# First Things First



Deborah Kurata
CONSULTANT | SPEAKER | AUTHOR | MVP | GDE

@deborahkurata | blogs.msmvps.com/deborahk/





# Module Overview



Introduce TypeScript
Install what we need
Set up our Angular application
About modules



TypeScript
is the programming
language we use
when building
Angular applications



# JavaScript



The language for the Web

**ECMAScript (ES)** 

ES 3/5

ES 2015 (formerly known as ES 6)

- Classes
- Arrow functions

Newer JavaScript transpiled to older JavaScript



# TypeScript



Open source language

Superset of JavaScript

Transpiles to plain JavaScript

Strongly typed

**Class-based object-orientation** 



# Learning More



#### **TypeScript Playground**

https://www.typescriptlang.org/play

#### **Pluralsight Courses**

"TypeScript: Getting Started"
"TypeScript Fundamentals"



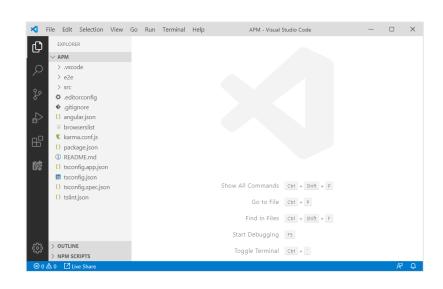
# Installing What We Need



#### **Editor**

- Visual Studio (VS) Code





### VS Code

**Created by Microsoft** 

Runs in Linux, Windows, and OS X

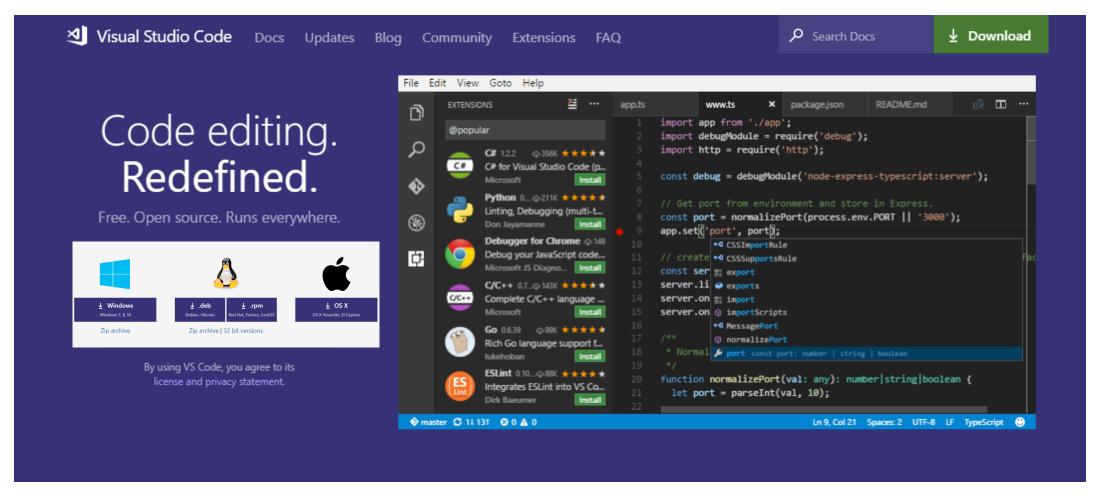
Has numerous features that support TypeScript

- Auto-completion
- Intellisense
- Syntax checking
- Refactorings

It's FREE



## Visual Studio Code



https://code.visualstudio.com/



# Learning More



**Visual Studio Code Site** 

https://code.visualstudio.com/

**Pluralsight Course** 

"Visual Studio Code"



# Installing What We Need







# Installing What We Need





- VS Code

#### npm

- Node package manager



## npm

Angular TypeScript Bootstrap etc...

Open-source repository

Command-line utility for interacting with the repository

```
Command Prompt
Microsoft Windows [Version 10.0.18362.720]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\Deborah>npm install abc_
   Command Prompt
    Directory of C:\Users\Deborah
   02/07/2020 05:58 PM
                                           newv9app
                            <DIR>
   03/25/2020 04:53 PM
                                            node_modules
                            <DIR>
   01/04/2019
               05:33 PM
                            <DIR>
                                            .nuget
                  0 File(s)
                                           0 bytes
                  3 Dir(s) 1,371,293,900,800 bytes free
   C:\Users\Deborah>
```

## npm



Installs libraries, packages, and applications

**Executes scripts** 

https://nodejs.org/en/download



# Installing What We Need





- VS Code



- Node package manager



## What Else Do We Need?



#### **Angular**

- Framework and libraries

#### **Angular CLI**

- Command line interface for Angular

#### **TypeScript**

- Programming language

Testing tools, linters, etc.



## package.json

#### dependencies

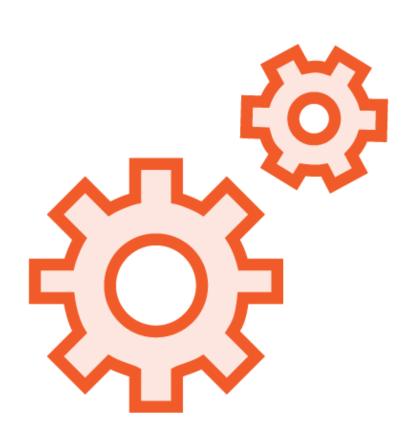
 Packages required for development and deployment

#### devDependencies

 Packages only required for development

```
"dependencies": {
13
         "@angular/animations": "~10.0.4",
14
         "@angular/common": "~10.0.4",
15
         "@angular/compiler": "~10.0.4",
         "@angular/core": "~10.0.4",
18
         "@angular/forms": "~10.0.4",
         "@angular/platform-browser": "~10.0.4",
19
         "@angular/platform-browser-dynamic": "~10.0.4",
20
         "@angular/router": "~10.0.4",
21
         "rxjs": "~6.5.5",
22
         "tslib": "^2.0.0",
23
         "zone.js": "~0.10.3"
24
25
       "devDependencies": {
26
         "@angular-devkit/build-angular": "~0.1000.3",
27
         "@angular/cli": "~10.0.3",
28
         "@angular/compiler-cli": "~10.0.4",
29
         "@types/node": "^12.11.1",
30
         "@types/jasmine": "~3.5.0",
31
         "@types/jasminewd2": "~2.0.3",
32
         "codelyzer": "^6.0.0",
33
         "jasmine-core": "~3.5.0",
34
         "jasmine-spec-reporter": "~5.0.0",
35
         "karma": "~5.0.0",
36
         "karma-chrome-launcher": "~3.1.0",
37
         "karma-coverage-istanbul-reporter": "~3.0.2",
38
         "karma-jasmine": "~3.3.0",
39
         "karma-jasmine-html-reporter": "^1.5.0",
40
         "protractor": "~7.0.0",
41
         "ts-node": "~8.3.0",
42
         "tslint": "~6.1.0",
43
         "typescript": "~3.9.7"
44
45
```

# Setting up Our Angular Application

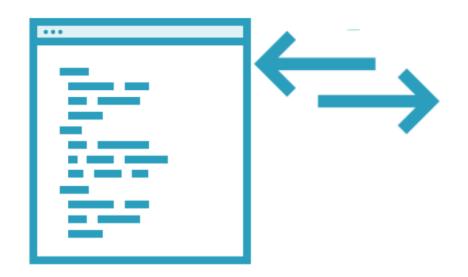


#### **Starter files**

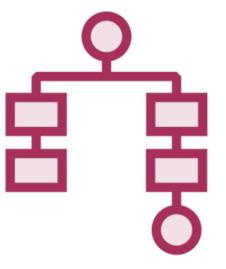
https://github.com/DeborahK/Angular-GettingStarted



## Modules



ECMAScript (ES) 2015 Modules



**Angular Modules** 



## ES 2015 Modules

**\_Transpile** 

# Export

#### product.ts

```
export class Product{
}
```

#### product.js

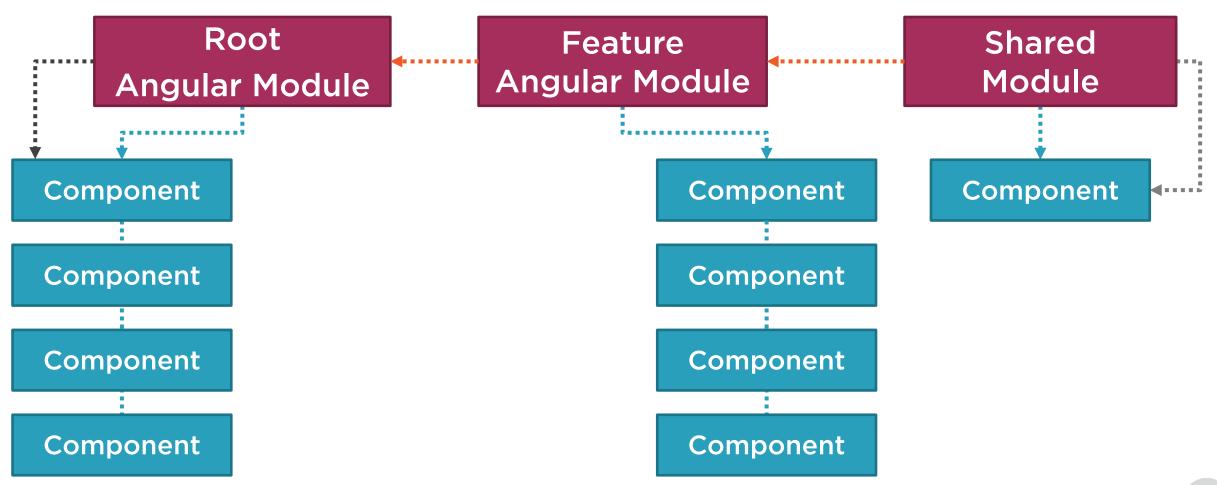
```
function Product() {
}
```

# Import

#### product-list.ts

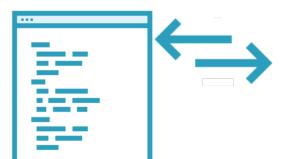
```
import { Product } from './product'
```

# Angular Modules





## Modules



#### **ES Modules**

Code files that import or export something

Organize our code files

Modularize our code

Promote code reuse

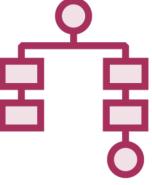
#### **Angular Modules**

Code files that organize the application into cohesive blocks of functionality

Organize our application

Modularize our application

Promote application boundaries



# Summary



#### **Introduced TypeScript**

#### Installed what we need

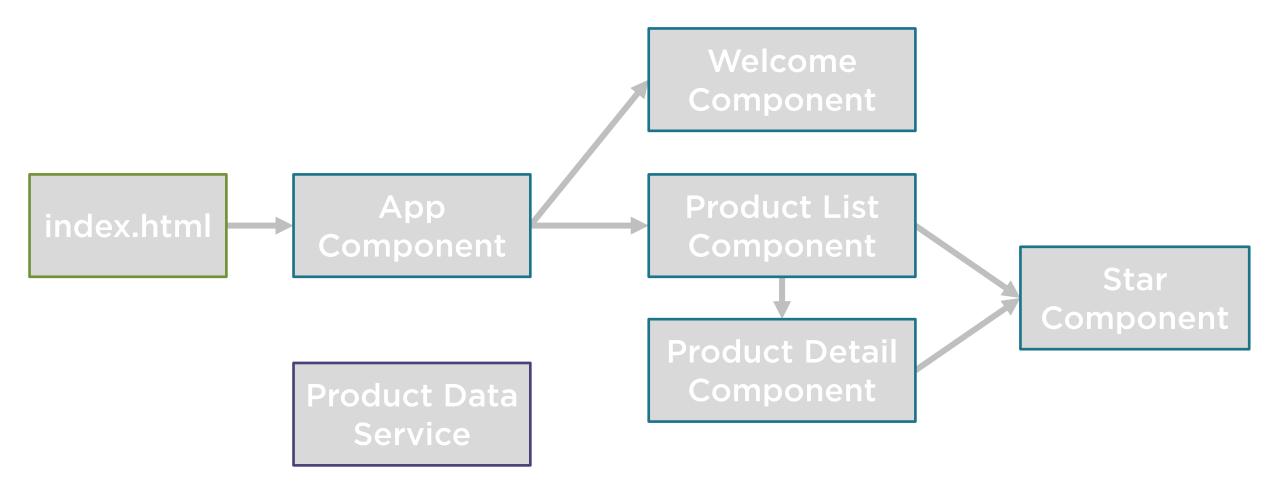
- Editor (VS Code)
- npm (node)

Set up our Angular application

**About modules** 

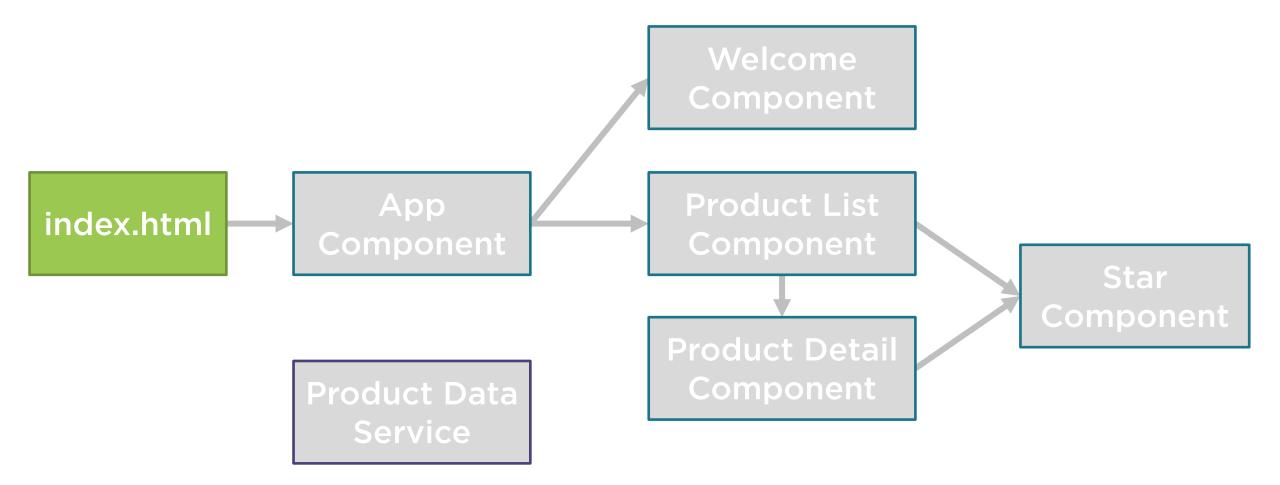


# Application Architecture





# Application Architecture





# Application Architecture

