**Coding Questions (Upload the code on github & share the link)**

1. **Assignment (Mandatory) – React.Js**

Create a React app as per the following requirement –

1. Create a card view to show movies
2. Each movie should have movie name, rating, released date
3. Create a simple JSON for movies data. Minimum 20 movies required.
4. Create a simple API in NodeJS to read data from JSON source
5. Integrate your React app with the NodeJS API.
6. Use React router in wherever possible here.
7. Application UI should be clean and simple.
8. **Assignment (Mandatory) – Node.Js**
9. Create a NodeJS server using HAPI/Express framework.
10. Create a service for USER. User model should have First Name, Last Name, Email, and Contact No.
11. Add a route with GET request to fetch all users
12. Add POST and PUT requests to create and update existing users
13. Add DELETE requests to delete a user entry.
14. Add proper validation on payload/parameters and error handler for request.

Write answer below questions only.

**React.Js**

1. **Can web browsers read JSX directly?**

**No**

1. **What is the virtual DOM?**

Virtual DOM provides a mechanism that prevents the real DOM manipulation. IT is the lighter version of the real DOM. That’s why it is easy and faster to update any element

1. **What is the primary difference between the ES6 and ES5 standards?**

In ES6 some more features are introduced:

Let,const

Arrow functions

Promisses

Async await

Template literals

destructuring

1. **What are synthetic events in React?**
2. **How do you update the state of a component?**

**By setState method**

1. **What are the components of Redux?**

**Reducers, actions,and store**

1. **What is the Flux?**
2. **What is PureComponent?**

A component which render the same output for the same state and props.

1. **What are controlled and uncontrolled components in React?**

**Controlled** compoenent controlled by the parent component and uncontrolled components which manage their own state.

1. **What is React.cloneElement?**

It helps to create a react element using another element

1. **What is the difference between mapStateToProps() and mapDispatchToProps () ? Give an example.**

These are used for the redux state manage.

**mapStateToProps is used to provide the store data to component**

**mapDispatchToProps is used to provide the action as props to compoent**

1. **What are the differences between redux-saga and redux-thunk?**

1. **How to add multiple middlewares to Redux?**

By applyMiddleware() function

1. **What is wrong with this example, and how would you go -**

|  |
| --- |
| class App extends React.Component {  constructor(props) {  super(props);  this.state = {  name: this.props.name || 'Anonymous'  }  } render() {  return (  <p>Hello {this.state.name}</p>  );  }  } |

**It should extends component from React**

1. **Can you explain the differences between all those ways. What happens when you click each of the buttons?**

|  |
| --- |
| class App extends React.Component {  constructor() {  super();  this.name = 'MyComponent';  this.handleClick2 = this.handleClick1.bind(this);  }  handleClick1() {  alert(this.name);  }  handleClick3 = () => alert(this.name);render() {  return (  <div>  <button onClick={this.handleClick1()}>click 1</button>  <button onClick={this.handleClick1}>click 2</button>  <button onClick={this.handleClick2}>click 3</button>  <button onClick={this.handleClick3}>click 4</button>  </div>  );  }  } |

1. **What's the issue with this component. Why? How would you go about fixing it?**

|  |
| --- |
| class App extends React.Component {state = { search: '' }handleChange = event => {/\*\*  \* This is a simple implementation of a "debounce" function,  \* which will queue an expression to be called in 250ms and  \* cancel any pending queued expressions. This way we can  \* delay the call 250ms after the user has stoped typing.  \*/  clearTimeout(this.timeout);  this.timeout = setTimeout(() => {  this.setState({  search: event.target.value  })  }, 250);  }render() {  return (  <div>  <input type="text" onChange={this.handleChange} />  {this.state.search ? <p>Search for: {this.state.search}</p> : null}  </div>  )  }  } |

1. **How can you tell React to build in the production mode?**

**Npm run build**

1. **Why is props passed to the super() function in React?**

**To access the parent class props**

1. **What are the benefits of HOC?**

For optimizations and code reusability

1. **Why do we need a Router to React?**

**To use routing router is required. React-router-dom package**

**Node.Js**

1. **Rewrite the code sample without try/catch block**

async function check(req, res) {

try {

const a = await someOtherFunction();

const b = await somethingElseFunction();

res.send("result")

} catch (error) {

res.send(error.stack);

}

}

async function check(req, res) {

const a = await someOtherFunction();

const b = await somethingElseFunction();

res.send("result")

}

1. **What are the benefits of using Node.js?**

Code sharing and reuse

Asynchronous

Scalability due to event loop

1. **What is an error-first callback? Give an examples**

**In callback function first param is error. If there is any exception then it will go to the first arg**

1. **What is Event Emitter? Give an example.**

**It can be used to create custom events**

1. **What's the Event Loop?**

**It is the mechanish which helps nodej to achieve asynchronous approach. When any request comes to event loop then it check for type whether it is non blocking or not. If not then it will assign a event and pass it to thread pool and move to next request. SO by this way the main thread will always empty to take next request.**

1. **What is typically the first argument passed to a Node.js callback handler?**

**error**

1. **How do you manage packages in your node.js project?**

**In package.json file**

1. **Explain the steps how “Control Flow” controls the functions calls?**
2. **What are the advantages of using promises instead of callbacks?**

**It will be easy readable and debug.**

**Also in the situation of chaining then promises are easy to manage the code**

1. **How do you create a simple server in Node.js that returns Hello World?**

**Var express = require(‘express’);**

**Const app = express();**

**App.get(‘/’, (req,res) => {**

**Res.send(‘hellp word’);**

**})**

**App.listen(3000, () => {**

**Console.log(‘running’);**

**})**

1. **How many types of API functions are there in Node.js?**
2. **Post, put, delete, get, patch**
3. **What do you understand by following code?**
4. **Which of the following statements is valid to import a module in file?**
5. var fs = require("fs");
6. var fs = import("fs");
7. package fs;
8. import fs;

a

1. **How to make node modules available externally?**
2. module.expose
3. module.spread
4. module.export

c

1. **Which of the following are Node.js stream types?**
2. Duplex
3. Readable
4. Writable
5. All of the above

d

1. **What is the default scope of Node.js application?**
2. Global
3. Local
4. Public
5. Private

b

1. **Which module is used to serve static files in Node.js?**
2. static
3. node-static
4. http
5. node-http

a

1. **REPL stands for.**
2. Research Eval Program Learn
3. Read Eval Print Loop
4. Read Earn Point Learn
5. Read Eval Point Loop

b

1. **Which of the following code print the platform of operating system?**
2. console.log('platform : ' + os.platform);
3. console.log('platform : ' + os.platform());
4. console.log('platform : ' + os.getPlatform());
5. None of the above.

a

1. **Which of the following template engines can be used with Node.js?**
2. Jade
3. Vash
4. Handlebars
5. All of the above

d

**MongoDB**

* Which syntax is used to create a Collection in MongoDB?
* Db,createCollection()
* Which syntax is used to drop a Collection in MongoDB?

Db.collection.drop()

* Explain Replication.

To create similar db for backup

* What is the use of an Index in MongoDB?

To improve performance in searching in collection

* Which command is used for inserting a document in MongoDB?

Db.collection.insert()

* What is the use of GridFS in MongoDB?
* What is the use of Journaling in MongoDB?
* Which command is used to see a connection?

db

* Define the primary Replica set.
* Define the secondary Replica sets.
* What is the use of Profiler?
* What type of data is stored by MongoDB?

JSON

* What is the purpose of Replication?

For data security and backup

* What are Embedded documents?
* Define the application-level Encryption.
* What is Storage Encryption?
* Which method is used to create an index?
* What is Replica set oplog?
* What is Vertical Scaling?
* Define Horizontal Scaling.
* What are the components of the Sharded cluster?
* Which command is used to create a database?
* Which command is used to drop a database?
* What is the use of the pretty() method?

To get data in associated array or readable format

* Which method is used to remove a document from a collection?

.remove()

* Define MongoDB Projection.

For join two collections

* What is the use of the limit() method?

To get the particular number of data from collection

* What is the syntax of the limit() method?
* Limit()
* What is the syntax of the sort() method?

.sort({KEY: 1})

* Which command is used to create a backup of the database?
* What is a Collection in MongoDB?

Where all documents will store

* What is the use of the db command?

To get the current db name

* Which method is used to update documents into a collection?

UpdateMany

* What is the syntax of the skip() method?

To set the offset- key when we fetch the data

* Which command is used to restore the backup?
* What is the use of the dot notation in MongoDB?
* Define Auditing.
* Define the Aggregation pipeline.
* Define MapReduce.
* What is Splitting in MongoDB?

MySQL

1 How can you change the root password if it is lost?

2 How to resolve the problem of the data disk that is full?

3 What is the significance of “%” and “\_” operators in the LIKE statement?

4 How to reset the autoincrement?

5 What happens when auto\_increment on integer column reaches the max\_value in databases?

6 Can you tell few best practices to be followed for optimization in SQL?

7 Identify what is wrong in the below query.

SELECT EmployeeID, AVG(Salary)  
FROM EmployeeDetails  
WHERE AVG(Salary) > 75  
GROUP BY EmployeeID

8 Suppose you have to collect the first name, middle name and the last name of students from the below table. But, you observe that there few missing values either in the first name, middle name and the last name columns. How will you return the first non-null values?

|  |  |  |  |
| --- | --- | --- | --- |
| **StudentID** | **First Name** | **Middle Name** | **Last Name** |
| 1 | Rohit | Kumar | NULL |
| 2 | Sakshi | Chowdhary | NULL |
| 3 | NULL | Yash | Singhania |
| 4 | Akash | NULL | Kumar |
| 5 | Avinash | NULL | Daksh |