Getting STARTED with Angular

hi!

I am Matt Vaughn

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 @angularlicious

 github.com/buildmotion

 http://www.angularlicio.us **OR** www.angularlicious.com

About ME

Profile:

- Web development since 1998
- .NET/C# since 2001
- Angular 2 since 2016
- Musician (Saxes, EWI)
- Husky: **lukka_the_husky**

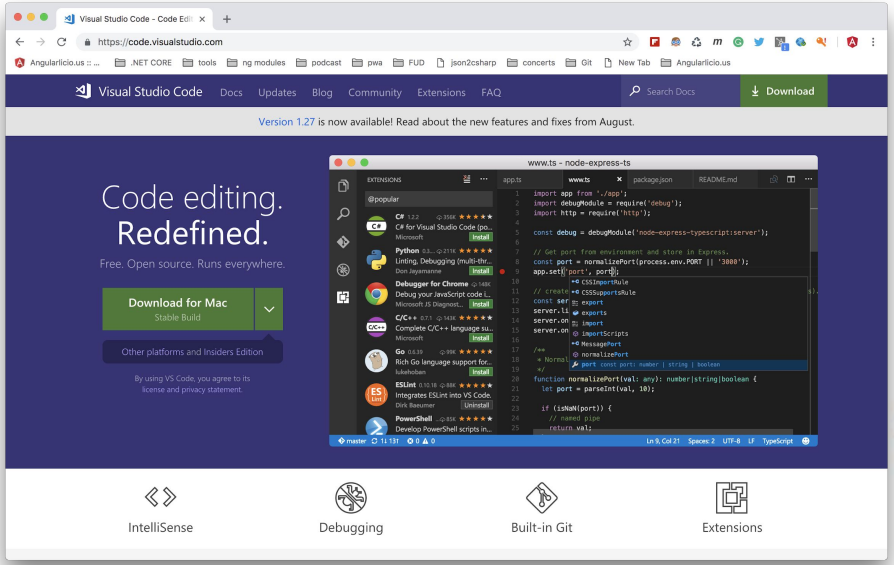

node
JS
npm
CLI
TypeScript
PRIME
NG
HTML
CSS

DEV Environment

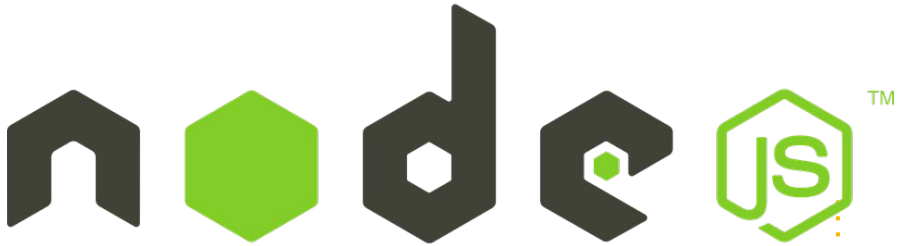
Things that you will need to get started

Visual Studio Code

- Download and install.



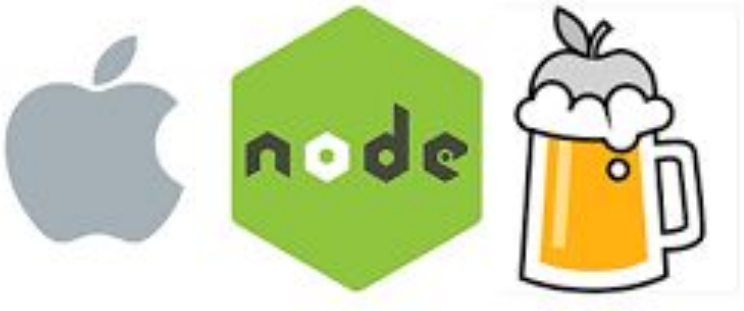
node.js



- Install nodejs…
- ***Browsers*** require Javascript to run the app - therefore, Typescript needs to be transpiled (which requires Nodejs).

Install on a MAC?

Use Brew.sh to install nodejs and npm on a Mac.



Install on a Windows PC?

Just download and install the latest LTS release.

Angular CLI

- Install the Angular CLI - globally.
- https://cli.angular.io/

```
1 npm install -g @angular/cli
```

HOW IT WORKS

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ANGULAR STUFF

ng: How it works...

Definition: The things that make Angular work.

Angular is

- Module-driven
- Enterprise-level Framework
- Design Patterns
- Object-Oriented
- Tooling

Benefits:

- Opinionated.
- Well-defined.
- Worldwide communities.
- End-to-end Framework
- Learning Resources
- Conferences

ng DETAILS

Angular is

- Module-Driven Platform
- Packages
- ES6
- Strongly Typed
- Services
- HTTP Client
- Routing
- Components
- Provider-based DI

Tooling:

- CLI
- Schematics
- Build
- Serving
- Testing (e2e, specification)

ng APPLICATIONS

Angular is

- Single Page Application (SPA)
- Progressive Web App (PWA)
- Angular Universal (Server-side Rendering)
- Angular + Ionic (Hybrid Mobile)

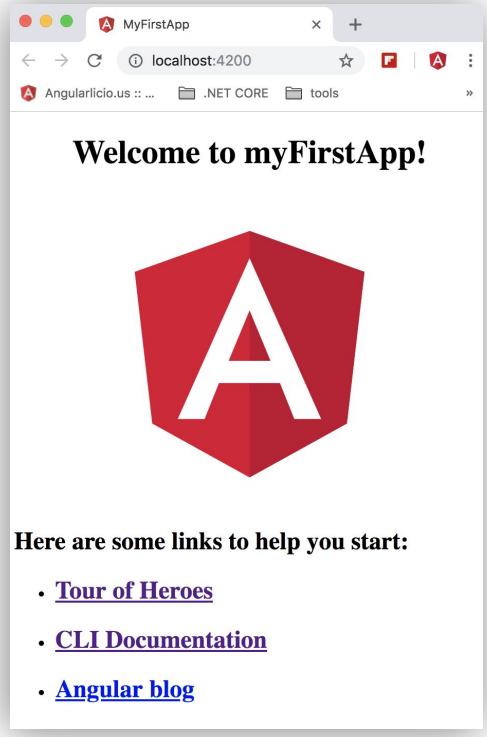
At the END of the DAY?

WHAT DO WE GET AFTER ALL OF THIS?

HOW does ng WORK?

A single page application.

- Index.html
- Javascript Bundles
  - Javascript
  - HTML
  - CSS
- Module loader...runtime
- HTTP Client access Web APIs



BUILDING blocks

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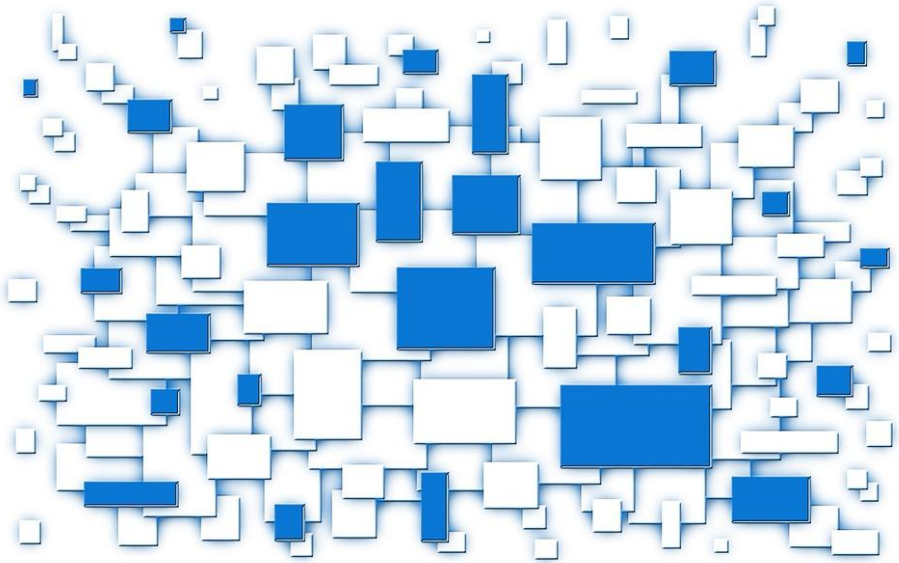
TOOLS, COMPONENTS, AND FRAMEWORKS

WHAT is A MODULE?

Definition: A module is a collection of ***related*** things - organized together to provide or perform some related functionalities.

Javascript: It is part of the ECMAScript specification 2015.

- ES6
- ESM6
- EcmaScript 2015



WHAT is an ng Module?

Definition: A container for components, services, classes, pipes, directives.

Angular Modules can *import* and use other modules - and what those modules expose (components, services, classes).

Benefits:

- Modular-driven
- Encapsulates implementation details.
- Controls what is exposed

WHAT is a COMPONENT?

Definition: A component is a unit that provides functional and visual elements for your application.

Angular Component: Is a specialized set of items:

- ***Class*** with @Component Decorator
- ***HTML*** → Template/View
- ***CSS***

Benefits:

- Can *extend* a base class.
- Container-Presentational.
- Composable.
- Autonomous/Independent
- Communication
  - Parent-to-child
  - Child-to-parent
- Data Binding

WHAT is a SERVICE?

Definition: A SERVICE provides sets of functionality (i.e., API), that allows for the encapsulation of logic.

Angular Service: Is a specialized class that is injected via DI:

- ***Class*** with @Injectable Decorator
- Provides an ***API*** to components or other services.

Benefits:

- Can implement an *interface*.
- Can *extend* a base class.
- Participates in Angular Dependency Injection mechanism.
- Can have configuration/setup data.
- Can be scoped for application, module, service, or component level.

WHAT is ROUTING?

Definition: Mechanism to navigate from one view to another.

Angular Routing Module: Is a specialized module with a routing service:

- Configurable routes for navigation.
- URL-based
- Links
- State and Events

Benefits:

- Built-in mechanism for navigation.
- Route guards to protect sensitive information.

WHAT is HttpClient?

Definition: Mechanism to communicate with backend systems using HTTP.

Angular HttpClient: Is a specialized module with capabilities of constructing and handling HTTP requests and responses.

Benefits:

- Built-in mechanism for HTTP communication.
- HTTP request/response error handling.
- Use to load JSON data
- Stream-based using Observables (rxjs)
- Security (XSRF, Headers)
- Supports mocking

first app

LET'S DO THIS...

USE the CLI...

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APPLICATION configuration

CONFIGURATION FOR YOUR ANGULAR APPICATION

WHAT is package.json?

Definition: A file that lists the npm packages used by your application..

- Dependencies for runtime and development
- Scripts for building, testing, and running

Benefits:

- Built-in mechanism for HTTP communication.
- HTTP request/response error handling.
- Use to load JSON data
- Stream-based using Observables (rxjs)
- Security (XSRF, Headers)
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WHAT is tsconfig.json?

Definition: TypeScript compiler configuration for the Angular app (`tsconfig.app.json`) and for the unit tests (`tsconfig.spec.json`).

- Compiler Options
- File Targets
  - Includes
  - Excludes

Resources:

- Learn more at: https://www.typescriptlang.org/docs/handbook/tsconfig-json.html

WHAT is tslint.json?

Definition: TSLint is an extensible static analysis tool that check Typescript code for readability, maintainability, and functionality errors.

- Configurable
- Rule based
- Type checking
- Support custom rules

Resources:

- Learn more at: https://palantir.github.io/tslint/

WHAT is angular.json?

Definition: Use to define the definition of all projects in an Angular Workspace.

- Add multiple applications
- Add multiple libraries
  - Shared
- Configure each application/library distinctly
- Shared configuration
- Environment Configurations
- Build Configurations

Resources:

- Schema Definition
- Schema Documentation
- Blog post...

WHAT is tsconfig.app.json?

Definition: Provides application-level Typescript build configuration..

- Extend the global tsconfig.json
- Override/customize the configuration items specific to the application.

WHAT is environment.ts?

Definition: A target environment file for environment-based configurations.

- Debug (default)
- Production
- Allows for customized configurations by environment
- Build configuration uses specified target
- Load configuration from JSON files.

Resources:

- Deployment
- Application Settings

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THE BACKEND

EVERY APPLICATION NEEDS A GOOD BACKEND

Option #1: WEB API

Definition: Use Microsoft's ASP.NET Web API to .

- Support for .NET Core
- Uses C#/.NET
- Controller-based
- Works well with JSON
- Integrates with Entity Framework

Resources:

- Getting Started
- Building Web APIs with .NET Core
- Pluralsight: Introduction to ASP.Net Web API

Option #2: SERVERLESS

Definition: A Serverless approach doesn't require a dedicated backend for the application.

- You can use Firebase as a database (BaaS)
  - Supports Functions
- Use Web APIs from any supported platform to compose functionality for the application
  - Contentful, MailChimp, Firebase, Google

Resources:

- Angular and Firebase Awesomeness
- Contentful
- SendGrid
- Stripe
- Google
- AWS

Option #3: OTHER

Definition: There are many other options out there.

- Node/Express
- Ruby on Rails
- Django for Python
- Flask (Python)
- Phoenix Framework
- Laravel

Resources:

- Node backend.
- List of Backend Frameworks

HOSTING

angular

?

HOSTING ANGULAR APPLICATION → NOTHING BUT OPTIONS

Hosting OPTIONS

Definition: add content here.

- On-premise
- Azure
- Heroku
- Firebase
- AWS
- Github Pages

USEFUL things

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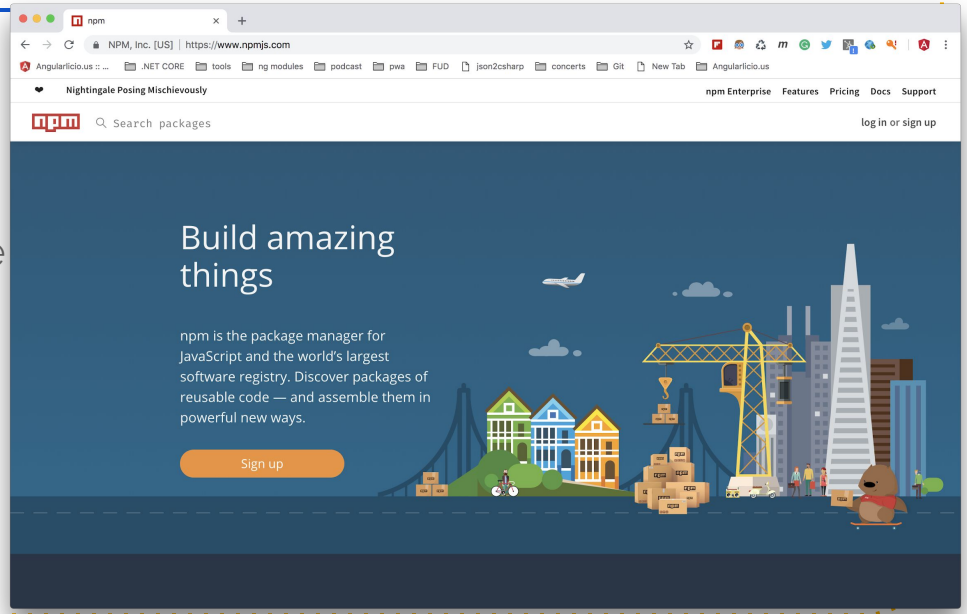
OTHER USEFULE THINGS TO HELP YOU BUILD NG APPS

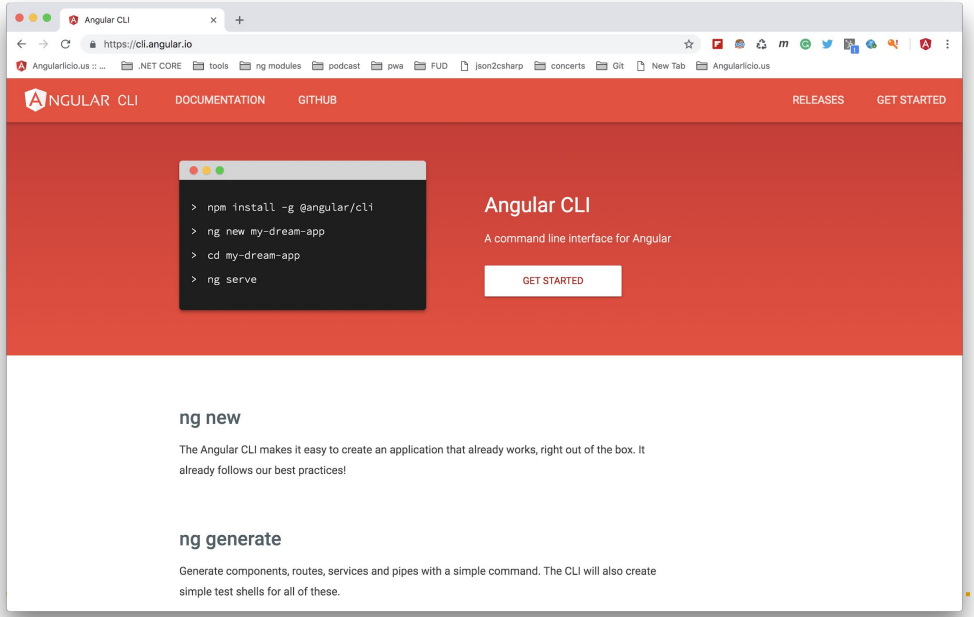
npm

- NPM (node package manager)
  - https://www.npmjs.com/
- Javascript Packages
- Angular-specific packages
- Publish custom packages
  - Custom libraries
- Public and/or Private package repositories
- Package Versioning



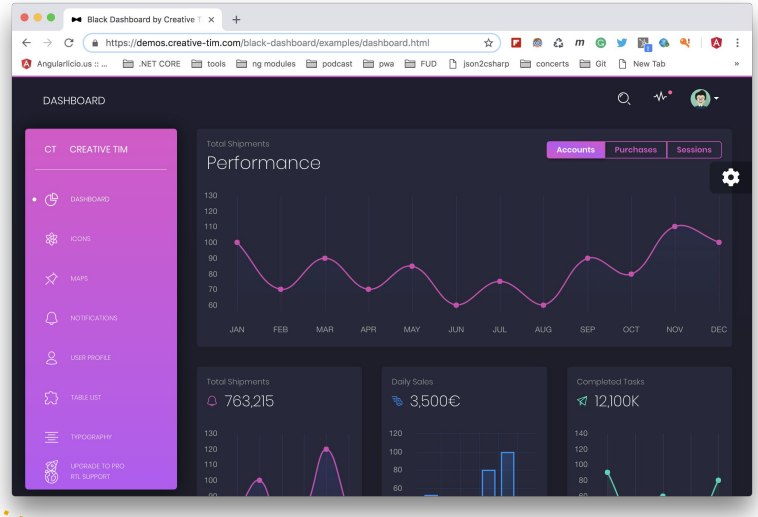
ng CLI

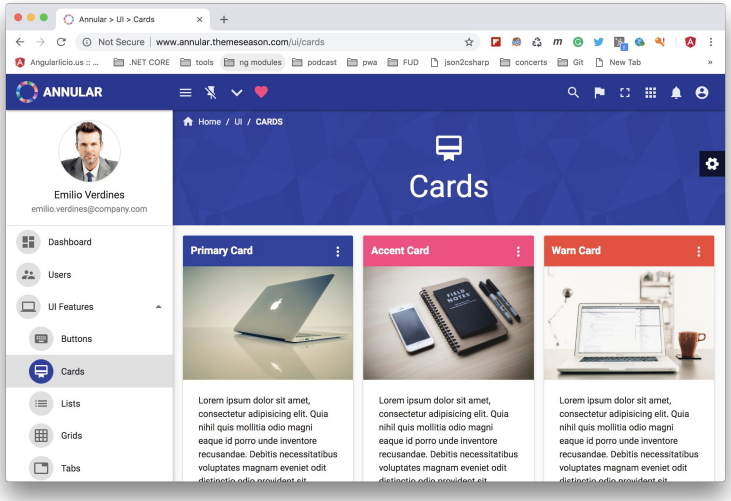
- https://cli.angular.io/



ng TEMPLATES

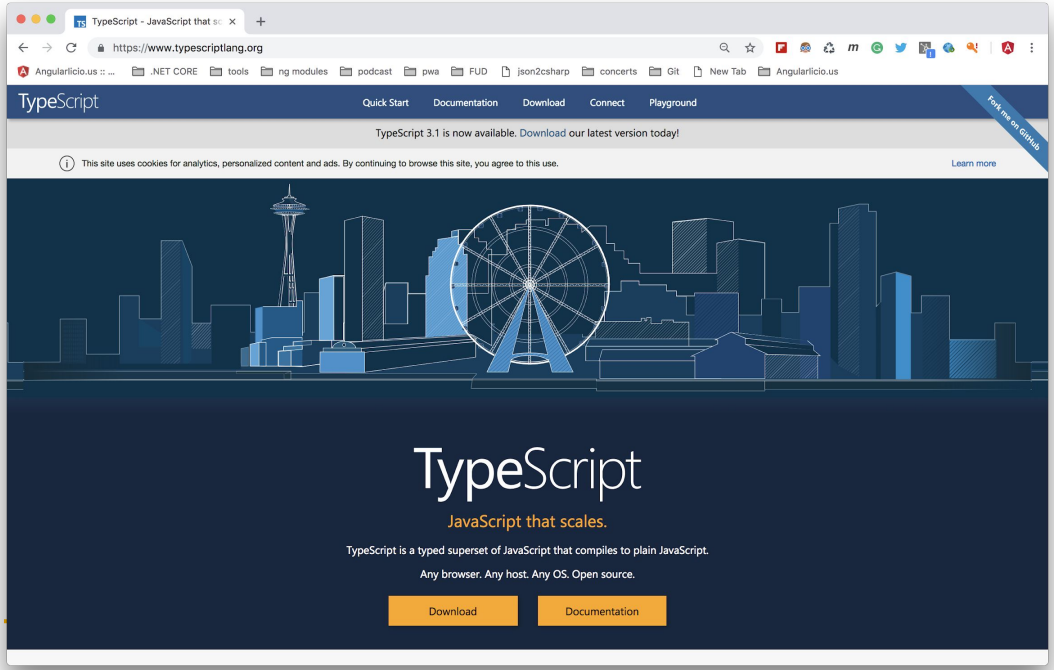
- Bootstrap www.creative-tim.com
- Material Design www.material.angular.io





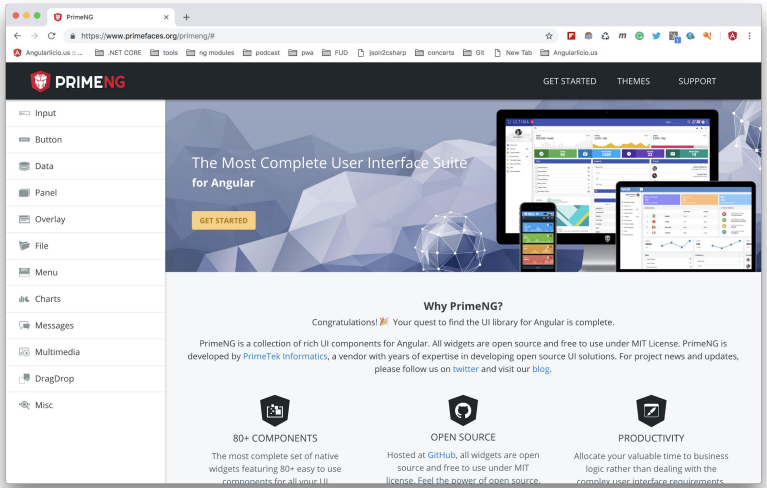
Typescript

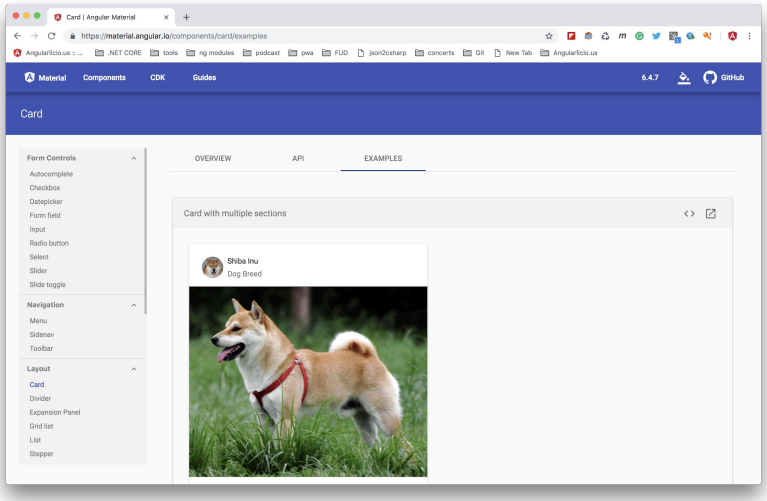
- https://www.typescriptlang.org/



ng CONTROLS

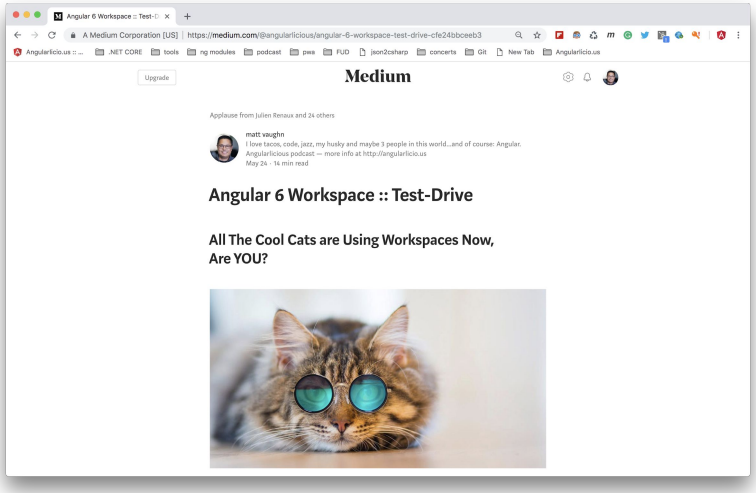
- Prime Ng: https://www.primefaces.org/primeng/#
- Material Design www.material.angular.io

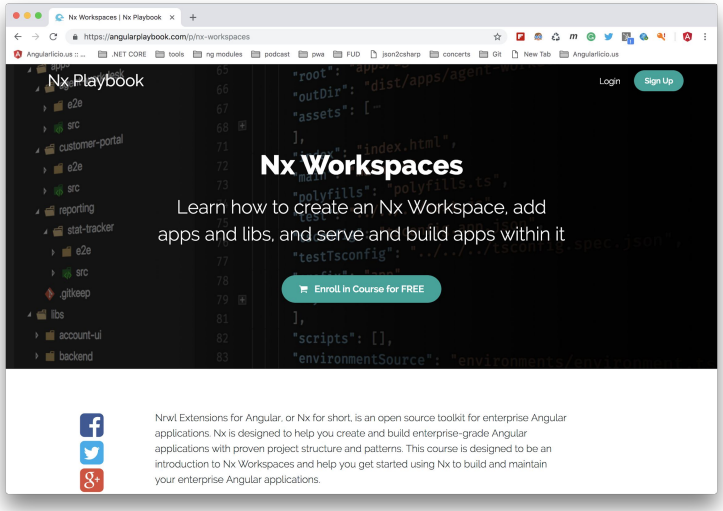




ng WORKSPACE

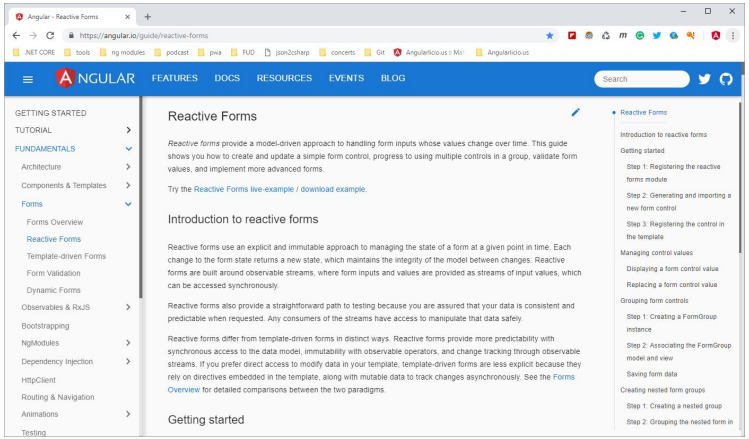
- Default with Angular 6
- Nrwl.io Nx : https://nrwl.io/nx





ng FORMS

- (2) Options
  - Template-Driven
  - ReactiveForms

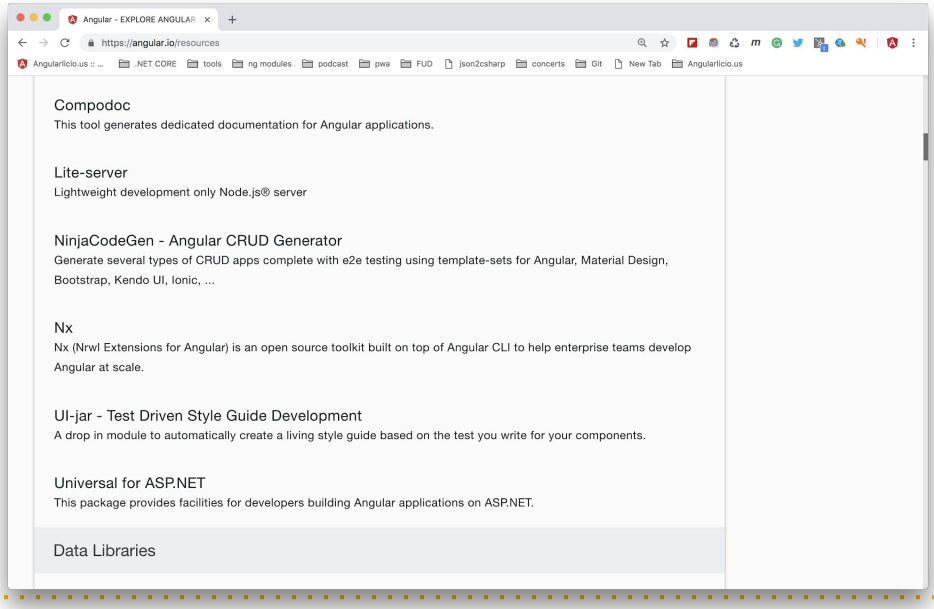


Resources:

- ReactiveForms Basics
- Todd Motto @ NG-NL 2017
- Reactive Thinking...

More RESOURCES

- https://angular.io/resources



BE SO GOOD
THEY CANNOT
IGNORE
YOU.

Angular RESOURCES

- Angular Quickstart Guide
- Angular CLI
- Nodejs download
- Typescript
- Angular Architecture
  - Modules
  - Components
  - Services
  - DI
- Routes
- HTTP Client

Presentation Resources

MORE RESOURCES

Presentation RESOURCES

- https://github.com/angularlicious/getting-started-with-angular

Thanks!

Any questions?

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