Angular Dev Tips

Angular GDE / Microsoft MVP / Trainer

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- Core Member of Angular Taiwan User Group

- 2018 Angular/Web GDE (Google Developer Expert)

- 2008 ~ Now Microsoft MVP

- Dozens of speeches and trainings each year in Taiwan.

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Angular Dev Citta

Concept first, then Speed

Concept First

- Angular Bootstrap Process

- Angular Execution Lifecycle

- Angular Forms

- Angular State Management

- Angular Components

- Third-party components

- Angular Routers

- Performance Tuning

- Unit testing & Integration tests

- Modules & Libraries

Then Speed

- Blind typing

- Accuracy first, then Speed

- Know your dev tools

- The "Flow" of heart

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Angular CLI

改善前端開發環境的終極武器

Using Schematics for automation

- ng new demo1 --routing --style css

- ng generate component hello

- ng update

- Custom code gen

  - 以 Manfred Steyer 的 angular-crud 為例
  - ng g angular-crud:crud-module hotel

- ng add @angular/elements

- ng add @angular/material

- ng add @angular/pwa

- ng add @clr/angular

- ng add @nativescript/schematics

- ng add ng-zorro-antd

- ng add ngcli-wallaby

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Interactive ng new / ng add / ng generate


```
ng new demo2

G:\Projects>ng new demo2
? Would you like to add Angular routing? Yes
? Which stylesheet format would you like to use?
  CSS
> SCSS    [ http://sass-lang.com    ]
  SASS    [ http://sass-lang.com    ]
  LESS    [ http://lesscss.org      ]
  Stylus [ http://stylus-lang.com ]
```

`ng new demo1 --routing --style css`

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ng add @angular/material

```
G:\Projects\demo1>ng add @angular/material
Installing packages for tooling via npm.
npm WARN @angular/material@7.0.4 requires a peer of @angular/cdk@7.0.4 but none is installed. You must
install peer dependencies yourself.
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.4 (node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.2.4: wanted {"os":"da
rwin","arch":"any"} (current: {"os":"win32","arch":"x64"})


+ @angular/material@7.0.4
added 1 package and audited 39135 packages in 19.083s
found 0 vulnerabilities


Installed packages for tooling via npm.
? Choose a prebuilt theme name, or "custom" for a custom theme:
> Indigo/Pink          [ Preview: https://material.angular.io?theme=indigo-pink ]
  Deep Purple/Amber   [ Preview: https://material.angular.io?theme=deeppurple-amber ]
  Pink/Blue Grey      [ Preview: https://material.angular.io?theme=pink-bluegrey ]
  Purple/Green        [ Preview: https://material.angular.io?theme=purple-green ]
  Custom
```

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Auto update & upgrade

- https://update.angular.io/

- Migrating outdated rxjs syntax
  ```
  npm install -g rxjs-tslint
  rxjs-5-to-6-migrate -p src/tsconfig.app.json
  npm uninstall rxjs-compat
  ```

- Upgrade to latest Angular version
  ```
  npm install @angular/cli
  ng update @angular/cli @angular/core
  ng update @angular/material
  ```

Angular CLI v7's Bundle Budgets

```
30          "configurations": {
31            "production": {
32              "fileReplacements": [
33                {
34                  "replace": "src/environments/environment.ts",
35                  "with": "src/environments/environment.prod.ts"
36                }
37              ],
47              "budgets": [
48                {
49                  "type": "initial",
50                  "maximumWarning": "2mb",
51                  "maximumError": "5mb"
52                }
53              ]
54            }
55          }
```

angular.json

Warning 200kB / Error 500kB

```
G:\Projects\demo1>ng build --prod

Date: 2018-11-14T17:16:41.799Z
Hash: 805dbba822221ef429c0
Time: 20184ms
chunk {0} runtime.ec2944dd8b20ec099bf3.js (runtime) 1.41 kB [entry] [rendered]
chunk {1} main.03731d229824b993b278.js (main) 253 kB [initial] [rendered]
chunk {2} polyfills.c6871e56cb80756a5498.js (polyfills) 37.5 kB [initial] [rendered]
chunk {3} styles.3bb2a9d4949b7dc120a9.css (styles) 0 bytes [initial] [rendered]

WARNING in budgets, maximum exceeded for initial. Budget 200 kB was exceeded by 92.1 kB.
```

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Warning 200kB / Error 250kB

```
G:\Projects\demo1>ng build --prod

Date: 2018-11-14T17:16:41.799Z
Hash: 805dbba822221ef429c0
Time: 20184ms
chunk {0} runtime.ec2944dd8b20ec099bf3.js (runtime) 1.41 kB [entry] [rendered]
chunk {1} main.03731d229824b993b278.js (main) 253 kB [initial] [rendered]
chunk {2} polyfills.c6871e56cb80756a5498.js (polyfills) 37.5 kB [initial] [rendered]
chunk {3} styles.3bb2a9d4949b7dc120a9.css (styles) 0 bytes [initial] [rendered]

WARNING in budgets, maximum exceeded for initial. Budget 200 kB was exceeded by 92.1 kB.

ERROR in budgets, maximum exceeded for initial. Budget 250 kB was exceeded by 42.1 kB.
```
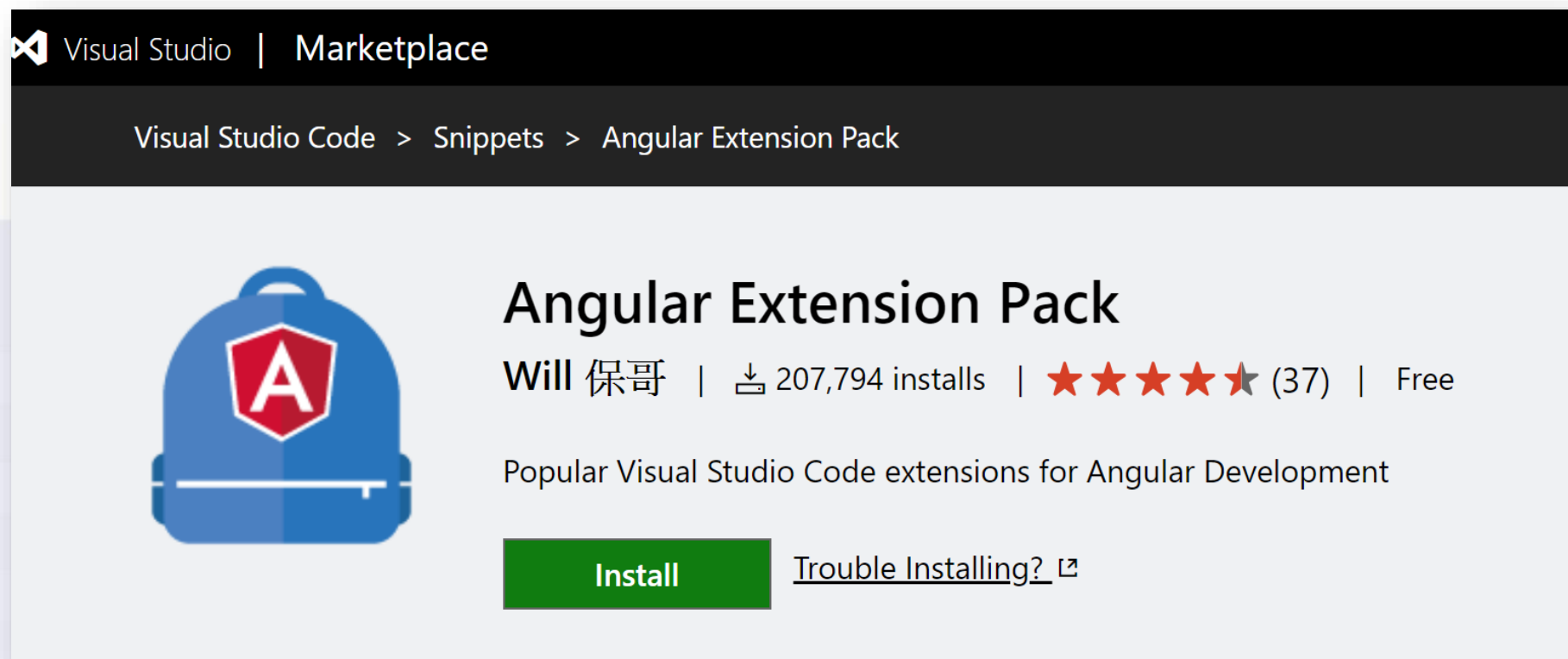
Code Navigation

- Don't use EXPLORER in Visual Studio Code

- Always use **Ctrl+E** to find files　　　　(Command: workbench.action.quickOpen)
    - Fuzzy matching

- Navigating back and forward
    - Back：**Alt+←**　　　　　　　　　　(Command: workbench.action.navigateBack)
    - Forward：**Alt+→**　　　　　　　　　(Command: workbench.action.navigateForward)

- Breadcrumbs
    - Toggle On: **Ctrl+Shift+.**　　　　　(Command: breadcrumbs.toggleToOn)
    - Focus Previous: **Ctrl+←**　　　　　(Command: breadcrumbs.focusPrevious)
    - Focus Next: **Ctrl+→**　　　　　　　(Command: breadcrumbs.focusNext)

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Angular Extension Pack

The Will 保哥's verion

- You MUST install Angular Extension Pack extension

Angular Language Service

- Completions lists

- AOT Diagnostic messages

- Quick info

- Go to definition

Switching between files in a component

- Switch to TEMPLATE (*.html)
  - Shoftcut：**alt+o** (Windows) / **shift+alt+o** (macOS)

- Switch to CSS (*.css)
  - Shortcut：**alt+i** (Windows) / **shift+alt+i** (macOS)

- Switch to TypeScript (*.ts)
  - Shortcut：**alt+u** (Windows) / **shift+alt+u** (macOS)

- Switch to Spec file (*.spec.ts)
  - Shortcut：**alt+p** (Windows) / **shift+alt+p** (macOS)

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Use Code Snippets

- Use Code Snippets as much as you can

  - ng-import-*   import common Angular modules or services

  - a-*   Angular v7 Snippets

  - ng-*   Angular Snippets
  - ngrx-*   Angular NgRx Snippets
  - ngxs-*   Angular Ngxs Snippets
  - m-*   Angular Material Design Snippets
  - rx-*   RxJS Snippets for both TypeScript and JavaScript

Use TSLint to improve code quality

- Command
  - TSLint: Fix all auto-fixable problems   (Command: tslint.fixAllProblems)

- User settings
  - **"tslint.autoFixOnSave": true**

- TSLint core rules (tslint.json)
  - **import-blacklist**
  - **prefer-const**

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TypeScript Refactoring

- Code Actions = Quick Fixes
  - `Ctrl+.`
- Rename symbol
  - `F2`
- Change All Occurrences
  - `Ctrl+F2  / CMD+F2`
- Move TS
  - Move TypeScript files and update relative imports

- Refactoring actions
  - Extract Method
  - Extract Variable
  - Extract function
  - Extract constant
  - Suggestion Code Action (…)
  - Generate 'get' and 'set' accessors
  - Move to new file
  - Convert to async function
  - Convert between named imports and namespace imports

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TypeScript type definition

- JSON to TS

  - **Ctrl+Alt+V**   Convert from clipboard
  - **Ctrl+Alt+S**   Convert from selection

- Paste JSON as Code

  - Support TypeScript, Python, Go, Ruby, C#, Java, Swift, Rust, Kotlin, C++, Flow, Objective-C, JavaScript, Elm, and JSON Schema

  - Choose Language Mode first, then run "Paste JSON as Code/Type" Command

  - Paste JSON as Code   (Command: quicktype.pasteJSONAsTypesAndSerialization)
  - Paste JSON as Type   (Command: quicktype.pasteJSONAsTypes)

Auto-generate code comments

- Document This

  - Just hit Ctrl+Alt+D twice

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Following the Angular Style Guide

- https://angular.io/guide/styleguide

- If you have time, read it.

- If you don't have time, forget it.

  - Just let `ng generate` scaffold the code for you.
  - Just run `ng lint` to check the code styles (codelyzer)
  - Just use TSLint to "**Fix all auto-fixable problems**"

Links

- Version 7 of Angular—CLI Prompts, Virtual Scroll, Drag and Drop and more

- How Did Angular CLI Budgets Save My Day And How They Can Save Yours

- Angular Extension Pack - Visual Studio Marketplace

- Angular CLI Command Reference

- Angular Update Guide

- Angular Style Guide

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