Angular

Frontend Technical Workshop

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What’s Angular ?

- A TypeScript-based open-source web application framework
  - Component-based architecture
  - Two-way data binding
  - Dependency injection
  - CLI for rapid development
  - Rich ecosystem of libraries and tools

Why Angular ?

- Improved code maintainability and scalability
- Faster development cycles
- Enhanced user experience
- Strong community support
- Integration with other popular tools and frameworks

Angular Architecture

- Components: Building blocks of Angular applications
- Templates: HTML structures with Angular-specific syntax
- Modules: Groups of related components, directives, and pipes
- Services: Reusable logic and data management

Common Angular Commands

- ng generate component my-component
- ng serve
- ng build
- ng test
- ng add [package]

Module 01: Angular Key Areas

- Components and Templates
- Data Binding
  - One-way Binding
  - Two Way Binding
- Directives
- Services
- Dependency Injection

- Routing
- Forms
- HTTP Requests
- Observables

Workshop 01:

Create a simple Angular app

- Create a new Angular app using the Angular CLI.
- Add a component to the app.
- Bind data to the component's template.
- Create a service to fetch data from an API.
- Display the data in the component's template.

NB: For all angular apps that you are creating need to have a backend API to integrate it to.

Module 02: Angular Key Areas

- Forms
- Pipes
- Animations

- State management
- Testing
- Deployment

Workshop 02:

Create a Real-world Angular App

Option 1

To-Do List App:

- Core Features:
  - Add, edit, and delete tasks
  - Mark tasks as completed/incomplete
  - Filter tasks by status (completed, incomplete, all)
- Additional Features (if time permits):
  - Set due dates and reminders
  - Organize tasks into categories or projects
  - Integrate with a task management API

Option 2

Simple Blog App:

- Core Features:
  - Create, edit, and delete blog posts
  - Display blog posts in a list or grid view
  - Allow users to comment on posts
- Additional Features (if time permits):
  - Add categories or tags for better organization
  - Implement a search functionality
  - Integrate with a content management system (CMS)

NB: For all angular apps that you are creating need to have a backend API to integrate it to.

Angular Auth2

- Authentication
- Authorization

Angular Material

- Pre-built UI Components:Buttons, cards, forms, grids, and more
- Customization: Theming and customization options

Angular i18n

- Internationalization (i18n)
  - Separating text content from code.
  - Using placeholders for dynamic content.
  - Considering layout and design for different languages and cultures.
- Localization (l10n)
  - Translating text content
  - Formatting numbers, dates, and currencies
  - Handling time zones and calendars
  - Adapting layout and design

Workshop 03:
Deploy the App

- Identify the potential of App
- Choose a platform for deployment
- What all needs to deploy?
- Deploy the Backend App
- Deploy the Angular App
- Share the weblink to access the App.

Angular 16 v/s 17

- **Stable Signals and Effects:** This feature has been stabilized, making it ready for production use. It provides a more intuitive and efficient way to build reactive Angular applications.
- **Improved Router:** Enhanced lazy loading and error handling capabilities for a more robust routing experience.
- **New Control Flow Syntaxes (Developer Preview):** Introduced experimental syntax for more concise and expressive template logic.

Angular 17 v/s 18

- **Zoneless Architecture (Experimental):** This feature aims to improve application performance by reducing the overhead of change detection. While experimental, it has the potential to significantly boost app speed.
- Material 3: The latest Material Design system is now stable, offering modern UI components and theming options.
- Enhanced Developer Experience:
  - Improved debugging tools and error messages.
  - More streamlined development workflows.

Angular Universal

- **Server-Side Rendering (SSR):** Improving SEO and initial page load times

Angular Best Practices

- Component Reusability: Creating reusable components
- Code Organization: Following Angular style guidelines
- Testing: Writing unit and integration tests
- Performance Optimization: Optimizing application performance

Thank You!!!

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