



e-Learning Course

Unlock the power of Node.js and become
a backend master!!

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COURSE MODULES

Module 1: Introduction to Node.js

- What is Node.js?
- Features & advantages of Node.js
- Installing Node.js & setting up the environment
- Running your first Node.js script
- Understanding the Node.js event-driven architecture
- Difference between Node.js and other backend technologies

Module 2: Node.js Basics

- Global objects in Node.js
- The Node.js REPL (Read-Eval-Print Loop)
- Node.js CLI commands
- Understanding Asynchronous vs Synchronous execution
- Using Timers (setTimeout, setInterval)
- Handling errors in Node.js

Module 3: Modules & NPM (Node Package Manager)

- Understanding CommonJS & ES Modules
- Creating and exporting custom modules
- Built-in modules (fs, path, os, http, etc.)
- Introduction to npm and npx
- Installing and managing dependencies
- Understanding package.json and package-lock.json
- Versioning & semantic versioning in npm

Module 4: File System & Streams

- Reading & writing files using the fs module
- Working with directories
- File system operations (create, delete, rename, move)
- Understanding Streams and Buffers
- Reading & writing files using Streams

Module 5: Event-Driven Programming in Node.js

- Understanding the EventEmitter class
- Creating and handling custom events
- Using event-driven patterns in applications

Module 6: Building Web Servers with HTTP

- Creating a basic HTTP server
- Handling HTTP requests and responses
- Working with query parameters & URL routing
- Setting HTTP headers & status codes
- Introduction to REST API architecture

Module 7: Express.js Framework

- Introduction to Express.js
- Setting up an Express server
- Middleware functions & usage
- Route handling (GET, POST, PUT, DELETE)
- Serving static files
- Error handling in Express

Module 8: Working with Databases

MongoDB (NoSQL Database)

- Introduction to MongoDB & Mongoose ORM
- Connecting Node.js to MongoDB
- CRUD operations with MongoDB
- Using Mongoose models & schemas
- Querying and filtering data

MySQL/PostgreSQL (SQL Databases)

- Setting up MySQL/PostgreSQL with Node.js
- Using mysql2 or pg packages
- CRUD operations in SQL databases
- Querying and managing relationships

Module 9: Authentication & Authorization

- User authentication basics
- Implementing JWT (JSON Web Tokens)
- Using bcrypt for password hashing
- Authentication middleware
- Role-based access control (RBAC)

Module 10: API Development & Best Practices

- Designing RESTful APIs
- Handling API versioning
- Data validation using Joi
- Rate limiting & security best practices
- Error handling & logging