

# Summer Industrial Training - 20



## **Backend Development** **with Node Js.**



**Node js Development**



## **Section A: Introduction to Node.js**

- What is Node.js?
- Understanding the Role & Usage of Node.js
- Course Outline
- How To Get The Most Out Of The Course
- Using the Attached Source Code

## **Section B: Understanding the Basics**

- · Module Introduction
- · How The Web Works
- · Creating a node app
- · Creating a Node Server
- · The Node Lifecycle & Event Loop
- · Controlling the Node.js Process

## **Section C: Intro to NPM**

- · What is node package manager
- · Adding a npm in project

## **Section D: Working with Express.js**

- • What is Express.js?
- • Installing Express.js
- • Adding Middleware
- • How Middleware Works
- • Express.js - Looking Behind the Scenes
- • Handling Different Routes
- • Parsing Incoming Requests
- • Limiting Middleware Execution to POST Requests
- • Using Express Router
- • Adding a 404 Error Page
- • Filtering Paths
- • Creating HTML Pages
- • Serving HTML Pages
- • Using a Helper Function for Navigation
- • Serving Files Statically

## **Section E: Intro to API's**

- • API Introduction
- • Develop First Api
- • Request Methods's (Get, Post, Put, Delete)
- • Sending Responses
- • Request & Response Headers
- • Routing Requests
- • Redirecting Requests
- • Parsing Request Bodies

## **Section F: Improved Development Workflow and Debugging**

- • Module Introduction
- • Installing 3rd Party Packages
- • Understanding different Error Types
- • Finding & Fixing Syntax Errors
- • Dealing with Runtime Errors
- • Logical Errors
- • Using the Debugger
- • Restarting the Debugger Automatically After Editing our App
- • Debugging Node.js in Visual Studio Code
- • Changing Variables in the Debug Console
- • Wrap Up
- • Useful Resources & Links

## **Section G: MySQL with NodeJs.**

- • NPM Install mysql
- • Create a connection with mysql
- • create and access a database
- • Create a table
- • Execute Queries on database

**Project:- Develop Api's for login and signup for a user**

## **Section H: Working with Dynamic Content & Adding Templating Engines**

- • Module Introduction
- • Sharing Data Across Requests & Users
- • Templating Engines - An Overview
- • Installing & Implementing Pug
- • Outputting Dynamic Content
- • Converting HTML Files to Pug
- • Adding a Layout
- • Finishing the Pug Template
- • Working with Handlebars
- • Converting our Project to Handlebars
- • Adding the Layout to Handlebars
- • Working with EJS
- • Working on the Layout with Partial

Quiz - 30 minutes

## **Section I :The Model View Controller (MVC)**

- • What is the MVC?
- • Adding Controllers
- • Finishing the Controllers
- • Adding a Product Model
- • Storing Data in Files Via the Model
- • Fetching Data from Files Via the Model
- • Refactoring the File Storage Code

Quiz - 30 minutes

## **Section J: Optional: Enhancing the App**

- · Creating the Shop Structure
- · Working on the Navigation
- · Registering the Routes
- · Storing Product Data
- · Displaying Product Data
- · Editing & Deleting Products
- · Adding Another Item

**Quiz - 30 minutes**

## **Section K: Dynamic Routes & Advanced Models**

- · Preparations
- · Applied Changes
- · Adding the Product ID to the Path
- · Extracting Dynamic Params
- · Loading Product Detail Data
- · Rendering the Product Detail View
- · Passing Data with POST Requests
- · Adding a Cart Model
- · Using Query Params
- · Pre-Populating the Edit Product Page with Data
- · Linking to the Edit Page

- • Editing the Product Data
- • Adding the Product-Delete Functionality
- • Deleting Cart Items
- • Displaying Cart Items on the Cart Page
- • Deleting Cart Items
- • Fixing a Delete Product Bug

Quiz - 30 minutes

## **Section L: Working with MySQL (Part-1)**

- • Setting up database for Product Module
- • Fetching All Products
- • Fetching a Single Product
- • Making the "Edit" & "Delete" Buttons Work Again
- • Working on the Product Model to Edit our Product
- • Finishing the "Update Product" Code
- • Fetching All Products
- • Fetching a Single Product
- • Updating Products
- • Deleting Products
- • Adding and Using a User Model

## **Section M: Working with MySQL (Part-2)**

- · Using Joins in MySQL
- · One Important Thing About Fetching Relations
- · Working on the Shopping Cart
- · Loading the Cart
- · Deleting Cart Items
- · Creating & Getting Orders
- · Storing All Order Related Data
- · Clearing the Cart After Storing an Order
- · Getting & Displaying the Orders

**Quiz - 30 minute**

## **Section N: MongoDB with NodeJs.**

- Schema, Model, and The Find Method
- Create a connection with mongoose
- The Save Method
- Schema Types, Its Properties and Validation
- Additional Schema Types
- Complex Schema With Nested Objects
- Bubbling Errors With The Okay Module
- The FindOne Method for Get and Put Requests
- Enum Schema Property
- Custom Field Validation and The Path Method



## **Section O: Sessions & Cookies**

- • What is a Cookie?
- • The Current Project Status
- • Optional: Creating the Login Form
- • Adding the Request Driven Login Solution
- • Setting a Cookie
- • Manipulating Cookies
- • Configuring Cookies
- • What is a Session?
- • Initializing the Session Middleware
- • Using the Session Middleware
- • Using MongoDB to Store Sessions

Quiz - 30 minutes

**Project:- Develop Backend Software for a e commerce website**

**Project:- Develop Backend Software for Image Library**