



ANGULAR 6

Lesson 00



Angular Framework...

- Angular is a framework for building client side web applications in HTML, CSS and JavaScript / Typescript
- Angular is written in Typescript. It implements core and optional functionality as a set of Typescript libraries that you import into your apps.
- Sponsored and maintained by Google.
- Angular applications are built around a design pattern called *Model-View-Controller* (MVC)



Why Angular?...

- Angular combines declarative templates, dependency injection, end to end tooling, and integrated best practices to solve development challenges
- Cross Platform
- Speed and Performance
- Productivity
- Full Development Story



What you will learn...

- Develop modern, complex, responsive and scalable web applications with Angular
- Use the gained, deep understanding of the Angular fundamentals to quickly establish as frontend developers
- Fully understand the architecture behind an Angular application and how to use it
- Create single-page applications with one of the most modern JavaScript frameworks out there
- Troubleshoot common Angular errors & Master the best practices
- Design and Implement Application Authentication and Authorization from scratch



Pre-requisites

- HTML5 fundamentals
- CSS3 fundamentals
- JavaScript Basics



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Intended Audience

- Web application developers



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ANGULAR 6 – DAY 1

ES6 & Typescript

- Var, Let and Const keyword
- Arrow functions, default arguments
- Template Strings, String methods
- Object Destructuring
- Spread and Rest operator
- Typescript Fundamentals
- Types & type assertions
- Typescript OOPS - Classes, Interfaces, Constructor, etc
- Creating custom types
- Decorators



Introduction to Angular Framework

- Introduction to Angular Framework, History & Overview
- Environment Setup
- Angular CLI, Installing Angular CLI
- NPM commands & package.json
- Bootstrapping Angular App, Components, AppModule
- Project Setup, Editor Environments
- First Angular App & Directory Structure
- Angular Fundamentals, Building Blocks
- MetaData



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ANGULAR 6 - DAY 2

Essentials of Angular

- Component Basics
- Setting up the templates
- Creating Components using CLI
- Nesting Components
- Data Binding - Property & Event Binding, String Interpolation, Style binding
- Two-way data binding
- Input Properties, Output Properties, Passing Event Data
- Case Study



Templates, Styles & Directives

- Template, Styles, View
Encapsulation, adding bootstrap to angular app
- Built-in Directives
- Creating Attribute Directive
- Using Renderer to build attribute directive
- Host Listener to listen to Host Events
- Using Host Binding to bind to Host Properties
- Building Structural Directives



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ANGULAR 6 – DAY 3

Pipes, Services & Dependency Injection

- Parametrized Pipes
- Chaining Multiple Pipes
- Creating a Custom Pipe
- Creating a Filter Pipe
- Pure and Impure Pipes (or: How to "fix" the Filter Pipe)
- Understanding the "async" Pipe
- Services
- Dependency Injections
- Creating Data Service
- Understanding Hierarchical Injector
- Services for Cross Component Communication
- Injection Tokens



Template-Driven and Reactive Forms

- Template-Driven vs Reactive Approach
- Understanding Form State
- Built-in Validators & Using HTML5 Validation
- Grouping Form Controls
- FormGroup, FormControl, FormBuilder, FormArray
- Forms with Reactive Approach
- Predefined Validators & Custom Validators
- Async Validators
- Showing validation errors



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ANGULAR 6 – DAY 4

Components Deep Dive / Routing

- Component Life Cycle Hooks
- Reusable components in angular using `<ng-content>`
- `ng-content` and `@ContentChild`
- Inter-component communication (using Input, Output and Services)
- Navigating with Router links
- Understanding Navigation Paths
- Navigating Programmatically
- Passing Parameters to Routes
- Passing Query Parameters and Fragments
- Setting up Child (Nested) Routes
- Passing static data on routes
- `Map()` operator and `switchMap()` operator
- Redirecting and wildcard routes
- Outsourcing Route Configuration (create custom module)



Http Requests / Observables

- HTTP Requests
- Sending GET Requests
- Sending a PUT Request
- Transform Responses with Observable Operators (`map()`)
- Using the Returned Data
- Catching Http Errors
- `Pipe()`, `map()`, `catchError()`
- Interceptors
- Basics of Observables & Promises
- Analysing a Built-in Angular Observable
- Building & Using a Custom Observable
- Understanding Observable Operators
- Using Subjects to pass and listen to data



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ANGULAR 6 – DAY 5

Deployment / Authentication

- Deployment Preparations
- JIT vs AOT Compilation
- Setup development env and backend env
- Environments configuration
- Linting
- Deployment
- How Authentication works in SPA
- JSON Web Tokens
- Signup, Login and logout application
- Router Protection, Route Guards
- CanActivate interface
- Checking and using Authentication Status



References

- <https://angular.io/docs>
- <https://angular.io/guide/quickstart>
- <https://angular.io/tutorial>



Add instructions here.