**Sequelize :**- Sequelize is a Node.js based Object Relational Mapper that makes it easy to work with MySQL, MariaDB, SQLite, PostgreSQL databases, and more. An Object Relational Mapper performs functions like handling database records by representing the data as objects.

**Nodemailer** : - Nodemailer is the Node. js npm module that allows to send email easily. In this article, we will cover each steps to send email using Gmail account with the help of nodemailer. Installations: Go to the project folder and use the following command. Create a package.

**Jsonwebtoken** :- A JSON Web Token (JWT) is an open standard (RFC 7519) that securely sends and receives data between parties (in the form of a JSON object). In this article, we'll implement JWT authentication to secure a Node. js application.

**Express: -** Express is a node js web application framework that provides broad features for building web and mobile applications. It is used to build a single page, multipage, and hybrid web application. It's a layer built on the top of the Node js that helps manage servers and routes

**Body-Parser :-** Body-parser is the Node. js body-parsing middleware. It is responsible for parsing the incoming request bodies in a middleware before you handle it.

**Error – Handle In Nodejs :-** Error handling is a mandatory step in application development. A Node. js developer may work with both synchronous and asynchronous functions simultaneously. Handling errors in asynchronous functions is important because their behavior may vary, unlike synchronous functions.

Asynchronous – CALLBACK

Synchronous – try catch

**Array :-** Node.js provides an Array object for collection manipulation. In general, a Node.js Array object has the same behavior with a JavaScript Array object.

**Arrow Function : -** Arrow function {()=>} is concise way of writing Javascript functions in shorter way. Arrow functions were introduced in the ES6 version. They make our code more structured and readable. Arrow functions are anonymous functions i.e. functions without a name and are not bound by an identifier.

**Module :-** In Node. js, Modules are the blocks of encapsulated code that communicate with an external application on the basis of their related functionality. Modules can be a single file or a collection of multiple files/folders.

NodeJs includes three types of modules: Core Modules. Local Modules. Third Party Modules.

**NPM :-**  NPM is a package manager for Node.js packages, or modules.

**Nodemon :-** Nodemon is a command-line tool that helps with the speedy development of Node. js applications. It monitors your project directory and automatically restarts your node application when it detects any changes.

**Winston** **:-** Winston is the most popular logging library for Node. js. It aims to make logging more flexible and extensible by decoupling different aspects such as log levels, formatting, and storage so that each API is independent and many combinations are supported. It also uses Node.

**Mongo DB** :- MongoDB is a modern, general-purpose document-oriented data platform that has been widely paired with Node. js in popular tech stacks such as the MEAN stack (MongoDB, Express. js, AngularJS, and Node. js) and the MERN stack (MongoDB, Express. js, React.

**NodeJs :-** (Node) is an open source, cross-platform runtime environment for executing JavaScript code. Node is used extensively for server-side programming, making it possible for developers to use JavaScript for client-side and server-side code without needing to learn an additional language.

**Rest-API :-** REST APIs are used to access and manipulate data using a common set of stateless operations. These operations are integral to the HTTP protocol and represent essential create, read, update, and delete (CRUD) functionality, although not in a clean one-to-one manner: POST (create a resource or generally provide data).

**API :-** API stands for Application Programming Interface. It consists of various communication protocols and subroutines that can be used by programs for inter-communication. There are various types of APIs available such as WEB APIs, LOCAL APIs, PROGRAM APIs, etc.

**Route :-** Routing refers to determining how an application responds to a client request to a particular endpoint, which is a URI (or path) and a specific HTTP request method (GET, POST, and so on). In simple terms, Routing allows targeting different routes or different URLs on our page.

**Node. js frameworks are mainly of three types**:- — MVC, Full-Stack MVC, and REST API frameworks.

**Which API is best in NodeJS?**

**Best Node JS API Frameworks for 2023**

* Express.
* Koa.
* Hapi.
* Fastify.
* NestJS.
* LoopBack.
* Sails.
* AdonisJS.

**Event Loop :-** Eventloope perform the single threaded non-blocking I/O operationuse in asynchronously callback.

**Package.json:-** Your package. json holds important information about the project. It contains human-readable metadata about the project (like the project name and description) as well as functional metadata like the package version number and a list of dependencies required by the application.

**Package.lock.json :-** json file is like a one-stop solution of your entire problem. Package-lock. Json is a file that is automatically generated by npm when a package is installed.

**Asynchronous**:- Asynchronous programming is a technique that enables your program to start a potentially long-running task and still be able to be responsive to other events while that task runs, rather than having to wait until that task has finished. Once that task has finished, your program is presented with the result.

**Asynchronous And Non-Blocking Apis In Node.Js**

* **Non-Blocking :-** Node. js takes full advantage of non-blocking I/O to maximize its performance and efficiency. It uses an event-driven architecture and employs asynchronous programming techniques.

* **Asynchronous :-** Asynchronous APIs allow developers to write non-blocking code by utilizing callbacks, promises, or async/await syntax.

### Async in Node.js :- The async code asks the javascript engine running the code to wait for the request.get() function to complete before moving on to the next line for execution.

### Callback Function In Node.Js :- Node. js callbacks are a special type of function passed as an argument to another function.

### What is REPL in Node.js :- REPL stands for Read Evaluate Print Loop, and it is a programming language environment (basically a console window) that takes single expression as user input and returns the result back to the console after execution. The REPL session provides a convenient way to quickly test simple JavaScript code.

### Piping In Node.Js:- Piping is a mechanism used to connect the output of one stream to another stream. It is normally used to retrieve data from one stream and pass output to another stream.

### Callback Hell :- Callback hell in Node. js is the situation in which we have complex nested callbacks.

### Middleware :- Middleware functions are functions that have access to the request object ( req ), the response object ( res ), and the next middleware function in the application's request-response cycle.

### HTTP requests Type :- GET , POST, HEAD, DELETE

### NODE\_ENV :- NODE\_ENV is an environment variable that stands for node environment in the express server.

### Module.export :- Module exports are the instructions that tell Node. js which bits of code (functions, objects, strings, etc.) to export from a given file so that other files are allowed to access the exported code.

### Asynchronous and synchronous function :-

### Asynchronous is a non-blocking architecture, so the execution of one task isn't dependent on another. Tasks can run simultaneously.

### Synchronous is a blocking architecture, so the execution of each operation is dependent on the completion of the one before it

### Promises :- A promise is an object returned by an asynchronous function, which represents the current state of the operation

### Current version of node => version 18 and 20

### Globals In node js :- The global object in Node. js is called 'global'. It provides access to several built-in objects, including 'process', 'console', 'buffer', 'setImmediate()', 'clearImmediate()', and 'setTimeout()', etc

### EventEmmiter : The EventEmitter class can be used to create and handle custom events module.

**What is LTS in npm?**

(Long Time Support version)

**Child Process in Nodejs**:- spawn() , fork() , exec() , and execFile()

*New qustions*

### Access Key

### Refres Key

### Blocking – Synchronously use

### Non-Blocking – Asynchronously

### When using the Org Authorization Server , the lifetime of the JSON Web Tokens (JWT) is hard-coded to the following values: ID Token: 60 minutes. Access Token: 60 minutes. Refresh Token: 90 days.

### Handle the Traffic In NodeJs Api : Implementing caching, load balancing, and data pagination and filtering.

**Benefits of Promises:**

* Improves Code Readability.
* Better handling of asynchronous operations.
* Better flow of control definition in asynchronous logic.
* Better Error Handling.