What is AJAX?

Acronym for Asynchronous JavaScript + XML

XML not required


Uses JavaScript's XMLHttpRequest object (or similar) to retrieve content 'on the fly' without reloading a web page.

Changes to an asynchronous model—removing synchronicity, i.e. client blocking for server response.
Traditional vs. Asynchronous Interaction

Crane and Pascarello's four principles of AJAX

1.
2.
3.
4.

Ajax in Action by Crane and Pascarello, p. 17-23
The AJAX Model

XMLHttpRequest object (or similar) instantiated by the client application.
Object is used to send and receive data to the Web server.
   If request is asynchronous, other processing is done.
When response from server is received, it is examined.
   A callback handler assigned to the Object processes responses.
   Server sends responses at various stages in its processing, so what we have received may be an 'status update' but not the actual response.
When the response payload is finally received, it is acted upon in the client application.
Using libraries

AJAX interaction can vary depending on the browser platform.

XMLHttpRequest Object does not exist in IE 6 and prior. An ActiveX object is available to serve the same purpose.

Existing JavaScript function libraries make AJAX easier by abstracting away these issues.

AJAX using Prototype

http://www.prototypejs.org
http://einstein.etsu.edu/~pittares/CSCI3110/examples/9-1.htm

Basic Prototype AJAX example

```javascript
window.onload = function() {
    document.getElementById("nameBtn").onclick = function() {
        var message = document.getElementById("message").value;
        new Ajax.Request("9-2.php?message=" + message,
        {
            method:"get",
            onSuccess:function(xhr) {
                document.getElementById("response").innerHTML = xhr.responseText;
            }
        });
    }
};
```

http://www.prototypejs.org/api/ajax/request
http://einstein.etsu.edu/~pittares/CSCI3110/examples/9-3.htm
http://einstein.etsu.edu/~pittares/CSCI3110/examples/9-5.htm