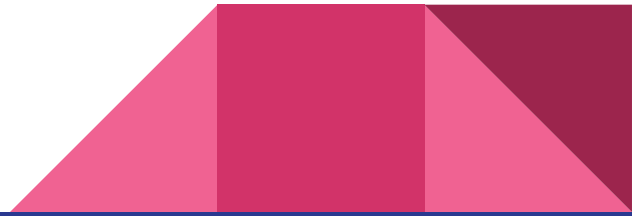
HTML

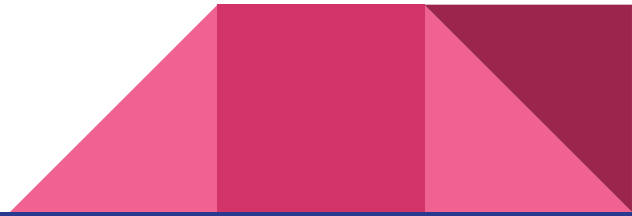
What is HTML?

- **HTML** stands for HyperText Markup Language
- Allows the user to create and structure sections, paragraphs, headings, links, etc. for web pages and applications
- Does not have the ability to create dynamic functionality, only responsible for organizing and formatting



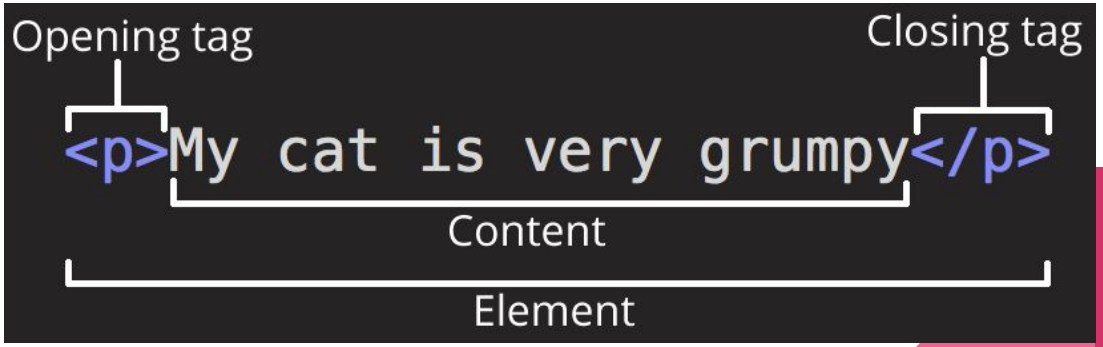
Elements

- HTML elements are the components that an HTML document is built from
- An element may contain a data item or a chunk of text or an image, or nothing
- Typically includes an opening tag with some attributes, enclosed text content, and a closing tag
- Elements can be nested within one another



Anatomy of HTML Elements

1. The opening tag: This consists of the name of the element (in this case, p), wrapped in opening and closing angle brackets. This states where the element begins or starts to take effect — in this case where the paragraph begins.
2. The closing tag: This is the same as the opening tag, except that it includes a *forward slash* before the element name. This states where the element ends — in this case where the paragraph ends. Failing to add a closing tag is one of the standard beginner errors and can lead to strange results.
3. The content: This is the content of the element, which in this case, is just text.



Anatomy of HTML Document

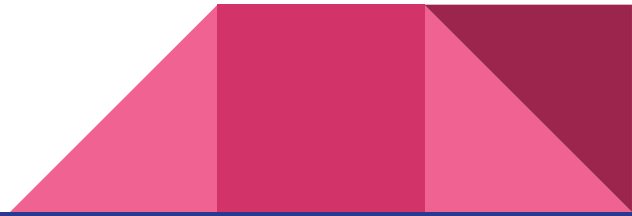
- <!DOCTYPE html> — doctype. It is a required preamble.However these days, they don't do much and are basically just needed to make sure your document behaves correctly. That's all you need to know for now.
- <html></html> — the <html> element. This element wraps all the content on the entire page and is sometimes known as the root element.
- <head></head> — the <head> element. This element acts as a container for all the stuff you want to include on the HTML page that *isn't* the content you are showing to your page's viewers. This includes things like keywords and a page description that you want to appear in search results, CSS to style our content, character set declarations, and more. Will go into more detail later.
- <body></body> — the <body> element. This contains *all* the content that you want to show to web users when they visit your page, whether that's text, images, videos, games, playable audio tracks, or whatever else.

Anatomy of HTML Document

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My test page</title>
  </head>
  <body>
    <img src="images/firefox-icon.png" alt="My test image">
  </body>
</html>
```

Commonly Used Elements

- A text header, denoted using the <h1>, <h2>, <h3>, <h4>, <h5>, <h6> tags
- A paragraph, denoted using the <p> tag
- A horizontal ruler, denoted using the <hr> tag
- A link, denoted using the <a> (anchor) tag
- A list, denoted using the <ul> (unordered list), <ol> (ordered list) and <li> (list element) tags
- An image, denoted using the <img> tag
- A divider, denoted using the tag
- A text span, denoted using the tag



Attributes

- An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts − a name and a value
  - The name is the property you want to set
  - The value is what you want the value of the property to be set and always put within quotations.

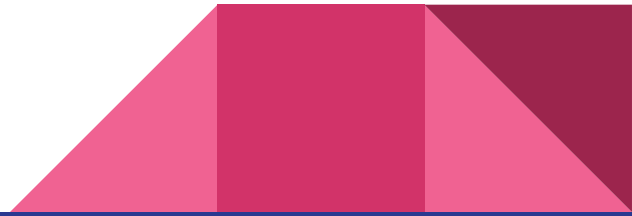
- All HTML elements can have attributes
- Attributes provide additional information about elements
- Attributes are always specified in the start tag

Attributes

- There are four core attributes that can be used on a majority (though not all) HTML elements:
  - ID - Used to uniquely identify any element within an HTML page.
  - Title - Gives a suggested title for the element.
  - Class - Used to associate an element with a style sheet, and specifies the class of element.
  - Style - Allows you to specify Cascading Style Sheet (CSS) rules within the element.
- Other commonly used attributes are
  - a - Defines a hyperlink
  - href - Specifies the URL of the page the link goes to
    - `<a href="https://www.w3schools.com">Visit W3Schools</a>`
  - img - Used to embed an image in an HTML page.
  - src - Specifies the path to the image to be displayed
    - `<img src="smiley.gif">`
  - Width/Height - Specified in number of pixels
    - `<img src="smiley.gif" width="500" height="600">`
  - Alt - Specifies an alternate text
    - `<img src="smiley.gif" alt="A Fox with a Smile" width="500" height="600">`
  - Lang - Declare the language of the Web page
    - `<p lang="es"> Esto es una frase</p>`

Metadata

- **Metadata** is — in its very simplest definition — data that describes data.
- In HTML, the HTML document is data, but HTML can also contain metadata in its <head> element that describes the document
- Examples of data found in the head:
  - Page title
  - Author
  - Links to CSS, custom favicons, etc.
- The head is not displayed when the page is loaded into a web browser



Simple HTML Document with Head Element

- The meta elements is used for metadata that can't be represented by other HTML-meta related elements
  - Here, its used to specify the character encoding and essentially defines the charset being used
- The title element defines the document's title that is shown in a browser's title bar or a page's tab. It only contains text; tags within the element are ignored.
- Other meta-related elements include <base>, <link>, <script>, and <style>

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My test page</title>
  </head>
  <body>
    <p>This is my page</p>
  </body>
</html>
```

Semanticism

- Markups written for the design of web pages should be meaningfully constructed and structurally arranged to ensure readability by not just users of the web alone but also user agents and robots.
- A properly designed webpage should be easily accessible and usable by all facets of users. The readability and proper rendering of markups by user agents allow for easy accessibility to the contents of the web by the users
- The right HTML tags should be used for the right purposes.

Semantic

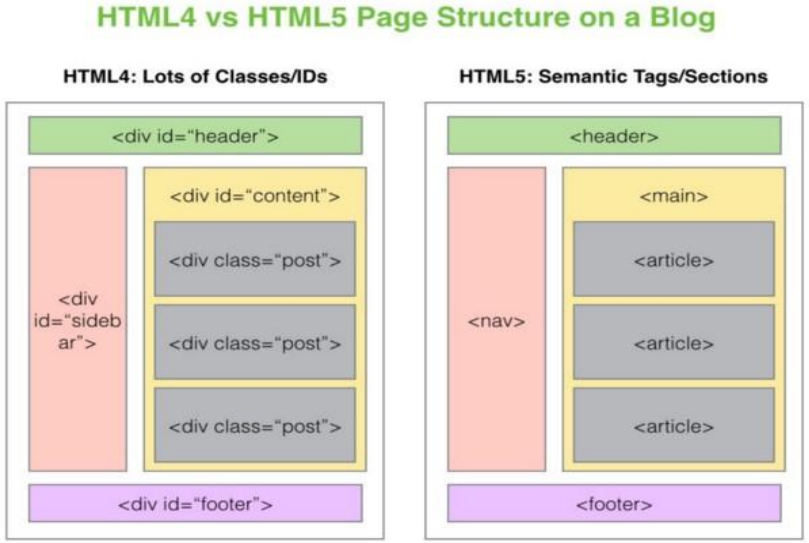
```
<button>Click Me</button>
```

Non-semantic

```
<div>Click Me</div>
```

Semanticism

- Over the years, several tags with semantic connotations have been added to pre-existing HTML tags to effect more meaning to webpages for better accessibility by diverse users
- In years prior, many contents to be displayed on webpages were usually wrapped in ** ** tags what is commonly being referred to as ***“div soup”*.**
- Elements such as *aside*, *article, nav, section, main, header*, and *footer* specifically addressed the issue of excessive usage of ***div*** tags while adding meaning to markup.



Accessibility

- Web accessibility simply means making web pages that can be accessed by every user of the web.
- Users are basically grouped into two categories; *people without disabilities* and *people with physical disabilities*.
- People with disabilities rely on ***Assistive Technologies (ATs)*** to use web content.
    - **Visually impaired** users access the web with the aid of ***screen magnifiers*** (*physical magnifiers or software zoom capabilities*) and ***screen readers*** (*e.g. ChromeVox*)
    - **Auditory impaired** individuals use ***Assistive Listening Devices (ALDs), Alerting Devices,*** *and* ***Augmentative and Alternative Communication devices (AACs)***
- Most of these assistive technologies like the screen reader, work with the browser environment, and utilize HTML markup for their function.
- People with slow/poor network connections should also be put into consideration when a website is being developed.

Accessibility/Semanticism

1. **Web pages are easier developed with semantic HTML**
   a. It gives you more functionality, thanks to some special styling already applied to some elements like the `button` element.
2. **More responsive on Mobile**
   a. semantic HTML is arguably lighter in file size than non-semantic spaghetti code, and easier to make responsive.
3. **Improves your SEO rating**
   a. Search engines give more importance to keywords inside headings, links, etc. than keywords included in non-semantic `<div>`s, etc., so your documents will be more findable
4. **It aids the proper maintenance of code and ensures easy adjustments when necessary.**