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Midterm Review

These are several high-level topics that appear frequently on my exams. This is by no means a complete review list. Be sure to review the documents posted on the course Timeline.

- Outline the history of HTML and CSS.
- Be able to list and explain each step in a web transaction. What does the server do? What does the browser do? What messages do they exchange?
- How do web servers handle dynamic content?
- What are all the parts of a URL? What does the browser do with each part? What does the server do with each part?
- How do GET and POST differ?
- Discuss separation of structure and style.

Below are some sample questions to give you a feel for the types of questions I ask.

- What are the key ideas of the “original” web? What made it new, innovative, and disruptive?
- What key ideas motivated the design and evolution of HTML?
- What key ideas motivated the design and evolution of CSS?
- Label each part of the URL below:
`http://test.weather.com:8080/northAmerica/current?zip=49401&units=F`
- Diagram a complete HTTP transaction. Clearly show what messages the client and server are sending, and when each is sent.
- Are hypertext and markup the same thing? If not, explain the difference between the two.
- In CSS, what is the difference between an id and a class?
- What does *idempotent* mean? How does this concept relate to HTML and HTTP?
- What types of features are usually implemented on the server side (e.g. php)? What types of features tend to be usually implemented on the client side (e.g., JavaScript). How do you decide whether a particular feature should be client-side or server side?
- Look at the sample web client `BasicHTTPTransaction` (in the Sample GitHub repository at <https://bit.ly/39z1zgA>). What is the purpose of line 25:
`Socket socket = new Socket(host, port);`
- Look at the sample web server `HTMLOnlyServer` (in the Sample GitHub repository at <https://bit.ly/2SJgJJu>). What is the purpose of the following two lines of code. Be clear how the purpose of each line differs:
 - Line 24: `ServerSocket serverSocket = new ServerSocket(port);`

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– Line 31: `Socket socket = serverSocket.accept();`

- Look at the sample web server `HTMLOnlyServer` (in the Sample GitHub repository at <https://bit.ly/2SJgJJu>). Add code that will isolate the query string (if present).
- Assume multiple elements have `class="btn red"`. What CSS selector should we use to style only elements that have *both* of these classes?
- Given the HTML below, write a CSS selector that will only apply to the *outer level* `li` elements:

```
<html>
  <body>
    <ul class='outerList'>
      <li> Outer list 1.
        <ul class='innerList'>
          <li>Inner element 1.1.</li>
          <li>Inner element 1.2.</li>
        </ul>
      </li>
      <li> Outer list 2.</li>
      <li> Outer list 3.
        <ul class='innerList'>
          <li>Inner element 1.1.</li>
          <li>Inner element 1.2.</li>
        </ul>
      </li>
    </ul>
  </body>
</html>
```

- Given the CSS and HTML below, will the words “Item 2” be red or green? Why?

```
<html>
  <head>
    <style>
      nav ul li.z { color: red; }
      .x .z { color: green; }
    </style>
  </head>
  <body>
    <nav id='mainNav'>
      <ul class='x'>
        <li class='y'> Item 1</li>
        <li class='z'> Item 2</li>
      </ul>
    </nav>
  </body>
</html>
```