What is HTML?

HTML, or HyperText Markup Language, is a markup language which describes the structure and meaning of web pages. Web browsers, such as Mozilla Firefox, Internet Explorer, and Google Chrome interpret the HTML code and use it to render output. Unlike Ruby, JavaScript and other programming languages, markup languages like HTML don't have any logic behind them. Instead, they simply surround the content to convey structure and meaning.

Every web page you've ever visited is structured using HTML code. Being able to read and understand an HTML document is one of the most essential tools in a developer's toolbox.

HTML Syntax

HTML consists of different elements. Each element consists of tags, which wrap around content. For example, say we wanted Hello World to appear as a paragraph. We could use the p element, which consists of an opening p tag and a closing p tag.

```
<p>Hello World</p>
```

Elements, like our p tags above, won't be displayed in the browser. Instead, they affect how the content itself is displayed. Techonologists might say that the tags "affect how the content is rendered by the browser."

Basic HTML Document Structure

```
<!DOCTYPE html>
<html>
   <head>
      <!-- metadata about the HTML document as a whole -->

   </head>

   <body>
      <!-- content of our page will be here! -->

   </body>
</html>
```

All HTML documents must start with a <!DOCTYPE> declaration.

The declaration is not an HTML tag. It is an "information" to the browser about what document type to expect.

In HTML 5, the declaration is simple:

```
<!DOCTYPE html>
```

The <!DOCTYPE> declaration is NOT case sensitive.

Examples

```
<!DOCTYPE html>
<!DocType html>
<!Doctype html>
<!doctype html>
```

Common HTML Elements

Headers <h1> to <h6>
Lists
Images <img src="URL_TO_IMAGE" alt="Picture of a Dog">

Identify HTML Tag Attributes and Their Purposes

An HTML attribute is extra information we can add to a tag to identify, classify, style or modify the default behavior of the element the tag contains.

```
<element attribute_name=attribute_value
another_attribute_name=another_attribute_value></element>
```

A common use case for HTML attributes is element identification (id attribute) and/or classification (class attribute). The id attribute is used to uniquely identify an element within the whole document. The class attribute is used to group together similar elements.

Both <id> and <class> attributes are often used for styling purposes since they allow us to find a specific element or style similar elements with a single style declaration.

HTML Validator
https://validator.w3.org/#validate_by_input

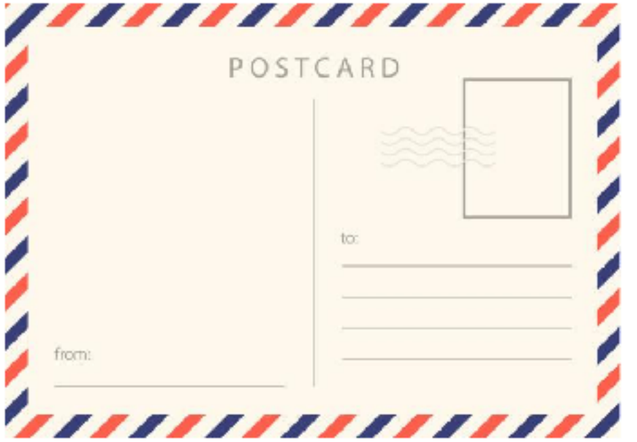
MDN Reference
https://developer.mozilla.org/en-US/docs/Web/HTML/Element

How to use Developer Tools

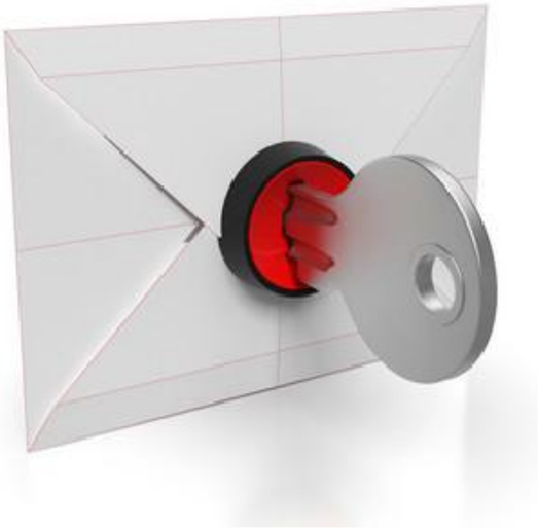
HTML Forms

An HTML form is used to collect user input. The user input is most often sent to a server for processing.

GET method



POST method



GET Method

When the user clicks the submit button, their responses in the input fields are captured and labeled using the name attributes from each element. The browser stores this information behind the scenes like this:

owner-name=Bob+Barkley&dog-name=SirBarksALot&favorite-toy=ball

This is known as the Query String. The browser then attaches the Query String onto the location listed in the form's action attribute after a ? to create a URL that looks like this:

http://example.com/process-user.php?owner-name=Bob+Barkley&dog-name=SirBarksALot&favorite-toy=ball

The browser then goes to this new URL. The server then uses back-end programming to use the information in the Query String to change what it will show.

When a Query String is added to a URL, it's a great solution for filtering the information that comes back. Forms are a nice way for users to add those filters without typing them in by hand. You've probably seen this on the internet.

POST Method

A POST is like a secure envelope. We can't see the information being sent. That's why POST is the right call when sending sensitive information like passwords or national IDs. The user's browser is not redirected in this case. We can't show you a screenshot of what this looks like because, well, there's nothing to show. Usually after a successful POST, the web site will send you to a page that says "Thanks for your purchase" or "Thanks for joining our site."

HTML IFrame

HTML Media

Semantic elements