

Csci 4131 Internet Programming
Spring 2024
Lecture 3
January 24th

Instructor: Dr. Dan Challou

Logistics: Csci 4131 1/24

- HW 1 out – Specification (write-up) and submission item in week 1 module on the class Canvas site
 - Due this Saturday, January 27 at 11:59 PM – 2 page web site: Schedule and “About-Me Page”.

4131 Lecture 3: 1/24 - Logistics Page 2

- Upcoming Bonus, Suggested but optional Zybook Assignments:
 - HW1 Prep due 11:59pm Thurs Jan 25th
 - HW1/HW2 Prep due 11:59 Thurs Feb 1st
- Upcoming Required Zybook Assignments:
 - Zybooks HW2 due 11:59pm Sunday Jan 28th
- Tutorials
 - CSS Tutorial, JavaScript Tutorial
 - <https://www.w3schools.com/css/default.asp>
 - <http://www.w3schools.com/js/>
 - For next class:
 - More Zybooks Assignments coming
 - Tutorials (JavaScript)
 - <http://www.w3schools.com/js/>
- **And Programming HW2 will come out Friday or Saturday!**

Questions?

Agenda

- Last Time:
 - History of, and how, Computers represent text
 - HTML Basics (Links, Lists, Tables)
- Today
 - HTML Revisited
 - Forms
 - Start CSS

Review Exercise 1 from Lecture 2

- Use a text editor for example, NotePad , or Notepad++ (**Not** MS Word), or TextEdit (Mac) and create an HTML 5 Webpage that:
 1. Displays your name on the TAB opened by the browser
 2. Has a header that says: My Favorite Site
 3. Has a link that says: click here, and when you do, it opens up your favorite site

An Answer: [Exercise1.html](#)

Review Exercise 3 from Lecture 2

- Create a 3 row table each row should have 2 columns
- The first row should contain the headers: Movie in column 1, and Actress/Actor in column 2
- The 2nd and 3rd rows should contain
 - the name of your favorite movie in column 1, and
 - the name of your favorite actress or actor in that movie in column 2.

For, Example: [Exercise 3.html](#) (An Answer)

Note, you can download the file: [L2_table_ex1.html](#) from the week 2 module on Canvas and edit to formulate your answer

- **Submit via the Lecture 2, Exercise 1 Link in the week 2 module**
- ***Please close your computing device, or raise your hand you are done***

So How Do We Make a Multi-Column Table with collapsed borders and alternating row colors (useful for HW1)?

- http://www.w3schools.com/html/html_tables.asp

Some Other Useful HTML5 Tags – block and inline elements

- Div, p, and Navigation tags (nav) (Block Elements)
- Nav Useful for creating a multi-page Website
(see homepage.html / Page1.html example)

[homepage.html](#)

[Page1.html](#)

- Can alternately use div if no browser support
- Span is an inline element – useful for inline styling!

<https://www.geeksforgeeks.org/html-span-tag/>

See - http://www.w3schools.com/html/html_blocks.asp

And, one other element that will be useful for HW1

- https://www.w3schools.com/tags/tag_img.asp

HTML Forms

- HTML5 provides **forms** for collecting information from users
- HTML forms enable you to do some syntactic validation on the client side before sending the information collected from the user to the server side (your Zybook, and <http://www.w3schools.com/> for more details)
- A form typically has a collection of input fields that can be submitted for further processing

Form Input Types (note, type is an HTML attribute of the input element)

- Several Input Types Available :
 - Text input (textarea is an HTML tag (element))
 - Submit input
 - Password input
 - Checkbox input
 - Radio Button input
 - Select Element input
 - Text Area input (element not a attribute of input)

HTML5 Form input types – (Introduced with HTML 5)

- input Type color
- input Type date
- input Type datetime
- input Type datetime-local
- input Type email
- input Type month
- input Type number
- input Type range
- input Type search
- input Type tel
- input Type time
- input Type url
- input Type week

Notes

- These types are not universally supported by all browsers (but the most popular browsers support them)
- HTML 5 input types are ***somewhat self validating*** on the client side.
- Benefits
 - eliminate the need to add (some) JavaScript code to your web pages to validate user input,
 - reduces the amount of invalid data submitted and thus reduces Internet traffic between the server and the client to correct invalid input.
- *The server should still validate most all user input.*
- When a user enters data into a form then submits the form the browser immediately checks the self-validating elements to ensure that the format (syntax) of the input data is correct

HTML Self Validating Input Types

input type	Format
color	Hexadecimal code
date	yyyy-mm-dd
datetime	yyyy-mm-dd
datetime-local	yyyy-mm-ddThh:mm
month	yyyy-mm
number	Any numerical value
email	name@domain.com
url	http://www.domain-name.com
time	hh:mm
week	yyyy-Wnn

Fig. 3.5 | Self-validating input types.

Example – a simple Form (Code Along)

- Build a Simple Form
 - [L2 form1.html](#)

Recall: Components of a URL (used in href attributes and action field of forms)

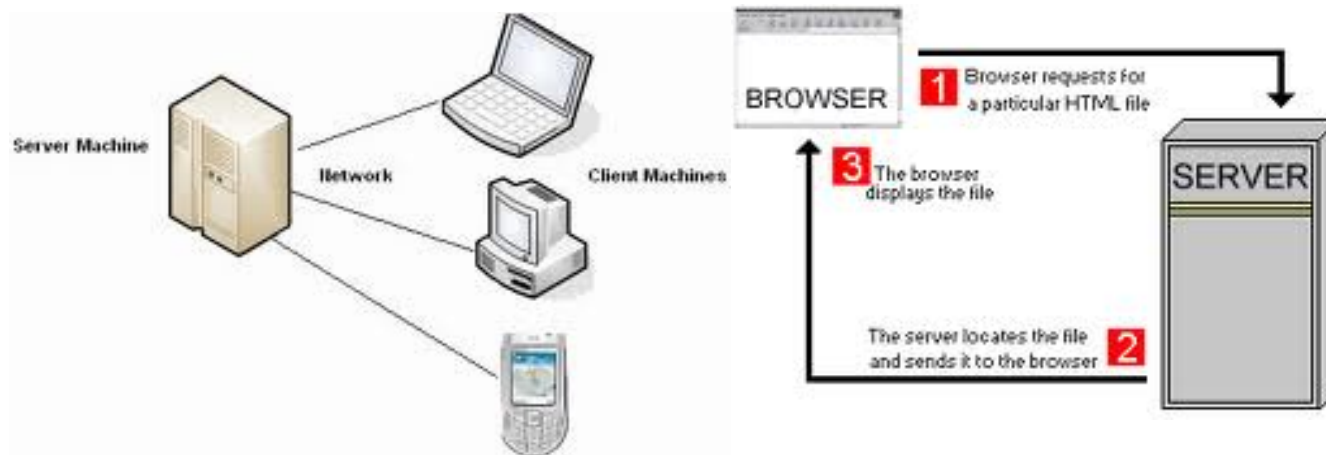
Consider the following URL:

- ▶ <https://twin-cities.umn.edu/about-us>
- ▶ **PROTOCOL:** **https://** indicates that the Secure HyperText Transfer Protocol (HTTPS) should be used to obtain the resource.
- ▶ Next in the URL is the server's fully qualified **hostname** (for example, twin-cities.umn.edu)—the name of the web-server computer on which the resource resides.
- ▶ This computer is referred to as the **host**, because it houses and maintains resources.
- ▶ The hostname twin-cities.umn.edu is translated into an **IP (Internet Protocol) address**—a numerical value that uniquely identifies the server on the Internet
- ▶ An Internet **Domain Name System (DNS) server** maintains a database of hostnames and their corresponding IP addresses and performs the translations automatically.

Components of a URL

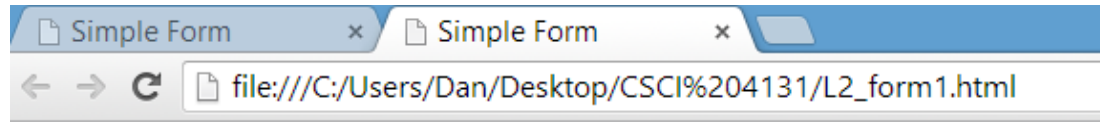
- ▶ The remainder of the URL (homepage/about-US/index.html) specifies the resource's location (/about-us) and name (default is index.html) on the web server.
- ▶ The location could represent an actual directory on the web server's file system. For *security* reasons, however, the location is typically a *virtual directory*.
- ▶ When the request is received by the web server, it translates the virtual directory into a real location on the server, thus hiding the resource's true location.

Issuing a URL from a Web-Browser is an Application of the Client / Server Model of Computing



One big caveat –Clients and Servers are SOFTWARE!!!!!! (and, of course they requires computer – hardware)

Exercise 1 – Add an email input type and URL input type to the Simple Form



Simple Form

Name:

Add an email input type, and a URL input type to the Simple Form

[L2_exercise1.html](#)

Here are the constructs to add to the form we did in the previous Example (THINK/PAIR/SHARE)

<label> Email

```
<input type = "email" name="emailAddress"  
      placeholder = "name@domain.com" required />  
(name@domain.com)
```

</label>

<label> My Favorite URL

```
<input type = "url" name="aUrl"  
      placeholder = "http://www.domainname.com" required />  
(http://www.domainname.com)
```

</label>

Submit through the Lecture 3, Exercise 1 link in the week 2 Module on Canvas

Please Close your computer (almost)/raise virtual hand when done!

Let's take a Look

- Dan's Attempt (note, this will not be posted with the lecture materials until after the exercise submission due date.

[L2_exercise1.html](#)

Questions?

Hidden Fields

- [L2 form1a.html](#)

On To Style

Hopefully, you have a good handle on the basics of structuring a web page) !

On to the second of the 4 components of a Web Page:

1. Structure (HTML)
2. **Style (Cascading Style Sheets- (CSS))**
3. Behavior (JavaScript – to change – e.g. - add, delete, update web page structure, style)
4. DOM (the data structure behind each web page)

Methods for Adding Style (CSS) to HTML 5 documents

- **Inline** – applied via the HTML style attribute to a particular element
- **Embedded** – use HTML style tag:
`<style> </style>` in the `<head>` section of the HTML document. Define styles for particular elements, and classes that can be applied to elements in between the style start and end tag
- **Separate File (External Style File)** that is included in HTML (separates structure and content from presentation)
Use the HTML `<link>` tag to include a style file

CSS Inline

- The style attribute
- `<p style ="font-size:32px;color:red;text-align:center"> Here is a paragraph
 with a line break </p>`

[css inline ex.html](#)

Embedded CSS using HTML Style Tag

https://www.w3schools.com/html/html_css.asp

Source: http://www.w3schools.com/tags/tag_style.asp

Including the CSS properties from an External StyleSheet

```
<head>
```

```
<link rel="stylesheet" type="text/css" href="style.css" />
```

```
</head>
```

What can you style with CSS???

- Virtually any HTML element, and any property
 - Font
 - Visibility
 - Font-size
 - Color
 - Background
 - Add animation
 - Reaction to events
- And, the box that wraps around many HTML element (margin, border, padding, content)
 - https://www.w3schools.com/css/css_boxmodel.asp

Next Time –

- CSS revisited
- Introduce the DOM?
- JavaScript?
 - Make sure to do the zbooks homework;
 - Also suggest doing optional (Bonus) lecture prep assignments in your Zybook:
 - Also suggest doing tutorials (and optional reading) for Week 3, specified in the document:

Course Schedule: Weekly Class Readings and Tutorials, Exam Dates, and Programming Assignment Due Dates

(Located in the Resources Module at the top of the Home Page on the class Canvas site)