

AJAX

Lesson Time: 60 Minutes

AJAX Is a “Behind the scene” HTTP request

AJAX is a tool that gives us a way to send data to, and receive data from a web server. JS can use AJAX to get or send data without the web page being reloaded. Being able to get new data from a web server without completely reloading the current page is very useful. Most commonly, we will request JSON data from a web server.

Below is some sample code to get data from a web server and update the page. We will walk through it line by line.

```
function ajaxRequest(){
    var xhttp = new XMLHttpRequest();
    xhttp.onreadystatechange = function() {
        if (this.readyState == 4 && this.status == 200) {
            document.getElementById("target").innerHTML = this.responseText;
        }
    };
    xhttp.open("GET", "https://httpbin.org/get", true);
    xhttp.send();
}
```

| Step | Code | Explanation | Simple English |
|------|----------------------------------|---|--------------------|
| 1 | var xhttp = new XMLHttpRequest() | All AJAX requests start with created a variable and setting it to new XMLHttpRequest() AJAX IS a HTTP Request. | Make a New Request |
| 2 | Skip for a moment, we will come | - | This is what I |

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| | back. This code has not ran yet. | | want to have happen when I get results back. |
| 3 | <code>xhttp.open("GET", "https://httpbin.org/get")</code> | Open means open a connection. We will use HTTP GET, and our web server is at the address listed. | Open the Connection |
| 4 | <code>xhttp.send()</code> | Fire the request. We've asked the server for it's data. | Send the Request and get the results |
| 2a | <code>Xhttp.onreadystatechange = function {next steps...}</code> | Now that the request has been sent, now we want to know the response. Onreadystatechange will hold the response. To work with the ready state, we set it equal to a nameless function. | Results are in, and the result function starts. |
| 2b | <code>if (this.readyState == 4 && this.status == 200) {next steps....}</code> | If the readyState is equal to 4 and status is 200. This means if the request is complete and HTTP returned OK | Only run this code if the http response is complete and is OK |
| 2c | <code>document.getElementById("target ").innerHTML = this.responseText;</code> | Change the HTML of our element to the AJAX responseText | Code I want to perform on the data. |

So what does all of this mean?

1. JS can use AJAX to go get new data from a server for us without reloading the page. It can update the page with the new data.
2. JS can use AJAX to send data as well.
3. The reason we had to write xhttp.onreadystatechange **before** writing xhttp.send() is because we have to say what we want to happen before sending the request. The

function defines what we want to happen with the results come in. After the request is sent, the function triggers.

Open the course file **ajax.html** to see an example of AJAX working. The example html file pulls data from the national weather service after the page loads.

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| Key Terms | XMLHttpRequest(), Ajax |
| Lesson Files | ajax.html |
| Additional Resources | https://developer.mozilla.org/en-US/docs/Web/Guide/AJAX |
| Further Learning | |