INFOSOFT IT SOLUTIONS

Training | Projects | Placements

Express.js

Introduction to Express.js

1. Overview of Node.js and Express.js
2. Why Use Express.js for Web Development
3. Setting Up Development Environment (Node.js, npm)
4. Creating a Simple Express.js Application
5. Routing Basics in Express.js

Middleware in Express.js

1. Understanding Middleware Functions
2. Built-in Middleware in Express.js
3. Creating Custom Middleware
4. Error Handling Middleware
5. Using Third-party Middleware (e.g., body-parser, morgan)

Templating Engines with Express.js

1. Introduction to Templating Engines (EJS, Handlebars, Pug)
2. Integrating Templating Engines with Express.js
3. Passing Data to Templates
4. Template Layouts and Partials

Express.js Routing

1. Handling Different HTTP Methods (GET, POST, PUT, DELETE)
2. Route Parameters and Query Parameters
3. Route Chaining and Router Objects

    4. Express Router Middleware

Express.js and Database Integration

1. Connecting to Databases (MongoDB, MySQL, PostgreSQL)
2. Using ORM/ODM Libraries with Express.js (Mongoose, Sequelize)
3. CRUD Operations with Database
4. Handling Database Errors and Asynchronous Operations

Authentication and Authorization

1. Introduction to Authentication and Authorization
2. Implementing User Authentication with Passport.js
3. Session Management with Express Session
4. JSON Web Tokens (JWT) for Stateless Authentication

RESTful API Development with Express.js

1. Principles of RESTful APIs
2. Creating RESTful Routes and Controllers
3. Handling Authentication and Authorization in APIs
4. Testing APIs with Postman or Insomnia

Error Handling and Debugging

1. Error Handling Mechanisms in Express.js
2. Debugging Techniques for Express.js Applications
3. Logging and Monitoring Express.js Applications

Security Best Practices

1. Overview of Web Security Risks
2. Implementing Security Headers
3. Preventing Cross-Site Scripting (XSS) and Cross-Site Request Forgery (CSRF)
4. Data Sanitization and Validation

Performance Optimization

1. Caching Strategies with Express.js
2. Compression Middleware
3. Load Testing and Performance Monitoring
4. Scaling Express.js Applications

Deployment and DevOps

1. Deploying Express.js Applications to Heroku, AWS, or DigitalOcean
2. Continuous Integration and Deployment (CI/CD) for Express.js
3. Containerization with Docker
4. Monitoring and Logging in Production

Advanced Topics

1. WebSocket Integration with Express.js
2. Server-Sent Events (SSE)
3. Real-time Applications with Socket.IO
4. GraphQL Integration with Express.js

Project Work

1. Building a Full-Stack Application with Express.js
2. Integrating Frontend Frameworks (React, Angular, Vue.js)
3. Project Presentation and Feedback

Best Practices and Code Reviews

1. Code Quality Standards and Guidelines
2. Conducting Code Reviews in Express.js Projects
3. Refactoring and Performance Optimization
4. Final Q&A and Recap