

HTML

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Reminders

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- Homework 12 is due Friday
- Game of Life is due Friday
- Topic 12 participation is due tommorow
- Topic 12 post-reading is due tommorow

Basics of Website Construction

HTML5 = HTML, CSS, JS

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- CSS = styling
- JS = interactivity

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- **JS**

- variables, expressions, function, conditionals, loops, etc

Generating Web pages Dynamically

- Ⓐ Amazon.com doesn't have people write web pages for each product. They're generated on the fly by a computer program according to a template.
- Ⓑ **Templates:** Basically like Python format strings, like `"Product: {} Price: {}".format(productname, product[productname])`.
- Ⓒ Looping through collections

HTML

The Starting Template

```
1 <!DOCTYPE html>
2 <html>
3   <body>
4     <h1>This is the header!</h1>
5     <p> And this is my first paragraph :D </p>
6   </body>
7 </html>
```

- ❶ <!DOCTYPE html> → This defines the type of document we are making (html5) so the browser knows how to interpret it.
- ❷ <html> → Defines the bounds of the HTML document.
- ❸ <body> → Defines the visible portion of the html document.
- ❹ Headers:
 - <h1> → Largest header
 - <h2> → Second largest header
 - <h3> → You get the idea...
- ❺ <p> → Encapsulates a paragraph and formats the text as just plain text

Ordered vs Unordered Lists

Unordered list:

```
1 <ul>
2   <li>CS 105</li>
3   <li>CS 125</li>
4 </ul>
```

Ordered list:

```
1 <ol>
2   <li>CS 105</li>
3   <li>CS 125</li>
4 </ol>
```

- ❶ `` → Encapsulates the items and renders them as an unordered list.
- ❷ `` → Encapsulates the items and renders them as an ordered list.
- ❸ `` → Goes inside either the `` or `` and encapsulates a list item.

Tables

What are the visible column header(s) in the table produced by this HTML?

```
1 <table>
2   <caption>CS 105</caption>
3   <tr>
4     <th></th>
5     <th>Assigned</th>
6     <th>Due</th>
7   </tr>
8   <tr>
9     <th>Homework 1</th>
10    <td>06/14/2021</td>
11    <td>06/21/2021</td>
12  </tr>
13 </table>
14
```

- A `<table></table>` → Defines a new table and encapsulates every item below
- B `<caption></caption>` → Defines a caption for the table
- C `<tr></tr>` → Defines a new table row and encapsulates a series of td.
- D `<td></td>` → Defines an entry in the table row.
- E `<th></th>` → Same thing as td but bold to indicate it's a header.

Poll Question: HTML

How many rows are produced by this table?

```
1 <table>
2   <tr>
3     <th>Assigned</th>
4     <th>Due</th>
5   </tr>
6   <tr>
7     <td>06/14/2021</td>
8     <td>06/21/2021</td>
9   </tr>
10  <tr>
11    <td>07/04/2021</td>
12    <td>07/14/2021</td>
13  </tr>
14  <tr>
15    <td>07/04/2021</td>
16    <td>07/14/2021</td>
17  </tr>
18 </table>
19
```

- ☐ A 4
- ☐ B 3
- ☐ C 2
- ☐ D 1

Text with Links

```
1 <a href="https://hamiltonfour.tech/#/cv">CV</a>
2 <a href="https://hamiltonfour.tech/#/">About</a>
3 <a href="https://hamiltonfour.tech/#/publications">Publications</a>
4
```

- Ⓐ `<a>` → Encapsulates the text we wish to include the hyperlink.
- Ⓑ `href=""` → The link to either an external link to a page on another website (e.g., the examples above) or another internal page on the website.

Given this directory structure and this sample HTML, which document do you think this HTML is in?

```
1 dev_website
2 |---index.html
3 |__elements
4 |   |-- about.html
5 |   |-- cv.html
6 |   |-- projects.html
7
```

- ☐ A index.html
- ☐ B about.html
- ☐ C cv.html
- ☐ D projects.html

```
1 <a href="elements/about.html">About</a>
2 <a href="elements/cv.html">CV</a>
3 <a href="elements/projects.html">Projects</a>
4
```

HTML Images

```
1   
2
```

- Ⓐ `src=""` Link to that image either locally or online.
- Ⓑ `alt=""` Text to display instead of the image incase a browser does not support that image or the image link becomes broken.
- Ⓒ One of the only html tags that is self contained and therefore does not have an end tag.

The div tag

```
1 <div class="">  
2 ...  
3 </div>
```

- Ⓐ Encapsulates an arbitrary amount of other html tags
- Ⓑ Defines how the stuff it encapsulates is rendered using class + css

CSS

CSS Attributes for Tag Types

```
1 body{
2     background-color: orange;
3 }
4
5 h1{
6     color: navy;
7     text-align: center;
8     font-size: 50;
9 }
10
11 p{
12     color: blue;
13 }
14
15 li{
16     font-variant: small-caps;
17 }
18
```

- Ⓐ A file containing attributes wrapped in curly brackets.
- Ⓑ Attributes change how the tag they're attached to get rendered on the webpage.
- Ⓒ Each attribute value pair ends with a ;.
- Ⓓ There's a lot of attributes you can change. These are just a few...

Defining your own classes

```
1 .myclass{  
2     background-color: orange;  
3     padding: 10px;  
4     font-size: 10px;  
5 }
```

- A Starts with a .
- B Otherwise identical to the previous example

div + css classes = unlimited power

```
1 <div class="myclass">
2   <p> This is a paragraph </p>
3   <p> This is another paragraph </p>
4   <ul>
5     <li> I </li>
6     <li> am </li>
7     <li> Groot </li>
8   </ul>
9 </div>
```

```
1 .myclass{
2   background-color: orange;
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5 }
```

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Next bat time. Same bat channel.

Reading data from the internet

```
1 import requests
2
3 response = requests.get("https://www.google.com")
```

- Ⓐ From a Python program
- Ⓑ requests module: Given a URL, returns the document at that URL