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Backend Development

(Certified Professional on Backend Development)

Backend development focuses on server-side logic, databases, and APIs. It handles data processing, business logic, and communication between the frontend and the server using technologies like Node.js, Python, Java, and SQL/NoSQL databases.



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About CODEZCORP

Talent is everywhere. Opportunity is not. We have working with our members and leading employers to break down barriers, ensuring firms can access the very best talent and that our graduate members have the chance to fulfill their potential. Every day we are in the unique position to connect leading businesses with our community to help them identify and engage with their next generation workforce.

Skill-Based Outcomes

- Build server-side applications using Node.js, Python, or Java
- Design and manage databases (SQL & NoSQL)
- Create and consume RESTful APIs
- Handle user authentication and authorization

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Key Learning Areas

Introduction to Node.js :-

- What is Node.js?
- Why use it?
- Installing Node.js and npm
- Understanding the Node.js runtime
- Creating a simple Node.js app
- Using core Node.js modules (fs, http, path)
- Creating and managing HTTP servers
- Error handling in Node.js

Express.js Framework :-

- Introduction to Express.js
- Setting up a simple Express server
- Routing in Express
- Middleware
- Handling GET, POST, PUT, DELETE requests in Express
- Creating routes
- Error handling and logging in Express

MongoDB and Mongoose :-

- Introduction to MongoDB
- CRUD operations in MongoDB
- MongoDB collections, documents, and schema-less data
- Introduction to Mongoose
- Defining schemas and models
- CRUD operations with Mongoose
- Data validation

SQL Databases :-

- Introduction to SQL
- Basic SQL syntax (SELECT, INSERT, UPDATE, DELETE)
- Primary keys, Foreign keys, and relationships
- Connecting Node.js to SQL databases (MySQL, PostgreSQL)
- Using SQL queries in Node.js applications
- Preventing SQL injection with parameterized queries

Authentication and Security :-

- Introduction to JWT authentication
- Setting up JWT authentication in Express
- Handling session-based authentication

Security Best Practices

- Securing Express apps (Helmet, CORS, rate limiting)
- Preventing common web vulnerabilities (XSS, CSRF)
- Encrypting passwords with bcrypt

Real-Time Communication with Socket.IO :-

- Setting up Socket.IO in React
- Real-time communication features (chat, notifications)
- Setting up Socket.IO with Node.js
- Broadcasting events
- Handling private messaging
- Authentication in real-time apps

Email Handling with SMTP :-

- SMTP Server Configuration
- Secure Authentication

- Sending Emails via Code
- Common SMTP Ports
- Handling Errors and SMTP Response Codes

Project

Project Title

Backend Setup (Node.js, Express.js, Database)

Deliverables

- Set up a basic Express.js server with API routes
- Connect to a database (MongoDB or PostgreSQL) and perform basic CRUD operations

Career

Option's You Can Choose

Discover interest in logic, data, and backend systems

Learn core backend languages and databases

Build real-world backend projects and APIs

Specialize in areas like APIs, microservices, or system design

Grow into senior/lead/backend architect roles

Mentor others and contribute to open source

Build your own tools or tech products

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FAQ'S



What is backend development?

It involves building the server-side logic, databases, and APIs of a web application.



Do I need to know frontend for backend?

No, but basic understanding helps. Focus is mainly on logic, data, and performance.



What languages are used in backend?

Common ones include Node.js, Python, Java, PHP, and Go.



What tools do backend developers use?

Databases (MySQL, MongoDB), API tools (Postman), Git, Docker, and cloud platforms (AWS, GCP).



Can I get a job after learning backend development?

Yes, you can work as a Backend Developer, API Developer, or Full Stack Developer.