Node JS

Duration: **5 Days**

Prerequisites:

To ensure a successful learning experience in the Node.js course provided by Koenig Solutions, the following are the minimum prerequisites:

- Basic understanding of JavaScript and programming concepts such as variables, loops, functions, and objects.
- Familiarity with web development basics, including HTML and CSS.
- An understanding of server-side vs. client-side concepts in web development.
- Experience with command-line tools and basic shell commands is helpful.
- Basic knowledge of Git for version control is advantageous but not mandatory.
- Eagerness to learn and adapt to new programming paradigms and technologies.
- Please note that while these prerequisites are intended to provide a foundation for the course material, individuals with a strong desire to learn and problem-solving skills are also encouraged to enroll, as the course is designed to guide you through the complexities of Node.js development.

Course Description:

The Node.js course is designed to equip learners with the skills and knowledge necessary to build scalable and efficient web applications using Node.js, a powerful JavaScript runtime environment. It covers key concepts such as asynchronous event-driven programming, streaming data, file system operations, using Express for web server development, and interacting with both SQL and NoSQL databases. Module 1: Understanding Node Environment sets the foundation by introducing the Node.js ecosystem, extending JavaScript capabilities to the server-side, understanding the V8 engine, and exploring the global Process object. Module 2: Understanding Asynchronous Event-Driven Programming dives into Node's non-blocking I/O model, teaching learners about event broadcasting, event listeners, timers, the event loop, and error handling with callbacks. The course then progresses to streaming data, file system access, and web development with Express, providing hands-on experience with routes, middleware, and JSON handling. Integration with databases through CRUD operations is covered extensively, using both MySQL and MongoDB to give a rounded perspective on data persistence. Advanced topics include connecting Node.js with Angular, allowing for the creation of full-stack applications. Learners will understand how to build Angular components, services, and handle events and forms. Finally, the course concludes with deployment strategies, ensuring learners can launch their applications into a production environment. This comprehensive Node.js course is ideal for those looking to become proficient in modern back-end web development, and the practical knowledge gained will be invaluable for both personal and professional projects.

Target Audience:

- Web Developers seeking to enhance their backend development skills.
- Frontend Developers looking to become Full Stack Developers.
- Software Engineers interested in building scalable network applications.
- IT Professionals wanting to learn asynchronous event-driven programming.
- Computer Science students or graduates aiming to specialize in JavaScript server-side development.
- Technical Leads and Managers needing to understand Node.js for project oversight.
- System Architects designing web application infrastructure.
- DevOps Engineers who integrate Node.js applications into their workflows.
- Quality Assurance Testers who require knowledge of Node.js for testing purposes.
- Entrepreneurs or Freelancers planning to build and deploy web applications independently.

Course Outlines:

1. Understanding Node environment
   - Extending JavaScript
   - V8
   - The Process Object
2. Understanding Asynchronous Event Driven Programming
   - Broadcasting Events
   - Listening for Events
   - Timers
   - Understanding the Event Loop
   - Callbacks and errors
3. Streaming Data Across Node And clients
   - Exporting Steams
   - Creating and HTTP Server
   - The Request objects
   - Working with Headers
   - Handling Post Data
4. Access the File System
   - Directories & iterating overs files and folders
   - Reading from File
   - Writing to a File
5. Using Express
   - Installing Express and Making it Easier to Build Web Server
   - Routes
   - Static File and Middleware
   - JSON
6. Databases
   - Relational Database and SQL
   - Node & MYSQL
   - NoSQL and Documents
   - MongoDB and Mongoose
   - CRUD operation using MongoDB
7. Working with MySQL
   - CRUD Operation using MYSQL
8. Connecting Node with Angular
   - Installation of Angular
   - Components
   - Services
   - Template Form
   - Event Handling
9. CRUD operation with HTTP
10. Deployment