

Front-End Web Application Development

Duration: 15 Days

Target Audience: Fresh Graduates / Junior Developers / Corporate Employees

Prerequisites: Basic programming knowledge (any language)

Outcome: Build modern enterprise-grade front-end applications using HTML, CSS, JavaScript, Angular, and React

Day 1 — HTML5 Fundamentals (Accelerated)

Topics

- How Web Applications Work
- HTML5 Document Structure
- Semantic Elements
- Text, Lists, Links, Images
- Tables & Forms Basics
- Accessibility Essentials

Hands-on Labs

- Create structured corporate webpage
 - Build user registration form
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◆ Day 2 — Advanced HTML + CSS Fundamentals

Topics

- Multimedia & Embedding
- SEO Basics & Meta Tags
- CSS Syntax & Selectors
- Colors, Typography
- Box Model
- Display & Visibility

Hands-on Labs

- Build landing page with styled sections
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◆ Day 3 — Layout & Responsive Design

Topics

- Flexbox Layout
- CSS Grid System
- Positioning Techniques
- Responsive Design Principles
- Media Queries
- Mobile-First Approach

Hands-on Labs

- Build responsive dashboard layout
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◆ Day 4 — JavaScript Essentials & DOM

Topics

- Variables, Data Types, Operators
- Control Flow & Functions
- ES6 Features
- DOM Manipulation
- Event Handling
- Form Validation
- Fetch API & Async/Await (Intro)

Hands-on Labs

- Build interactive To-Do application
 - Consume public API
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React Development Phase

◆ Day 5 — Introduction to React

Topics

- Why React
- SPA Concept
- React Architecture
- Environment Setup (Vite/Create React App)
- JSX
- Functional Components
- Props

Hands-on Labs

- Create first React application
 - Build reusable components
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◆ Day 6 — React State & Events

Topics

- useState Hook
- Event Handling in React
- Conditional Rendering
- Lists & Keys
- Component Styling

Hands-on Labs

- Build dynamic task manager app
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◆ Day 7 — React Hooks & Forms

Topics

- useEffect Hook
- Component Lifecycle
- Forms in React
- Controlled vs Uncontrolled Components
- Basic Performance Tips

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- Build form-based application
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◆ Day 8 — Routing & API Integration (React)

Topics

- React Router
- Navigation & Layouts
- Fetching Data from APIs
- Error Handling
- Loading States

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- Build multi-page React application
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◆ Day 9 — Advanced React Concepts

Topics

- Context API
- Custom Hooks
- Code Splitting & Lazy Loading
- Best Practices & Folder Structure
- Intro to State Management Concepts

Hands-on Labs

- Enhance application with shared state
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Angular Development Phase (Enterprise Focus)

◆ Day 10 — Introduction to Angular

Topics

- Angular vs React (Enterprise Perspective)
- Angular Architecture
- Angular CLI & Project Setup
- TypeScript Essentials for Angular
- Components & Templates
- Data Binding Types

Hands-on Labs

- Create Angular application
 - Build basic components
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◆ Day 11 — Components, Directives & Pipes

Topics

- Component Interaction
- Input & Output Decorators
- Structural Directives (ngIf, ngFor, ngSwitch)
- Attribute Directives
- Pipes & Custom Pipes

Hands-on Labs

- Build dynamic UI using directives
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◆ Day 12 — Angular Forms

Topics

- Template-Driven Forms
- Reactive Forms
- Form Controls & Validation
- Dynamic Forms
- Form Best Practices

Hands-on Labs

- Build enterprise-style data entry form
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◆ Day 13 — Services, DI & HTTP

Topics

- Angular Services
- Dependency Injection
- RxJS & Observables Basics
- HTTP Client

- REST API Integration

Hands-on Labs

- Connect Angular app to backend service
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◆ **Day 14 — Routing & Modular Architecture**

Topics

- Angular Routing
- Lazy Loading Modules
- Route Guards
- Shared Modules
- Application Architecture Best Practices

Hands-on Labs

- Build multi-module enterprise application
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◆ **Day 15 — UI Frameworks, Optimization & Deployment**

Topics

- Angular Material / Bootstrap Integration
- UI Component Libraries
- Performance Optimization
- Production Build
- Deployment Strategies (Cloud/Static Hosting)
- Code Review & Best Practices

Capstone Project (Choose One)

Develop a full enterprise front-end application using either Angular or React:

- Employee Management System
- E-Commerce Front-End
- Corporate Dashboard
- CRM Interface
- Project Management Tool