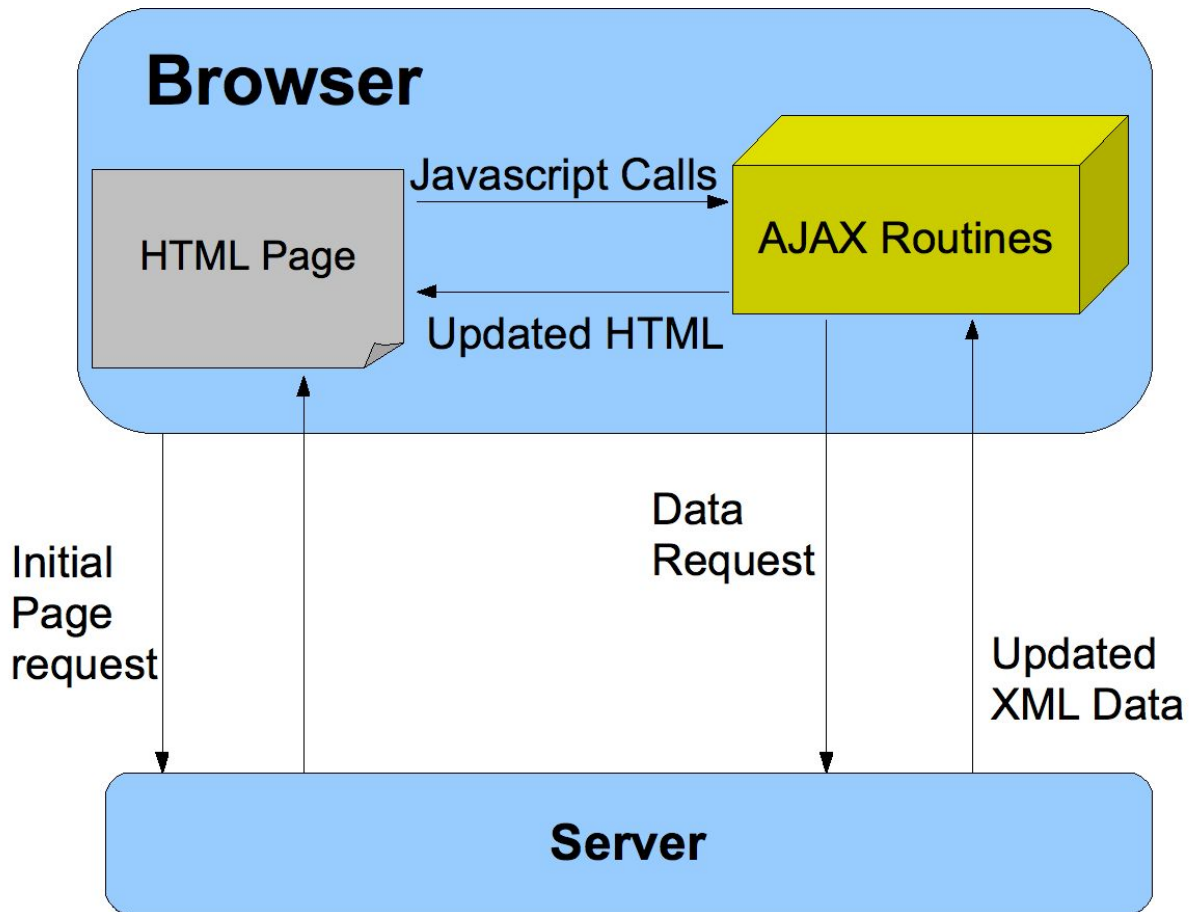- AJAX - Asynchronous Javascript and XML

- Ajax is a client-side script that communicates to and from a server/database without the need for a postback or a complete page refresh.

- The best definition for Ajax would be "the method of exchanging data with a server, and updating parts of a web page – without reloading the entire page."

->   Ajax requests are triggered by JavaScript code; your code sends a request to a URL, and when it receives a response, a callback function can be triggered to handle the response. Because the request is asynchronous, the rest of your code continues to execute while the request is being processed, so it's imperative that a callback be used to handle the response.

AJAX uses a combination of:
• HTML and CSS for marking up and styling information.
• The DOM accessed with JavaScript to dynamically display and interact with the information presented.
• A method for exchanging data asynchronously between browser and server, thereby avoiding page reloads.
• A format for the data sent to the browser. Common formats include XML, pre-formatted HTML, plain text, and JavaScript Object Notation (JSON). This data could be created dynamically by some form of server-side scripting

How it is work:

Where to use AJAX?

Ajax should be used anywhere in a web application where small amounts of information could be saved or retrieved from the server without posting back the entire pages. A good example of this is data validation on save actions. Another example would be to change the values in a drop down list-box based on other inputs, such as state and college list boxes. When the user selects a state, the college list box will repopulate with only colleges and universities in that state.

Another great example is when the client needs to save or retrieve session values from the server, based on a user preference such as the height, width or position of an object. Adjusting the width could make a callback to the server to set the session variable for the new width. This way, whenever the page is refreshed, the server can adjust the object's width based on this session variable. Otherwise, the object would go back to its initial default width.

Other features include text hints and autocomplete text boxes. The client types in a couple of letters and a list of all values that start with those letters appear below. A callback is made to a web service that will retrieve all values that begin with these characters. This is a fantastic feature that would be impossible without Ajax and is also part of the Ajax Control Toolkit.

AJAX Settings

async

• default: true

• type: Boolean

• function: By default, all requests are sent asynchronously (i.e. this is set to true by default). If you need synchronous requests, set this option to false. Cross-domain requests and dataType: "jsonp" requests do not support synchronous operation. Note that synchronous requests may temporarily lock the browser, disabling any actions while the request is active.

error

• default: does not apply

• type: Function

• function: A function to be called if the request fails. The function receives three arguments: The jqXHR (in jQuery 1.4.x, XMLHttpRequest) object, a string describing the type of error that occurred and an optional exception object, if one occurred. Possible values for the second argument (besides

null) are "timeout", "error", "abort", and "parsererror". When an HTTP error occurs, errorThrown receives the textual portion of the HTTP status, such as "Not Found" or "Internal Server Error."

global

• default: true
• type: Boolean
• function: Whether to trigger global Ajax event handlers for this request. The default is true. Set to false to prevent the global handlers like ajaxStart or ajaxStop from being triggered. This can be used to control various Ajax Events.

method

• default: 'GET'
• type: String
• function: The HTTP method to use for the request (e.g. "POST", "GET", "PUT").

success

• default: does not apply
• type: Function
• function: A function to be called if the request succeeds. The function gets passed three arguments: The data returned from the server, formatted according to the dataType parameter or the dataFilter callback function, if specified; a string describing the status; and the jqXHR (in jQuery 1.4.x, XMLHttpRequest) object.

type

• default: 'GET'
• type: String
• function: An alias for method. You should use type if you're using versions of jQuery prior to 1.9.0.

url

- default: 'current page'
- type: String
- function: A string containing the URL to which the request is sent.

username

- default: does not apply
- type: String
- function: A username to be used with XMLHttpRequest in response to an HTTP access authentication request.

password
- default: does not apply
- type: String
- function: A password to be used with XMLHttpRequest in response to an HTTP access authentication request.