HTML

Introduction:

HTML and JavaScript files are text files. There is no additional formatting information in them. Other type of files, such as word files, pdf files, excel files contain additional formatting and are not suitable for programming.

Text Editors and IDEs:

To create a text file, you use a text editor. There are text editors that are designed to assist you in writing computer programs. They make common tasks like indenting your code easier. These editors include:

- SublimeText
- NotePad++
- UltraEdit
- Vi

You can use any editor that is installed on the lab computers.

In addition to text editors there are also Integrated Development Environments(IDEs), which help you develop software. You are free to use an IDE that is installed on the lab computers, which may include:

- Brackets.io
- Visual Studio

Programs such as Microsoft word adds additional information to the file and are unsuitable for programming.

HTML

HTML is the programming language used for creating webpage. Like all language, there are rules, vocabulary and punctuation associated with the language.

- The rules of the language are known as the syntax.
- The vocabulary of the language consists of keywords that is part of the language and words that you define.
- The punctuation consists of all the various symbols used by the language, in HTML these include things like angle brackets ,"< >", slashes, "/", etc…
- **Exact spelling and syntax is required**, otherwise the web browser will not understand what you are trying to do with your code and will not do what you want.
- There is no **close enough** coding.

At the beginning of all HTML files is the line:
<!DOCTYPE HTML>
This lines tells the web browser an HTML 5 website is to follow.

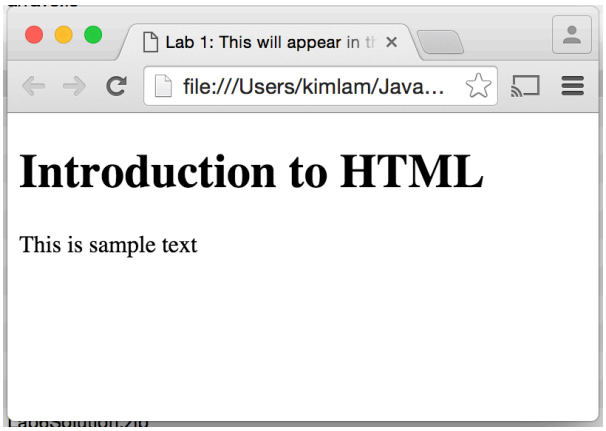
Next we have <html> </html>. This is known as an **element**, or a pair of html **tags**. The first tag,<html> is the opening tag, the </html> is the closing tag. All the remainder of our content will be within the <html> element. Placing additional tags inside a set of tags is known as **nesting.**

A simple HTML page will look as follows.
Source:

```
<!DOCTYPE html>
<html>
   <head>

       <title>Lab 1: This will appear
              in the title bar</title>
       <meta charset="UTF-8">
   </head>
   <body>
      <h1>Introduction to HTML</h1>
      <p>This is sample text </p>
   </body>
</html>
```

output:



The <html> tag can be omitted and will still validate as a proper HTML 5 document, but we do not recommend that you omit this tag. You can check if your HTML file is valid HTML 5 by using a validator, which can be found at the following link:

http://www.w3schools.com/html/html5_syntax.asp

Validating your code is a good idea because web browsers are very forgiving and will display bad HTML, this will cause subtle errors when you modify your page or

use JavaScript. Just because it looks right in the browser does not mean it is 100% correct, use the validator.

Note the pattern of indentation. Nested tags are indented to show the hierarchical structure of the page. Indenting helps with finding errors.

In HTML white space is all displayed as a single space, irrespective of the number of them. That is " This text has a lot of whitespace" and "This text has a lot of whitespace" will be displayed as "This text has a lot of whitespace" on the HTML page.

This allows us to breakup up long blocks of HTML into more readable pieces. This also means that you require special formatting characters to produce the formatting you want.

Elements

Elements are the basic building blocks of a HTML page. Some elements can contain other elements, creating a nested structure.

<head>

The <head> element is used to define a section of the HTML file that contains information used by the web browser, but not displayed on the main page. For our sample snippet above, we use it to define the title of the page and the character encoding of our file.

<meta charset="UTF-8">

`<meta charset="UTF-8">` specifies the file uses the utf-8 8-bit Unicode encoding. The Unicode encoding is an international standard that allows multiple languages to be used in the same file. For this course all our files will use utf-8 encoding, so we will always include the `<meta charset="UTF-8">` in our HTML files. There is no closing tag associated with this element. This element should be placed inside the <head> element.

<title>

The `<title>` element refers to the title of the document and is usually displayed on the title bar or tab for the page. This element should be placed inside the <head> element.

<body>

The body element contains the contents of the HTML page. The elements nested within the body element will be displayed on the webpage following HTML's formatting rules.

<h1>

The heading element <h1> is a special formatting element, that will display the text between the <h1></h1> tags in the heading style. It is possible to modify this style using CSS.

Additional Elements

The element is not a visual element. It is use to create logical sections within your webpage, by grouping elements within with element.

<article>

An <article> element specifies self-contained content, that can be distributed on it's own such as blog posts, forum posts or comment.

<section>

A <section> element defines sections in a document, such as chapters, headers, footers, or any other sections of the document.

<p>

The <p> tag defines a paragraph. That is a block of text with padding above and below the paragraph. Other formatting tags like <b> for bold or <i> to italic can be nested in the paragraph.

The
 element defines a line break. A line break is how you specify a piece of text or sentence starts on a new line.

The tags described above and the tags below are all the tags we are all the tags we will need for this course.

- <label>
- <input>
- <canvas>
- <script>

We will introduce the functionality of each tag, as they are needed in the course. If you encounter a tag that is unfamiliar to you, as there are many tags in HTML, you can look them up at the following sites:

- http://www.w3schools.com/
- https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5

Since this is not a HTML course, we will not introduce you to every HTML tag that you may encounter. It is important to know what each tag does.

Attributes

Tags can have attributes. Attributes are additional information related to the tag. Two important attributes for this course are "id" and "class". We will discuss the "id" attribute later in the course. The "class" tag is used by CSS for formatting purposes.

For example:

```
<div class="question">
   <p>Random Content</p>
</div>
```

The above snippet adds the attribute class with the value "question" telling the web browser that the content within the div should be formatted like a "question". The web browser will then see if there are formatting rules for "question" type content and apply that formatting. If no such rules exist it will use default formatting.

Further Reading for HTML

We will only use a minimal set of HTML tags in this course, because the focus of the course is not HTML programming but JavaScript programming. We do need to know some HTML because the purpose of JavaScript in a web context is to modify and interact with a HTML document.

For further reading on HTML you have can go to the following resources:

- http://www.w3schools.com/html/
- https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/Introduction
- https://www.codecademy.com/en/tracks/web
- http://www.lynda.com/HTML-tutorials/HTML-Essential-Training/170427-2.html

If you have difficulty understanding HTML, I recommend going to one of the above sites and trying the tutorials and you will be required to read and write basic HTML for your exams. The Lynda.com site contains video tutorial, if you prefer video to reading text. You can access Lynda.com with your Langara ID.
For information on how to logon, go to the link below.
http://langara.ca/information-technology/teaching-learning-tools/lynda.html