

Node.js Developer Roadmap (Fresher to Expert)

1 Basics (Fresher Level)

- Understanding what Node.js is
- Exploring Node.js architecture (Single Threaded, Event Loop)
- Installing Node.js and using the node CLI
- Understanding npm and package.json
- Using built-in modules: `http`, `fs`, `os`, `path`, `url`, `events`

2 Core Concepts

- Creating an HTTP server without any framework
- Working with `req` and `res` objects
- Implementing manual routing in pure Node.js
- Sending HTML and JSON responses
- Understanding `res.writeHead()` and `res.end()`

3 Essential Tools

- Using Nodemon for auto-restarting server
- Testing APIs with Postman
- Version control and project hosting with Git & GitHub

4 Modular Node.js

- Using `require()` and `module.exports`
- Splitting code into routes, controllers, and utils
- Creating and using custom modules

5 Asynchronous Programming

- Working with Callbacks
- Using Promises
- Implementing Async/Await
- Handling errors in async functions

6 Express.js Framework

- Installing and setting up Express
- Creating routes and using middleware
- Serving static files with Express
- Handling `req.params`, `req.query`, and `req.body`

7 Authentication & Authorization

- Understanding JWT (JSON Web Tokens)
- Creating login/signup with JWT
- Protecting routes using middleware
- Implementing role-based access control

8 Working with Databases (MongoDB)

- Introduction to MongoDB and Mongoose
- Connecting to MongoDB Atlas
- Creating schemas and models
- Performing CRUD operations
- Using Mongoose middleware (pre/post hooks)

9 Building APIs

- Designing RESTful APIs using Express
- Sending/receiving JSON data
- Handling status codes correctly
- Implementing centralized error handling

10 Advanced Node.js Topics

- Managing environment variables using `dotenv`
- Handling file uploads using `multer`
- Performing input validation using `express-validator` or `zod`
- Enabling CORS and security headers
- Sending emails using `nodemailer`
- Implementing real-time communication with WebSockets (`socket.io`)

11 Testing (Optional for Advanced Devs)

- Performing unit testing with Jest
- Testing APIs with Supertest

12 Extra Skills for Job Readiness

- Using Postman collections
- Creating API documentation with Swagger or Postman
- Deploying applications (Render, Railway, or Vercel backend)
- Writing clean, maintainable code
- Managing GitHub projects and issues