

MEAN Stack

(MongoDB + Express JS + Angular 11 + NodeJS)

Objective and Manifest

- *MEAN* is a latest technology stack which uses **Angular** for UI, **Node.js** for Server Side, **Express.js** for RestFul Web Services and **Mongo DB** as a NO-SQL Database. At the end of this course, a participant is expected to integrate all the technologies and create an end to end application.

What is a SPA? What is Angular?

- Single Page Apps vs Conventional Web Applications
- How to involve Angular?

Preparing for TypeScript

- Brief Intro to TypeScript
- The TypeScript Module System
- Getting Setup
- Project Setup
- String Templates
- Const, Let vs Var
- Debugging
- Rest & Spread Operators
- Arrow Functions
- For & If
- Maps & Sets
- Class & Interface
- Generics

Building with Angular Components

- A simple Component
- Nested Components

Angular Binding and Events

- Templates
- Event Bindings
- Two-way Binding

- Class and Style Bindings
- Component Data Binding

Forms

- Controls & Control groups
- Form Builder
- Template Driven Approach
- Data Driven Approach

Pipes

- Built-in Pipes
- Chaining Pipes
- Custom Pipes
- Stateful & Stateless Pipes

Dependency Injection

- Why Dependency Injection?
- Injection API
- Component Service Providers
- Injecting Service Providers

Services

- Services Overview
- Creating a Service
- Injecting a Service
- Nesting Services

HTTP, Promises, and Observables

- Promises
- Calling an API endpoint via HTTP
- Introduction to Observables
- Observable Bindings
- Observables Operators

Routing

- Introduction and Use
- Creating and configuring Routes
- Routing Parameters

- Child Routes
- Routing Lifecycle Hooks

Directives

- Attribute Directives
- Custom Attribute Directive
- Structural Directives
- Structural Directive: ngIf, ngFor, ngSwitch etc.
- Custom Structural Directive

Testing

- Unit Testing Methodology for TDD
- Using Karma
- Using Jasmine
- End to End Testing

Angular Security

- Introduction to JSON Web Tokens
- JWT In Practice – Step by Step Authentication with JSON Web Tokens
- CSRF – Cross Site Request Forgery
- JWT-based Authentication with Auth0

Node.js

- Introduction to the Node.js Framework
- Installing Node.js
- Overview of Blocking vs Non-Blocking IO
- Using Node.js to execute scripts
- The Node Package Manager
- The package.json configuration file
- Using & compiling Typescript for Node.js
- Working with the HTTP protocol
- Building an HTTP Server
- Accepting a request
- Rendering a response
- Using Representational State Transfer Protocol (REST)
- Understanding concept of Web-Services
- Introduction to REST Full W/S

Express.js

- Introduction to the Express.js Framework
- Installing the Express package
- Routing
- HTTP Methods (Get, Put, Post, Delete)
- URL Building
- Form Data
- ExpressJS – Body-Parser to read data from incoming requests
- Database
- Cookies
- Sessions
- Authentication
- RESTful APIs
- ExpressJS & Mongo DB Integration

Mongo DB

- Introduction to the NO-SQL Databases
- Data Modeling
- Create & Drop Database
- Create & Drop Collection
- Data Types
- Insert Document
- Query Document
- Update Document
- Delete Document
- Projection
- Limiting Records
- Sorting Records
- MongoDB – Indexing
- Object Id
- Map Reduce