luv2code

TypeScript Basics

What is TypeScript?

- Language developed by Microsoft in 2012
  - Free and open-source

www.typescriptlang.org

- Provides static typing support to JavaScript
  - Helps with IDE support: code completion and debugging

- Add support for object-oriented programming
  - Classes, objects, inheritance, interfaces, etc …

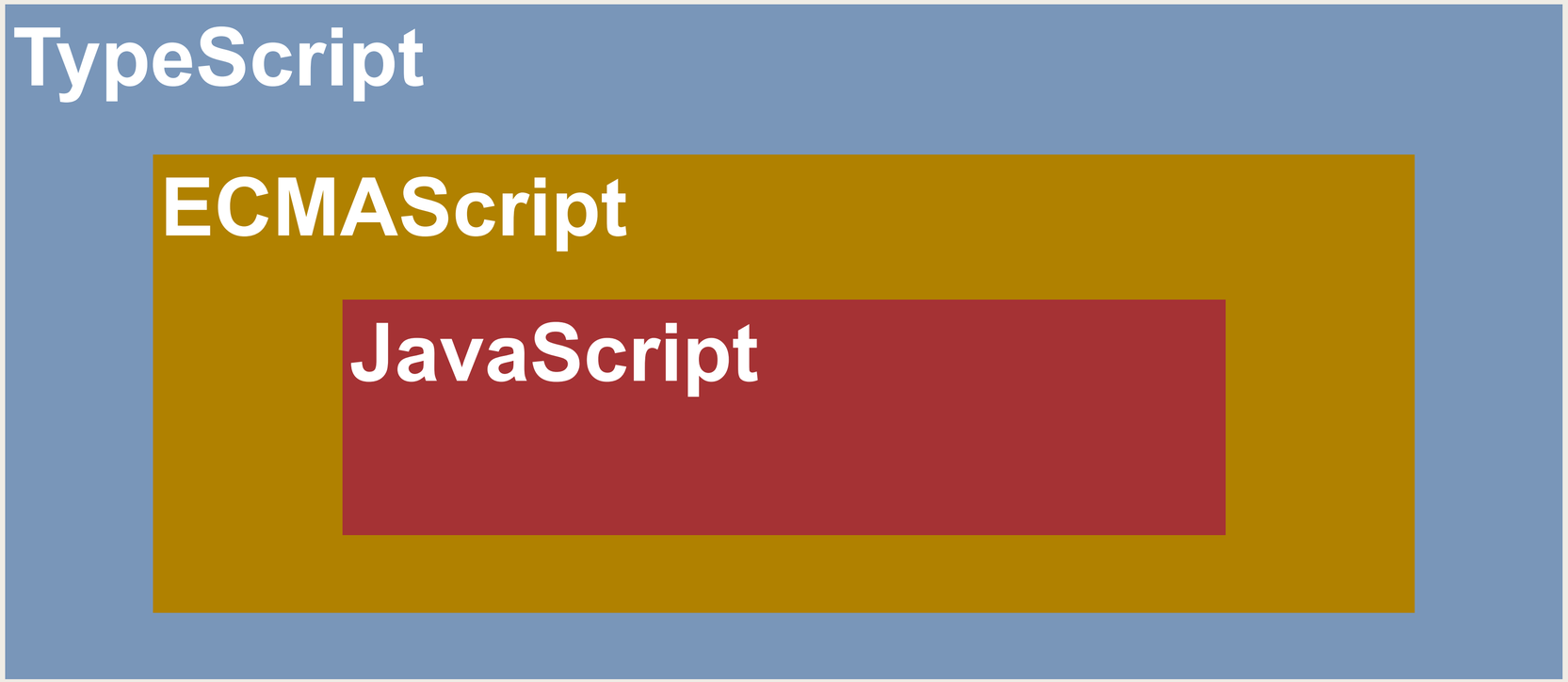
Angular Development

- For Angular development, we can develop using various languages
  - **JavaScript**: extremely popular programming language
  - **ECMAScript:** standardized version of JavaScript (ES6, ES9, …)
  - **TypeScript:** adds optional types to JavaScript
  - *Other languages such as **Dart**, etc …*

- **TypeScript** is the most popular language for Angular development

Relationships

- TypeScript is a superset of JavaScript and ECMAScript



TypeScript

- **FAQ: Why do most Angular developers use TypeScript?**

- Strongly-typed language with compile time checking and IDE support
- Increased developer productivity and efficiency

- The Angular framework is internally developed using TypeScript
- Docs, online blogs and tutorials use TypeScript for coding examples

Practical Results

- Introduction to TypeScript development
- Not an A to Z reference
- For complete reference, see TypeScript Documentation

www.typescriptlang.org

Development Process

1. Create TypeScript code

2. Compile the code

3. Run the code

Step 1: Create the TypeScript code

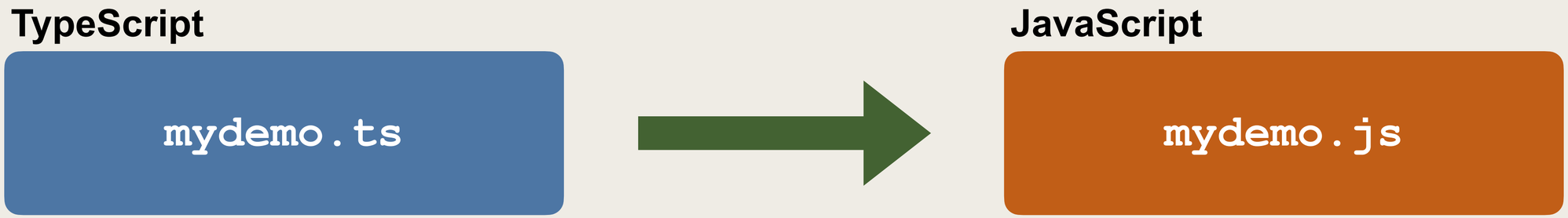
- TypeScript files have the **.ts** extension

File: mydemo.ts

```
console.log("Hello World!");
```

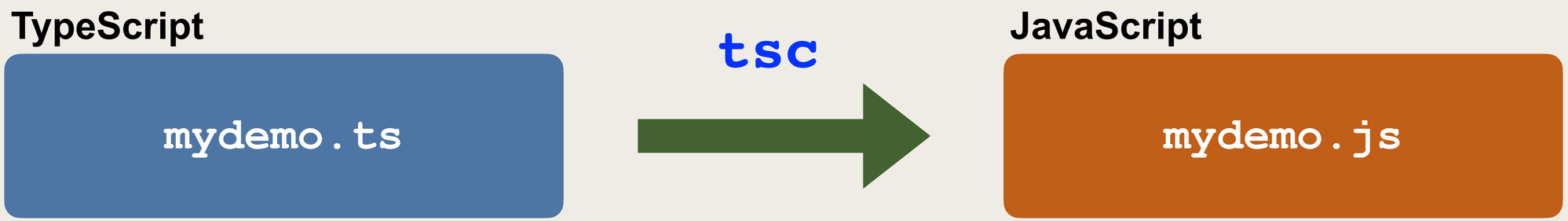
Step 2: Compile the Code

- Web browsers do not understand TypeScript natively
- Have to convert TypeScript code to JavaScript code
- This is known as **"transpiling"**



Step 2: Compile the Code (cont)

- **"Transpiling"** is accomplished with the **`tsc`** command




```
C:\> tsc mydemo.ts
```

Step 3: Run the code

- To run the JavaScript code, we use the **`node`** command
- Run the **generated JavaScript code** (**`.js`** file)

```
C:\> node mydemo.js

Hello World!
```

```
console.log("Hello World!");
```

The Compiler is Your Friend

- The compiler / IDE can find errors earlier at compilation time

```
console.LOGSTUFF("Hello World!");
```

Compile code using: tsc

```
C:\> tsc mydemo.ts

myhello.ts:1:9 - error TS2339: Property 'LOGSTUFF' does not exist on type 'Console'.

 console.LOGSTUFF("Hello World!!");
         ~~~~~~~~

Found 1 error.
```

Compilation error … much better