



# AJAX

CSCI 201

Principles of Software Development

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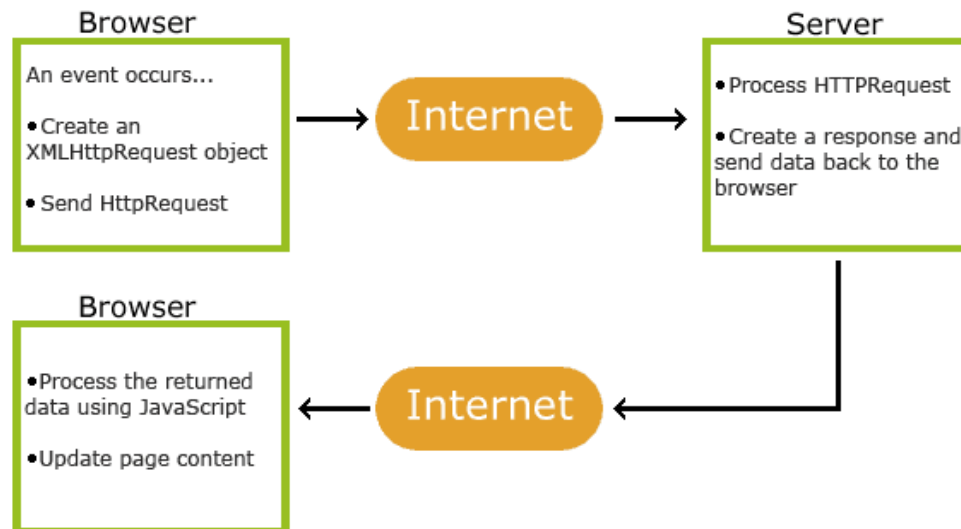
# Outline

- AJAX
- Program

# AJAX



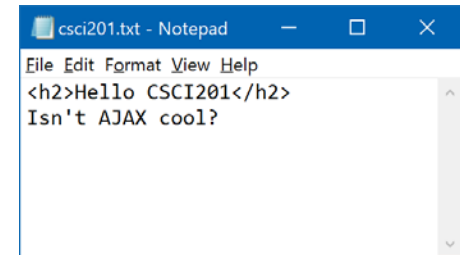
- AJAX stands for Asynchronous JavaScript and XML
- AJAX uses a combination of
  - › A browser built-in XMLHttpRequest object to request data from a web server
  - › JavaScript and HTML DOM to display the data
- AJAX allows for just part of a page to be reloaded with direct access to the server



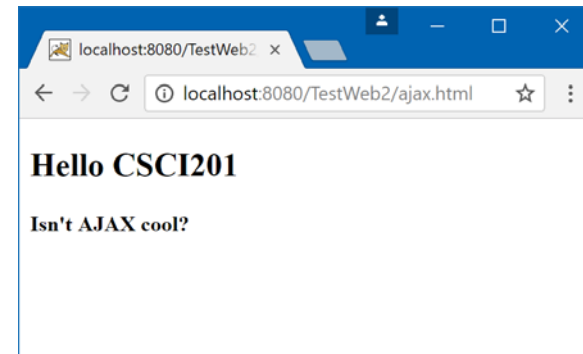
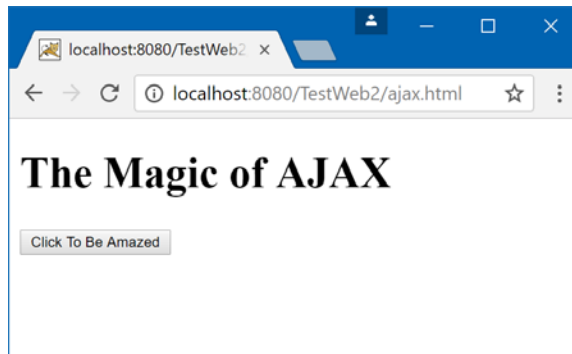
# My First AJAX



```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <script>
5       function loadDoc() {
6         var xhttp = new XMLHttpRequest();
7         xhttp.onreadystatechange = function() {
8           document.getElementById("demo").innerHTML = this.responseText;
9         };
10        xhttp.open("GET", "csci201.txt", true);
11        xhttp.send();
12      }
13    </script>
14  </head>
15  <body>
16    <div id="demo">
17      <h1>The Magic of AJAX</h1>
18      <button type="button" onclick="loadDoc()">Click To Be Amazed</button>
19    </div>
20  </body>
21 </html>
```



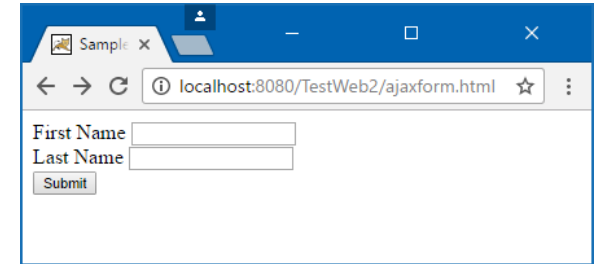
```
csci201.txt - Notepad
File Edit Format View Help
<h2>Hello CSCI201</h2>
Isn't AJAX cool?
```



# AJAX/JSP Form Validation



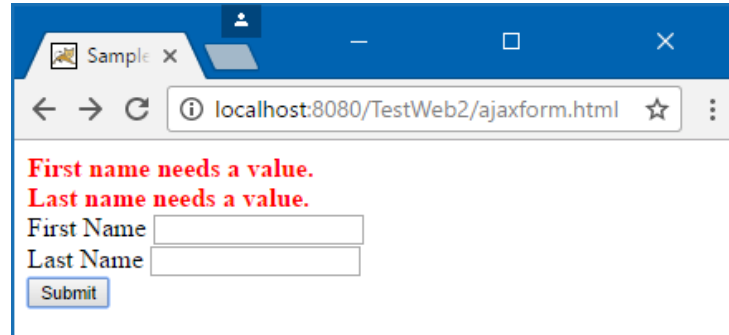
```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Sample Form</title>
5     <script>
6       function validate() {
7         var xhttp = new XMLHttpRequest();
8         xhttp.open("GET", "validate.jsp?fname=" + document.myform.fname.value +
9           "&lname=" + document.myform.lname.value, false);
10        xhttp.send();
11        if (xhttp.responseText.trim().length > 0) {
12          document.getElementById("formerror").innerHTML = xhttp.responseText;
13          return false;
14        }
15        return true;
16      }
17    </script>
18  </head>
19  <body>
20    <form name="myform" method="GET" action="form.jsp" onsubmit="return validate();">
21      <div id="formerror"></div>
22      First Name <input type="text" name="fname" /><br />
23      Last Name <input type="text" name="lname" /><br />
24      <input type="submit" name="submit" value="Submit" />
25    </form>
26  </body>
27 </html>
```



# AJAX/JSP Form Validation



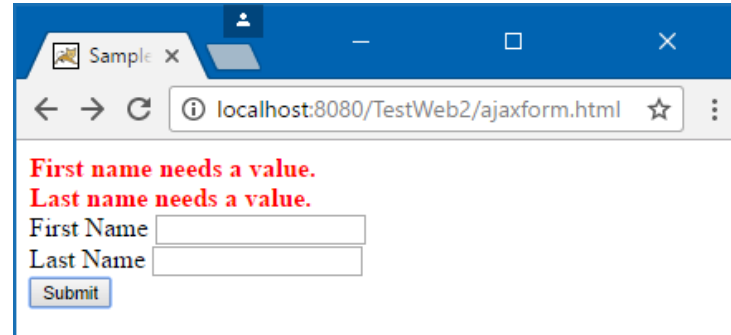
```
1 <!-- validate.jsp -->
2 <%@ page language="java" contentType="text/html; charset=ISO-8859-1"
3     pageEncoding="ISO-8859-1"%>
4 <%
5     String fname = request.getParameter("fname");
6     String lname = request.getParameter("lname");
7     System.out.println(fname + "." + lname);
8     if (fname == null || fname.length() == 0) {
9 %>
10     <font color="red"><strong>First name needs a value.</strong></font><br />
11 <%
12     }
13     if (lname == null || lname.length() == 0) {
14 %>
15     <font color="red"><strong>Last name needs a value.</strong></font><br />
16 <%
17     }
18 %>
```



# AJAX/JSP Form Action



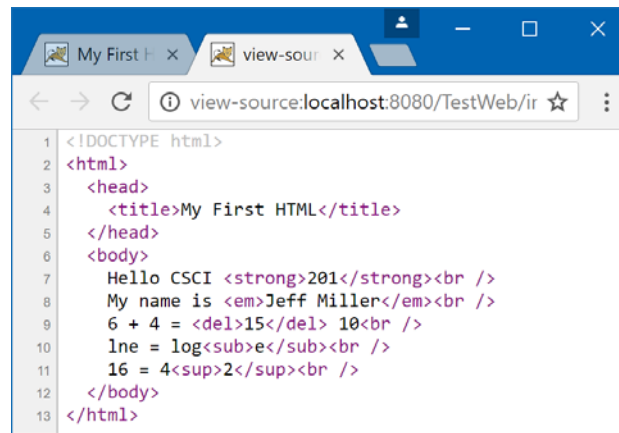
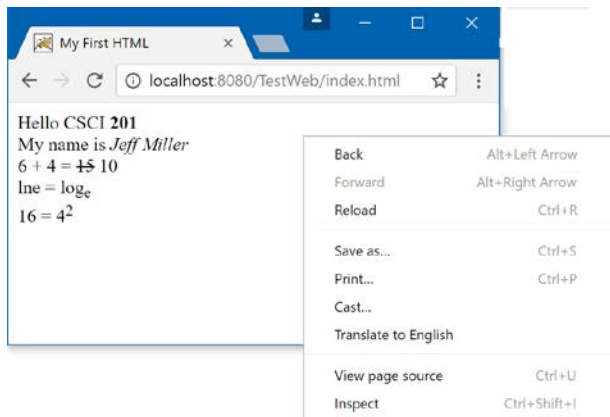
```
1 <!-- form.jsp -->
2 <%@ page language="java" contentType="text/html; charset=ISO-8859-1" %>
3 <!DOCTYPE html>
4 <html>
5   <head>
6     <title>Form Data Processing</title>
7   </head>
8   <body>
9   <%
10     String fname = request.getParameter("fname");
11     String lname = request.getParameter("lname");
12 %>
13   <h1>Submitted Data</h1>
14   First Name:<strong><%= fname %></strong><br />
15   Last Name:<strong><%= lname %></strong>
16 </body>
17 </html>
```



# More AJAX



- For more information on AJAX
  - › Go to [http://www.w3schools.com/js/js\\_ajax\\_intro.asp](http://www.w3schools.com/js/js_ajax_intro.asp)
  - › View the source of any web page to see the JavaScript that was used on that page
  - › Go through one of many tutorials you find online







# Outline

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# Program



- Write a program that validates the form based on rules for different types of fields, but have it to do this through AJAX without submitting the form if there are any errors
  - › Email should have an @ with at least one . After
  - › Passwords should be at least 8 characters long with at least 1 number
  - › Birthday must be a date in the past
  - › New Student must have one option selected
  - › College must have a value
  - › Favorite color must have a value other than Black
  - › Terms and Conditions must be checked
- Do not allow the form to be submitted otherwise.
- Put a message next to each field that is not formatted correctly

The screenshot shows a web browser window with the address bar displaying 'localhost:8080/TestWeb/schoolform.html'. The page title is 'School Form'. The form contains the following fields and controls:

- Email:
- Password:
- Birthday:
- New Student?:  Yes  No
- College:
- Major: - Favorite Color:
- Terms and Conditions:  I agree.

At the bottom of the form are two buttons: 'Reset Form' and 'Submit Form'.