Week 9
This Week

- Javascript
- Document Object Model
- Ajax
Development of Interactivity

- HTML – static web pages
- PHP – dynamically generated web pages
- Javascript – web pages with dynamic content
Javascript

- Programming Language used in web design
- Unlike PHP, executed client-side!
- Javascript code is included in HTML passed to browser.
<table>
<thead>
<tr>
<th>PHP</th>
<th>Javascript</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpreted</td>
<td></td>
</tr>
<tr>
<td>Loosely-typed</td>
<td></td>
</tr>
<tr>
<td>Server-side execution</td>
<td>Client-side execution</td>
</tr>
</tbody>
</table>
Javascript

• Like CSS, may be included either within the HTML page or linked in from external .js file.

• Linking in:
  <head>
    <script src="file.js">
    </script>
  </head>
Variables in Javascript

Initialization
Global - x = 5;
Local - var x = 5;

Data Types
number, boolean, string, object, undefined, null
Operators in Javascript

+ : Concatenation operator, joins two strings.

== : Equality, can compare across types!

typeof : Gives data type of value stored in a variable.
‘For Each’ Loop in Javascript

weekdays[“Sunday”, “Monday”,...,”Saturday”];

for(int i = 0; i < 7; i++) for(var day in weekdays)
{
    weekdays[i];
    day;
}
Events

Remember me?

broadcast event

when I receive event
Events

• ‘Event handlers’ listen for an event and then execute code when that event happens.

• Example: set up an ‘onclick’ event for a tag which does something when the content on the page is clicked by the user.
Document Object Model

• Contents of web page represented in a structure called the Document Object Model.
• We can access individual elements by Id in Javascript and get their contents!

• Example:
  – name = document.getElementById(‘name’).value;
Development of Interactivity

• HTML – static web pages

• PHP – dynamically generated web pages

• Javascript – web pages with dynamic content

• Ajax – dynamically load content from other pages
Ajax

• Asynchronous Javascript and XML

• Allows us to send requests to other pages for new content without reloading page!
Recipe for Ajax Calls:
1. Create ‘xhr’ object
2. Construct url
3. Optional: Display ‘loading’ icon.
4. Send out xhr:
   1. Set up handler (do something on xhr.readyState == 4)
   2. Open request
   3. Send request