

CIS 215 Week 11 Guided Notes

Lecture 1: JSON, POST/GET, AJAX, Fetch

Script Tags

Script Tags: JS & HTML

- You should use the **defer attribute** to make the JS wait for the HTML page to load.

Script Tags: Inline Scripting

- You should use separate JS files because it allows for code **to be split by pages**, it's less **messy**, it saves **file** size, and because Brightspace **strips script tags on download**.
- If you have separate JS files, the browser can make separate **pages** which makes the page **less messy**

JSON Files

What is JSON?

- JSON encodes data into **key-value** pairs.

Activity: JSON

*Post Prompts: What are all of the keys in that JSON File? What are the types for the value of each key?

Important: Do not post your JSON file, say any of the values in your JSON file, or otherwise reveal your password for CSNLinux.*

POST/GET

What Does POST/GET Do?

- POST and GET are types of **HTTP requests**.

HTTP Requests

- **When does an HTTP request occur?**
An HTTP request occurs when hypertext needs to be transferred.

GET/POST Vs HEAD/PUT

- **What are the relevant HTTP requests for each part of CRUD?**
Put is the update part, post is create and get is like read. As well as there is a delete request.

GET/POST

AJAX

AJAX: What is it?

- AJAX can do anything that can be done with a **GET/POST request**.

Events: Which is AJAX?

*Post Prompt: Determine whether these events should use AJAX calls

Sending data from a webform to a separate PHP file using JS to be evaluated on button click.

A form submit button using the action attribute to send data directly to a PHP file where it is validated and sanitized.

Evaluating if a password follows requirements when each character is typed using JS code.

Retrieving elements from a separate HTML file and placing them in the form when a checkbox is selected.

Clicking a button to make text appear on the page using .show/.hide.*

Synchronous Vs Asynchronous

- AJAX is different from events because AJAX calls can happen **at the same time**.

Asynchronous Vs Blocking

- When something is blocking, it **stops everything else until they finish**

Designing for Users: Asynchronicity

- Asynchronous calls can help with speed since they can happen at the same time as other calls, but they also help because **they can put dummy content for the user while the site loads**.

Fetch/Load

AJAX: What can it do?

- AJAX calls return a **promise** object that turns into a **response** object

Promises?

- If we use a promise right away, it will be of type **promise** and probably **resolved into a value such as a string or other Object**.

Promises: Wait for it / If/Then

- The two ways to wait for a promise are to use **await keyword** or **.then**

Example: AJAX

AJAX: Fetch & .load

Post Prompt: Make a simple AJAX call. This could be grabbing HTML from a different file and displaying it, checking a password's strength, or something else entirely. Which method do you prefer to use for AJAX?

Post Prompt: Pick one of the examples we did and explain what each line does. Similar to the commenting I have done in the JS Events examples.

Lecture 2: PHP/SQL/JS, Security

Putting it All Together

Full Website

- For more on HTML take **CIS 113**, for more on databases, take **CIS 208**

Putting it Together

- **PHP** and **SQL** are backend. **JS**, **HTML**, and **CSS** are frontend.

Backend/Frontend Illustrated (Programmer)

- **What additional knowledge would you need to set up a website from scratch?**

You would also need to know the server, as well as what operating system you will be using.

User Interactions Illustrated

Security

Recall: Validation & Sanitization

JavaScript: Validation & Security

- We can use JS for **small tasks**, but we should not rely on JS because **we still need to sanitize and validate on the backend.**

JavaScript & AJAX: Validation

- We can use PHP validation code by making an **AJAX** call

Activity: Security & Validation

*Post Prompt: Assume we have a simple form which just has a text box asking for a review, and a rating out of 5 stars.

On our site, we display reviews from users on the product page.

What Validation & Sanitization methods can we now do using JavaScript?

Would this change the Validation and Sanitization we would have done previously for this type of form?

Name one thing you could do to prevent XSS.*

Homework 6

Homework 6: Enhancements

- **Do you have any questions about Homework 6?**