

## **MERN Stack Interview Questions**

### **What is the MERN Stack?**

Answer:

MERN Stack is a collection of JavaScript-based technologies used for building full-stack web applications. It includes:

MongoDB (NoSQL database)

Express.js (Backend framework for Node.js)

React.js (Frontend library)

Node.js (JavaScript runtime for the backend)

### **What are the advantages of using the MERN Stack?**

Answer:

Uses JavaScript throughout the stack (frontend and backend).

Fast development with reusable React components.

Scalable and supports large applications.

JSON-based interactions between frontend and backend.

Open-source with a large community.

### **What is the role of MongoDB in MERN Stack?**

Answer:

MongoDB is a NoSQL database that stores data in JSON-like BSON format. It is used for:

Storing application data in collections and documents.

Providing scalability with flexible schemas.

Handling large volumes of unstructured data efficiently.

### **What is Express.js and why is it used?**

Answer:

Express.js is a backend web framework for Node.js that simplifies server-side development. It is used because:

It provides middleware for handling HTTP requests and responses.

It helps in routing, API creation, and handling errors.

It is lightweight and works well with MongoDB and React.

### **What is React and why is it used in MERN Stack?**

Answer:

React is a JavaScript library for building user interfaces, especially single-page applications (SPA). It is used because:

It uses a component-based architecture for better reusability.

It improves performance with the Virtual DOM.

It enables fast rendering and updates.

### **What is Node.js and why is it used in MERN?**

Answer:

Node.js is a JavaScript runtime environment that allows running JavaScript code outside a browser. It is used because:

It handles asynchronous operations efficiently.

It uses non-blocking I/O for high performance.

It supports real-time applications like chat apps.

### **What is the Event Loop in Node.js**

Answer:

The Event Loop is what allows Node.js to be asynchronous and non-blocking. It continuously checks the call stack and callback queue, processing asynchronous operations like I/O operations, timers, and API calls in a non-blocking manner

### **What are Promises and async/await in Node.js?**

Answer:

Promises help in handling asynchronous operations. They can be resolved or rejected.

Async/Await is a cleaner way to handle promises.

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

Answer:

Middleware functions in Express.js are functions that execute before the request reaches the final route handler.

Types of middleware:

Application-level middleware

Router-level middleware

Error-handling middleware

Built-in middleware (e.g., `express.json()`)

Third-party middleware (e.g., `cors`, `morgan`)

### **What is NPM?**

Answer:

NPM (Node Package Manager) is the default package manager for Node.js. It is used to install, update, and manage packages (libraries or dependencies) in Node.js projects.

Here are some MERN stack interview questions and answers:

## **MERN Stack General Questions**

### **1. \*What is MERN Stack?\***

Answer: MERN Stack is a JavaScript-based framework for building web applications, consisting of MongoDB, Express.js, React.js, and Node.js.

### **2. \*What are the advantages of using MERN Stack?\***

Answer: Advantages include JavaScript-based, open-source, flexible, scalable, and cost-effective.

### **3. \*What is the difference between MERN and MEAN?\***

Answer: MERN uses React.js, while MEAN uses Angular.js.

## **# MongoDB Questions**

### **1. \*What is MongoDB?\***

Answer: MongoDB is a NoSQL, document-based database for storing and retrieving data.

### **2. \*What is the difference between MongoDB and traditional RDBMS?\***

Answer: MongoDB is schema-less, document-based, and horizontally scalable.

### **3. \*How do you perform CRUD operations in MongoDB?\***

Answer: Using MongoDB's CRUD methods: create(), read(), update(), and delete().

## **# Express.js Questions**

### **\*What is Express.js?\***

Answer: Express.js is a Node.js framework for building web applications.

### **\*What is the difference between Express.js and Node.js?\***

Answer: Express.js is built on top of Node.js and provides additional features for web development.

### **\*How do you handle routing in Express.js?\***

Answer: Using Express.js's routing methods: app.get(), app.post(), app.put(), and app.delete().

## **# React.js Questions**

### **\*What is React.js?\***

Answer: React.js is a JavaScript library for building user interfaces.

### **\*What is the difference between React.js and Angular.js?\***

Answer: React.js is a library, while Angular.js is a full-fledged framework.

### **\*How do you handle state changes in React.js?\***

Answer: Using React.js's `setState()` method or Redux.

## **# Node.js Questions**

### **\*What is Node.js?\***

Answer: Node.js is a JavaScript runtime environment for building server-side applications.

### **\*What is the difference between Node.js and browser JavaScript?\***

Answer: Node.js runs on the server-side, while browser JavaScript runs on the client-side.

### **\*How do you handle asynchronous operations in Node.js?\***

Answer: Using Node.js's built-in `async/await` syntax or callbacks.

## **What is React?**

Answer:

React is a JavaScript library used for building user interfaces (UIs). It is developed by Meta (Facebook) and is mainly used for creating single-page applications (SPAs).

## **What are React Hooks?**

Answer:

Hooks are functions that allow you to use state and lifecycle methods in functional components

Common Hooks:

`useState()` – Manages state in a functional component.

`useEffect()` – Handles side effects (API calls, DOM updates).

`useContext()` – Accesses global state without props drilling.

### **What is Virtual DOM?**

Answer:

The Virtual DOM (VDOM) is a lightweight copy of the actual DOM. When a component updates, React:

Creates a virtual copy of the DOM.

Compares it with the previous version (Diffing).

Updates only the changed parts (Reconciliation).

### **What is `useEffect` in React?**

Answer:

`useEffect()` is a Hook used to handle side effects like API calls, event listeners, and subscriptions.

### **What is the difference between null and undefined?**

>null is an explicitly assigned value indicating "no value".

>undefined means a variable has been declared but hasn't been assigned a value.