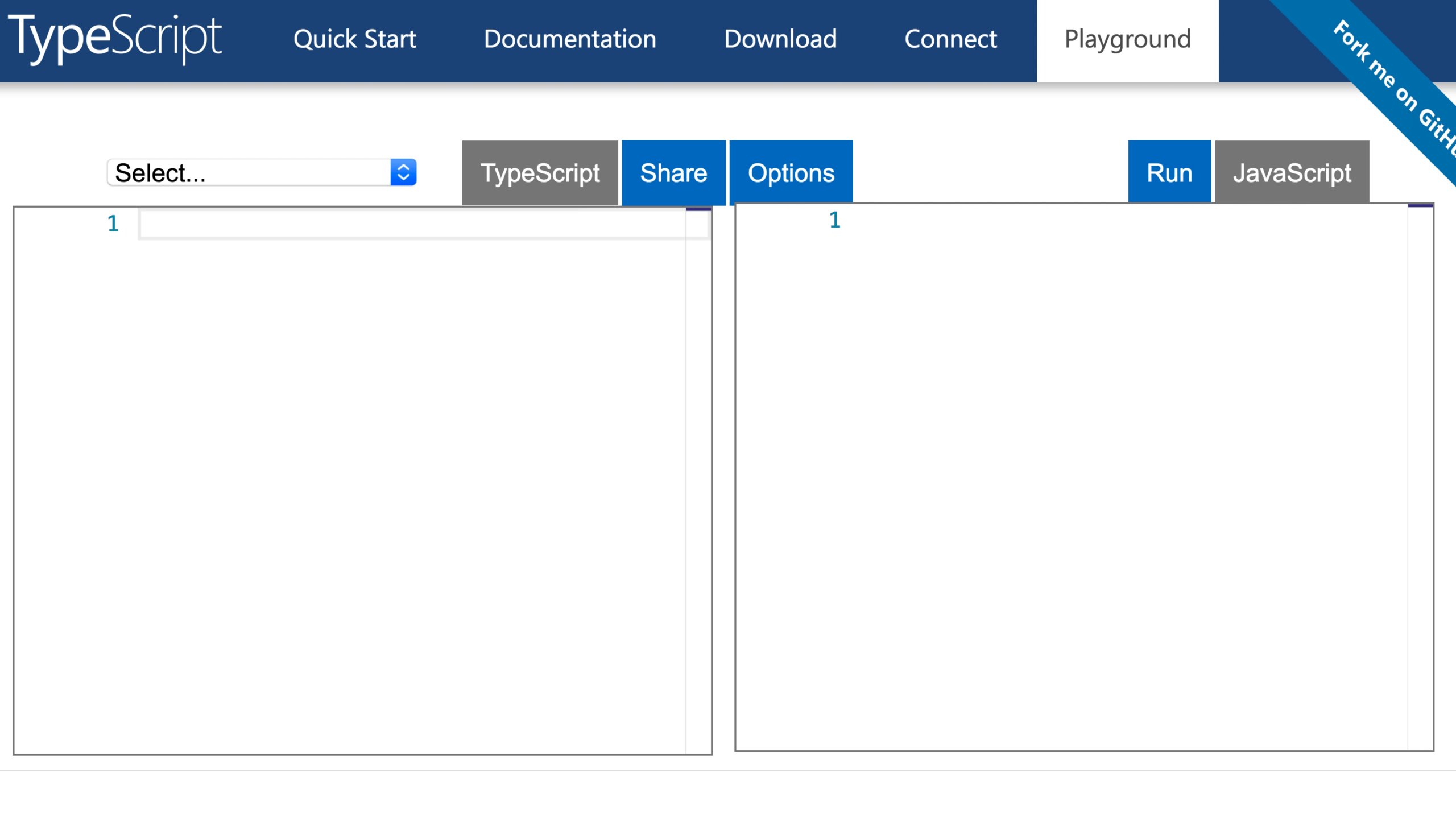
Playground
Fork me on GitHub
Select...
TypeScript
Share
Options
Run
JavaScript
1 var myValue = "Hello World";
2 myValue.to
toLocaleLowerCase (method) String.toL…
Converts all alphabetic characters to lowerca…
toLocaleUpperCase
toLowerCase
toString
toUpperCase
1 var myValue = "Hello World";
2 myValue.to;

interfaces, defining class methods as either private or public, and declaring enums. Along the way, we made two surprising discoveries:

Top highlight

First, we were surprised by the number of small bugs we found when converting our code. Talking to other developers who began using a type checker, we were delighted to hear that this was a common experience: the more lines of code a human writes, the more inevitable it becomes to misspell a property, assume the parent of a nested object to always exist, or to use a non-standard error object.

3) Tooling



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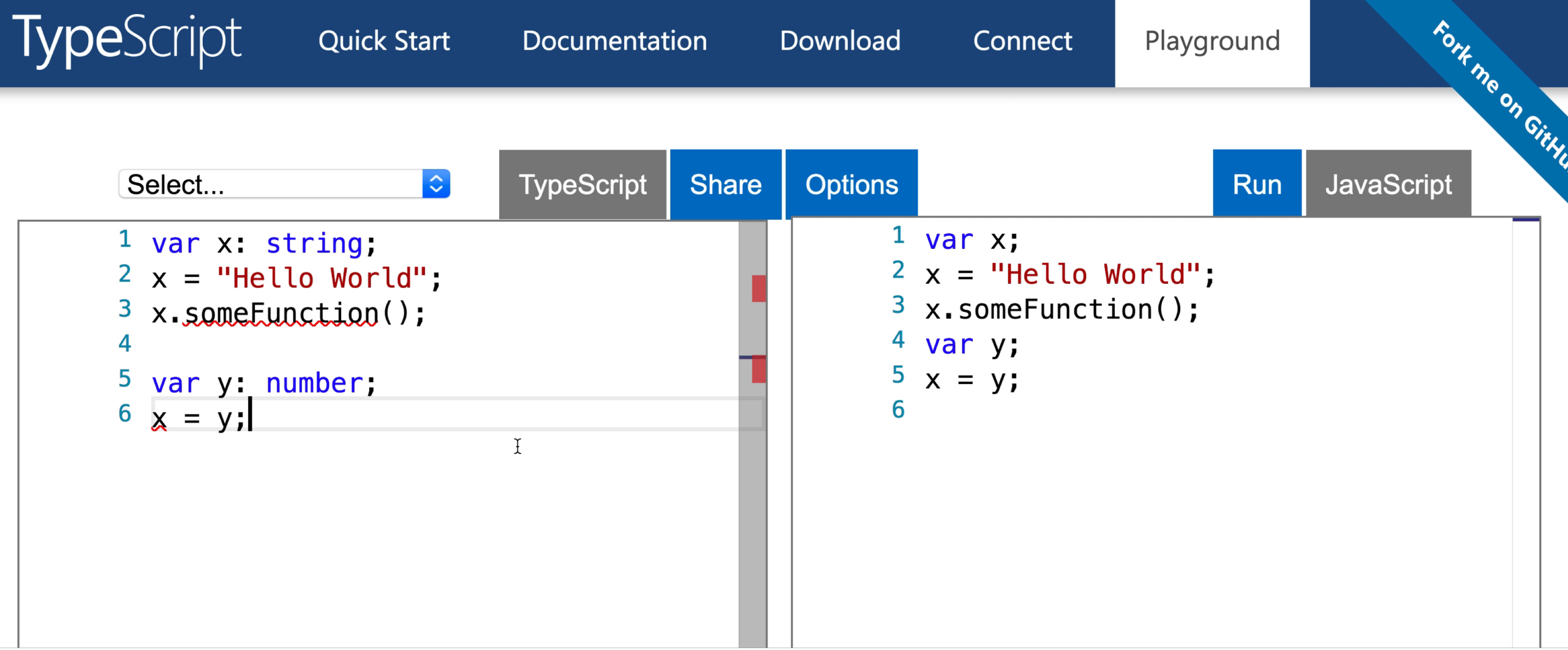
1

1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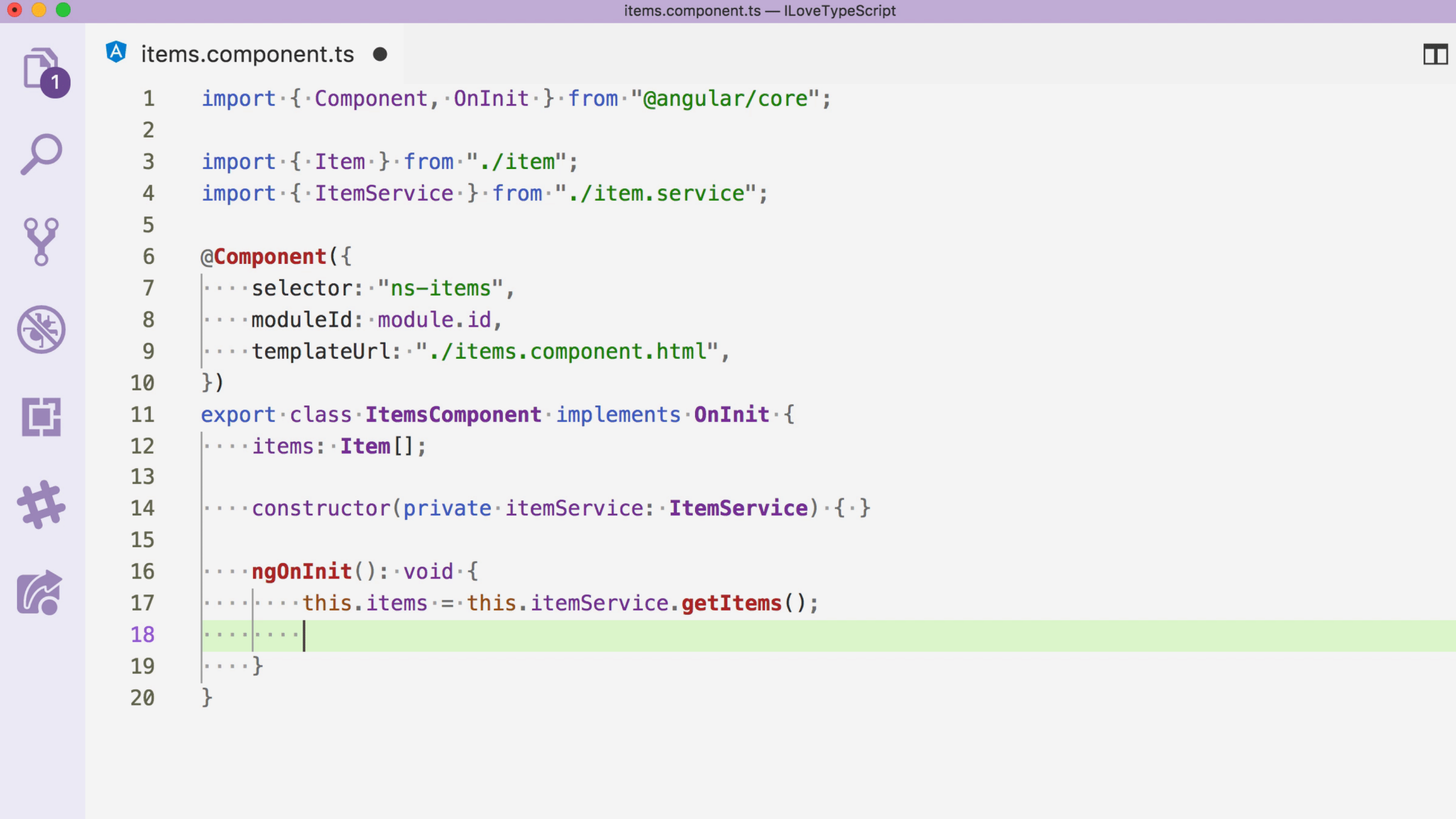
Select...
TypeScript
Share
Options
Run
JavaScript
1 var x: string;
2 x = "Hello World";
3 x.someFunction();
4
5 var y: number;
6 x = y;
1 var x;
2 x = "Hello World";
3 x.someFunction();
4 var y;
5 x = y;
6


items.component.ts — ILoveTypeScript
items.component.ts
import { Component, OnInit } from "@angular/core";
import { Item } from "./item";
import { ItemService } from "./item.service";
@Component({
selector: "ns-items",
moduleId: module.id,
templateUrl: "./items.component.html",
})
export class ItemsComponent implements OnInit {
items: Item[];
constructor(private itemService: ItemService) { }
ngOnInit(): void {
this.items = this.itemService.getItems();
}
}

items.component.ts ●

```
1  import { Component, OnInit } from "@angular/core";
2
3  import { Item } from "./item";
4  import { ItemService } from "./item.service";
5
6  @Component({
7      selector: "ns-items",
8      moduleId: module.id,
9      templateUrl: "./items.component.html",
10 })
11 export class ItemsComponent implements OnInit {
12     items: Item[];
13
14     constructor(private itemService: ItemService) { }
15
16     ngOnInit(): void {
17         this.items = this.itemService.getItems();
18         this.items.forEach((item) => {
19             console.log(item.name);
20         })
21     }
22 }
```

DefinitelyTyped/DefinitelyTyped

GitHub, Inc. (US) https://github.com/DefinitelyTyped/DefinitelyTyped 150%

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DefinitelyTyped / DefinitelyTyped

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Code | Issues 2,397 | Pull requests 184 | Projects 2 | Wiki | Insights

The repository for high quality TypeScript type definitions. http://definitelytyped.org/

typescript definition dts types typings typescript-definitions

52,748 commits | **27** branches | **0** releases | **7,410** contributors | View license

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aharonp and **PranavSenthilnathan** Support function for locator-based validators (#30528) ... Latest commit d202969 a day ago

.github	Updated CODEOWNERS as of 2018-11-05	13 days ago
scripts	Added type definitions for Naver maps	8 months ago
types	Support function for locator-based validators (#30528)	a day ago
.editorconfig	Update .editorconfig	2 months ago
.gitattributes	Enforce package.json checkout with LF line-endings (#24353)	8 months ago

@types/node

10.12.9 • Public • Published 3 days ago

Readme | 0 Dependencies | 5,680 Dependents | 475 Versions

Installation

```
npm install --save @types/node
```

Summary

This package contains type definitions for Node.js (http://nodejs.org/).

Details

Files were exported from https://github.com/DefinitelyTyped/DefinitelyTyped/tree/master/types/node

Additional Details

- Last updated: Thu, 15 Nov 2018 20:45:18 GMT

install

```
> npm i @types/node
```

weekly downloads

15,640,552

version	license
10.12.9	MIT

open issues	pull requests
2397	184

homepage	repository
github.com	github

last publish

@types/react

16.7.6 • Public • Published 4 days ago

Readme | 2 Dependencies | 1,756 Dependents | 190 Versions

Installation

```
npm install --save @types/react
```

Summary

This package contains type definitions for React (http://facebook.github.io/react/).

Details

Files were exported from https://github.com/DefinitelyTyped/DefinitelyTyped/tree/master/types/react

Additional Details

- Last updated: Wed, 14 Nov 2018 06:52:17 GMT
- Dependencies: csstype, prop-types
- Global values: React

Credits

install

```
> npm i @types/react
```

weekly downloads

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version	license
16.7.6	MIT

open issues	pull requests
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github.com	github

last publish

4 days ago

collaborators

@types/jquery

3.3.22 • Public • Published a month ago

Readme | 1 Dependencies | 664 Dependents | 80 Versions

Installation

```
npm install --save @types/jquery
```

Summary

This package contains type definitions for jquery (https://jquery.com).

Details

Files were exported from https://github.com/DefinitelyTyped/DefinitelyTyped/tree/master/types/jquery

Additional Details

- Last updated: Mon, 22 Oct 2018 19:29:31 GMT
- Dependencies: sizzle
- Global values: $, Symbol, jQuery

Credits

install

```
npm i @types/jquery
```

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3.3.22	MIT

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homepage	repository
github.com	github

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collaborators

items.component.ts ●

1

GET STARTED

CORE CONCEPTS

- Technical Overview
- Modules
- Application Architecture
- Application Lifecycle
- Angular Bootstrap
- Navigation
- Data Binding
- Using Plugins
- Accessing Native APIs Through JavaScript
- Multithreading Model
- Utils
- CommonJS Modules In NativeScript Apps
- Error Handling
- Android Runtime
- IOS Runtime

Accessing native iOS and Android APIs through JavaScript

In this article we are going through the basic concepts of how native APIs are accessed through JavaScript. Our focus is on how primitive types are mapped between JavaScript and the corresponding native platform. We then continue with explaining how complex objects are represented and accessed. At the end, we talk about TypeScript and the `tns-platform-declarations` add-on which gives you TypeScript definitions for the Android and iOS development platforms.

NativeScript lets you access all native APIs from the underlying platform. To achieve this behaviour, many things happen under the hood. One of them is marshalling - the conversion between JavaScript and Objective-C data types for iOS and Java data types for Android.

In this article, you will learn how to call native APIs from JavaScript with various data types parameters. For more information, see the platform-specific resources about data conversion in the iOS Runtime and Android Runtime sections.

Numeric Types

social-share.ios.ts ●

```
1  import { topmost } from "tns-core-modules/ui/frame";
2
3  function share(thingsToShare) {
4      var activityController = UIActivityViewController.alloc()
5          .initWithActivityItemsApplicationActivities(thingsToShare, null);
6
7
8
9      var presentViewController = activityController.popoverPresentationController;
10     if (presentViewController) {
11         var page = topmost().currentPage;
12         if (page && page.ios.navigationItem.rightBarButtonItems &&
13             page.ios.navigationItem.rightBarButtonItems.count > 0) {
14             presentViewController.barButtonItem = page.ios.navigationItem.rightBarButtonItems[0];
15         } else {
16             presentViewController.sourceView = page.ios.view;
17         }
18     }
19
20     topmost().ios.controller
21         .presentViewControllerAnimatedCompletion(activityController, true, null);
22 }
```

social-share.android.ts ●

```
10      return intent;
11    }
12    function share(intent, subject) {
13      context = application.android.context;
14      subject = subject || "How would you like to share this?";
15
16      j
17
18      var shareIntent = android.content.Intent.createChooser(intent, subject);
19      shareIntent.setFlags(android.content.Intent.FLAG_ACTIVITY_NEW_TASK);
20      context.startActivity(shareIntent);
21    }
22
23    export function shareImage(image, subject) {
24      numberOfImagesCreated ++;
25
26      context = application.android.context;
27
28      var intent = getIntent("image/jpeg");
```

Why I Was Wrong About TypeScript

Final quick topics

- How to get started?
- Is TypeScript similar to Flow?
- What are the downsides to TypeScript?
- Should you use TypeScript?

Final quick topics

- **How to get started?**
- Is TypeScript similar to Flow?
- What are the downsides to TypeScript?
- Should you use TypeScript?

Get TypeScript

Node.js

The command-line TypeScript compiler can be installed as a Node.js package.

INSTALL

```
npm install -g typescript
```

COMPILE

```
tsc helloworld.ts
```

Visual Studio

Visual Studio 2017

Visual Studio Code

Visual Studio 2015

And More...

Sublime Text

Emacs

Atom

WebStorm

Eclipse

Vim

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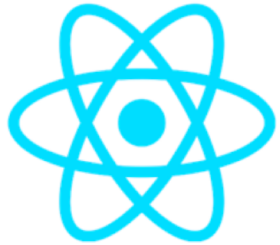


React

If create-react-app had an option to include TypeScript, this is what you'd get: the perfect starting point for React + TypeScript.

React | Redux | Webpack | Enzyme | Jest

Angular

The Angular team recommends using TypeScript with all your Angular apps. Check out their great tutorial on getting started with both.

Angular | Protractor | Jasmine | Karma | Rollup | Uglify | TSLint

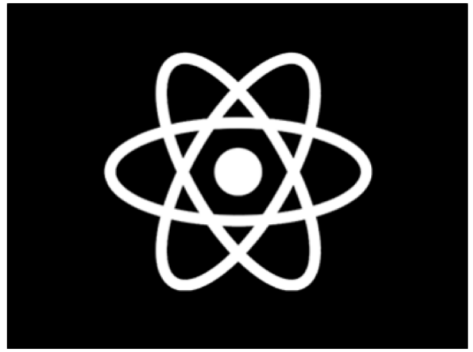
Express

Check out this starter project using Express + MongoDB + TypeScript and see why TypeScript and Node.js are a perfect combination.

Node.js | Express | Pug | Jest | TSLint | MongoDB | Travis CI

Babel

Leverage type-checking with TypeScript in your existing Babel projects using Babel 7 and later.



React Native

Take your JavaScript to mobile devices with React Native while keeping your productivity intact with TypeScript.

Vue.js

Check out this TodoMVC app using Vue.js and TypeScript.

Final quick topics

- How to get started?
- **Is TypeScript similar to Flow?**
- What are the downsides to TypeScript?
- Should you use TypeScript?

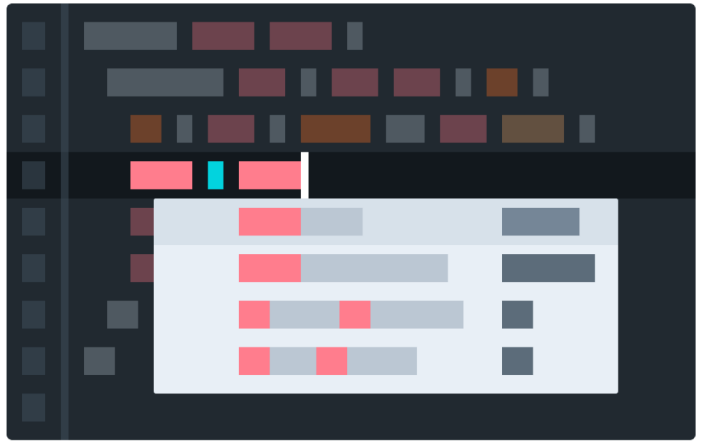
FLOW IS A STATIC TYPE CHECKER FOR JAVASCRIPT.

GET STARTED INSTALL FLOW Star 18,314

Current Version: v0.86.0

CODE FASTER.

Tired of having to run your code to find bugs? Flow identifies problems as you code. Stop wasting your time guessing and checking.



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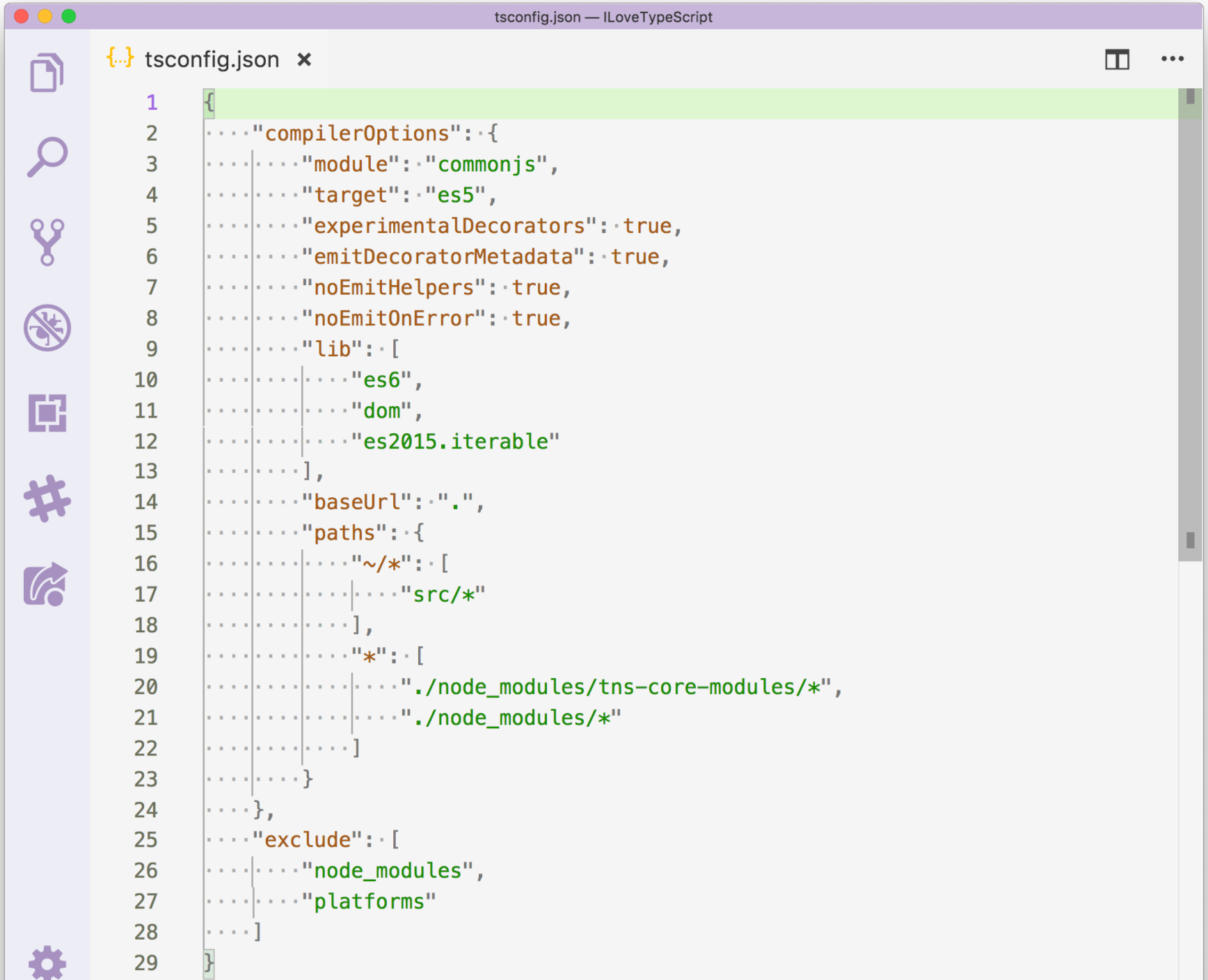
tsconfig.json — ILoveTypeScript
tsconfig.json
{
"compilerOptions": {
"module": "commonjs",
"target": "es5",
"experimentalDecorators": true,
"emitDecoratorMetadata": true,
"noEmitHelpers": true,
"noEmitOnError": true,
"lib": [
"es6",
"dom",
"es2015.iterable"
],
"baseUrl": ".",
"paths": {
"~/*": [
"src/*"
],
"*": [
"./node_modules/tns-core-modules/*",
"./node_modules/*"
]
}
},
"exclude": [
"node_modules",
"platforms"
]
}

Intersection Types

An intersection type combines multiple types into one. This allows you to add together existing types to get a single type that has all the features you need. For example, `Person & Serializable & Loggable` is a `Person` *and* `Serializable` *and* `Loggable`. That means an object of this type will have all members of all three types.

You will mostly see intersection types used for mixins and other concepts that don't fit in the classic object-oriented mold. (There are a lot of these in JavaScript!) Here's a simple example that shows how to create a mixin:

```
function extend<T, U>(first: T, second: U): T & U {
    let result = <T & U>{};
    for (let id in first) {
        (<any>result)[id] = (<any>first)[id];
    }
    for (let id in second) {
        if (!result.hasOwnProperty(id)) {
            (<any>result)[id] = (<any>second)[id];
        }
    }
    return result;
}
```

Final quick topics

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- **Should you use TypeScript?**

So should you use TypeScript?

- Are your apps big?
- Do you work on a team?
- Unfamiliar codebases?
- Non JS developers that need to write JS code?

Create Native iOS and Android Apps With JavaScript

Open source framework for building truly native mobile apps with Angular, Vue.js, TypeScript, or JavaScript.

Get Started

Why NativeScript?

Angular

Vue.js

JavaScript, TypeScript, CSS

goto; copenhagen

GOTO Copenhagen 2018

Conference Nov. 19 - 21

Please

Remember to rate this session

Thank you!

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Thanks!

@tjvantoll