NODE JS

Interview Questions & Answers

1. **What is Node.js?**

**Node js** is a very popular scripting language that is primarily used for server-side scripting requirements.

### ****Briefly explain the working of Node.js.****

Node.js is an entity that runs in a virtual environment, using JavaScript as the primary scripting language. It uses a simple V8 environment to run on, which helps in the provision of features like the non-blocking I/O and a single-threaded event loop.

### ****What is difference between**** Synchronous & Asynchronous function?

### Synchronous functions are mainly used for I/O operations. They are instantaneous in providing a response to the data movement in the server and keep up with the data as per the requirement. If there are no responses, then the API will throw an error.

Asynchronous functions, work on the basis of not being synchronous. Here, HTTP requests when pushed will not wait for a response to begin. Responses to any previous requests will be continuous even if the server has already got the response.

### ****What is Control Flow function?****

The control flow function is a common code snippet, which executes whenever there are any asynchronous function calls made, and they are used to evaluate the order in which these functions are executed in Node.js.

### ****Explain what a Reactor pattern in Node.js?****

Reactor pattern again a pattern for nonblocking I/O operations. But in general, this is used in any event-driven architecture.   
  
There are two components in this: 1. Reactor 2. Handler.  
  
**Reactor**: Its job is to dispatch the I/O event to appropriate handlers  
**Handler**: Its job is to actually work on those events

### How Node.js overcomes the problem of blocking of I/O operations?

Node.js solves this problem by putting the event based model at its core, using an event loop instead of threads.

1. **When would you use cluster module in Node.js?**

The Node.js cluster module is used with Node.js any time you want to spread out the request processing across multiple node.js processes. This is most often used when you wish to increase your ability to handle more requests/second and you have multiple CPU cores in your server.

1. **Explain difference between var, let and const.**

var declarations are globally scoped or function scoped while let and const are block scoped. var variables can be updated and re-declared within its scope; let variables can be updated but not re-declared; const variables can neither be updated nor re-declared. They are all hoisted to the top of their scope.

1. **What do map () filter () and reduce () do?**

The map(), reduce() and filter() are array functions that transform the array according to the applied function and return the updated array. They are used to write simple, short and clean codes for modifying an array instead of using the loops.

### What is if else statement?

The if/else statement executes a block of code if a specified condition is true. If the condition is false, another block of code can be executed.

The if/else statement is a part of JavaScript's "Conditional" Statements, which are used to perform different actions based on different conditions.

1. **What is What is Promise and async await?**

Promise creation starts the execution of asynchronous functionality. await only blocks the code execution within the async function. It only makes sure that the next line is executed when the promise resolves. So, if an asynchronous activity has already started, await will not have any effect on it.

### ****What is Purpose of \_filename Variable?****

The filename represents the filename of the code being executed. This is the resolved absolute path of this code file. For a main program this is not necessarily the same filename used in the command line. The value inside a module is the path to that module file.

### ****Explain DNS module.****

The DNS module is used for resolving a name and an actual DNS lookup. With this module, it is not required to memorize the IP addresses as the DNS servers convert domain/subdomain into IP addresses.

### ****What is Piping in Node.js?****

Piping in Node.js is the mechanism that connects the output of one stream to another, i.e., it connects multiple streams. It retrieves data from one stream and passes the output to another stream.

### ****What is middleware in Node.js?.****

A middleware function has access to the response object, request object, and the next middleware function in the application's request-response cycle. A variable named next denotes the next middleware function. Middleware finds usage in between your request and business logic.

BEST OF LUCK!