AJAX is an acronym for **Asynchronous JavaScript and XML**. It is a group of inter-related technologies like javascript, dom, xml, html, css etc.

AJAX allows you to send and receive data asynchronously without reloading the web page. So it is fast.

AJAX allows you to send only important information to the server not the entire page. So only valuable data from the client side is routed to the server side. It makes your application interactive and faster.

1) What is AJAX?

AJAX stands for Asynchronous JavaScript and XML. It is a group of related technologies to display data asynchronously. [More details...](http://www.javatpoint.com/ajax-tutorial)

2) What are the advantages of AJAX?

* Quick Response
* Bandwidth utilization
* User is not blocked until data is retrieved from the server.

3) What are the disadvantages of AJAX?

* Dependent on JavaScript
* Security issues
* Debugging is difficult

4) What are the real web applications of AJAX currently running in the market?

* Twitter
* Facebook
* Gmail
* Javatpoint
* Youtube etc.

5) What are the security issues with AJAX?

* AJAX source code is readable
* Attackers can insert script into the system

6) What is the difference between synchronous and asynchronous requests?

Synchronous request blocks the user until response is retrieved whereas asynchronous doesn't block the user. [More details...](http://www.javatpoint.com/understanding-synchronous-vs-asynchronous)

7) What are the technologies used by AJAX?

* HTML/XHTML and CSS
* DOM
* XML
* XMLHttpRequest
* JavaScript

[More details...](http://www.javatpoint.com/ajax-technologies)

8) What does XMLHttpRequest?

* sends data in the background
* receives data
* updates data without reloading the page

[More details...](http://www.javatpoint.com/understanding-xmlhttprequest)

9) What are the properties of XMLHttpRequest?

The important properties of XMLHttpRequest object are given below.

* onReadyStateChange
* readyState
* responseText
* responseXML

[More details...](http://www.javatpoint.com/understanding-xmlhttprequest)

10) What are the important methods of XMLHttpRequest?

* open()
* send()
* setRequestHeader()

[More details...](http://www.javatpoint.com/understanding-xmlhttprequest)

11) What is JSON in AJAX?

JSON stands for JavaScript Object Notation. It is easy to understand and data exchange is fast than XML. It supports array.

12) What are the tools for debugging AJAX applications?

There are two most widely used tools for debugging AJAX applications.

* Firebug for Mozilla Firefox
* Fiddler for IE (Internet Explorer)

13) What are the types of post back in AJAX?

There are two types of post back in AJAX.

* Synchronous Postback
* Asynchronous Postback

14) What are the different ready states of a request in AJAX?

There are 5 ready states of a request in AJAX.

* 0 means UNOPENED
* 1 means OPENED
* 2 means HEADERS\_RECEIVED
* 3 means LOADING
* 4 means DONE

[More details...](http://www.javatpoint.com/understanding-xmlhttprequest)

15) What are the common AJAX frameworks?

* Dojo Toolkit
* YUI
* Google Web Toolkit (GWT)
* Spry
* MooTools
* Prototype

16) How can you test the AJAX code?

JsUnit is the open source unit testing framework for client side JavaScript. It is a part of JUnit.

17) What is the difference between JavaScript and AJAX?

JavaScript makes a request to the server and waits for the response. It consumes more bandwidth as it reloads the page.

AJAX sends a request to the server and doesn't wait for the response. It doesn't reload the page so consumes less bandwidth.

# What is JSON

JSON is an open standard for exchanging data on the web. It supports data structures like object and array. So it is easy to write and read data from JSON.

## What is JSON

* JSON stands for JavaScript Object Notation.
* JSON is an open standard data-interchange format.
* JSON is lightweight and self describing.
* JSON is originated from JavaScript.
* JSON is easy to read and write.
* JSON is language independent.
* JSON supports data structures such as array and objects.

## Features of JSON

1. Simplicity
2. Openness
3. Self Describing
4. Internationalization
5. Extensibility
6. Interoperability

|  |  |  |
| --- | --- | --- |
| **No.** | **JSON** | **XML** |
| 1) | JSON stands for JavaScript Object Notation. | XML stands for eXtensible Markup Language. |
| 2) | JSON is simple to read and write. | XML is less simple than JSON. |
| 3) | JSON is easy to learn. | XML is less easy than JSON. |
| 4) | JSON is data-oriented. | XML is document-oriented. |
| 5) | JSON doesn't provide display capabilities. | XML provides the capability to display data because it is a markup language. |
| 6) | JSON supports array. | XML doesn't support array. |
| 7) | JSON is less secured than XML. | XML is more secured. |
| 8) | JSON files are more human readable than XML. | XML files are less human readable. |
| 9) | JSON supports only text and number data type. | XML support many data types such as text, number, images, charts, graphs etc. Moreover, XML offeres options for transferring the format or structure of the data with actual data. |

# JavaScript Interview Questions

JavaScript interview questions and answers for provides a list of top 20 interview questions. The frequently asked JavaScript interview questions with answers for beginners and professionals are given below.

### 1) What is JavaScript?

**JavaScript** is a scripting language. It is different from Java language. It is object-based, lightweight and cross platform. It is widely used for client side validation. [More details...](http://www.javatpoint.com/javascript-tutorial)

### 2) What is the difference between JavaScript and jscript?

Netscape provided the JavaScript language. Microsoft changed the name and called it JScript to avoid the trademark issue.In other words, you can say JScript is same as JavaScript, but it is provided by Microsoft.

### 3) How to write a hello world example of JavaScript?

A simple example of JavaScript hello world is given below. You need to place it inside the body tag of html.

1. **<script** type="text/javascript"**>**
2. document.write("JavaScript Hello World!");
3. **</script>**

[More details...](http://www.javatpoint.com/javascript-example)

### 4) How to use external JavaScript file?

I am assuming that js file name is message.js, place the following script tag inside the head tag.

1. **<script** type="text/javascript" src="message.js"**></script>**

[More details...](http://www.javatpoint.com/external-javascript-file)

### 5) Is JavaScript case sensitive language?

Yes.

### 6) What is BOM?

**BOM** stands for Browser Object Model. It provides interaction with the browser. The default object of browser is window.

[Browser Object Model](http://www.javatpoint.com/browser-object-model)

### 7) What is DOM? What is the use of document object?

**DOM** stands for Document Object Model. A document object represent the html document. It can be used to access and change the content of html.

[Document Object Model](http://www.javatpoint.com/browser-object-model)

### 8) What is the use of window object?

The window object is automatically created by the browser that represents a window of a browser.

It is used to display the popup dialog box such as alert dialog box, confirm dialog box, input dialog box etc.

[More details...](http://www.javatpoint.com/window-object)

### 9) What is the use of history object?

The history object of browser can be used to switch to history pages such as back and forward from current page or another page. There are three methods of history object.

1. history.back()
2. history.forward()
3. history.go(number): number may be positive for forward, negative for backward.

[More details...](http://www.javatpoint.com/javascript-history-object)

### 10) How to write comment in JavaScript?

There are two types of comments in JavaScript.

1. Single Line Comment: It is represented by // (double forward slash)
2. Multi Line Comment: It is represented by slash with asterisk symbol as /\* write comment here \*/

[More details...](http://www.javatpoint.com/javascript-comment)

### 11) How to create function in JavaScript?

To create function in JavaScript, follow the following syntax.

1. function function\_name(){
2. //function body
3. }

[More details...](http://www.javatpoint.com/javascript-function)

### 12) What are the JavaScript data types?

There are two types of data types in JavaScript:

1. Primitive Data Types
2. Non-primitive Data Types

[More details...](http://www.javatpoint.com/javascript-data-types)

### 13) What is the difference between == and ===?

The == operator checks equality only whereas === checks equality and data type i.e. value must be of same type.

### 14) How to write html code dynamically using JavaScript?

The innerHTML property is used to write the HTML code using JavaScript dynamically. Let's see a simple example:

1. document.getElementById('mylocation').innerHTML="<h2>This is heading using JavaScript</h2>";

[More details...](http://www.javatpoint.com/javascript-innerHTML)

### 15) How to write normal text code using JavaScript dynamically?

The innerText property is used to write the simple text using JavaScript dynamically. Let's see a simple example:

1. document.getElementById('mylocation').innerText="This is text using JavaScript";

[More details...](http://www.javatpoint.com/javascript-innerText)

### 16) How to create objects in JavaScript?

There are 3 ways to create object in JavaScript.

1. By object literal
2. By creating instance of Object
3. By Object Constructor

Let's see a simple code to create object using object literal.

1. emp={id:102,name:"Rahul Kumar",salary:50000}

[More details...](http://www.javatpoint.com/javascript-objects)

### 17) How to create array in JavaScript?

There are 3 ways to create array in JavaScript.

1. By array literal
2. By creating instance of Array
3. By using an Array constructor

Let's see a simple code to create array using object literal.

1. var emp=["Shyam","Vimal","Ratan"];

[More details...](http://www.javatpoint.com/javascript-array)

### 18) What does the isNaN() function?

The isNan() function returns true if the variable value is not a number.

### 19) What is the output of 10+20+"30" in JavaScript?

3030 because 10+20 will be 30. If there is numeric value before and after +, it is treated is binary + (arithmetic operator).

### 20) What is the output of "10"+20+30 in JavaScript?

102030 because after a string all the + will be treated as string concatenation operator (not binary +).

### 21) Difference between Client side JavaScript and Server side JavaScript?

**Client side JavaScript** comprises the basic language and predefined objects which are relevant to running java script in a browser. The client side JavaScript is embedded directly by in the HTML pages. This script is interpreted by the browser at run time.

**Server side JavaScript** also resembles like client side java script. It has relevant java script which is to run in a server. The server side JavaScript are deployed only after compilation.

### 22) In which location cookies are stored on the hard disk?

The storage of cookies on the hard disk depends on OS and the browser.

The Netscape navigator on Windows uses cookies.txt file that contains all the cookies. The path is : c:\Program Files\Netscape\Users\username\cookies.txt

The Internet Explorer stores the cookies on a file username@website.txt. The path is: c:\Windows\Cookies\username@Website.txt.

### 23) What is the real name of JavaScript?

The original name was **Mocha**, a name chosen by Marc Andreessen, founder of Netscape. In September of 1995, the name was changed to LiveScript. In December 1995, after receiving a trademark license from Sun, the name JavaScript was adopted.

### 24) What is the difference between undefined value and null value?

**Undefined value:** A value that is not defined and has no keyword is known as undefined value. For example:

1. int number;//Here, number has undefined value.

**Null value:** A value that is explicitly specified by the keyword "null" is known as null value. For example:

1. String str=null;//Here, str has a null value.

### 24) How to set the cursor to wait in JavaScript?

The cursor can be set to wait in JavaScript by using the property "cursor". The following example illustrates the usage:

1. **<script>**
2. window.document.body.style.cursor = "wait";
3. **</script>**

### 25) What is this?

1. var myArray = [[[]]];

Ans: Three dimensional array.

### 26) Are Java and JavaScript same?

No, Java and JavaScript are the two different languages. Java is a robust, secured and object-oriented programming language whereas JavaScript is a client side scripting language with some limitations.

### 27) What is negative infinity?

Negative Infinity is a number in JavaScript which can be derived by dividing negative number by zero.

### 28) What is difference between View state and Session state?

"View state" is specific to a page in a session whereas "Session state" is specific to a user or browser that can be accessed across all pages in the web application.

### 29) What are the pop up boxes available in JavaScript?

* Alert Box
* Confirm Box
* Prompt Box

### 30) How can we detect OS of the client machine using JavaScript?

The **navigator.appVersion** string can be used to detect the operating system on the client machine.

### 31) How to submit a form using JavaScript by clicking a link?

Let's see the JavaScript code to submit form on clicking the link.

1. **<form** name="myform" action="index.php"**>**
2. Search: **<input** type='text' name='query' **/>**
3. **<a** href="javascript: submitform()"**>**Search**</a>**
4. **</form>**
5. **<script** type="text/javascript"**>**
6. function submitform()
7. {
8. document.myform.submit();
9. }
10. **</script>**

### 32) Is JavaScript faster than ASP script?

Yes, because it doesn't require web server's support for execution.

### 33) How to change the background color of HTML document using JavaScript?

1. **<script** type="text/javascript"**>**
2. document.body.bgColor="pink";
3. **</script>**

### 34) How to handle exceptions in JavaScript?

By the help of try/catch block, we can handle exceptions in JavaScript. JavaScript supports try, catch, finally and throw keywords for exception handling.

### 35) How to validate a form in JavaScript?

Visit here: [JavaScript form validation](http://www.javatpoint.com/javascript-form-validation).

### 36) How to validate email in JavaScript?

Visit here: [JavaScript Email validation](http://www.javatpoint.com/javascript-form-validation#email).

## The onreadystatechange event

When a request to a server is sent, we want to perform some actions based on the response.

The onreadystatechange event is triggered every time the readyState changes.

The readyState property holds the status of the XMLHttpRequest.

Three important properties of the XMLHttpRequest object:

|  |  |
| --- | --- |
| **Property** | **Description** |
| onreadystatechange | Stores a function (or the name of a function) to be called automatically each time the readyState property changes |
| readyState | Holds the status of the XMLHttpRequest. Changes from 0 to 4:  0: request not initialized  1: server connection established 2: request received  3: processing request  4: request finished and response is ready |
| status | 200: "OK" 404: Page not found |

In the onreadystatechange event, we specify what will happen when the server response is ready to be processed.

When readyState is 4 and status is 200, the response is ready:

### Example

function loadDoc() {  
  var xhttp = new XMLHttpRequest();  
  xhttp.onreadystatechange = function() {  
  if (xhttp.readyState == 4 && xhttp.status == 200) {  
    document.getElementById("demo").innerHTML = xhttp.responseText;  
  }  
};

[Try it Yourself »](http://www.w3schools.com/ajax/tryit.asp?filename=tryajax_first)

**Note:** The onreadystatechange event is triggered five times (0-4), one time for each change in readyState.

## Using a Callback Function

A callback function is a function passed as a parameter to another function.

If you have more than one AJAX task on your website, you should create ONE standard function for creating the XMLHttpRequest object, and call this for each AJAX task.

The function call should contain the URL and what to do on onreadystatechange (which is probably different for each call):

### Example

function loadDoc(cFunc) {  
  var xhttp = new XMLHttpRequest();  
  xhttp.onreadystatechange = function() {  
  if (xhttp.readyState == 4 && xhttp.status == 200) {  
    cFunc(xhttp);  
  }