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IT Services and IT Consultancy \ Internship-Inplant Training \ Software Training Institute

உங்கள் கடை மற்றும் வியாபாரத்திற்கு ஏற்ற Website & Andriod App மற்றும் Software மிகச்சிறந்த முறையில் செய்து கொடுக்கப்படும்.

Expertise : AI, Machine Learning & Data Science \ Cybersecurity & Ethical Hacking
IoT, Blockchain & Cloud Computing \ Full Stack Web & Mobile Development
Digital Marketing & SEO

W3 App Developers

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Angular – 100+ Lab Exercises (Basic, Intermediate, Advanced)

□ Basic Level (30+ Exercises)

Objective: Build foundational skills in Angular components, templates, and core framework concepts.

Getting Started & Environment Setup

- Install Angular CLI and create Angular projects.
- Understand Angular architecture and MVC pattern.
- Explore Angular workspace and file structure.
- Create and render Angular components.
- Use Angular template syntax: interpolation, property binding, event binding.

Templates & Directives

- Use structural directives (*ngIf, *ngFor).
- Implement attribute directives (ngClass, ngStyle).
- Two-way data binding with [(ngModel)].
- Handle user input events and form controls.
- Create simple template-driven forms.

Component Communication

- Pass data via @Input and @Output decorators.
- Use EventEmitter for child-to-parent communication.
- Implement ViewChild and ContentChild queries.
- Use lifecycle hooks (ngOnInit, ngOnDestroy).
- Organize components using modules.

□ Intermediate Level (40+ Exercises)

Objective: Strengthen Angular proficiency with advanced forms, routing, services, and state management.



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Forms & Validation

- Build reactive forms using FormBuilder.
- Implement custom validators and async validators.
- Manage form arrays and nested forms.
- Handle dynamic form controls.
- Display validation error messages.

Routing & Navigation

- Configure Angular Router with routes and child routes.
- Use route guards (CanActivate, CanDeactivate).
- Manage route parameters and query params.
- Implement lazy loading for modules.
- Handle router events and navigation lifecycle.

Services & Dependency Injection

- Create injectable services.
- Use Angular's DI system.
- Implement singleton services.
- Consume REST APIs with HttpClient.
- Handle HTTP interceptors for request modification.

State Management & RxJS

- Work with Observables and Subjects.
- Use RxJS operators for stream transformations.
- Manage state with BehaviorSubject.
- Introduce NgRx for Redux-style state management.
- Implement effects for handling side-effects.

Testing & Debugging

- Write unit tests with Jasmine and Karma.
- Test components, services, and pipes.
- Perform end-to-end testing with Protractor or Cypress.
- Debug with Angular DevTools.
- Use Angular CLI testing commands.



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Advanced Level (40+ Exercises)

Objective: Master complex Angular patterns, performance, server-side rendering, and enterprise integration.

Advanced Components & Patterns

- Create dynamic and programmatic components.
- Use content projection and ngTemplateOutlet.
- Implement Angular animations.
- Build reusable libraries and Angular packages.
- Use custom pipes and directives.

Performance Optimization

- Analyze and optimize change detection strategies.
- Use OnPush change detection.
- Implement trackBy in ngFor for list rendering.
- Lazy load modules and components.
- Optimize bundle size with Angular CLI and Webpack.

Server-Side Rendering & PWA

- Set up Angular Universal for SSR.
- Implement Angular Service Workers for PWA capabilities.
- Manage pre-rendering and SEO optimization.
- Use TransferState API for data hydration.
- Deploy Angular SSR apps on cloud platforms.

Full-Stack Integration & DevOps

- Connect Angular with Node.js/Express backend.
- Implement authentication and authorization (JWT, OAuth).
- Use WebSockets for real-time features.
- Automate build and deployment pipelines (CI/CD).
- Containerize Angular apps with Docker.

Capstone Projects

- Develop a full-featured CRM dashboard.
- Build a real-time collaborative editor.
- Create an enterprise-grade e-commerce platform.



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- Implement a data visualization dashboard with D3.js.
 - Architect a multi-tenant SaaS Angular application.
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□ Tools & Ecosystem

- Angular 15+ with TypeScript
- Angular CLI, RxJS, NgRx
- Jasmine, Karma, Protractor/Cypress
- Angular Universal, Angular Material
- Docker, Jenkins/GitHub Actions for CI/CD