Computers and Information Technology · IT279

Angular Advanced

Mastering Angular for High-Performance Web Applications: Advanced Techniques and Best Practices

Duration	Category	Ref
1 Week	**Computers and Information Technology**	**IT279**
Language	Certificate	
English	**Certificate of attendance**	

Introduction

Angular has established itself as one of the most powerful frameworks for building dynamic, responsive, and scalable web applications. As businesses strive to deliver sophisticated, user-friendly web solutions, the demand for developers with advanced Angular skills continues to grow. While many developers are familiar with Angular's core features, advancing your knowledge and mastering its more complex components can significantly enhance application performance, scalability, and maintainability.

This advanced course is designed for developers who are already proficient in Angular but want to deepen their expertise. Participants will explore advanced concepts such as optimising Angular applications for performance, state management, component communication, and the use of Angular’s powerful tooling and libraries. The course also covers best practices for architecting large-scale Angular applications, utilising RxJS effectively, and deploying applications to production with confidence.

Throughout this programme, participants will engage in hands-on exercises, real-world examples, and deep-dive explorations of Angular’s more sophisticated features. They will leave the course equipped with the tools and techniques needed to solve complex development challenges, optimise their code, and stay at the forefront of web application development.

Course Objectives of Angular Advanced

Upon completing this programme, participants will be able to:

- Implement advanced Angular features such as lazy loading, routing, and AOT (Ahead of Time) compilation.
- Optimise Angular applications for performance and scalability.
- Master state management techniques using NgRx and other advanced libraries.
- Utilise RxJS to handle complex asynchronous data streams effectively.
- Architect large-scale Angular applications following industry best practices.

- Implement dynamic form handling and validation using Angular's Reactive Forms.
- Integrate third-party libraries and tools to extend Angular’s capabilities.
- Deploy and monitor Angular applications in production environments.
- Enhance user experience through efficient component communication and smart rendering.

Course Methodology of Angular Advanced

- Lectures and Expert Insights: Leading industry experts will share their insights and best practices.
- Case Studies: Analyse real-world talent acquisition challenges and solutions.
- Group Discussions: Engage in meaningful discussions and share experiences with peers.
- Role-Playing and Simulations: Practice recruitment scenarios to enhance skills.
- Hands-on Workshops: Gain practical experience in using recruitment tools and techniques.

Organisational Impact of Angular Advanced

This training programme will have a positive impact on organisations by:

- Develop high-performance, scalable, and maintainable web applications using advanced Angular techniques.
- Reduce application downtime and improve user experience by optimising web performance.
- Accelerate development timelines by equipping teams with advanced skills and best practices.
- Streamline application architecture, making future enhancements and scaling more efficient.
- Foster a culture of continuous improvement in development teams by introducing cutting-edge tools and methodologies.
- Ensure successful deployments and seamless integration with existing systems and infrastructures.

Personal Impact of Angular Advanced

Participants will experience personal growth and development, including:

- Deepen their understanding of Angular’s advanced features and tools.
- Gain the confidence to tackle complex web development challenges using Angular.
- Improve their ability to architect and manage large-scale applications.
- Master the use of RxJS for handling asynchronous programming and data streams.
- Learn best practices for code optimisation, testing, and deployment.
- Enhance their career opportunities by becoming proficient in advanced Angular development.
- Become more effective in collaborating with teams on sophisticated Angular projects.

Who Should Attend

This course is intended for experienced developers and professionals with a working knowledge of Angular, including:

- Web Developers and Front-End Engineers
- Software Engineers with a focus on Angular-based projects
- Full-Stack Developers
- Technical Leads and Project Managers in web application development
- Anyone looking to deepen their expertise in advanced Angular concepts and tools

Course Outlines

Day 1

Advanced Angular Architecture and Optimisation

- Review of Core Angular Concepts: Components, Services, and Directives
- Exploring Advanced Angular Architecture Patterns
- Optimising Application Performance: AOT Compilation and Lazy Loading
- Advanced Routing Techniques and Guard Implementation
- Architecting an Angular Application for Performance

Day 2

State Management with NgRx and Redux Patterns

- Introduction to NgRx and Redux Principles
- Managing Application State with NgRx: Store, Actions, and Reducers
- Using NgRx Effects to Handle Asynchronous Operations
- Best Practices for Scalable State Management in Angular Applications
- Implementing State Management in a Complex Angular Application

Day 3

Advanced RxJS for Angular Development

- Deep Dive into RxJS and Reactive Programming Concepts
- Advanced Operators for Stream Manipulation: MergeMap, SwitchMap, and ForkJoin
- Best Practices for Handling Complex Asynchronous Data Streams
- Combining RxJS with NgRx for State and Stream Management
- Building a Real-Time Data Stream Solution with RxJS

Day 4

Dynamic Forms, Validation, and Testing

- Mastering Reactive Forms: Dynamic Form Handling and Validation
- Creating Complex Form Structures with Nested Form Groups and Arrays
- Validating Forms with Custom Validators and Async Validators
- Testing Angular Applications: Unit Testing with Jasmine and Karma
- Building and Testing Dynamic Forms with Advanced Validation Techniques

Day 5

Deploying and Monitoring Angular Applications

- Best Practices for Deploying Angular Applications to Production
- Optimising for Production: Minification, Bundling, and Caching Strategies
- Monitoring and Debugging Angular Applications in Production Environments
- Integrating Angular Applications with Third-Party Libraries and APIs
- Deploying a Full-Scale Angular Application with Best Practices
- Applying Advanced Angular Concepts to Real-World Projects

Ask us for a date for this course

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