Interview questions

NodeJS Interview Questions and Answers:

1.What is Node.js?
Ans: Node.js is an open-source, cross-platform JavaScript runtime environment.

2. What is the difference between Node.js and JavaScript?

Ans: JavaScript is a scripting language whereas Node.js is an engine that provides the runtime environment to run JavaScript code.

3. Is Node.js single-threaded?

Ans: Yes, Node.js is a single-threaded application as it is built using the **single-threaded event loop model** architecture.

4. What kind of API function is supported by Node.js?

Ans: There are two types of API functions supported by Node.js:

- **Synchronous:** These API functions are used for blocking code.
- **Asynchronous:** These API functions are used for non-blocking code.

5. What is npm and its advantages?

Ans:NPM stands for Node Package Manager. It is an online repository for Node.js packages. We can install these packages in our projects/applications using the command line.

6. What is package.json in Node.js?

Ans: package.json is a file that is used to store the metadata of all the contents of the project.

Express.js Interview Questions and Answers:

1.What do you mean by Express JS ?
Ans: Express JS is an application framework that is light-weighted node JS.

2. What function are arguments available to Express JS route handlers?
Ans: The arguments which are available to an Express JS route handler-function are-

- **Req:** the request object
- **Res:** the response object

- **Next (optional):** a function that is employed to pass management to 1 of the following route handlers.

3.Why use Express.Js?

Ans: Express.js is a lightweight Node.js framework that gives us ability to create server-side web applications faster and smarter.

4. Differentiate between Node.js and Express.js?

Ans: Node.js is the runtime environment that allows you to execute JavaScript on the server side, on the other hand Express.js is a framework built on top of Node.js that provides a set of tools for building web applications and APIs.

5. Is Express JS a front-end or a back-end framework?

Ans: Express.js is a JavaScript backend framework. It is mainly designed to develop complete web applications and APIs.

6. What is .env file used for?

Ans: The .env file is used for storing sensitive information in a web application which we don't want to expose to others like password, database connection string etc.

MongoDB Interview Questions and Answers:

1.What are NoSQL databases?

Ans: A NoSQL database provides a mechanism for storage and retrieval of data that is modeled in means other than the tabular relations used in relational databases.

2.What is 32-bit nuances?

Ans: There is an extra memory mapped file activity with journaling. This will further constrain the limited db size of 32-bit builds. For now, journaling by default is disabled on 32-bit systems.

3.What is a Namespace in MongoDB?
Ans: A Namespace is the concatenation of the database name and collection name.

4.Which are the most important features of MongoDB?

- Flexible data model in form of documents

- Agile and highly scalable database
- Faster than traditional databases
- Expressive query language

5.How is MongoDB better than other SQL databases?

Ans: MongoDB allows a highly flexible and scalable document structure. one data document in MongoDB can have five columns and the other one in the same collection can have ten columns. Also, MongoDB database are faster as compared to SQL databases due to efficient indexing and storage techniques.

6.Does MongoDB need a lot of RAM

Ans: No. MongoDB can be run even on a small amount of RAM. MongoDB dynamically allocates and de-allocates RAM based on the requirements of other processes.

7.What are Indexes in MongoDB?
Ans: Indexes support the efficient execution of queries in MongoDB. MongoDB can use the index to limit the number of documents it must inspect.

8.What is Aggregation in MongoDB?

Ans: Aggregations operations process data records and return computed results.

React.js interview questions

1.Explain the building blocks of React?
Ans: The five main building blocks of React are:

- **Components:** These are reusable blocks of code that return HTML.
- J**SX:** It stands for JavaScript and XML and allows to write HTML in React.
- **Props and State:** props are like function parameters and State is similar to variables.
- **Context:** This allows data to be passed through components as props in a hierarchy.
- **Virtual DOM:** It is a lightweight copy of actual DOM which makes DOM manipulation easier.

2. Explain props and state in React with differences

Ans: Props are used to pass data from one component to another. The state is local data storage that is local to the component only and cannot be passed to other components.

3. What is virtual DOM in React?
Ans: Virtual DOM in React is used as a strategy to compute minimal DOM operations while re-rendering the UI. It is not in competition with or faster.

4. What is JSX?

Ans:JSX is basically a syntax extension of regular JavaScript and is used to create React elements.All the React components are written in JSX.

5. What are components and its type in React?

Ans: A Component is one of the core building blocks of React. In other words, we can say that every application you will develop in React will be made up of pieces called components.

6. How do browsers read JSX?

Ans: In general, browsers are not capable of reading JSX and only have the capacity to read pure JavaScript. The web browsers read JSX with the help of a transpiler. Transpilers are used to convert JSX into JavaScript. The transpiler used is called Babel.

7. What is a key in React?

Ans: A “key” is a special string attribute you need to include when creating lists of elements in React.

8. How to write a comment in React?

There are two ways to write comments in React.

- **Multi-line comment:** We can write multi-line comments in React using the asterisk format /* */.
- **Single line comment:** We can write single comments in React using the double forward slash //.

9. Explain the use of render method in React?

Ans: React renders HTML to the web page by using a function called render(). The purpose of the function is to display the specified HTML code inside the specified HTML element.

10. What is state in React?

Ans: The state is an instance of React Component Class that can be defined as an object of a set of observable properties that control the behavior of the component.

11. Explain props in React?

Ans: React allows us to pass information to a Component using something called props (which stands for properties). Props are objects which can be used inside a componen

12. What is higher-order component in React?

Ans: Higher-order components is the advanced method of reusing the component functionality logic. It simply takes the original component and returns the enhanced component.

13. Explain one way data binding in React?

Ans: ReactJS uses one-way data binding which can be Component to View or View to Component. It is also known as one-way data flow, which means the data has one, and only one way to be transferred to other parts of the application.

14. What is conditional rendering in React?

Ans: When there are multiple components in react and we want to render components according to our preference and some conditions then we use conditional rendering.

15. What is react router?

Ans: React Router is a standard library for routing in React. It enables the navigation among views of various components in a React Application, allows changing the browser URL, and keeps the UI in sync with the URL.

16. What is this.setState function in React?

Ans: We use the setState() method to change the state object. It ensures that the component has been updated and calls for re-rendering of the component.

17. What is the use of ref in React?

Ans: Refs are a function provided by React to access the DOM element and the React element that you might have created on your own. They are used in cases where we want to change the value of a child component, without making use of props and all.

18. What are hooks in React?

Ans: Hooks are a new addition in React 16.8. They let developers use state and other React features without writing a class. Hooks doesn’t violate any existing React concepts. Instead, Hooks provide a direct API to react concepts such as props, state, context, refs and life-cycle

19. Explain the useState hook in React?

Ans: The most used hook in React is the useState() hook. It allows functional components to manipulate DOM elements before each render. Using this hook we can declare a state variable inside a function but only one state variable can be declared using a single useState() hook.

20. Explain the useEffect hook in react?

The useEffect hook in React eliminates the side effect of using class based components. It is used as an alternative to componentDidUpdate() method. The useEffect hook accepts two arguments where second argument is optional.