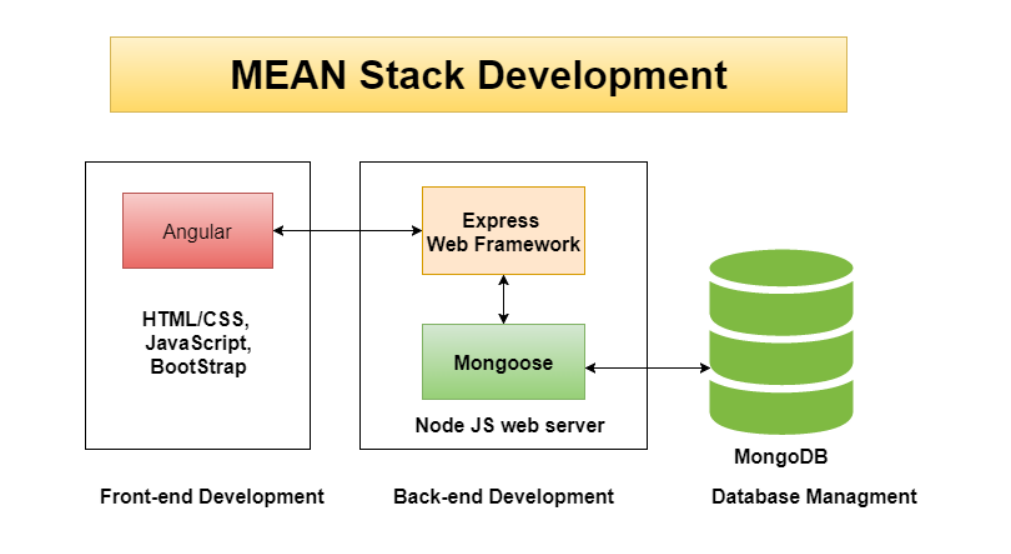
Certificate Course in
"MEAN Stack Web Development"

MEAN Stack Overview:

MEAN is an acronym for MongoDB, ExpressJS, Angular and Node.js.
MEAN Stack web development is a structured learning path recommended by leading industry experts and ensures your mastery of full MEAN stack development.



MongoDB is a schemaless NoSQL database system. MongoDB saves data in binary JSON format which makes it easier to pass data between client and server.

ExpressJS is a lightweight framework used to build web applications in Node. It provides a number of robust features for building single and multi-page web application. ExpressJS is inspired by the popular Ruby framework, Sinatra.

Angular 6 is a TypeScript based open-source front-end web application platform led by the Angular Team at Google. It gives an extraordinarily expressive, readable and fast way to develop rich front ends for websites.

Node.js is a server side JavaScript execution environment. It is a platform built on Google Chrome's V8 JavaScript runtime. It helps in building highly scalable and concurrent applications rapidly.

Course Objective:

The overall aim of the course is to enable participants to confidently build different types of application using the MEAN stack.

The course is divided into four modules, **MongoDB, ExpressJS, Angular, and Node.js.**

Each module focuses on a different goal. The four modules work together building a full application, with an overall outcome of showing how to **architect and build complete MEAN applications.**

Course Details:

Title	Certificate Course in MEAN Stack Web Development
Duration	14 Weeks (Saturday Only)
Course Commencement Date	Saturday, 17th Nov 2018
Timings	9:00 am – 3:30 pm
Venue	Fergusson College
Actual Contact Hours Classroom Training (with hands-on)	60
Project Based Learning Hours	18
Fee Structure	20,000/- per Participant (Inclusive of GST)
Eligibility	Open for all Students / Individuals / Professionals with basic knowledge of HTML5, CSS3 and JavaScript
Intake	30 Participants

Outcome:

By the end of the course, participants will be able:

- To set up a web-server using Node.js and ExpressJS, to listen for request and return response.
- To design **NoSQL** databases and work with MongoDB from the command line and from Node.js and ExpressJS.
- To design and build robust **REST APIs** using Node.js, ExpressJS and MongoDB, following industry best practices.
- To build high quality Angular **single page applications** (SPAs), following industry best practices.
- To build full stack applications in JavaScript using the MEAN technologies.

Course Contents:

Introduction to MEAN

- Overview to Web UI Technologies
- Revisiting HTML, CSS & JavaScript
- HTML DOM
- Getting started with MEAN
- Architecture of MEAN
- Scope of MEAN
- Benefits of Using MEAN
- Application of MEAN
- The Four Building Components
  - An Insight into Mongo DB
  - An Insight into Express
  - An Insight into Angular
  - An Insight into Node.js
- Collaboration of the Four technologies
- Outcome and Deployment

MongoDB

- What is MongoDB
- MongoDB History
- MongoDB Features
- No SQL Databases
- Advantages over RDBMS
- MongoDB Data Types
- Install MongoDB
- MongoDB Shell
- MongoDB Data Modeling
- **Database Operations**
  - Create Database
  - Drop Database
- **Collection**
  - Create Collection
  - Drop Collection
- **CRUD: Documents**
  - Insert Documents
  - Update Documents
  - Delete Documents
  - Query Documents
- **User Authentication**
- **Connectivity**
  - Python MongoDB
- **Technical Assessment**

Angular

- What is Angular
- MVC
- Introduction to TypeScript
- TypeScript Basics
- Introduction to Visual Studio Code
- Installing Angular 6.0
- Introduction to Angular CLI
- Understanding “npm” tool
- First App
- Managing Dependencies (package.json)
- Expressions
- Pipes
- Directives
- Components
- Data Binding
- Modules
- Dependency Injection
- Services
- Routing
- Forms& Form Validation
- **Technical Assessment**

ExpressJS	Node.js
❖ Introduction ❖ Environment Setup ❖ Basic Program ❖ Routing ❖ URL Binding ❖ Middleware ❖ Static Files ❖ Post Data ❖ Database ❖ Cookies ❖ Sessions ❖ Error Handling ❖ RESTful API ❖ Debugging ❖ **Technical Assessment**	❖ What is Node.js ❖ Environment Setup ❖ First Application ❖ REPL Terminal ❖ Package Manager (NPM) ❖ Callbacks Concept ❖ Event Loop ❖ Event Emitter ❖ Buffers ❖ Streams ❖ File System ❖ Global Objects ❖ Utility Modules ❖ Web Module ❖ Packaging ❖ Overview of Unit-testing framework for Angular and Node.js ❖ **Technical Assessment**

Technical Assessment Details:

After each module a technical assessment would be conducted as follows:

Module	Assessment Type	Duration	Marks
Angular	Objective	45 Minutes	40
MongoDB	Objective	45 Minutes	40
Node.js	Objective	45 Minutes	40
Express	Objective	45 Minutes	40

Final Project:

To develop a **MEAN stack** & **RESTful API** based Web Application.

Description	Assessment Type	Duration	Marks
Project	Practical Implementation	Full Day	60

Note:

1. Grades would be given based on **Average Marks of Technical Assessments + Project Marks**.

   All technical assessments and project activity is mandatory.

Marks	**Grade**
80 – 100	O: Outstanding
70-79	A+: Excellent
60-69	A: Very Good
50-59	B+ : Good
< 50	B: Satisfactory

2. **Certificate** would be issued to participants after successful course completion. Certificate will not be issued in case of failing to complete any technical & project assessment.