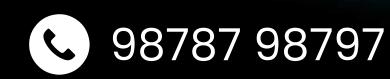


# .Net + Angular Full Stack Development

Become a Front-End / Full-Stack Developer







## Introduction to Full-Stack Development

- Overview of Front-End, Back-End, and Database
- Role of Angular, C#, .NET Core, and SQL Server in Full-Stack
   Development
- Setting Up the Development Environment: Visual Studio, SQL
   Server, Angular CLI, and Node.js

# Front-End Development

### Module-1: HTML, CSS, and Bootstrap

- HTML Fundamentals: Structure of an HTML Document,
   Semantic HTML5, Forms, Tables, and Multimedia
- CSS Basics: Selectors, Box Model, Flexbox, Grid Layout,
   Styling Forms, Animations, and Transitions
- Bootstrap: Grid System and Breakpoints, Components (Navbar, Cards, Buttons, Forms), Customizing Themes
- Responsive Design: Using Media Queries, Mobile-First
   Design Principles

## Module-2: Angular Framework

Introduction to Angular: SPA (Single Page Application)
 Overview, Setting up an Angular Project, Angular
 Architecture (Modules, Components, Templates)

- Forms in Angular: Template-Driven and Reactive Forms,
   Validation and Error Handling
- Angular Material: Material Design Components, Navigation,
   Dialogs, Tables, and Theme Customization
- Routing and Navigation: Setting up Routes and Lazy Loading,
   Router Guards
- CRUD Operations: Consuming REST APIs, Creating a CRUD Application with Angular and APIs

# Back-End Development

## Module-3: C# Programming

- Basics: Variables, Data Types, and Operators, Control
   Structures (If, Switch, Loops), Methods and Functions
- Object-Oriented Programming: Classes, Objects, and Constructors, Inheritance, Polymorphism, Abstraction, Interfaces
- Advanced C#: Delegates, Events, and Lambda Expressions,
   Exception Handling, LINQ (Language Integrated Query)

#### Module-4: .NET Core 8

 Introduction to .NET Core: Overview of .NET Core 8, Setting up a Web API Project in .NET Core

- RESTful APIs: Creating Controllers and Routes, Handling HTTPMethods (GET, POST, PUT, DELETE), Dependency Injection in .NET Core
- Middleware in .NET Core: Custom Middleware, Authentication and Authorization (JWT)
- Working with Configuration and Services
- Error Handling and Logging

## Module-5: Entity Framework Core

- Introduction to Entity Framework Core: Code-First and Database-First Approaches, Setting up DbContext
- Entity Relationships: One-to-One, One-to-Many, and Many-to-Many, Navigational Properties
- Migrations: Creating and Applying Migrations, Updating the Database Schema
- CRUD Operations with Entity Framework Core: Adding,
   Updating, Deleting, and Retrieving Data

#### Module-6: SQL Server

- Introduction to SQL Server: Installing and Configuring
   SQL Server, SQL Server Management Studio (SSMS)
- SQL Basics: DDL, DML, and DQL Statements, Creating and Managing Tables, Writing Queries (SELECT, INSERT, UPDATE, DELETE)

- Advanced SQL: Joins (INNER, OUTER, LEFT, RIGHT), Subqueries and Common Table Expressions (CTEs), Stored Procedures and Functions, Triggers and Indexing
- Database Design: Normalization and Denormalization,
   Designing Relational Databases, Creating Relationships
   with Primary and Foreign Keys

## Module-7: Full-Stack Integration

- Building a Complete Full-Stack Application:
   Example (E-Commerce or Task Management System)
- Integration: Using Angular to Consume .NET Core APIs,
   Persisting Data in SQL Server via Entity Framework
- Authentication and Authorization: JWT-Based
   Authentication in .NET Core, Protecting Routes in Angular
- Real-Time Updates: SignalR Integration (optional)

## Module-8: Deployment

- Deploying the Application: Hosting Angular on
   Firebase/Netlify, Hosting .NET Core APIs on Azure or IIS
- Database Management: Backing up and Restoring
   Databases in SQL Server

## Module-9: Capstone Project

Develop a Full-Stack Application integrating Angular,

.NET Core, Entity Framework, and SQL Server.

Example Projects: Online Store, Employee Management
 System, Learning Management System

## **Course Duration**

Total Duration: 16 to 20 weeks

Front-End: 6-8 weeks

Back-End (C#, .NET Core, Entity Framework): 6-8 weeks

Database (SQL Server): 3-4 weeks

Project Development: 2-4 weeks