

2. Hypertext Markup Language (HTML)

2.1. Working with text and elements in HTML

2.1.1 Web Technology

Structure

Many webpages act like electronic versions of documents such as Newspapers.

Think about the stories you read in a newspaper: for each story, there will be a headline, some text, and possibly some images. If the article is a long piece, there may be subheadings that split the story into separate sections or quotes from those involved. Structure helps readers understand the stories in the newspaper.

Structure is a way to build a webpage to make it easier for the reader to understand what he is reading. HTML code describes the structure of webpages.

The HTML code

The HTML code is made up of characters that live inside angled brackets which are called HTML **elements**. Elements are usually made up of two **tags**: an opening tag and a closing tag.

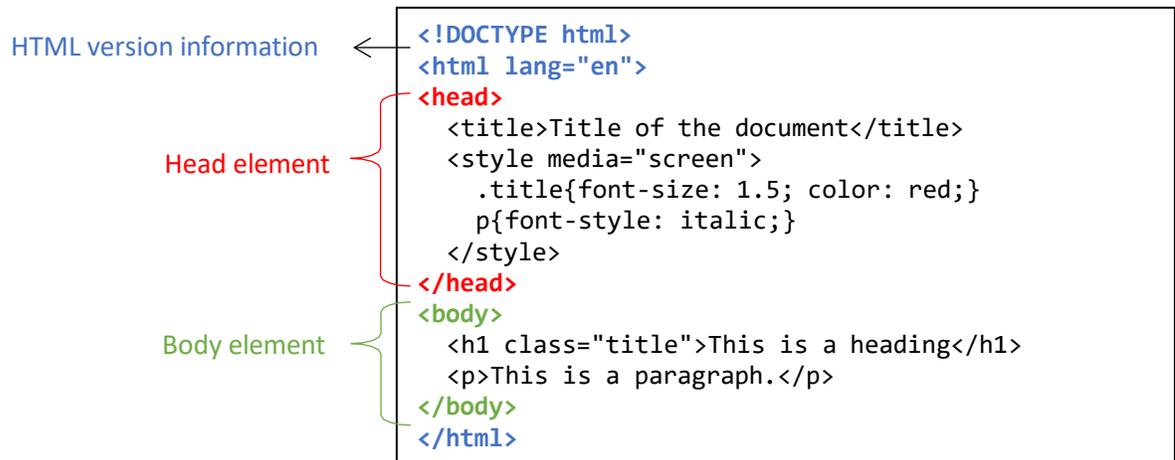
<p> **</p>**
Opening tag Closing tag

Each HTML element tells the browser something about the information that sits between its opening and closing tags.

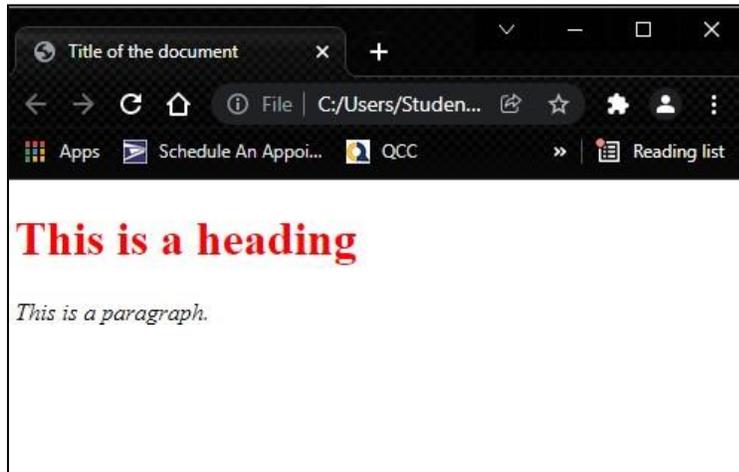
Basic HTML elements

An HTML document has three required parts:

- a line containing HTML version information. When the webpage is loaded, the declaration line is the first line that the browser reads. It tells the browser that the following file is an HTML file.
- a head element. The head element contains metadata, which is data about the HTML document, that is not displayed on the browser when the webpage is loaded, except for the title.
- a body element. The body element contains the document's actual content. Elements in the body build the visual part of a webpage.



Browser display



The basics HTML elements are:

1. The opening `<html>` tag element indicates that anything between it and a closing `</html>` tag is HTML code
2. A `<head>` element contains information about the page such as title
3. The contents of the `<title>` element are either shown in the top of the browser, above where you usually type in the URL of the page you want to visit, or on the tab for that page (if your browser uses tabs to allow you to view multiple pages at the same time).
4. The `<body>` tag indicates that anything between it and the closing tag `</body>` should be inside the main browser window.
5. A paragraph of text appears between these `<p>` and `</p>` tags.

6. A heading element is used to display titles or subtitles on a webpage `<h1>` and `</h1>`. The largest heading is h1, which is twice the normal size, and the smallest heading is h6, which is 0.75% of the normal size.

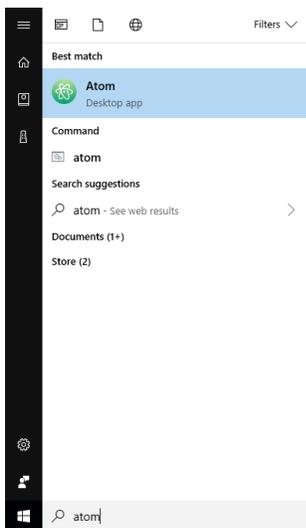
Usually `<h1>` is used for main headings or titles, `<h2>` is used for subheadings, and if there are further sections under the subheadings, then the `<h3>` element is used, and so on.

Exercises) Creating your first webpage

Activity 1 we are going to create our first app view using HTML and check our code through google Chrome browser.

Steps:

1. We start by writing the HTML code using Atom.



2. In Atom, open a new file and save it with your last name and the file extension .html. Make sure that you save the file in your local drive or computer Desktop.
3. The first line that we write in an html file is `<html>` tag to declare the html file. One of the great things about Atom is that when you type a tag name, it will automatically build a basic code structure of the code. Write `html` and click enter and Atom will create the following code:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <title></title>
  </head>
  <body>

  </body>
</html>
```

The **<!DOCTYPE>** declaration must be the very first thing in your HTML document, before the **<html>** tag and it specifies the rules for the markup language, so that the browsers render the content correctly.

The attribute **lang** indicates the language and the value **en** means English. This line specifies that the html code is based in English.

The attribute **dir** indicates the direction of the text and the value **ltr** indicates that the text will be display from left-to-right.

Metadata is data (information) about data. The **<meta>** tag provides metadata about the HTML document. Metadata will not be displayed on the page, but will be machine parsable.

Meta elements are typically used to specify page description, keywords, author of the document, last modified and other metadata

UTF-8 is the Unicode character sets from 1 to 4 bytes long. UTF-8 can represent any character in the Unicode standard. UTF-8 is backwards compatible with ASCII and the encoding for e-mail and web pages.

For app view development, it is an important to add the following line:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

The **viewport** is the user's visible area of a web page. It varies with the device, and will be smaller on a mobile phone than on a computer screen. viewport element gives the browser instructions on how to control the page's dimensions and scaling.

The **width=device-width** part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The **initial-scale=1.0** part sets the initial zoom level when the page is first loaded by the browser.



Without the viewport meta tag



With the viewport meta tag

Once we have the **<head>** element sets, we can use some tags in the **<body>**. Most of the tags that we use in **<body>** are visible in the web app. We are try to add some heading the body.

HTML has six levels of headings:

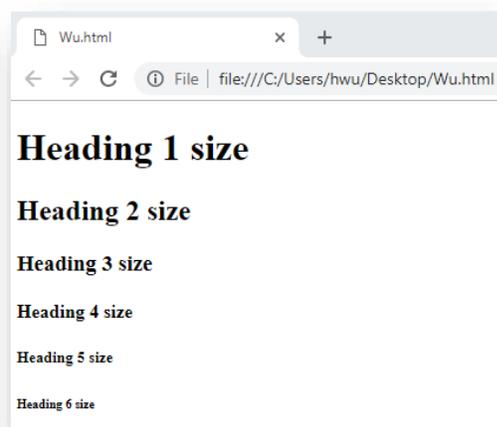
- `<h1>` is used for main headings
- `<h2>` is used for subheadings.
- If there are further sections under the subheadings then the `<h3>` element is used, and so on...

```
HTML  
<h1>Heading 1 size</h1>  
<h2>Heading 2 size</h2>  
<h3>Heading 3 size</h3>  
<h4>Heading 4 size</h4>  
<h5>Heading 5 size</h5>  
<h6>Heading 6 size</h6>
```

To see the output of the html code, we can go to the location of our html file, and double click on html icon



The html file will open in internet browser



More elements

Paragraph

The `<p>` tag specifies a paragraph of text. It is a block-level element and it automatically have margin before and after the tag.

Bold

By enclosing words in the tags `` and `` we can make characters appear bold.

Italic

By enclosing words in the tags `<i>` and `</i>` we can make characters appear italic.

Line Breaks

The browser will automatically show each new paragraph or heading on a new line. But if you wanted to add a line break inside the middle of a paragraph you can use the line break tag `
`

Horizontal Rules

To create a break between themes — such as a change of topic in a book or a new scene in a play — you can add a horizontal rule between sections using the `<hr/>`

Strikethrough

Strikethought means to cross something out by drawing a line through it.

The `<s>` element indicates something that is no longer accurate or relevant (but that should not be deleted).

Visually the content of an `<s>` element will usually be displayed with a line through the center.

Abbreviations and Acronyms

If you use an abbreviation or an acronym, then the `<abbr>` element can be used. A title attribute on the opening tag is used to specify the full term.

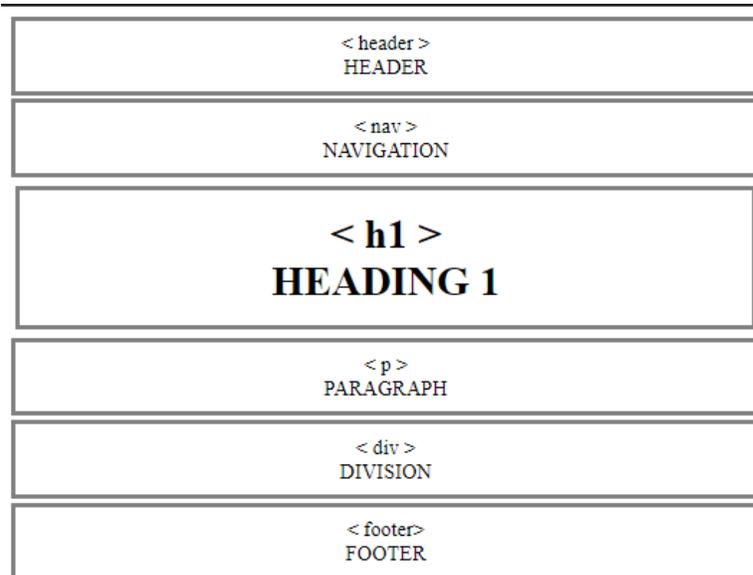
Example



Block and inline elements

There are two display elements in HTML: block and inline.

Block-level elements always starts on a new line and takes a full width of the screen. It also has a top and bottom margin.



Some of the block-level elements in HTML are:

<address>	<figcaption>	<noscript>
<article>	<figure>	
<aside>	<footer>	<p>
<blockquote>	<form>	<pre>
<canvas>	<h1>-<h6>	<section>
<dd>	<header>	<table>
<div>	<hr>	<tfoot>
<dl>		
<dt>	<main>	<video>
<fieldset>	<nav>	

Inline elements do not start on a new line; instead, it only takes up to the space as needed within the element content. They can set width and height values.

```
<abbr title="Abbreviation Template" style = "border:1px solid blue;"> abbr element </abbr>  
<span style = "border:1px solid red;"> span element</span>  
<i style = "border:1px solid green;">i element</i>
```

HTML code

abbr element span element *i element*

Some of the inline-level elements in HTML are:

<a>	<i>	<small>
<abbr>		
<acronym>	<input>	
	<kbd>	<sub>
<bdo>	<label>	<sup>
<big>	<map>	<textarea>
 	<object>	<time>
<button>	<output>	<tt>
<cite>	<q>	<var>
<code>	<samp>	
<dfn>	<script>	
	<select>	