

# Web Application Development using MEAN Stack



HRDF  
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Claimable



Express

3  
days

## Course Description

MEAN Stack training course teaches participants how to create full stack web applications with MongoDB, Express, Angular.js and Node.js. Participants will build an MVC application using these technologies.

With the MEAN Stack, developers can write end-to-end JavaScript throughout their application, from the database, to server side operations and client side handling, leaving fewer margins for error and enabling rapid application development. Rather than spending time translating objects between different levels of the stack, MEAN stack developers can focus on writing application features, cutting down development time in the long-term.

With MongoDB, developers can store documents in a JSON-like format, write JSON queries on the ExpressJS and NodeJS based server, and seamlessly pass JSON documents to the AngularJS frontend.

The course will give a broad introduction to this popular web and mobile app development toolkit. It will teach the basic concepts of the MEAN stack while walking you through building a web application.

## Target Participant

This course is designed for experienced or entry-level software developers who want to learn how to leverage this powerful and modern web stack.

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## Prerequisite

This training course can be tailored to any level. In general, attendees ranging from first-time programmers to experienced JavaScript developers seeking to learn MEAN Stack can take this course. No prior experience with any of the MEAN stack technologies needed. The only prerequisite is a basic knowledge of the JavaScript programming language.

## Course Objectives

The main objective of this course is

1. Installing and working with MongoDB and Node.js
2. MongoDB schema design fundamentals
3. Building REST APIs with Node.js and Express
4. Building single page applications with AngularJS

## Course Content

### Day 1

- Introduction to Mean Stack
- Node.js / Node Projects
- HTTP
- File System
- Buffers, Streams and Events
- Express

### Day 2

- MongoDB
- Data Sources
- Documents and Collections
- Simple Queries
- Simple Update and Deletes
- Indexing
- MongoDB RESTful API
- MapReduce

### Day 3

- AngularJS
- Single Page Applications
- Controllers
- Models
- Views

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- Expressions
- Filters
- Scopes
- Angular Forms

## Curriculum Outline

### MEAN Stack Fundamentals

- Introduction
- Prerequisites – Installing the various MEAN software packages

### Node.js

- Node.js Introduction
- Node.js Environment Setup
- Node.js First Application
- Node.js REPL Terminal
- Node.js Package Manager (NPM)
- Node.js Callbacks Concept
- Node.js Event Loop & Node.js Event Emitter
- Node.js Buffers & Node.js Streams
- Node.js File System
- Node.js Global Objects
- Node.js Utility Modules
- Node.js Web Module
- Node.js RESTful API
- Node.js Scaling Application
- Node.js Packaging

### Express

- Node.js Express Framework
- Installing & Environment Setup
- Defining Routes
- From Static to Dynamic
- Statements
- Conditional (if) Statements
- Adding an else if
- Conditional (switch) Statements
- while and do-while Loops
- for Loops
- Enhanced for Loop
- The continue Statement
- The break Statement

### MongoDB

- Overview
- Environment
- Data Modeling
- Create Database
- Drop Database
- Create Collection

- Drop Collection
- Data Types
- Insert Document
- Query Document
- Update Document
- Delete Document
- Projection
- Limiting Records
- Sorting Records
- Indexing
- Aggregation
- Replication
- Sharding
- Backup
- MongoDB with Nodejs
- Relationships
- Covered Queries
- Analyzing Queries
- Atomic Operations
- Advanced Indexing
- Map Reduce
- Text Search
- Regular Expression
- Working with Rockmongo

### **AngularJS**

- Overview
- Environment Setup
- MVC Architecture
- First Application
- Directives
- Expressions
- Controllers
- Filters
- Tables
- HTML DOM
- Modules
- Forms
- Includes
- AJAX
- Views
- Scopes
- Services
- Dependency Injection
- Custom Directives
- Internalization



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