**AJAX**

**AJAX** Stands for Asynchronous JavaScript and XML. Although X in Ajax stands for XML, JSON is preferred over XML nowadays because of its many advantages such as being a part of JavaScript, thus being lighter in size. Both JSON and XML are used for packaging information in the Ajax model.

AJAX can send information to a server and receive information from a server.

**Features:**

* Make requests to the server without reloading the page
* Receive and work with data from the server

**How AJAX works?**

If a user of a website request with the server for a particular webpage or to load any particular content. Server send a response (any file or any data as per user request) to this request.

By default, whenever a server send a response it refresh the webpage of the website. So that we can see the changes on the webpage that server sent a file/data as a response.

But in the case of AJAX, request send by user for any particular webpage or data doesn’t go directly to the server. Instead, here it first went through a JavaScript snippet consisting a JS class called ‘**XMLHttpRequest()**’ for AJAX. So due to this, when user send request to the server, it went to the background and this request get the response from the server and render the data into the webpage without reloading it.

And these data that come as a response from the server is basically having in 3 format:

* Either it would be a ‘Text File’
* Either it would be a ‘XML Data’
* Or a ‘JSON Data’

So, When a user send request to the server, then server process its request and send response back to the user. If we let user to send request using ‘XMLHttpRequest’ then it’ll this process into 5 Steps**.**

These 5 Steps in JavaScript are called “**readySate**”.

5 Steps/**State Code** in readyState are as Follows:-

1. **0**: In this state user doesn’t send any request to the server. This is the neutral state where request not initialized.
2. **1**: In this state, a connection is established between our local system and the server.
3. **2**: In this state, request received in the background.
4. **3**: In this state, request sent to the server and server start processing it.
5. **4**: In this state, processing get completed, request finished and response in ready and successfully send back to the user.

After, server successfully send the response back to the user, then user get two things in response.

1. **responseText / responseXML:** If the user send request for text then user get reponse in responseText or If the user send request for XML then user get reponse in responseXML.
2. **Status:** It tells about the response is proper or not.  
   Basically, there are 3 status code:  
   **200:** ‘OK’(Response is proper) **403:** “Forbidden” (Server doesn’t responded due to some technical issue) **404:** “Not Found” (File doesn’t found in the server)

There are tremendous amount of status code are there.

**JavaScript AJAX Syntax:**

var xhttp = new XMLHttpRequest(); ***//xhttp object of XMLHttpsRequest***

**//onreadystatechange property of xhttp object which is an event get fire as readyState change from (0 to 4)**  
xhttp.onreadystatechange = function(){

**//Means, As we got the response && this response should be proper, then only execute this block**  
if(this.readyState == 4 && this.status == 200){

document.getElementById("demo").innerHTML = this.responseText;

}

}

**//Both open() & send() method should use together**  
xhttp.open("GET", "filename.txt", true); ***//param: (http method, filename, boolean)  
//true: async mode is turned On  
//false: async mode is turned Off (means now it will work synchronously)***

xhttp.send(); ***//this method use to send request***