

Introduction to Angular

Learning Objectives

This section will introduce the learners to Angular. Learners will get up and running quickly with a simple Hello world app. Learners will understand the fundamentals of Angular - what it is, why it is used, and how easy it is to get started.

Topics

What is Angular?

- Angular Overview
- Why Should You Learn Angular?
- How Do Websites Work?
- What is Angular?

Hello Angular

- Build a Hello World Angular Project
- What are Node and NPM?
- Install NodeJS for Angular
- Build a Hello World Project with Angular CLI
- How to Debug?

Angular Essential Concepts

- Angular Development Workflow Overview
- Understanding the Root HTML
- Understanding the Entry Point TypeScript File
- Understanding the App Component

Angular Version Releases

- Angular Version Releases

Architecture of an Angular Application

TypeScript

Learning objectives

This section will introduce the learners to TypeScript, the programming language used for Angular. Learners will understand basic TypeScript syntax, including variables and functions. Learners will build classes and modules with TypeScript.

Topics

What is TypeScript?

- Introduction to TypeScript
- What is TypeScript?

TypeScript for Beginners

- Create a TypeScript Project
- Basic Types in TypeScript
- TypeScript Classes
- Catching Runtime Errors in Compile Time with TypeScript
- Build a Class with ES5
- Build a Class with ES6
- Build a Class with TypeScript
- TypeScript Interfaces
- TypeScript Decorators
- Build a Decorator

Components and Templates

Learning objectives

This section will introduce the learners to building components and modularizing Angular applications. Learners will also cover bindings, directives, and tests. We will cover fundamentals including modules, components, data and event binding and passing data between components.

Topics

Building a Component

- Introduction to Components and Templates
- What is a Component?
- Set Up Development Environment
- Build a Component
- Understanding Our New Component
- Use Data Binding to Display Data

Angular Directives

- What are Directives?
- Use the NgClass Attribute Directive
- Use the NgStyle Attribute Directive

- Use the NgIf Structural Directive
- Use the NgFor Structural Directive

Defining a Component

- Modularizing Your App
- Build a Module
- Build a Lazy Loading Module with Routes - Setup
- Build a Lazy Loading Module with Routes - Routing
- Input
- Output
- Component Lifecycle

Content Projection

- Content Projection

Testing Angular Components

- Test Setup
- Write Unit Tests

Template-Driven Forms

Learning objectives

This section will cover how to handle user input via forms. Students will learn the template-driven approach as well as reactive approach to building forms.

Topics

Forms

- Building Forms with Angular
- Build a Template-Driven Form
- NgForm Directive
- Form Validation in Angular

Reactive Forms

- Reactive Forms
- Build a Reactive Form
- Form Data in Reactive Forms
- Understanding FormGroup and FormControl

Angular Services

Learning objectives

Grasp the significance of the angular module system, and gain an insight into why modules are needed, how we create modules, and about the different kinds of modules.

Topics

Angular Services

- Angular Services Overview
- Angular Services Introduction
- Refactor Application for Service
- Build a Service
- Inject and Use Service in Component
- Integrate Service into Components

Dependency Injection

- What is Dependency Injection
- Build a Service with Dependency Injection
- Integrate Message Service in Multiple Components

Asynchronous Operations

- Asynchronous Operations
- Build an Asynchronous Operation
- Simplify Asynchronous Operation

Angular HTTP Calls

Learning objectives

This section will introduce the learners to using HttpClient service for working with APIs/backend. Students will learn how to use built-in Angular modules and services to build and parse HTTP call to a server.

Topics

HttpClient

- Introduction to Angular HTTP Calls
- Clean Up UI
- What is HttpClient?
- Node.js Review
- Set Up Server
- Handle GET Data Request
- Handle POST and PATCH Requests
- Add HTTP Client to Angular
- Test Client-Server Communication
- HTTP Options
- HTTP Unit Testing

Unit Test Services

- Unit Test Services
- Style the App
- JSON Server

Routing

Learning objectives

Students will learn how to encapsulate pages and sections under routes and link to them when a user requests to visit or view content. Students will learn Angular's built-in Angular routing module

Topics

Routing

- Introduction to Routing?
- What is Routing?
- Build Routing and Display Contents
- Navigate the Application
- Routing with To-Do List Web Application
- Routing Requirements and Guards
- Routing - Example
- Nested and Wildcard Routes
- Lazy Loading Routes
- Routing - Advanced Example
- Route Guards

Styling and Animation

Learning objectives

This section will introduce the learners to styling the user interface of Angular applications.

Topics

Styling

- Introduction to Styling and Animation
- Basic Styling
- Angular Material Styling
- Advanced Styling Example

Angular Animation

- Angular Animation

Internationalization

- Internationalization

Deep Dive into Internationalization

- Deep Dive into Internationalization

Service Workers and Building a Progressive Web App

Learning objectives

This section will introduce the learners to building a web application with Angular service workers

Topics

Service Workers Introduction

- Service Workers and Building a Progressive Web App
Introduction to Service Worker

Build a Progressive Web App

- Build a Progressive Web App

- PWA Project Example
- Build a New PWA
- Build a Timer Component
- Quick Glance at the Outcome of Timer Component
- Build User Interface for Timer Component
- Build Timer-List Component
- Quick Glance at the Outcome of Timer-List Component
- Build Timer-List Component User Interface
- Simulate a Network Issue
- Designing a Professional User Interface
- Explanation on Manifest
- Browser's Cache Storage

Deployment with Firebase

Learning objectives

This section will introduce the learners to deploying an Angular application with Firebase

Topics

Overview of Deployment with Firebase

- Introduction to Deployment with Firebase
- New Build Options in Angular
- Understanding Deployment with Firebase
- How to Build a Firebase Project?
- Build an Angular CRUD App with Firebase
- Build a Service for the CRUD App with Firebase
- Build an Order Component
- Build an Order User Interface
- Build an Orders List Component
- Add Styling to Application
- Deploy Angular Application
- Production Files for Deployment