Advanced Angular Development

Wissensgarantie: 12 Monate

Trainings-ID: ngADV

Zum Seminar →

Das nehmen Sie mit

This is a workshop for experienced Angular developers who want to deepen their knowledge and skills in Angular development. It consists of 10 modules each covering different advanced topics in Angular development. The workshop is designed to be hands-on and interactive, with a mix of lectures, demos, and exercises.

Standalone Components: Concepts & Migration
This module introduces the concept of standalone components and contrasts them with traditional Angular modules. You'll learn how to create and convert components, understand the Angular bootstrapping process, and manage providers in the new configuration files. The module also covers the use of app.config.ts and app.routes.ts for configuration and routing. Finally, it provides a comprehensive guide to migrating existing projects to use standalone components.

Components & Forms Deep Dive
Dive deep into Angular's component and form capabilities. This module explores advanced topics such as control flow syntax, deferred loading, and standalone directives. You'll master reactive forms, including typed forms, custom controls, and validation techniques, ensuring robust and dynamic form handling. Additionally, it covers content projection, HostBinding, and HostListener for more flexible component design. The module also addresses handling form errors and using the ErrorStateMatcher.

Mastering Reactive Programming using RxJS
Gain a comprehensive understanding of RxJS and its role in Angular applications. This module introduces observables, operators, and marble diagrams, helping you visualize and debug

reactive streams. You'll learn to handle reactivity declaratively, manage stateful services, and implement custom observable operators. The module also covers imperative vs. declarative reactivity and the use of data- and action-streams. Finally, it includes strategies for retry and error handling in reactive programming.

Mastering Reactivity using Signals
Explore the new Signals API in Angular, comparing it with observables and understanding their interoperability. This module covers component communication, zoneless change detection, and advanced view queries. You'll learn to use signals for nesting components, handling inputs and outputs, and implementing the event bus pattern. The module also addresses the use of writable signals, computed signals, and effects for managing reactivity. Additionally, it covers the use of viewChild, viewChildren, contentChild, and contentChildren for querying the view.

Advanced State Management using NgRx
Master state management with NgRx, from classic patterns to the new Signal Store. The module includes an overview of state management patterns and the differences between NgRx Classic and Signal Store. It covers NgRx classic store implementation using createFeature, createActionGroup. The focus of this module is the @ngrx/signal Signal Store, with it's basic concepts and how to implement and use it. The module also covers side effects using rxMethod, usage of Store Features like Entity and Data Services as well as the implementation of custom store features.

Advanced Routing and App Initialization
Delve into advanced routing techniques and app initialization strategies. This module covers dependency injection, global error handling, lazy loading, and dynamic components. You'll also learn about preloading strategies, route guards, and router animations, optimizing your application's navigation and initialization. The module includes the use of APP_INITIALIZER, forwardRef, and functional resolvers for preloading component data. Additionally, it covers the use of auxiliary routes, router animations, and visual feedback indicators.

Securing Angular using Cloud Identities
Learn to secure your Angular applications using JWT, OAuth 2.0, and OpenID Connect. This module covers token-based authentication with NgRx, implementing an AuthModule, and

optimizing application flow for authentication. You'll also explore authentication using Microsoft Entra ID. The module includes the use of a facade service, components, guards, and interceptors for managing authentication. Additionally, it covers the recap of JWT, OAuth 2.0, and OpenID Connect for securing Angular applications.

Advanced Testing with Jasmine, Cypress, and NgRx
Enhance your testing skills with advanced techniques for Angular applications. This module covers testing tools like Jasmine, Karma, Jest, and Cypress. You'll learn to test classes, services, components, and complex forms, as well as perform end-to-end testing and marble testing for observables. The module includes the use of HttpClientTestingModule and HttpTestingController for testing services. Additionally, it covers the use of mock store, mock selectors, reducers, effects, and facades for testing NgRx.

Reusability with Libraries, Nx & Angular Elements
Focus on creating reusable Angular artifacts. This module covers building and consuming Angular libraries, using Nx workspaces, and implementing Angular Elements. You'll learn to publish libraries to GitHub Packages and create reusable web components, promoting code reuse and modularity. The module includes the use of Angular building blocks like workspace, apps, and libraries. Additionally, it covers the implementation of reusable web components using Angular Elements and standalone components.

Real-Time Micro-Frontends & Progressive Web Apps
Explore the world of micro-frontends and progressive web apps (PWAs). This module covers real-time connectivity, service workers, and PWA configuration. You'll learn to install, update, and optimize PWAs, ensuring a seamless and responsive user experience. The module includes the introduction to micro-frontends and their real-time connectivity using cloud events or large language models responses. Additionally, it covers the understanding and configuring of service workers and manifests for PWAs.

Optimizing & Publishing Containerized Applications
Optimize and publish your Angular applications using containerization. This module covers performance optimization with Chrome Dev Tools and Lighthouse, bundle analysis, and change detection profiling. The module includes the use of virtual- and infinite scrolling for optimizing

performance. Additionally, it covers the use of NgOptimizedImage for optimizing images and the introduction to zoneless change detection. You'll also learn about accessibility best practices, linting, and autoformatting with Prettier. Finally it introduces the concepts of server-side rendering, Docker image creation, and configuration management for containerized deployments.

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Zielgruppen

- Angular Entwickler*innen welche ihre Kenntnisse vertiefen wollen.

Termine & Optionen