

Node Js

Overview: JavaScript's rising popularity has brought with it a lot of changes, and the face of web development today is dramatically different. The things that we can do on the web nowadays with JavaScript running on the server, as well as in the browser, were hard to imagine just several years ago, or were encapsulated within sandboxed environments like Flash or Java Applets.

Beyond that, it's worth noting that Ryan Dahl, the creator of Node.js, was aiming to create real-time websites with push capability, "inspired by applications like Gmail". In Node.js, he gave developers a tool for working in the non-blocking, event-driven I/O paradigm. After over 20 years of stateless-web based on the stateless request-response paradigm, we finally have web applications with real-time, two-way connections

Course Objectives

- Understand the JavaScript and technical concepts behind Node JS
- Structure a Node application in modules
- Understand and use the Event Emitter
- Understand Buffers
- Build a Web Server in Node and understand how it really works
- Use npm and manage node packages
- Build a web application and API more easily using express
- Connect to Mongo database

Pre-requisite:

Basic Knowledge of JavaScript and OOPS

Knowledge in async programming will be added advantage

Module 1: - Introduction to Node JS

Introduction to Node JS In this module, you learn what are Node JS and advantages of Node JS and How Node JS Works and the difference between the traditional web server and what are the limitations of the traditional web server modal.

- ❖ Introduction
- ❖ What is Node JS?
- ❖ Advantages of Node JS
- ❖ Using Node.js to execute scripts
- ❖ Node.js Process Model

Module 2: - Setup and Environment

Setup Dev Environment In this chapter, you will learn about the tools required and steps to setup development environment to develop a Node.js application and to work with the REPL to work with the Console.

- ❖ Install Node.js on Windows
- ❖ Working in REPL
- ❖ Node JS Console

Module 3: - Node JS Modules

In this chapter, you will know what a module, functions and examples is. And achieving modularity and separation of concern with the NodeJS Modules.

- ❖ Functions
- ❖ Buffer
- ❖ Module
- ❖ Module Types
- ❖ Core Modules
- ❖ Local Modules
- ❖ Module. Exports

Module 4: - Node Package Manager

This deals with working with npm to install and update packages and updating your package to the NPM and managing and updating your current Packages.

- ❖ What is NPM
- ❖ Installing Packages Locally
- ❖ Adding dependency in package.json
- ❖ Installing packages globally and local
- ❖ Updating packages
- ❖ Package.json file configuration

Module 5: - Creating Web server

Creating Web server in this chapter we will learn creating web server, handling GET, POST, PUT and Delete requests and listening to certain port numbers and handling routing with basic web server. Creating web server

- ❖ Creating web server
- ❖ Handling http requests
- ❖ Sending requests
- ❖ Processing query string
- ❖ Rendering a responses

Module 7: - File System

File System In this module, we will work with files, reading, writing, updating files, and the concept of chunks, buffers, and uploading files synchronously and asynchronously.

- ❖ Fs. read File
- ❖ Writing a File
- ❖ Writing a file asynchronously
- ❖ Opening a file
- ❖ Deleting a file
- ❖ Other IO Operations

In this chapter you will learn how to debug node js application. Debugging is a process of tracing the bugs and performance issues to optimize your code.

- ❖ Core Node JS debugger
- ❖ Debugging with Visual Studio

Module 8: - Events

In this chapter you work with the events in Node JS, and the significance of the events, writing your own events because Node is event driven framework.

- ❖ Event Emitter class
- ❖ Returning event emitter
- ❖ Inhering events

Module 9: - Working with asynchronous programming

- ❖ Asynchronous basics
- ❖ Call-back functions
- ❖ Working with Promises
- ❖ Asnyc/await / Closure

Module 10: - Express.JS

In this chapter you will learn how to use express framework to create web applications. Express is the most popular framework to build efficient web applications with minimum coding.

- ❖ Configuring routes
- ❖ Working with express

Module 11: - Serving Static Resources

In this chapter you will learn how to serve static html pages to the browser, and serving other file formats and restricting certain files. In this you will to serve static resources with built in middle ware

- ❖ Serving static files
- ❖ Working with middle ware

Module 12: - Database connectivity

In this chapter you will learn how to connect to mongo db. and perform CRUD operations We will usedifferent Node JS modules to connect with database.

- ❖ Configuring
- ❖ Working with select command
- ❖ Updating records
- ❖ Deleting records

Module 13: - Template Engines

In this chapter you learn how use template engines to perform 2-way data binding and appending dynamic data to the webpage and different view engines and their syntax.

- ❖ Why Template Engine
- ❖ What is Jade
- ❖ What is vash
- ❖ Example

At the end of the course participants will be able to 1. Develop a web application which involves database operations.

- ❖ MYSQL Rest API Project Development
- ❖ Mongo DB Rest API Project Development