HTML:

* HyperText Markup Language.
  + A markup language is descriptive not programmatic.
  + HTML is most often used to describe webpages and are rendered by a browser.
  + HyperText refers to HTTP mostly in regards the ability to make HyperLinks which are basic links that we see in webpages.
  + HTML syntax is divided into two major categories: elements and their attributes.

HTML Elements:

* Elements create the structure of the document and they defined by tags.
  + E.g. <div> this is a div element</div>
* HTML elements can be nested (one element can completely contain another element) and in fact all elements must be nested in the root element.
  + Correct: <div> <p> </p> </div>
  + Incorrect: <div> <p> </div> </p>
* There are two categories of elements that are displayed on the page:
  + Block elements: these elements will render as a block on the page meaning any following element will render on a new line by default.
  + Inline elements: these can sit next to each other on the same line when rendered.
* Common HTML Elements:
  + <div> this is a block element that defines a “division” of the page. Often will contain other elements.
  + <p> defines a paragraph of text. (block)
  + <span> standard inline element.
  + <br> line break (does not need a closing tag)
  + <img> displays an image (does not need closing tag)
  + <h1> through <h6> These are header tags 1 is the largest 6 is the smallest.
  + <a> anchor tag used to make a hyperlink.

HTML Attributes:

* These are metadata about the element itself. You can think of them as parameters defining the element itself.
  + E.g. <img src=”myImage.jpg”> here the src attribute contains the location of the image file to display.
* Attributes are defined as key/value pairs inside the opening tag of the element.
* Global Attributes are attributes that can be added to any element.
  + class – This allows your to group similar elements together when applying styling or other modifications outside of the straight HTML.
  + id – This is a unique identifier for an element.
  + hidden – this can hide an element so it does not appear on the page.
  + lang – defines the language the element should use.
  + style – allows you to apply CSS directly to the element.
  + title – defines what info should show as a tooltip on the element.
* Elements like <img> <form> etc have specific attributes that only apply to them.

HTML DOCTYPE declaration and the root tag:

* <!DOCTYPE html> this is the doctype declaration. It informs the browser what type of document we are displaying (HTML) as well as the version. The one above defines a HTML 5 document.
* The root tag contains all the elements of the document. It is simply <html> … </html>
  + Under the root tag there are two sections: The head and the body.
    - Head is used to define metadata about the page and its elements are directly rendered on the page.
    - Body contains the actual elements being displayed in the document. (NOTE: if you are using JavaScript with your HTML the link to your JS file should generally be at the bottom of your body.)

HTML Tables:

* Tables are an easy way to structure our HTML pages and display information. There was a time when almost all HTML pages were just giant tables.
* To create a table we use the <table> tag.
  + Inside the table will be a <thead> and a <tbody>
    - Inside the <thead> and <tbody> will be <tr> that stands for table row. Each row will therefore use the <tr> tag.
      * Under the row you will have either <th> for the thead portion or <td> for the body portion for individual cell data.
  + You can also have a <tfoot> tag to give footer information.

HTML Lists:

* HTML also has built in functionality to display lists of items.
* There are two types of lists: ordered and unordered.
  + Ordered are given a sequence. E.g. 1, 2, 3,…
  + Unordered lists have no sequence, simply an identifier usually a bullet of some type.
* Ordered lists use the <ol> tag.
* Unordered lists use the <ul> tag.
* In either type of list, items inside that list use the <li> tag.
* NOTE: Lists of either type can be used nested inside each other.

HTML Forms:

* HTML has built in form functionality. Forms take in inputs (generally <input>) and then submit the information somewhere to be handled.
* Input elements include:
  + Text field
  + Password - prevents the inputs from being displayed on the screen.
  + Radio Buttons - select one from a list of options.
  + Checkboxes - select multiple from a list of options
  + Select Boxes - drop down menu to select an option
  + File select boxes - Allows you to upload a file from your local machine.
  + Text Area - A multi-line text field. These are different because they don’t use the <input> tag and instead have their own <text-area> tag.
  + Reset and Submit buttons.
* Attributes used in forms:
  + Action - how (or where) the form data will be processed.
  + Target - Where the result will open: i.e. same window (self) or in a new tab/window (blank)
  + Name - each input needs a name value so the data can be labeled.
  + Method - What HTTP method the form will use to send the form. GET or POST.
  + Value - the initial value of the field.
  + Placeholder - this is a “hint” that describes what should be entered in the field.
  + Required - This field must have an input in order for the form to be submitted.
  + Min and Max - give minimum or maximum values that can be imputed into the field.
* <label> is an element that can be associated with an input field to give it a label.

HTML 5 Features:

* DOCTYPE declaration
* Character encoding which allows you to chose what type of characters are displayed on the page with a <meta> tag in the head.
* Semantic Elements – HTML 5 added the majority of semantic elements. These are elements that are clearly named to describe what they are intended for. Many of them do not have any built-in functionality but are for organizational purposes.
  + <section>
  + <article>
  + <header>
  + <footer>
  + <summery>
* Non-semantic tags:
  + <div>
  + <p>
  + <ol>
* HTML 5 also added built-in functionality for audio and video.
  + <audio> will have an audio element (mp3, ogg, wav are supported) to play on your page.
  + <video> will have a video element. (MP4, WebM, ogg are all supported.)
* HTML 5 also added some functionality for form validation. (Min and Max for instance.)