Overview:
- Basic XHTML structural elements
- Basic XHTML form elements
- Introduction to Perl/CGI

References:
- HRAG, HXW3, PINT, C101, CBEG

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### HTML and XHTML Differences

- Documents must be well-formed and elements must be properly nested.
- Tags must be lower case.
  E.g., `<body>` not `<BODY>`
- All elements must be closed.
  E.g., `<p> ... </p>`
- Empty elements must be closed.
  E.g., `<br />`

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### Numeric attributes values must be in quotes

```
<img src="button.gif" height="50">
```

NOT

```
<img src="button.gif" height=50>
```

- The presentation attributes have been deprecated. E.g., `<p align="center">`
  Style sheets are recommended instead.
- Validate at http://validator.w3.org

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### Links

- A standard link:
  ```html```
  `<a href="http://www.goggle.com">Google</a>`
  ```html```
- A relative link:
  ```html```
  `<a href="cs350.html">CS 350 Computer/Human Interaction Assignments</a>`
  ```html```
- A link to a different spot on the same page:
  ```html```
  `<a href="#Refs">Jump to References</a>`
  ```html```
  `<h2 id="Refs">References</h2>`

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### Images

- Display an image in a web page:
  ```html```
  `<img src="bad.gif" width="50" height="80" alt="Angry" />`
  ```html```
- Use an image as a link:
  ```html```
  `<a href="http://www.goggle.com">
  `<img src="google.gif" width="50" height="80" alt="Google" /></a>`
  ```html```
- Width and height attributes are optional, but it is good practice to include them, so browsers can render the page more quickly.
Text Formatting

The following are phrase elements:

- `<p>` Defines a paragraph.
- `<br />` Forces a line break.
- `<hr />` Draws a horizontal line.
- `<pre>` Preformatted text.
  (Preserve line breaks.)
- `<h1>` Largest header text.
- `<h6>` Smallest header text.
- `<sub>` Subscript text.
- `<sup>` Superscript text.

Forms

Forms are used to collect data from users

```html
<form action=URL method="post">
  <!-- form elements can only appear in a form -->
  <input type="text" name="name" size="65" />
  <input type="submit" value="Submit" />
</form>
```

where URL is the location of the CGI script.

Input element

Input element has type attribute.

- One line of text input:
  ```html
  <input type="text" name="name" size="65" />
  ```
- Submit button:
  ```html
  <input type="submit" value="Submit" />
  ```

Name attribute is associated with the input value.

Textarea element

Textarea element is used to process multi-line text input

```html
<textarea cols="80" rows="3" name="toppings">
</textarea>
```

What is CGI?

- CGI (Common Gateway Interface) programs run on the web server and are used to process web form data. The program's standard output is sent to the browser.
- The web server must be configured to run CGI programs. They are not permitted on all sites.
- Web servers usually require that CGI programs live in a particular directories (e.g., on cserver, /home/username/www_home/cgi-bin) and have certain filename extensions (e.g., .cgi).

What is CGI?

- CGI programs can be written in any language (Shell, C, C++, Java, etc.) We will only use Perl. Will cover next class.
- There are several modules (Perl's CGI modules for example) or libraries that can be used to make CGI programming easier. It definitely is recommended to use of these for advanced CGI work. We will keep things simple and work with straight Perl.
**Purple Pizza Parlor v1**

- On csserver, create a `cgi-bin` subdirectory under `www_home`
- Copy files `~hwang/cs350/lecture3/*.*` to your `cgi-bin` directory
- Edit `pizza1.html` to use the CGI script in your web space.
- Edit the response in `pizza1.cgi` so you can tell it's your program running.

**PPP v1, cont'd**

- Browse to `pizza1.html` and execute the form by clicking on the submit button
- Browsing errors:
  - “Not found” mean the file is not present at the path given
  - “Forbidden” usually mean permissions are not set correctly (711 – directories, 644 – regular files, 755 – scripts)
- Add a link to `pizza1.html` in your `cs350.html` page