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1. **MongoDB vs Mongoose. Why are we using Mongoose package instead of MongoDB package? How would we perform CRUD operations using the MongoDB package? Give code examples for creating, retrieving, updating and deleting MongoDB documents.**

In packages MongoDB package is the native driver for interacting with a MongoDB instance and Mongoose is an Object Data Modeling (ODM) library for MongoDB and Node.js. It manages relationships between data, provides schema validation, and is used to translate between objects in code and the representation of those objects in MongoDB. We are using Mongoose as it provides us with an easy way to create and manage data in MongoDB.

**Creating:**

db.products.insert( { item: "card", qty: 15,status:”A” } )(without Id)

db.products.insert( { \_id: 10, item: "box", qty: 20,status:”A” } )(with Id)

**Retrieving:**

db.products.find({status:”A”})

**Updating:**

db.products.updateOne(

{ item: "card" },

{

$set: { "size.uom": "cm", status: "P" },

$currentDate: { lastModified: **true** }

}

)

**Deleting:**

db.products.deleteOne({status:”A”)}

1. **POST vs PUT. Why was POST used to update employee data in the Employees sample AJAX application? What happens if you replace POST with PUT? What difference does it make?**

Both PUT and POST strategies are utilized to send information to the server to make or update resources. The distinction between both is that PUT strategy is idempotent i.e. on the off chance that we consider PUT on different occasions it will create similar outcomes. Then again, in the event that we call POST strategy over and again it will copy information, making a similar asset on various occasions. In addition, PUT ought to be utilized in the event that you know the correct URI and if not, it is prescribed to utilize POST.

Replacing POST with PUT does not duplicate data. Rather it updates the previous thus making the previous data inaccessible.

1. **PUT vs PATCH. Can PUT be used for partial updates e.g. in case of updating your name in an online university application form what method should be used? PUT or PATCH or anyone? Why?**

PUT can be used for updating fields like a name on University forum however it has a drawback that is that if we solely replace the name field without rewriting other attributes all of the previous fields will be deleted. Thus, we have to write all the fields again and again even if we are updating a single field. Thus, it is better to use Patch, which means that we are implementing a partial update, this will only replace the area that we stated to be updated and will not have an effect on the rest of the fields. But, it is important to observe that patch only works for existing collections and does not create new collections like post or put.

1. **Where does React lie in comparison to AngularJS? Compare with respect to advantages and disadvantages.**

|  |  |
| --- | --- |
| **REACT** | **Angular JS** |
| One-way data binding i.e. it is known where the change was made | Two-way data binding i.e. any change in data changes both view and model |
| Uses virtual DOM | Uses browser DOM |
| It is easy to learn but consumes a lot of time when setting up a project | Projects made in AngularJS are quick to set up |
| It requires libraries and additional tools to solve dependencies | It automatically solves dependencies. |

1. **What is Vue.js? Where does Vue lie in comparison to React and AngularJS? Give examples.**

Vue is a modern framework for building user interfaces. It is designed from the floor up to be incrementally adaptable. It focuses on view layer only. Vue can be effortlessly combine with different libraries. Moreover, it is additionally quite beneficial in developing single paged powerful applications when used in mixture with present day tooling and aiding libraries.

* **Popularity:**

For now React and Angular are the most popular framework and MVC right now, with 66.9% users preferring REACT and 51.7% preferring Angular.

* **Structure:**

All of these are Javascript based frameworks with the the only difference being the version of JS. Angular is a straight forward framework. React is more integration based as it combines with different tools. Vue is the cleanest as it is JS based and pretty easy to use and set up.

* **Processing:**

Both Vue and REACT are virtual DOM based while Angular is browser DOM based. Still all three of these frameworks are the fastest JS based frameworks out there.

1. **How is AngularIO different from AngularJS? Give examples.**

* Angular JS is an open source JS-based, frontend internet application framework for dynamic web app development whereas, AngularIO (angular-2 and angular-4) are open-source, Typescript based frontend web application systems.
* Angular JS is written in JavaScript. Angular uses Microsoft’s TypeScript language, which is a superset of ECMAScript 6 (ES6). This has the mixed benefits of the TypeScript features, like type declarations, and the benefits of ES6, like iterators and lambdas. Angular four is like minded with the most current variations of TypeScript that have powerful type checking and object-oriented features.
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1. **What is Linting? What is the use of JSLint? What is the use of ESLint? Give examples.**

Linting is the process of running a program that will analyse code for potential errors. This can be done manually or by a third-party application.

**JSLint:**

* JSLint is a JavaScript program that looks for problems in JavaScript programs. It is a code quality tool.
* JSLint will reject programs that browsers will accept because JSLint is concerned with the quality of your code.
* JSLint is a JavaScript syntax checker and validator.

**ESLint:**

* ESLint is a tool for identifying and reporting on patterns found in ECMAScript/JavaScript code.
* ESLint is entirely plugabble and anything can be turned on or off.
* ESLint allows developers to create their own linting rules.

1. **Give an example where you would prefer to use AngularJS over AJAX and vice versa.**

In searching and review based web pages I would prefer AJAX as it is more dynamic than Angular in this manner.

In making a static SPA that doesn’t do much and has rarely any data change from the consumer side Angular is preferable as it is a static framework as compared to AJAX.