Angular

Introduction & Overview

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What is Angular?

- It’s a tool that helps you build interactive websites
- Namely: it’s a framework
- It will allow you to communicate with the server, maintain state and sync it when it changes, organize the code and logic, easily display data, package the application and improve the performance

What is Angular?

- In fact, there are two Angular frameworks
- The original framework is called AngularJS and it includes all versions that start with 1.x
- The current framework is just called Angular and it includes all versions that are 2+
- **These are two completely different frameworks!**

What is Angular?

- The current version of the framework (Angular 16) is maintained a whole team in Google
- Compared to AngularJS, it is:

  Standards Based

  Modern

  Performant and Faster

Angular Versions

- Angular releases new version every 6 months
- If a feature is not ready, it’s simply not released in that version but instead 6 months later with the next
- Every version gets 6 months of active support
- After that it gets 12 months of LTS (long time support) which includes bug and security fixes but no new features

Angular Versions

- Basically a version of Angular is supported for only 18 months
- When new version is released, Angular provides a way to update your code to the new version via tool developed by the Angular team
- It’s done via using schematics, which is part of Angular

Angular Benefits

- Standards compliance - applications will run on most browser, comply with security thresholds and run faster and more optimal using the latest available tools (such as the latest version of ECMAScript)
- Very fast performance
- Open source
- Backed by Google with big community and documentation

Angular Specifics

- It’s a framework - it comes with many tools that you would otherwise have to include separately such as router, forms, HTTP support, etc.
- It uses RxJS - embedded library for reactive async programming
- Separation of templates and logic - Angular uses different files for each of them

Angular Specifics

- Supports lazy-loading - faster loading client times
- Fully featured router
- Animations support
- Strictly typed forms with templates and reactiveness
- CLI update - easy transition to newer versions

Angular Specifics

- Mobile - you can use either Ionic or NativeScript to develop mobile applications using Angular
- Desktop - you can use Electron to build desktop applications (not only with Angular but with any other JS framework).

  NOTE: Electron is used building Visual Studio Code

Angular Testing

- Karma - unit testing tool
- Protractor - end-to-end tests tool (no more support)
- Alternatives to use: Jest, Cypress and Playwright
- Angular testing utilities: TestBed, Async and fakeAsync, MockBackend

Angular Cons

- Decorators - new type of syntax used by Angular that is not like JavaScript but you need to get used to
- TypeScript - not necessarily a minus but Angular uses TS so you need to learn it and use it
- Pipes - used to format data. If not used correctly, they can easily convolute your code and hit the performance

Angular Cons

- Modules API - listing and importing everything you use

  but leads to easy mistakes if you miss something and can become a huge mess if you create multiple modules

- Build - being a framework, the build process is complex

  and it needs to be fine tuned so it doesn’t affect performance negatively

Angular Cons

- Accessing the DOM - Angular creates a wrapper of the DOM to hide complexity and improve performance BUT tyring to access it directly could pose a problem
- RxJS - it uses much more complex Observables rather than regular Promises which makes the development a bit more cumbersome

Is Angular For You?

- It’s enterprise oriented
- Typed backend
- Templates separate from code
- It’s a framework
- If all of that is fine with you then Angular is a great choice

Questions?

Thank You!