

Angular 2 (and 4) Introduction

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“Code with Passion!”



Topics

- What is and Why Angular (Angular 2 and Angular 4)?
 - > From this point on, whenever we say “Angular 2” or “Angular”, we also include “Angular 4”
- Angular CLI
- Angular 4 improvements over Angular 2

What is and Why Angular?

What is Angular?

- Angular is a development platform for building “mobile” and “desktop” applications
 - > Angular was designed for mobile from the ground up
 - > Angular, like React and other modern frameworks, can leverage performance gains by rendering HTML on the server or even in a web worker
- Angular is platform agnostic
 - > Not coupled with DOM or even HTML
 - > Can be used for non-browser platforms

Angular 1 vs Angular 2

- Angular 2 is rewritten from scratch
 - > Using different language (TypeScript over JavaScript)
 - > Introduced new building blocks (component oriented)
 - > Incompatible with Angular 1
- Why these drastic change (from Angular 1)?
 - > Web has evolved a lot (since Angular 1 was introduced in 2009)
 - > The applications are becoming more complex and demanding
 - > New technologies were introduced (WebWorkers, Reactive extensions (Rx), etc)
 - > ..

Why Angular 2?

- Angular is easier to program
 - > Familiar language features, Type-checking, IDE support, Easier to read and write code, etc
- Streamlined architecture over Angular 1
 - > Component oriented
- Higher performance
- Mobile-friendly

Angular CLI

Angular CLI

- Command line tool for automating your development workflow
- It allows you to
 - > create a new Angular application (ng new hello-app)
 - > run a development server with LiveReload support to preview your application during development (ng serve)
 - > add features to your existing Angular application (ng generate ...)
 - > run your application's unit tests (ng test)
 - > run your application's end-to-end (E2E) tests (ng e2e)
 - > build your application for deployment to production (ng build)
 - > deploy your application to a server

Angular CLI installation



- Install Node.js (if it has not been installed already)
 - > Before you can use Angular CLI, you must have Node.js 4.0.0 and npm 3.0.0 or higher installed on your system (npm gets installed as part of Node installation)
 - > <https://nodejs.org/en/>
- Verify the installation
 - > `node -v`
 - > `npm -v`
- Install Angular CLI
 - > `npm install -g @angular/cli` (Angular Cli beta 30+)
 - > `npm install -g angular-cli` (Angular Cli beta -30)
 - > `ng version` (to verify the installation)

Lab: Build Helloworld Angular App



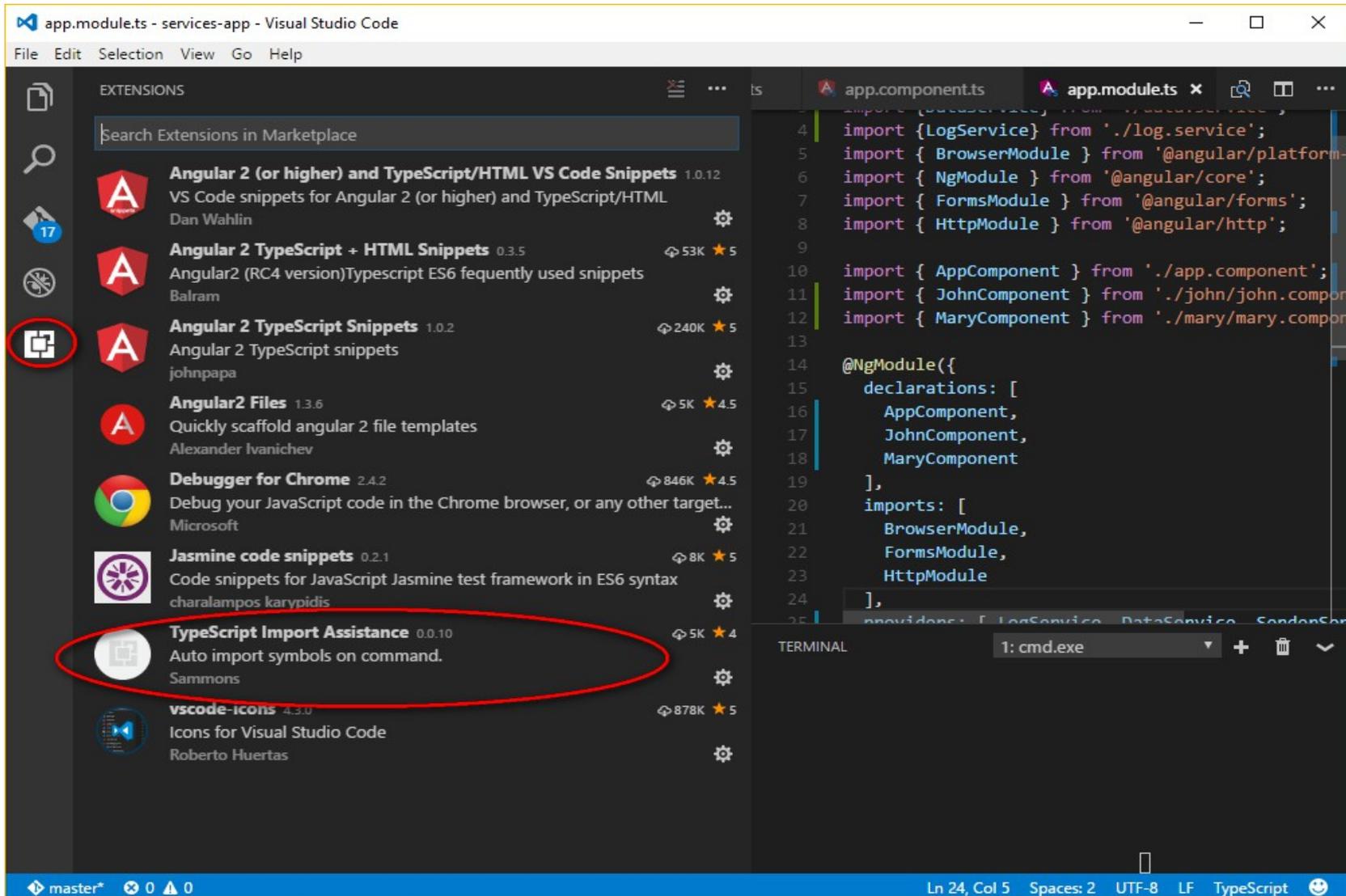
- Create and run Helloworld Angular app
 - > `ng new helloworld-app`
- Open “helloworld-app” directory using editor of your choice
- Run the “helloworld-app” Angular application
 - > `cd helloworld-app`
 - > `ng serve` (application gets build and served, application gets rebuilt and deployed when changes are made)
- Open a browser and go to `http://localhost:4200`
- Observe “Welcome to app!” page in a browser
- You now have a simple yet fully functioning Angular application

Lab: Install Editor/IDE

- Visual Studio Code (Microsoft) - free
 - > <https://code.visualstudio.com/download>
- WebStorm (JetBrain) – probably the best at this point, commercial
- Atom
- Sublime Text



Lab: Install Extensions to VSC



The screenshot shows the Visual Studio Code interface with the Extensions Marketplace open. The search bar contains the text "Search Extensions in Marketplace". The list of extensions includes:

- Angular 2 (or higher) and TypeScript/HTML VS Code Snippets 1.0.12
- Angular 2 TypeScript + HTML Snippets 0.3.5
- Angular 2 TypeScript Snippets 1.0.2
- Angular2 Files 1.3.6
- Debugger for Chrome 2.4.2
- Jasmine code snippets 0.2.1
- TypeScript Import Assistance 0.0.10** (highlighted with a red oval)
- vscode-icons 4.3.0

The editor window shows a TypeScript file named `app.component.ts` with the following code:

```
import { LogService } from './log.service';
import { BrowserModule } from '@angular/platform-browser';
import { NgModule } from '@angular/core';
import { FormsModule } from '@angular/forms';
import { HttpClientModule } from '@angular/http';

import { AppComponent } from './app.component';
import { JohnComponent } from './john/john.component';
import { MaryComponent } from './mary/mary.component';

@NgModule({
  declarations: [
    AppComponent,
    JohnComponent,
    MaryComponent
  ],
  imports: [
    BrowserModule,
    FormsModule,
    HttpClientModule
  ],
  providers: [ LogService, DataService, SendarService ]
})
```

The terminal window at the bottom shows the command prompt: `1: cmd.exe`. The status bar at the bottom indicates the current file is `app.component.ts` at line 24, column 5, with 2 spaces, UTF-8 encoding, and LF line endings.

Angular 4

Angular 4 Improvements Over Angular

- Under the hood changes
 - > Size of the generated code reduced
 - > Faster compilation
- Feature changes
 - > Animations being pulled out of @angular/core
 - > *ngIf/else : Now you can use else clause as well

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