



Node JS

HRDC Registration No. - 10001424673

HRDC Fully Claimable Training

DESIGNED FOR

Node Js Developers, Server Side Developers, Frond-end Developers, Software Engineers, Technical Leads, JavaScript Developers for Web Applications, RESTful API Developers, Full-Stack Developers



1 - 5 July 2024



9 AM - 5 PM



AC hotel, Marriott,
Penang, Malaysia


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 **Who is this course for/  Why you should join/**


 **What We Offer:**


 **Suitable for all levels (from beginners to experts):** Basics to advanced, including asynchronous programming, HTTP, ExpressJS, MongoDB, and web sockets.


 **Practical Learning:** Hands-on building of real-world applications, focusing on HTTP servers, REST endpoints, and server configuration.


 **Modern Practices:** NPM for package management, event-driven architecture, and unit testing with Mocha, Chai, and Jest.


 **Scalability and Performance:** Worker threads, cluster modules, and cloud deployment for high-performance applications.

 **ExpressJS and REST APIs:** Routing, middleware, templating, and MongoDB with Mongoose ODM.

 **Unit Testing and Best Practices:** Setting up test frameworks, writing tests for callbacks and promises, ensuring test coverage.

 **Real-time Applications:** Web sockets and Socket.io for building real-time web apps.

 **Development and Deployment:** CI/CD pipelines, GitHub Actions, and architectural styles like monolith vs microservices.

 **On going Support:** Get personalized guidance and continuous support for mastering essential Node.js concepts in modern web development.

Course Outline

1. Introduction

- What is Node.js?
- Why Node.js?
- Node Modules
- Node Built-in packages.
- Creating your own package.
- Import your own Package.
- NPM (Node Package Manager)
- Local and Global Packages
- Nodejs architecture

2. Asynchronous Programming

- What is Asynchronous Programming in JavaScript?
- JavaScript EventLoop
- Call Stack
- Callbacks
- Callback Hell
- Promises
- Promise Chaining
- Async and Await
- Observables and Subscription
- Event Emitter and listeners

3. Built-In Libraries

- Working with the Operating System
- Working with the File System
- Console and Utilities
- Debugging

4. File System

- Synchronous and Asynchronous IO
- Listing and reading directories and files.
- Writing and updating to files
- File System Watcher

5. Stream and Events

- What are Streams in Node.js
- Reading and Writing Streams
- Understanding and using Event Emitter class
- Emitting Events
- Responding to events
- i.e. similar to Observables and Subscription

Course Outline

6. NPM

- What Is a Package
- Typical NPM Usage
- NPM Help
- Creating a Package.json
- Setting Defaults
- Installing Packages
- Listing Installed Packages
- Installing Global Packages
- Removing a Package
- Installing Specific Versions
- The NPM Registry
- Searching for Packages
- Env management for CI/CD
- Pruning
- Using Simple Scripts
- Publishing Your Package
- Node Version Manager
- Node Package eXecute

7. HTTP and REST

- The HTTP protocol
- Node HTTP Module
- Making a request and response mechanism
- Routing and Service Management
- Build a web server
- Serving to files
- Serving to Json Data
- Collection post data from web pages
- Scaling the application

8. ExpressJS

- What is ExpressJS
- The model-view-controller pattern
- Creating a simple HTTP Server using ExpressJS
- Building a front-end controller
- Routing in Express
- Templating in Express
- Templating using JADE
- Defining routes
- Middleware

Course Outline

9. ExpressJS and MongoDB

- What is MongoDB
- MongoDB Advantages
- Documents Collections
- Mongoose ODM
- MongoDB Clusters (ATLAS)
- Creating Schemas and Models using mongoose
- CRUD Operations in MongoDB using Mongoose and Express
- Mongo Compass
- Searching, Finding, creating, updating and deleting records
- Mongo DB Data Design

10. Working with Web Sockets

- Creating a web socket server
- Broadcasting message with web sockets
- Creating web sockets with Sockets.io.
- Realtime interaction with Socket.io
- Creating and Managing Channels and Events

11. ExpressJS and REST

- Understanding the principles of REST
- Richardson Maturity Model
- Creating a RESTful Web Service using Node Express
- Data Exchange Formats JSON vs. XML
- Securing REST services
- Header Protocols

12. Serving a NodeJS application

- Monolith Architecture
- Microservice Architecture
- Problem and Advantages
- Monolith Vs Microservice

Course Outline

13. Building Scalable application using NodeJS

- Worker Threads
- Child Process
- Cluster Modules
- Cloud Deployment
- Google Run Hosing of NodeJS Application
- PM2 – config
- Dev / SIT/ UAT/ STG Env
- SDLC
 - o CI/CD
 - o GitHub Actions

14. Unit Testing

- Benefits of Unit Testing
- Understanding the test frameworks: Mocha, Chai, Jest
- Installing and configuring test frameworks
- Understanding test syntax and structure
- Using assertions to validate test results
- Testing callbacks
- Testing Promises
- Mocking and Stubbing
- Test Coverage
- Best Practice


Pre-Requisites:


- Proficiency in programming.
- Familiarity with Web Applications is essential for all participants.
- Basic understanding of JavaScript is a requirement for participants.
- Basic command line functions.


 Duration : 5 Days


By the end of this course!

You will gain:

 **Master Node.js Development:** Acquire advanced skills in Node.js fundamentals, including asynchronous programming, package management, and API integration.

 **Enhance Problem-Solving:** Develop the ability to analyze complex Node.js challenges and make informed decisions to optimize application performance.

 **Optimize Application Efficiency:** Streamline coding workflows and maximize resource utilization, ensuring efficient application operation in various web development environments.

 **Unlock Career Opportunities:** Expand your career prospects as a proficient Node.js developer, sought after in industries requiring expertise in server-side JavaScript development.

If you struggle with:

 Complex Node.js Challenges

 Technical Implementation Obstacles

 Decision-Making Dilemmas

 Resource Limitations

 Staying Competitive in the Web Development Industry

Implementing our course will lead to:

- ✓ Enhanced Node.js Development Skills
- ✓ Improved Decision-Making in Application Development
- ✓ Efficient Resource Utilization in Projects
- ✓ Professional Growth as a Node.js Specialist
- ✓ Organizational Success with Optimized Application Solutions

Timmins Training Consulting

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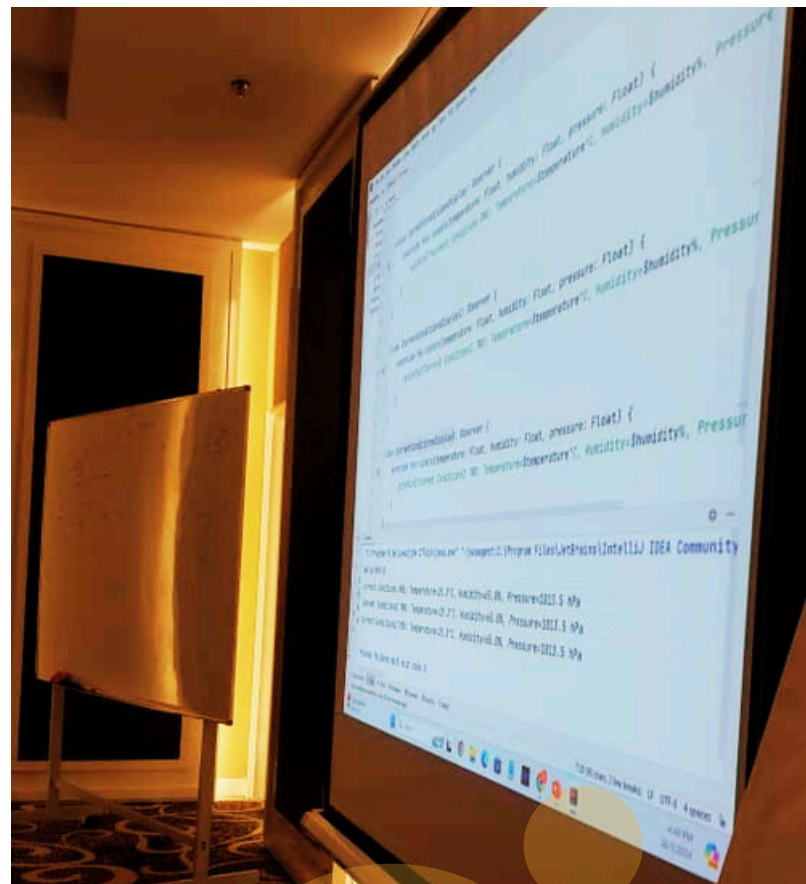
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Our trainers are subject-matter experts with years of hands-on experience in their specialized areas. They bring practical insights to help you excel in your journey.

Empower yourself with Timmins Training Consulting and elevate your Power BI skills to new heights!

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