

# HTML

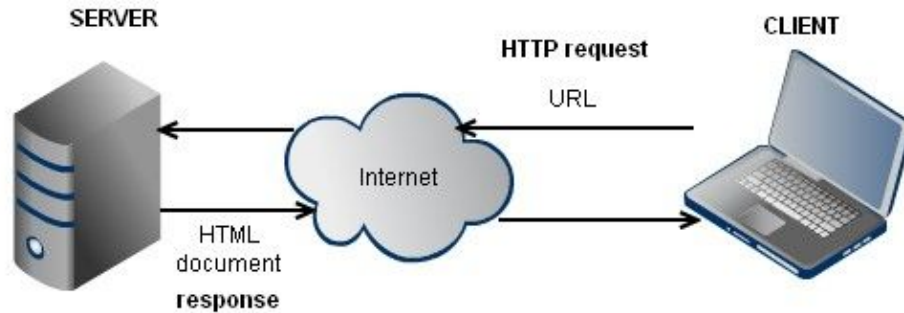
`<DIV>Q: HOW DO YOU ANNOY A WEB DEVELOPER?</SPAN>`

## Objectives

- Understand the basics of the structure of a web application
- Learn some fundamental elements and tags
- Know how to view and debug your HTML

## Client server interaction

What happens when you type in `www.google.com` and hit enter?



## Structure of a web app

- Four main CS components
  - PHP
  - HTML
  - JavaScript
  - CSS
- Which of these would traditionally be used for database interaction?

## HTML Basics

### History

- Tim Berners-Lee was creator
- HTML → Hype(r Text Markup Language)

### What is it used for?

- Browser can interpret it

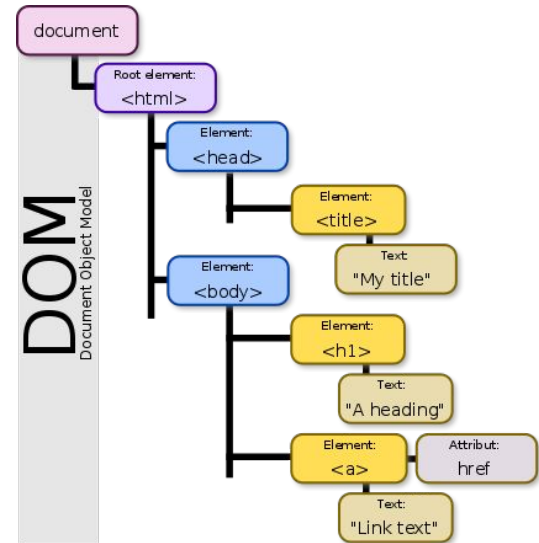
### Alternatives to HTML?

- HTML Abstraction Markup Language



## Structure of HTML

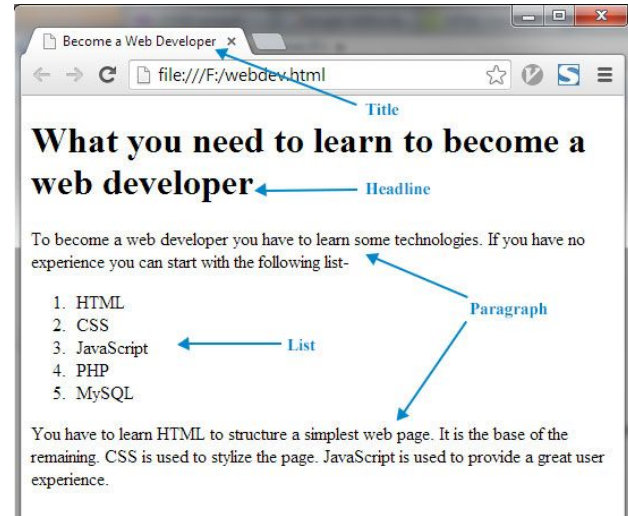
- Document Object Map (DOM)
- Elements
  - e.g. paragraph element
- Tags
  - e.g. `<p></p>`





## Elements

- Elements are represented by tags in HTML
  - ex: The paragraph elements are represented with the paragraph tag `<p></p>` in the HTML code.



<http://schoolsofweb.com/wp-content/uploads/webpage-element.jpg>

## DOCTYPE

Tag: `<!DOCTYPE html>`

Tells browser they should interpret your code as HTML

The tag goes on line 1 of your .html file always



## html

Tag: `<html>...</html>`

Encloses entire html document

You should always include this tag.

## head

Tag: `<head>...</head>`

Contains the metadata (non-visible information about your web page)

You should always include this tag.

```
<head>
  <!-- metadata-->
  <meta charset="utf-8">
  <meta name="author" content="Disha Jain">
  <meta name="keywords" content="Disha,Jain,UVA,CS,engineering,2020">
  <meta name="viewport" content="width=device-width,initial-scale=1">
  <meta name="description" content="Discover Disha's resume">
  <!--/ metadata-->

  <title>Disha Jain | Home</title>

  <!-- main JS libs -->
  <script src="js/libs/modernizr.min.js"></script>
  <script src="js/libs/jquery-1.10.0.js"></script>
  <script src="js/libs/jquery-ui.min.js"></script>
  <script src="js/libs/bootstrap.min.js"></script>
  <script src="js/general.js"></script>

  <!-- Style CSS -->
  <link href="css/bootstrap.css" media="screen" rel="stylesheet">
  <link href="style.css" media="screen" rel="stylesheet">

  <!-- Fonts -->
  <link href="https://fonts.googleapis.com/css?family=Raleway|Roboto+Condensed" rel="stylesheet">
</head>
```

Example of HTML head

“

*Any questions so far?*

## body

Tag: `<body>...</body>`

Contains the page content

You should always include this tag.

## paragraph

Tag: `<p>Hello World!</p>`

Wraps text and is a block-level element



Wait, what's a block-level element?

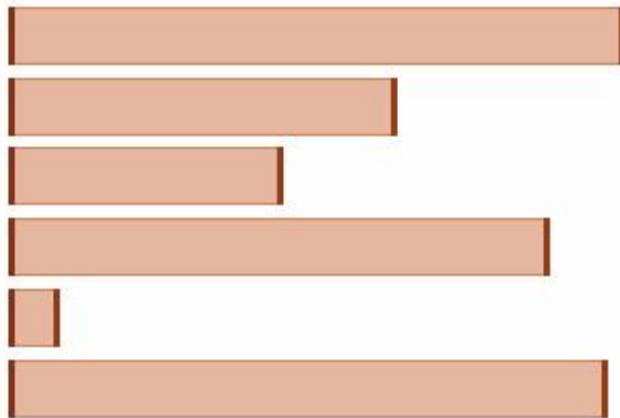
## Block and inline

### Block elements:

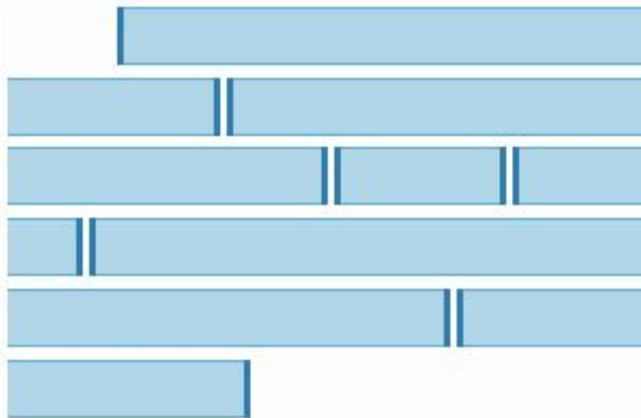
- Start on a new line
- Expand their element width to fill the entire line

### Inline elements:

- Start in the next available space
- Are only as wide as they need to be, no more



Block elements stack,  
regardless of their widths.



Inline elements flow from one line to the next.

## Block vs inline elements

## anchor

Tag: `<a href="http://google.com/">To Google</a>`

Wraps text and is an inline-level element

## lists

- Tag:
- `<ul>`
  - `<li>List Item 1</li>`
  - `<li>List Item 2</li>`
- `</ul>`

ul = unordered list

li = list item

1. Tag:
2. `<ol>`
  - a. `<li>List Item 1</li>`
  - b. `<li>List Item 2</li>`
3. `</ol>`

ol = ordered list

## Group elements

Tag: `<div>...</div>`

Division element and is  
block-level

Tag: `<span>...</span>`

Span element and is  
inline-level

Group elements do not make visual changes, but give more structure to your HTML code.



```
<body>
  <div>
    <p>Hello <span>world!</span></p>
    <a href="http://hello.world/">Here</a>
  </div>
  <div>
    <p>Hola <span>mundo!</span></p>
    <a href="http://translate.google.com">Yep</a>
  </div>
</body>
```

Example of div and span in use

## headers

Tags: <h1>Big Header</h1>, <h2>Sorta big header</h2>  
<h3>Smaller</h3> <h4>and smaller</h4> <h5>and smaller</h5> <h6>and smaller</h6>

Defines different sizes of headers

An appropriate use of h1 would be for the page title

## image

Tag: ``

Displays a static image

Notice there's no closing tag

## breaks

Tags: `<br>` and `<hr>`

`<br>` is an invisible line **break**

`<hr>` is a visible line break or a **horizontal rule**

hello  
world

hello  

---

world

## Attributes

- Used to modify
  - Element data
  - Element behavior
  - Element appearance
  - Etc.

## Attributes

### Element identifiers

- id - a unique identifier for your element
  - **Browser will not give duplicate ID warnings**
  - **IDs should be unique and descriptive**
  - **At least any element the user interacts with should have an ID**
- class - a non-unique identifier for a class of elements

### style

- Can apply CSS inline. **Generally, you don't want to do inline CSS, but we'll talk about this later.**



## Attributes

### href

- “hypertext reference” attribute
- For anchor elements, defines the location to link to
- For link element, defines the location of external CSS file

### src

- For script tag, defines the location of external JS file
- For img tag, defines the location of external image file

## Running

- Open editor
- Save file as example.html
- Open or drag/drop example.html on to browser

## Debugging

- Right click and select inspect to open dev tools
  - Ctrl-Shift-J in Windows Chrome
  - Cmd-Option-J in Mac Chrome
  - **Use Chrome, because it has the best dev tools.**
  - **Keep your user in mind**
    - Government? Web app must work in Internet Explorer
  - **Go into settings and disable cache when DevTools open**
    - Allows to hard refresh when developing.