



Using Ajax with XML

Simple example using XML as data
format for Ajax



The XML document

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
```

```
<STUDENTS>
```

```
  <STUDENT id="1">
```

```
    <NAME>Anders Andersson</NAME>
```

```
  </STUDENT>
```

```
  <STUDENT id="2">
```

```
    <NAME>Beata Bengtsson</NAME>
```

```
  </STUDENT>
```

```
  <STUDENT id="3">
```

```
    <NAME>Charlie Christensen</NAME>
```

```
  </STUDENT>
```

```
  <STUDENT id="4">
```

```
    <NAME>Dick Dale</NAME>
```

```
  </STUDENT>
```

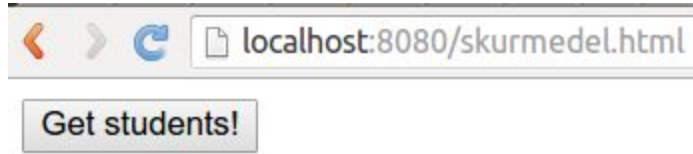
```
  <STUDENT id="5">
```

```
    <NAME>Edward Eriksson</NAME>
```

```
  </STUDENT>
```

```
</STUDENTS>
```

The Ajax-enabled web page



The Ajax-enabled web page



Get students!

Student name	Student id
Anders Andersson	1
Beata Bengtsson	2
Charlie Christensen	3
Dick Dale	4
Edward Eriksson	5

The Ajax-function

```
function loadDoc() {  
    var xhttp = new XMLHttpRequest();  
    xhttp.onreadystatechange = function() {  
        if (xhttp.readyState == 4 && xhttp.status == 200) {  
            myFunction(xhttp); ← callback function!  
        }  
    };  
    xhttp.open("GET", "/Student.xml", true);  
    xhttp.send();  
}
```

Idea: Build an HTML table with data from the XML

HTML table:

```
<table>
<tbody>
  <tr><th>Name</th><th>ID</th></tr>      ← row 1 with headers
  <tr><td>Name 1</td><td>1</td></tr>      ← row 2 with data
  <tr><td>Name 2</td><td>2</td></tr>      ← row 3 with data
  --- etc ---
</tbody>
</table>
```

The callback function

```
function myFunction(xml) {
    var i;
    var xmlDoc = xml.responseXML;
    var table="<tr><th>Student name</th><th>Student id</th></tr>";
    var x = xmlDoc.getElementsByTagName("STUDENT");
    for (i = 0; i <x.length; i++) {
        table += "<tr><td>" +
                x[i].getElementsByTagName("NAME")[0].childNodes[0].nodeValue +
                "</td><td>" +
                x[i].getAttribute("id") +
                "</td></tr>";
    }
    document.getElementById("demo").innerHTML = table;
}
```

Breakdown

Strategy: build an HTML table by looping through the XML document

```
var x = xmlDoc.getElementsByTagName("STUDENT"); ← all STUDENT elements
```

Loop through all STUDENT elements and get the data for the <td> cells

```
x[i].getElementsByTagName("NAME")[0].childNodes[0].nodeValue ← NAME child elem
```

```
x[i].getAttribute("id") ← id attribute of this STUDENT element
```

```
document.getElementById("demo").innerHTML = table; ← Write the table to the document
```


The HTML page

```
<html>
<head>... the scripts...</head>
<body>
<button onclick="loadDoc()">Get students!</button>
<br><br>
<table id="demo"></table> ← here the script will build and put the table!
</body>
</html>
```

How could this be implemented dynamically?

Let's say the student data is in a database on a server (it is!).

The ajax enabled HTML page could then call a servlet asking for an XML with all the students. The servlet replies with the XML file. The page gets the data dynamically from the servlet and shows the user.

This way, the web page always gets "live" data that comes from the database.

In this simple example, I've rather used a static XML file on the server.

A servlet could use "application/xml" as the content type for the XML response.