Ajax and json

Ajax

Fulll form: Asynchronous Javascript and xml

Prevents Reloading, Talk to server via xml data

Mainly used for client server communication introduced in 2005.

ajax request :

1.text file

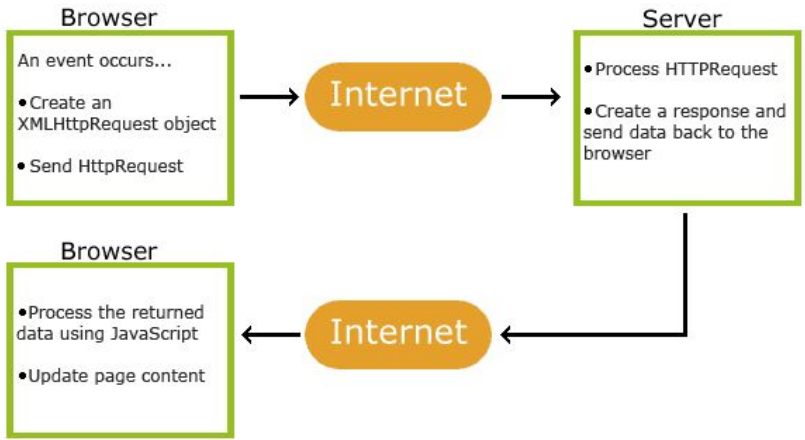
2. Html file

3.json data Format file

Working of Ajax

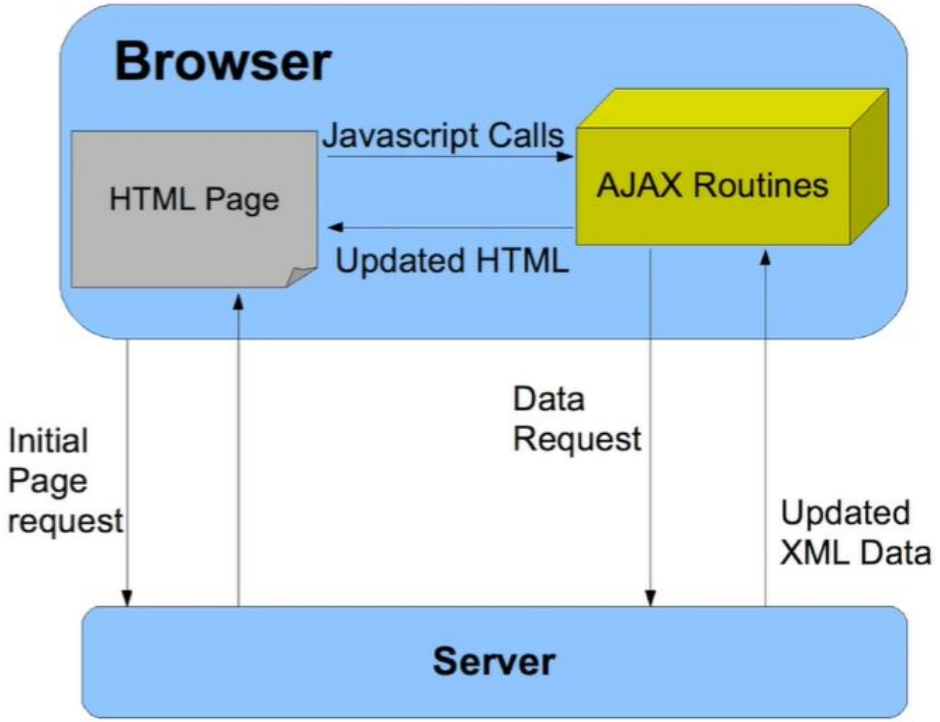
- A browser built-in XMLHttpRequest object (to request data from a web server)

- It transfers the data in the form of text , json object format



AJAX

- AJAX stands for **A**synchronous **Ja**vaScript and **X**ML.
- AJAX is a new technique for creating better, faster, and more interactive web applications
- XMLHttpRequest object that performs asynchronous interaction with the server.



Working of ajax

1. An event is occurred in web page(the page is loaded , button is clicked)
2. An xml http request object is created in browser by javascript
3. An xmlHTTPRequestobject is sent to the web server
4. The server process the request
5. Server send back the response request
6. The response is read by javascript
7. And displayed in web page by using javascript

The XML http request

It is used to exchange the data with servers, update the data without reloading the webpage

Syntax:

```
variable = new XMLHttpRequest();
```

Sending requesst to server:

open(*method, url, async*)

Specifies the type of request

method: the type of request: GET or POST

url: the server (file) location

async: true (asynchronous) or false (synchronous)

send()

Sends the request to the server (used for GET)

GET or POST

GET is simpler and faster , the data transfers via http methods and it is not secured, the data transferred is limited, not secured

Post:

1. Post has no size limitations , secured ,

Ajax server response

Property	Description
Onreadystatechange	Defines a function to be called when the readyState property changes
readyState	Holds the status of the XMLHttpRequest.
	0: request not initialized
	1: server connection established, 2: request received
	3: processing request,4: request finished and response is ready
Status	200: "OK"
	403: "Forbidden"
	404: "Page not found"

Example

```
function loadDoc() {
  var xhttp = new XMLHttpRequest();
      xhttp.onreadystatechange = function() {
    if (this.readyState == 4 && this.status == 200) {
      document.getElementById("demo").innerHTML =  response
      this.responseText;
    }
      };
      xhttp.open("GET", "ajax_info.txt", true);  request
      xhttp.send();}
```

JSON data format (string)

Json stands for javascript object notation

It is the data format used to store and transfer the data

It is easy readable format

It is stored in browser in associative array format of **key and value pair**

Json.parse(text) is used to convert the json string to javascript object

JSON Example

Synax for json format (string)

```
{
    “firstName”: “Jonathan”,
    “lastName”: “Freeman”,
    “loginCount”: 4,
    “isWriter”: true,
    “worksWith”: [“Spantree Technology Group”, “InfoWorld”],
    “pets”: [
     {
       “name”: “Lilly”,
       “type”: “Raccoon”
     }
```

Associative array

1.An associative array is simply a set of key value pairs.

2.A variable that holds more than one value at a time is called a**rray**

For example:

```
array={key1: 'value1',key2:'value2'}   --->  javascript object
```

We can access the value using the key

Example:

```
console.log(array[key1]);   // value1
console.log(array[key2]);   // value2
```

Since it is a **object.**

Exchange of the data

When there is the exchange of data between browser and server the data is in the **text format**

Javascript object is converted in **json format** and sent to the server

The data we have saved in the browser is in javascript object

Sending data:

Example:

```
var myObj = {name: "John", age: 31, city: "New York"};   jsobject

var myJSON = JSON.stringify(myObj);     stringifyed json format
```

Receiving data

If the data is received in **json format** it is converted into **javascript object**

Sytax:

```
Var jsobject=JSON.parse(jsonformat);
```

```
And it is manipulated and displayed using javascript.
```

Storing and retrieving data

When storing data, the data has to be a certain format, ***text*** is always one of the legal formats.

JSON makes it possible to store JavaScript objects as text.(data is stored in text format)

// Storing data:

```
myObj = {name: "John", age: 31, city: "New York"};

myJSON = JSON.stringify(myObj);

localStorage.setItem("testJSON", myJSON);
```

// Retrieving data:

```
text = localStorage.getItem("testJSON");

obj = JSON.parse(text);

document.getElementById("demo").innerHTML = obj.name;
```

Thank you