



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional JSON Course Outline

Module 1: Introduction to JSON

- What is JSON?
- JSON vs. XML: Key Differences
- Understanding JSON Syntax & Structure
- Real-World Applications of JSON

Module 2: JSON Fundamentals

- JSON Data Types (String, Number, Boolean, Null)
- JSON Objects & Arrays
- Nested JSON Structures
- Formatting & Validating JSON

Module 3: Working with JSON in JavaScript

- Parsing JSON with `JSON.parse()`
- Stringifying JSON with `JSON.stringify()`
- Accessing & Modifying JSON Data
- Handling Errors in JSON Parsing

Module 4: JSON with APIs & Web Services

- Understanding RESTful APIs & JSON Responses
- Making API Calls with Fetch & Axios
- Handling API Responses & Errors
- Working with Third-Party APIs

Module 5: Storing & Retrieving JSON Data

- Local Storage & Session Storage in Browsers
- Reading & Writing JSON Files in Node.js
- JSON in NoSQL Databases (MongoDB, Firebase)
- JSON vs. SQL Data Storage

Module 6: Advanced JSON Concepts

- JSON Schema & Data Validation
- JSON Web Tokens (JWT) for Authentication
- Streaming & Large JSON Data Handling
- Minifying & Beautifying JSON

Module 7: JSON in Different Programming Languages

- Working with JSON in Python (json module)
- JSON Handling in Java (Jackson & Gson)
- Using JSON in PHP, C#, and Ruby
- Best Practices for Cross-Language JSON Integration

Module 8: JSON for Configuration & Logging

- JSON-Based Configuration Files (package.json, appsettings.json)
- Using JSON for Logging & Debugging
- JSON in Cloud Platforms (AWS, Azure, Google Cloud)
- Optimizing JSON for Performance

Module 9: Security & Best Practices in JSON

- Preventing JSON Injection Attacks
- Securely Transmitting JSON Over HTTPS
- Handling Sensitive Data in JSON
- JSON Compression Techniques

Module 10: Final Project & Certification Preparation

- Building a JSON-Based Web Application
- Working with APIs & Database Integration
- Preparing for JSON-Related Certifications
- Career Opportunities in Data & API Development