

WEB1100: Lecture 5

Web Development & HCI

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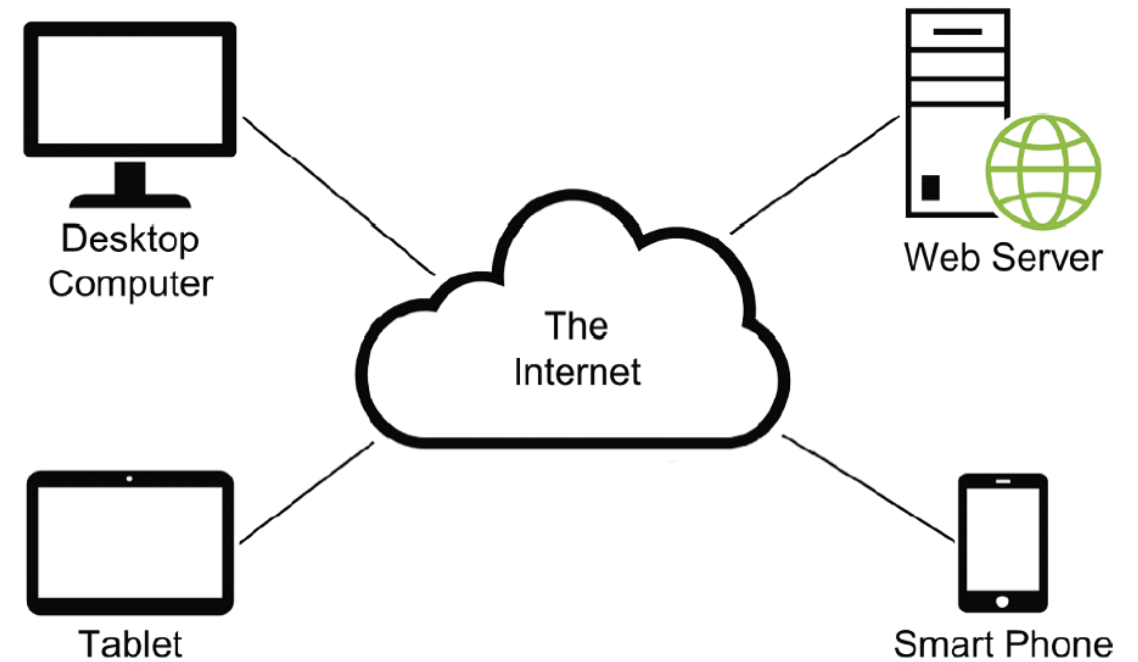
Agenda for today

- Introduction to web development
- Learning the basics of HTML

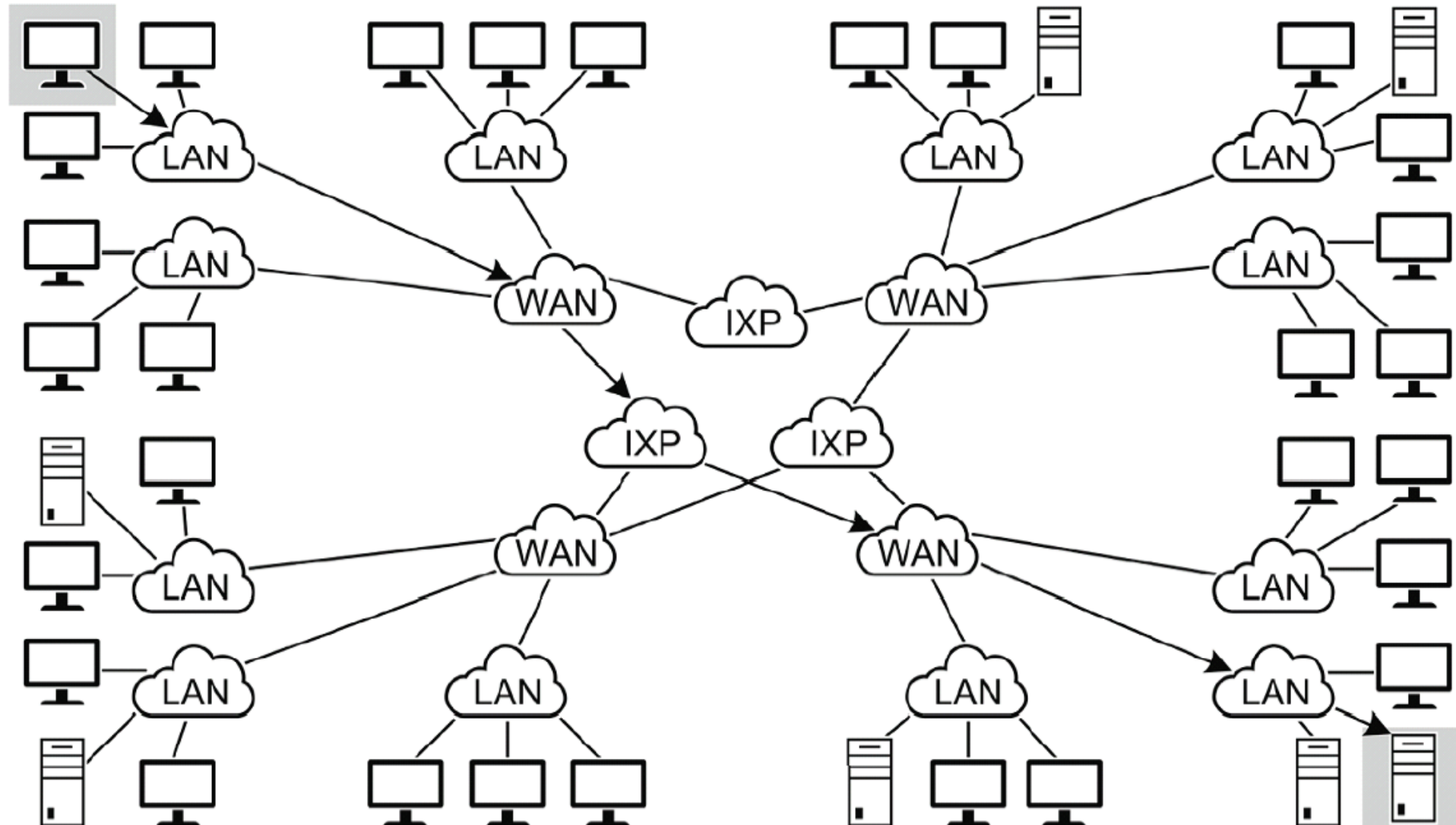
How Web Applications Work

The components of a web application

- client and web server
- web browsers
- network
 - LAN, WAN, ISP, IXP



The architecture of the Internet



Web Servers

- contain necessary information or content
- run in accessible computers
- respond to browser requests
- accept different browsers
- provide same information to various browsers
- are responsible for opening and closing connections
- server computers can also work as clients

URL

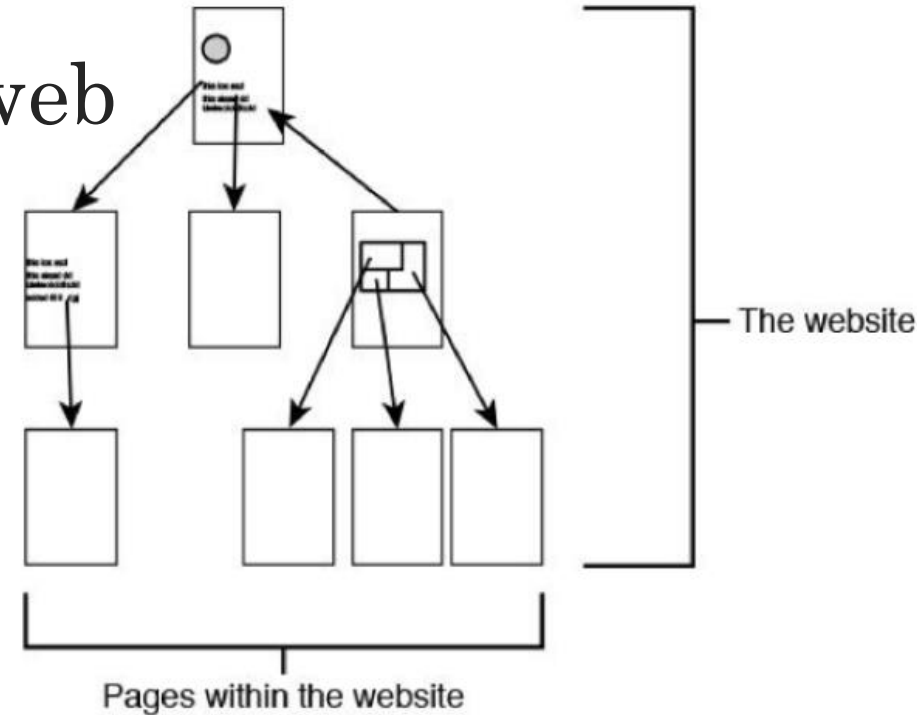
- Uniform Resource Locations
 - provides information about:
 - how to get to the information
 - the internet host name of the computer
 - the directory or other location on that site
 - performs other tasks:
 - sending mail
 - running JavaScript code

`http://www.modulemedia.com/ourwork/index.html`

<code>http</code>	<code>://www.modulemedia.com</code>	<code>/ourwork</code>	<code>/index.html</code>
protocol	domain name	path	filename

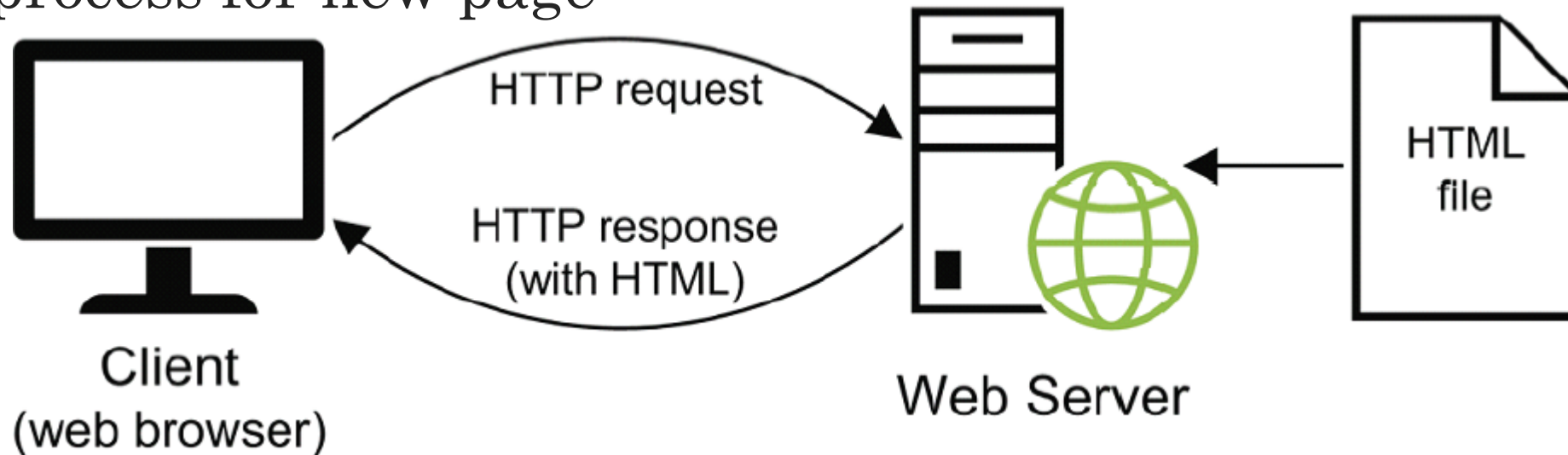
Anatomy of a Website

- Four main terms:
 - Website: a collection of one or more web pages
 - Web server: responds to browser requests
 - Web page: consists HTML document
 - Home page: is the first or topmost page



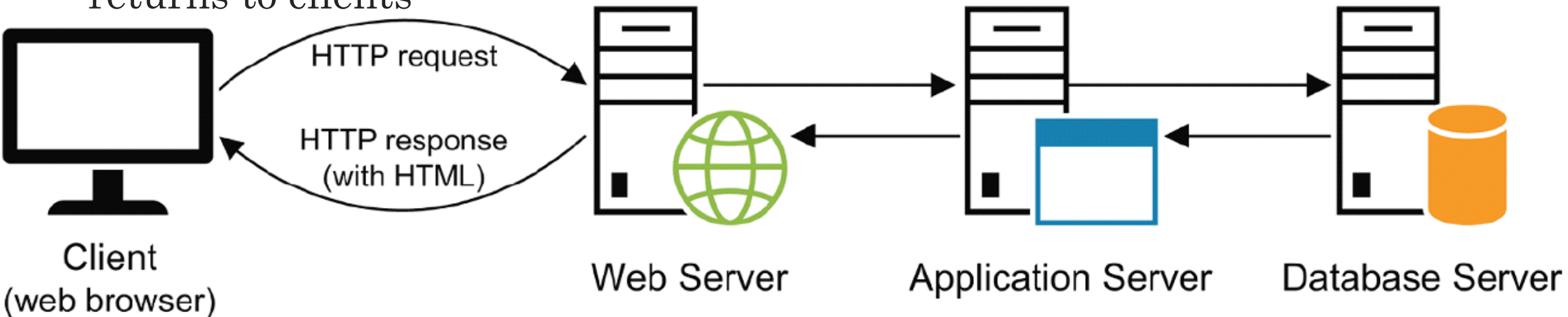
Static Web Pages

- HTML is used to markup web pages
- stored in server and don't change
- file names have .htm or .html extension
- when requested, they are directly sent from the server
- accessed through URL
- new process for new page



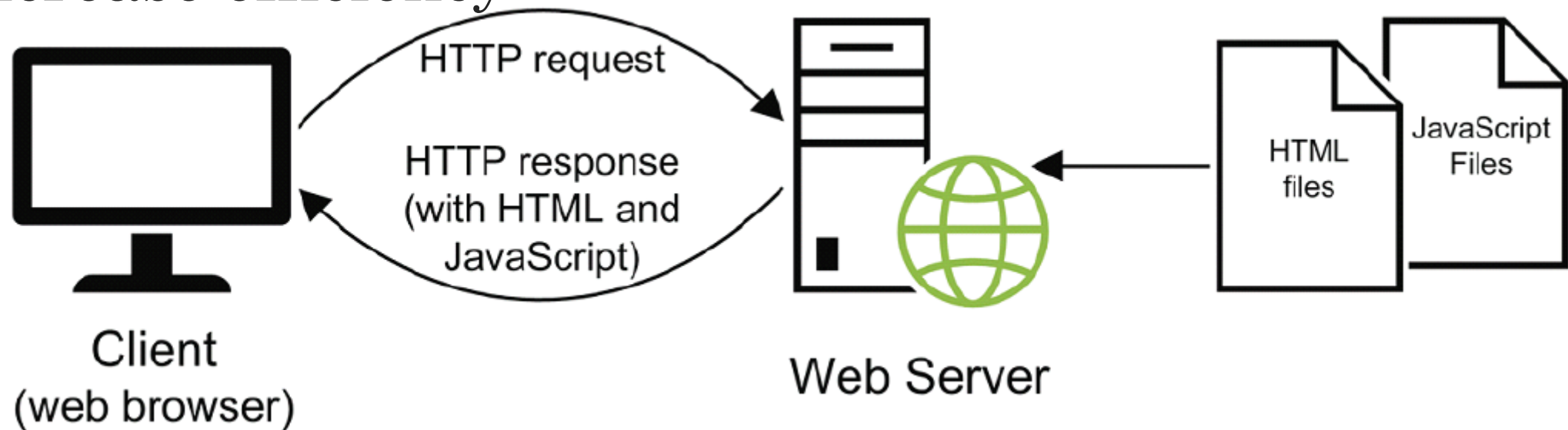
Dynamic Web Pages

- generated in server-side (web server)
- run specified scripts in application server
- application server gets data from both web server and database server and processes them
- web server receives HTML documents from application server and returns to clients



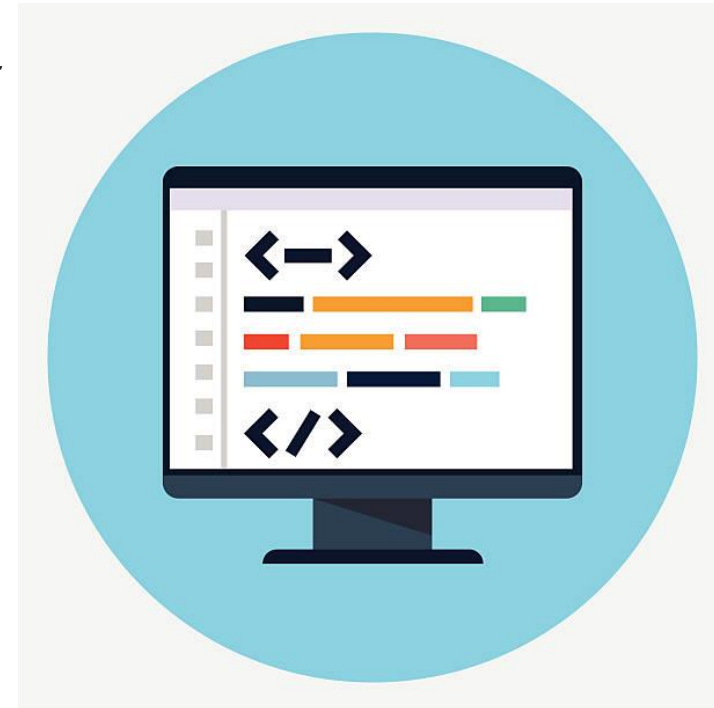
JavaScript

- client-side scripting language
- runs by the JavaScript engine of a web browser
- loaded along with HTML document
- functions are not available in server
- increase efficiency



The HTML for a web page

- HyperText Markup Language
- defines the content and structure of a web page
- the entire page with code – *HTML document*
- DOCTYPE declaration: `<html>.....</html>`
- contains elements of the page:
 - heading, paragraph, lists, table
- contains tags
- does not describe page layout



The basic structure of an HTML5 document

- two parts: the DOCTYPE declaration & the document tree
- the document tree: head and body elements
- Head section: information about the document
- Body section: the displaying elements
- for instance, the title element: title of the page
- Attributes: identify and define an element
- Tool for web development: Notepad++ (<http://notepad-plus-plus.org/>)

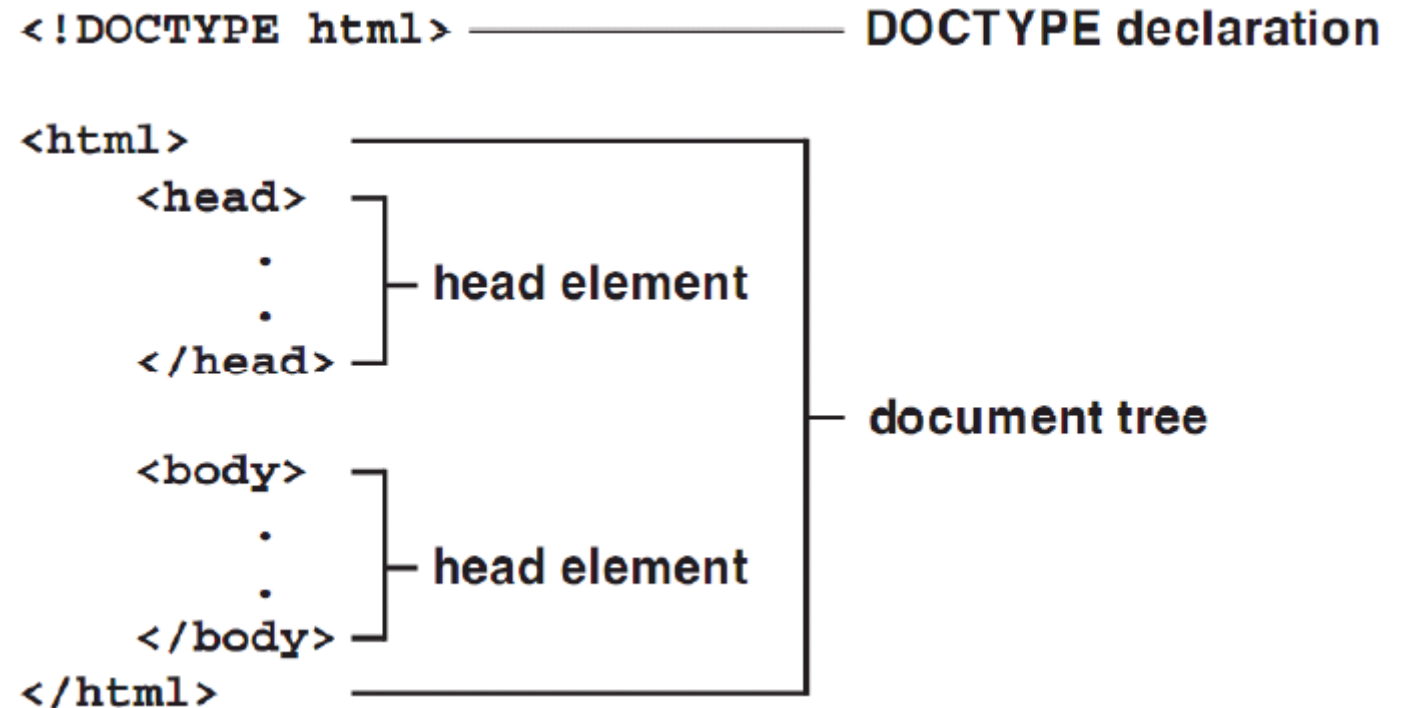
```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>

    <h1>This is a Heading</h1>
    <p>This is a paragraph.</p>

  </body>
</html>
```

A conventional HTML template

- follow a template
- elements can be written in:
 - lowercase
 - uppercase
 - mixed case



Some concerns about Tags

- most HTML elements start and end with opening and closing tags:

`<h1>.....</h1>`

```
<h1>San Joaquin Valley Town Hall</h1>
<p>Here is a list of links:</p>
```

- two empty tags are there:

`
`, ``

```
<br>
```

```

```

- nested tags: shouldn't overlap

Correct nesting

```
<p>Order your copy <i>today!</i></p>
```

Incorrect nesting

```
<p>Order your copy <i>today!</p></i>
```

Coding attributes (rules)

- coded within the opening tag
- contains the attribute name, an equal sign and the attribute value
- Quotation marks for enclosing all values
- Boolean attribute can have just two values: on/off
- ID attribute is used for uniquely identifying one element
- Class attribute is used for marking one/more elements

An opening tag with three attributes

```
<a href="contact.html" title="Click to Contact Us" class="nav_link">
```

How to code a Boolean attribute

```
<input type="checkbox" name="mailList" checked>
```

Coding comments & whitespace

Comments:

- describe or explain portions of code
- appear between the `<!--` and `-->` characters
- Commenting out a portion of code inactivates that portion from execution
- Commenting out a portion of code facilitates testing

Whitespace:

- makes your HTML document easy to read
- helps indenting and aligning HTML elements
- Consists of tab characters, return characters, and extra space

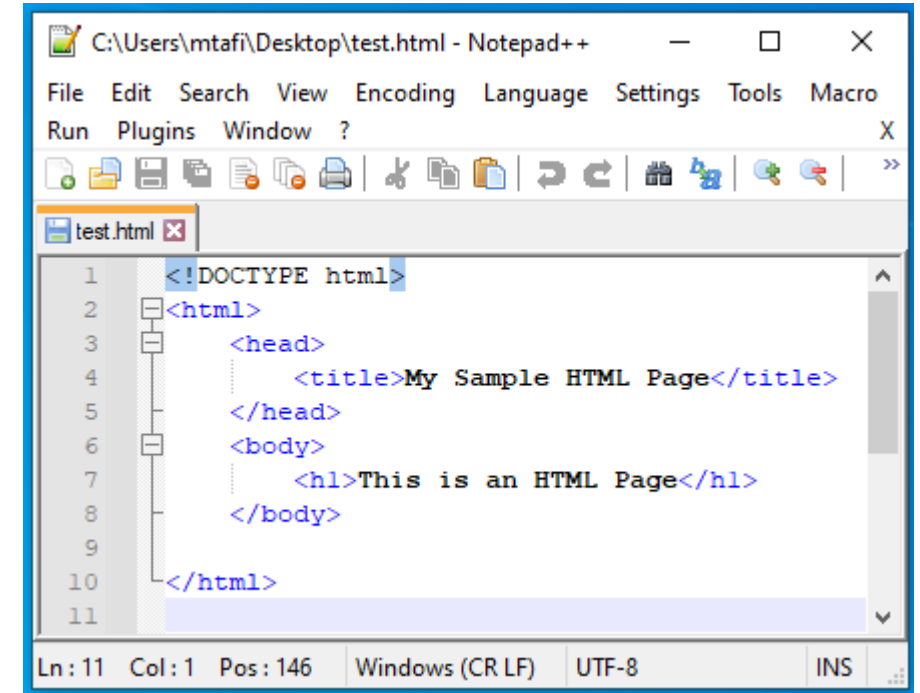
```
<!DOCTYPE html>
<!--
This document displays the home page
for the website.
-->

<html>
  <head>
    <title>San Joaquin Valley Town Hall</title>
  </head>

  <body>
    <h1>San Joaquin Valley Town Hall</h1>
    <h2>Bringing cutting-edge speakers to the valley</h2>
    <!-- This comments out all of the HTML code in the unordered list
    <ul>
      <li>October 19, 2011: Jeffrey Toobin</li>
      <li>November 16, 2011: Andrew Ross Sorkin</li>
      <li>January 18, 2012: Amy Chua</li>
      <li>February 15, 2012: Scott Sampson</li>
      <li>March 21, 2012: Carlos Eire</li>
      <li>April 18, 2012: Ronan Tynan</li>
    </ul>
    The code after the end of this comment is active -->
    <p>Contact us by phone at (559) 444-2180 for ticket information.</p>
  </body>
</html>
```

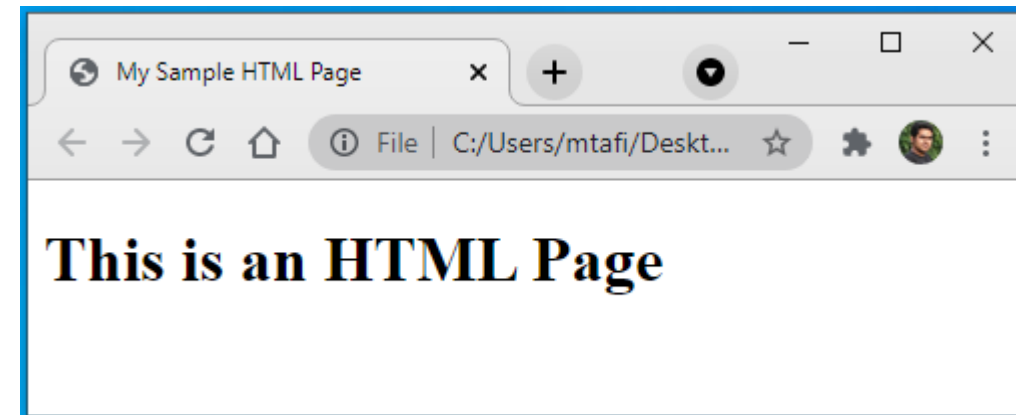

Creating your first HTML page

- open your text editor
- type the given code
- save it by using an extension of **.html**, not **.html.txt**
- use short and simple names with just letters and numbers
- open the saved file to view the result
- Congratulation, you have created your first HTML page



```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>My Sample HTML Page</title>
5   </head>
6   <body>
7     <h1>This is an HTML Page</h1>
8   </body>
9
10 </html>
11
```

The screenshot shows the Notepad++ editor with a file named 'test.html' open. The code is a basic HTML document with a title 'My Sample HTML Page' and a body containing the text 'This is an HTML Page' in a large heading. The status bar at the bottom indicates the cursor is at line 11, column 1, position 146, with Windows (CR LF) line endings and UTF-8 encoding.



More examples

Different headings:

```
<h1>Mythology Through the Ages</h1>
  <h2>Common Mythological Themes</h2>
  <h2>Earliest Known Myths</h2>
  <h2>Origins of Mythology</h2>
    <h3>Mesopotamian Mythology</h3>
    <h3>Egyptian Mythology</h3>
      <h4>The Story of Isis and Osiris</h4>
      <h4>Horus and Set: The Battle of Good vs. Evil</h4>
      <h4>The Twelve Hours of the Underworld</h4>
      <h4>The River Styx</h4>
    <h2>History in Myth</h2>
```

More examples

Paragraphs:

`<p>Slowly and deliberately, Enigern approached the mighty dragon. A rustle in the trees of the nearby forest distracted his attention for a brief moment, a near fatal mistake for the brave knight.</p>`

`<p>The dragon lunged at him, searing Enigern's armor with a rapid blast of fiery breath. Enigern fell to the ground as the dragon hovered over him. He quickly drew his sword and thrust it into the dragon's chest.</p>`

`<p>The dragon fell to the ground, releasing an anguished cry and seething in pain. The thrust of Enigern's sword proved fatal as the dragon breathed its last breath. Now Enigern was free to release Lady Aelfleada from her imprisonment in the dragon's lair. </p>`

A real example

```
<!DOCTYPE html><html>
<head>
<title>Camembert Incorporated</title>
</head>
<body>
<h1>Camembert Incorporated</h1>
<p>"Many's the long night I dreamed of cheese -- toasted, mostly."
-- Robert Louis Stevenson</p>
<h2>What We Do</h2>
<p>We make cheese. Lots of cheese; more than eight tons of cheese
a year.</p>
<h2>Why We Do It</h2>
<p>We are paid an awful lot of money by people who like cheese.
So we make more.</p>
</body>
</html>
```



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Thank You!

Think **Green**, Grow **Green**, Live **Green**