**1.What is AJAX? Advantages of AJAX?**

AJAX stands for **A**synchronous **Ja**vaScript and **X**ML. AJAX is a new technique for creating better, faster, and more creative web applications with the help of XML, HTML, CSS, and Java Script. AJAX is introduced by Google to communicate with sever through java script.

In earlier days, web pages can’t update small portion without reloading pages. So now we use Ajax which help us to background server calls for fetching data and update new contain without reloading whole page again. Hence, AJAX helps in partial page load.

Advantages:-

**Reduce server traffic and increase speed**-

The first and foremost advantage of Ajax is its ability to improve the performance and usability of web applications.

**Enable asynchronous calls-**

Ajax benefits web developers in how its framework can be used for lazy loading. Those who don’t know what Lazy Loading is are an optimization technique that’s widely used for online content.

In essence, Ajax allows its users to make asynchronous calls to the web server without reloading the whole web page. As a web visitor, you don’t have to wait for the entire page to load entirely in order to access the entire page content.

**Reduce bandwidth wage-**

One more advantage of Ajax comes from the bandwidth usage. This action is effective in improving web performance and load speed as well.

**Form validation-**

In contrast to traditional form submission, where client-side validations occur after submission, the AJAX method enables precise and immediate form validation. AJAX provides speed, which is also one of its significant benefits.

**XML HTTP Requets**-

XMLHttpRequest transfers and manipulates the XML data to and from a web service using HTTP. Its purpose is to establish an independent connection between the webpage’s client-side and server

**2.What is JSON? WhY JASON?**

JSON stands for "JavaScript Object Notation." It is a lightweight, text-based data interchange format that is easy for humans to read and write and easy for machines to parse and generate. JSON is often used for representing structured data and is commonly used in web development for sending data between a server and a web application, or between different parts of an application.

**Why JSON?**

[JSON](https://en.wikipedia.org/wiki/JSON) is mainly intended for data interchanging among the applications. Parsing data from one application to another through [JSON](https://en.wikipedia.org/wiki/JSON) is so much easy because of its [language-independent](https://en.wikipedia.org/wiki/Language-independent_specification) data format. Almost every programming language has JSON support through official and 3rd party.

A very popular database named “MongoDB” uses JSON-like documents with the schema.

**3.What is JQuery? Advantage of JQuery?**

* jQuery is a JavaScript library that is open-source in nature. jQuery is a lightweight, "write less, do more", JavaScript library.
* The purpose of jQuery is to make it much easier to use JavaScript on your website.
* jQuery is a popular and widely used JavaScript library that simplifies HTML document traversal, event handling, animation, and interaction with a web page. It was created to make client-side web development easier and more efficient

**ADVANTAGES:**

* **Ease of Use:** jQuery provides a simplified and concise syntax for common JavaScript operations. It abstracts many complex tasks, making it easier for developers to work with HTML documents
* **Cross-Browser Compatibility:** It ensures that your JavaScript code works consistently across different web browsers.
* **AJAX Support:** jQuery simplifies AJAX (Asynchronous JavaScript and XML) requests, making it easier to fetch data from a server without requiring a full page reload. AJAX is commonly used for dynamic content loading and partial page load.
* **Performance:** jQuery is optimized for performance, and its use of modern JavaScript techniques helps reduce the load times and improve the responsiveness of web applications.
* **Open Source:** jQuery is open source and released under the MIT License, allowing you to use it freely in your projects, modify it, and contribute to its development.

**4.What is No-SQL databases? Examples?**

jQuery is a popular and widely used JavaScript library that simplifies HTML document traversal, event handling, animation, and interaction with a web page. It was created to make client-side web development easier and more efficient.

Types of NoSQL database: Types of NoSQL databases and the name of the databases system that falls in that category are:

Graph Databases: Examples – Amazon Neptune, Neo4j

Key value store: Examples – Memcached, Redis, Coherence

Tabular: Examples – Hbase, Big Table, Accumulo

Document-based: Examples – MongoDB, CouchDB, Cloudant

**5.What is HTTP status codes? What is the meaning of 401,403,404,500 status codes?**

Ans - [Hypertext Transfer Protocol](https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol) (HTTP) response status codes. Status codes are issued by a server in response to a [client's request](https://en.wikipedia.org/wiki/Client_(computing)) made to the server. It includes codes from IETF [Request for Comments](https://en.wikipedia.org/wiki/Request_for_Comments) (RFCs), other specifications, and some additional codes used in some common applications of the HTTP. The first digit of the status code specifies one of five standard classes of responses.

401 Unauthorized

Similar to 403 Forbidden, but specifically for use when authentication is required and has failed or has not yet been provided. The response must include a WWW-Authenticate header field containing a challenge applicable to the requested resource.. 401 semantically means "unauthorised", the user does not have valid authentication credentials for the target resource.

403-FORBIDDEN

The request contained valid data and was understood by the server, but the server is refusing action. This may be due to the user not having the necessary permissions for a resource or needing an account of some sort, or attempting a prohibited action (e.g. creating a duplicate record ). This code is also typically used if the request provided authentication by answering the WWW-Authenticate header field challenge, but the server did not accept that authentication.

404- NOT FOUND

The requested resource could not be found but may be available in the future. Subsequent requests by the client are permissible.

500-INTERNAL SERVER ERROR

A generic error message, given when an unexpected condition was encountered and no more specific message is suitable.