

Angular Intermediate Development

Target Audience: Developers with prior Angular experience who are comfortable with components, modules, routing, and TypeScript basics.

Duration: 3 Days

Table of contents

Day 1 – Advanced Components & Modern Angular Architecture

Topics

- Angular Project Architecture Best Practices
- Standalone Components and Standalone APIs
- Smart vs Presentational Components
- Component Communication
 - @Input()
 - @Output()
 - ViewChild
 - Content Projection
- Dependency Injection Deep Dive
- Injection Tokens
- Environment Configuration
- Shared Services & Singleton Pattern
- Feature Module Organization
- Lazy Loading with Standalone Routing

Hands-on Labs

- **Lab 1:** Convert an existing application to Standalone Components
- **Lab 2:** Build reusable Card, Modal, and Alert components
- **Lab 3:** Implement parent-child communication using Inputs, Outputs & ViewChild
- **Lab 4:** Configure lazy-loaded feature modules using standalone routing

Day 2 – Reactive Programming & Data Management

Topics

- RxJS Deep Dive
- Observable Lifecycle
- Subjects
- BehaviorSubject
- ReplaySubject
- Async Pipe Best Practices
- HTTP Client Advanced Usage
- HTTP Interceptors
- Error Handling
- Retry Strategies
- Caching API Responses
- State Sharing using RxJS Services

Hands-on Labs

- **Lab 1:** Build a reusable API service with interceptors
- **Lab 2:** Implement loading indicators and centralized error handling
- **Lab 3:** Create shared application state using BehaviorSubject
- **Lab 4:** Develop a searchable product catalog consuming REST APIs

Day 3 – Forms, Performance & Testing

Topics

- Advanced Reactive Forms
- Dynamic Forms
- Custom Validators
- Cross-field Validation
- Async Validators
- Route Guards
- Route Resolvers
- Performance Optimization
- OnPush Change Detection

- TrackBy
- Angular Signals (Introduction)
- Unit Testing Components and Services
- Debugging Techniques

Hands-on Labs

- **Lab 1:** Build a dynamic employee registration form
- **Lab 2:** Implement authentication guard with protected routes
- **Lab 3:** Optimize application performance using OnPush & TrackBy
- **Lab 4:** Write unit tests for services and components