Learn Node.js - Beginner Guide

# 1. What is Node.js?

Node.js is an open-source, cross-platform JavaScript runtime environment that executes JavaScript code outside of a web browser. It is built on Chrome's V8 JavaScript engine and allows developers to use JavaScript to write command line tools and server-side scripts. Node.js is ideal for building fast and scalable network applications, especially real-time applications like chat servers, APIs, and more.

# 2. Node.js Installation

Step-by-step installation:  
1. Visit the official website: https://nodejs.org/  
2. Download the LTS (Long Term Support) version for your operating system (Windows, macOS, or Linux).  
3. Run the installer and follow the instructions.  
4. Verify the installation:  
 Open terminal or command prompt and type:  
 node -v (to check Node.js version)  
 npm -v (to check Node Package Manager version)

# 3. Node.js Hello World

Create a file named 'hello.js' and write the following code:  
  
console.log('Hello, Node.js!');  
  
To run the code, open terminal and type:  
node hello.js

# 4. Node.js Modules

Modules are reusable pieces of code in Node.js. There are three types of modules:  
1. Core Modules (e.g., fs, http, path) build in module package  
2. Local Modules (your own modules)  
3. Third-party Modules (installed via npm)  
  
Example:  
const fs = require('fs'); // Core module  
console.log('Module loaded');

Example:  
const myLogModule = require('./Log.js'); // local module  
myLogModule.info('Node.js started');

Example:  
npm Install Express  
const fs = require('express'); // Third- Party module  
console.log('Module loaded');

# 5. Node.js File Handling

Node.js provides the 'fs' module to interact with the file system.  
  
Example: Writing to a file  
const fs = require('fs');  
fs.writeFile('example.txt', 'Hello World!', function(err) {  
 if (err) throw err;  
 console.log('File created and saved!');  
});  
  
Example: Reading a file  
fs.readFile('example.txt', 'utf8', function(err, data) {  
 if (err) throw err;  
 console.log(data);  
});