

Week 3-4

Keywords/Questions:

Objectives

Explain what
markup languages
are with examples.
Explain how
ML works
Describe the
ML boilerplate

Notes:

- A markup language is a language that annotates text so that one browser can manipulate the text.
- There are so many markup languages such as SGML, XML, XHTML etc.
- All these markup languages share a common history - like those that used to be put on manuscripts by editors specifying changes to the author's structure/layout to the publishers.
King ~ (bold), / (lower case), - (Italics)
O (delete bold, Italics or underline) etc.
- HTML is the foundation of all websites.
- You can't find webpages created using only CSS or javascript files but websites can be created using only HTML albeit they may not look really great.
- HTML is the standard markup for creating webpages.

Summary:

HTML = HyperText Markup Language

SGML = Standard Generalized Markup Language

XML = Extensible Markup Language

XHTML = Extensible HyperText Markup Language

DHTML = Dynamic HyperText Markup Language

HTML describes the structure of web pages using Markup.

~~These markup are referred to as HTML elements.~~

HTML elements are the building blocks of HTML Pages.

- HTML elements are represented by tags.
- HTML tags label pieces of content such as P, h1, table etc. (i.e. tags give a meaning).
- Browsers do not display the HTML tags but use them to render the content of the page.
- No matter the type of browser, they all have a single purpose which is to interpret HTML, CSS and JavaScript gives into a website that should be displayed.

Getting started with HTML.

→ You need to have a text editor like notepad, Sublime text, notepad++, atom, Visual Studio code.

• For iPhone users download Lrn or Swiftly.

• For android users, download Trebedib.

→ Create a folder for your projects on the desktop and in that folder, we are going to have our very first webpage.

→ Open your text editor and by convention, save it as index.html (inside your project folder on your desktop). This will be the homepage of your website (i.e. the first page users will see when they type your website's URL).

→ In order to create any HTML website, there is a boiler plate (structure) that must be associated with it.

HTML Boiler plate is similar to having a blueprint.

Keywords/Questions:

Form of HTML Tag.

Example:

Surround text with tag

`<h1> Hello world </h1>`

The text becomes a "heading".

How does a heading look like?

Tag closing tag
`<a> link `

The text becomes a hypertext.

How does a hypertext look?

Notes:

The first rule to writing HTML code is to surround text with tags.

• Most HTML elements require a pair of tags; an opening tag and a closing tag with content (text) inserted in between.

• Tags begin with angular brackets and ends with angular bracket and in the middle is the type of element you want to use.

• When using closing tags, make sure to put a forward slash before the name of the element.

How do we know which tag does what? Through DOCUMENTATION.

• It is very important to your journey as a web developer. One of the key skills to becoming a good programmer.

Summary:

Is getting good at finding out how you can help yourself. This can simply be done by googling.

• Documentation for HTML

- Go to google

(1) Type the tag you want to find out about and mdn (Mozilla Developer Network). Eg headings mdn

(2) w3schools

(3) DevDoc .io

HTML boilerplate

`<!DOCTYPE html>`] Defines the HTML version for the document. This is used for HTML 5 which is the latest version.

its
& more
but
everything
is HTML
code.

`<html>`

`<head>`

`<meta charset = "utf-8">`

`<title> </title>`

`</head>`

`<body>`

`...`

`</body>`

`</html>`

Contains everything you want the user to see on the web page (ie the visible portion of the webpage is written here).

This is where you specify the settings of the document. Contains meta data for the webpage. They are not visible in the browser.

`<!DOCTYPE html>`

This is where we declare the document type and tells the browser when the file is opened, what version of html was used. This syntax shows that we are working with HTML 5 version. Previous versions were more complicated.

`<html>`

Tells the browser that everything between `<html>` ... `</html>` is html code. And what does the code consist of? It consists of a head and a body.

The head is that part of the html file that holds information about the webpage. It tells the browser how it should handle the page. For example, we can have the `<title>` ... `</title>` which tells the browser the name of the particular document/page.

Activity

- Give your webpage (index.html) a title. Go back to the html boilerplate on your text editor and simply type a title between the title tags.
- Next, preview your webpage on your browser by clicking the browser icon. When you do this

Keywords/Questions:

times when we use outdated browsers to open a web page or receive an email from a user speaking another language, you find the text jumbled up. This is because the wrong charset is being used to interpret the page. This is called Mismatchable.

Notes:

- Also inside the head section is the meta element.
- There are quite a number of meta elements but the particular one on the bootstrap is called charset which is set to utf-8.
- So what does this do?
 - It gives extra information (meta data) to the html document
 - In this case, we are telling the browser that all the text within the body tags are encoded in utf-8 encoding system.
 - There are quite a different number of encoding for different languages because different languages use different symbols. So it is important to use the right encoding system.
 - utf-8 is the standard encoding to be used when working with HTML files.

Another reason for this is because it includes all the international symbols and in fact every single symbol is included in the unicode charset.

- unicode-table.com shows all the unicode characters and the different languages that use each including emoji.
- Hence, utf-8 gives your webpage maximum chance of being rendered correctly.
- Other meta elements are description, keywords, authors

- Meta tags tell the browser how it should render the webpage and also gives information to search engines about the content of the webpage.
- search engines crawl detail of webpages and look for certain meta tags in order to know what your website is about and also how to display it in their search index.

Head tag can also contain style tag for CSS & script tag for JS

How to structure Text in HTML.

The body section is used to give a webpage content.

• Headings

Heading tags are used to format heading elements. we use `<h1>` to `<h6>` to create different levels of headings where `<h1>` produces the largest heading and `<h6>` the smallest. The heading tags are used according to the size and importance of headings.

Note: h stands for heading.

Activity: Open your index.html file and make this text a level 1 header

(Your name)'s Website

→ Replace with your name.

Paragraph: For text that is not a heading, we use the `<p>` tag. `<p>` formats text into a paragraph so every get a new line and the text inside gets grouped together into the same paragraph.

Note: Text surrounded by heading and paragraph tags begin on a new line.

Topic/Title:



Emphasis

Keywords/Questions:

Notes:

`` element marks text that has stress emphasis.

• we also have the `<i>` element to italicize text as well.

- However, there is a little bit of subtle difference:

• The visual result is by default the same - both tags render its content in italics.

• But the semantic meaning is different.

- The `` ~~tag~~ element tells the browser that the text in between it should be stressed (emphasized) while the

- `<i>` element only styles the text and does not confer any of the emphasis.

• For this reason, it is good practice to use `` instead of `<i>` because it conveys more information and isn't just about style.

Summary:

• Another pair is `` vs ``.

- The `` tag makes any text in between it to be bold.

- The `` tag confers meaning such as - this text has strong importance and therefore should be displayed in bold.

• While `` is used to change the meaning of a sentence ("I love carrots" vs "I love Carrots"), strong is used to give portions of a sentence added importance (eg Warning! This is very dangerous)

- `
` draws a horizontal rule across the browser
- It does not have a closing tag. Another example is `
`
- They are called self-closing tags.

Question? How do we find out if a tag requires a closing tag or is self closing? Documentation

Adding spaces between text lines

- In a word processor or google docs, you achieve this by hitting enter or return several times.
- Unfortunately, in HTML it doesn't quite work like that as it is a little bit more complicated.
- In order to create that spacing, we actually have to use an HTML element called a 'line break' written as `
`
- One feature of this tag is that it does not require a closing tag.

Comments

- Comments are portions of text which are marked out to be ignored by the browser.
- They are useful for explaining your codes or keeping notes for other programmers who might be looking at your code at a later date.
- In HTML, we create comment by
`<!-- Everything here is a comment -->`

HTML LINKS

Keywords/Questions:

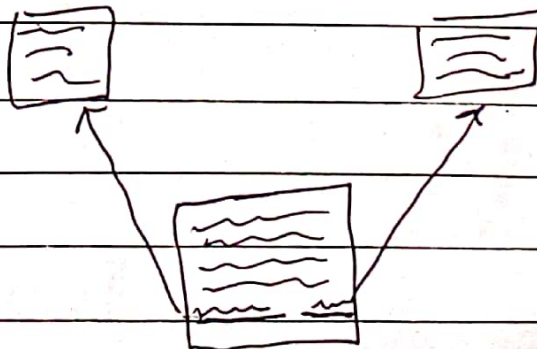
Objectives:

- Explain the concept of links in HTML
- Differentiate between absolute and relative referencing
- Explain the concept of attributes
- Create links to external pages/websites
- Create links to pages on your local computer
- Create links to sections of a page.

Notes:

- If we think back to what HTML stands for which is Hypertext Markup Language.
- We have talked about how to markup text using basic HTML tags which corresponds to the Markup language part.
- However, we haven't seen how to create hypertext yet.
- In this lesson, we are going to talk about the hypertext part of HTML which is all about creating links within and to other documents.
- Hypertext is basically a bunch of documents that can be linked together such that when you click on one of the links on a document, it takes you to a different document.
- This is illustrated in the figure below

Summary:



- You can easily create a link with the `<a>` tag
- "a" stands for anchor.

- The text in `<a>` tags is displayed in the browser as a link text as shown below.

`<a> cse 207 `

[This will be displayed in the browser, underlined and in blue colour.]

- However, every link must have a destination.
- Thus, in order to make any link work, you will need to specify a destination URL.
- This requires you to add the "href" attribute. Hence this is a good point to talk about attributes.
 - Attributes provide extra settings for HTML tags.
 - They are usually in a ~~value/pair~~ name/value pair with the value written in double quotes as shown below
 - attribute name = "value".
 - Attributes can only be specified in the opening tag.
- Now back to our `<a>` tags, the main attribute of the `<a>` tag is "href" which stands for hypertext reference. The value of the "href" attribute is any valid URL (absolute or relative) which signifies where the link will take users to when they click on it.
- Hence, we can rewrite our `<a>` tags to look like this.

` cse 207 `

HTML element called anchor

HTML attribute

HTML value which indicates the link's destination.

link text

- The "link text" in between the starting `<a>` tag and the closing `` tag will be underlined and highlighted in blue.

Topic/Title:



Keywords/Questions:

Notes:

• This informs the user that when they click on the text, it will take them to the link destination.

• By convention, the highlight is going to be blue, if it is a link that has not been clicked on before and

• it is going to be purple if we have clicked on it in the past.

• Recollect that the value of the "href" attribute can be an absolute or relative URL. So what are these?

• An absolute URL includes the full path (URL) of the webpage. Usually, it is used for pages that reside on a different server, ^{from ours,} somewhere on the internet. For example google, facebook etc (another website).

• Creating a link to these pages (i.e. google, facebook etc) from your web page will require the full URL like this

Summary:

`Go to google `

• Relative URLs on the other hand, does not include a full specification. It is used when the page you are trying to link to resides on your local machine.

• For example if you create two web pages on your computer saved as "index.html" and "aboutus.html".

• In trying to link these pages to one another, you simply type the file name.

Note

• Another attribute of the `<a>` is `download`.
• This instructs the browser to download a file instead of going to it.

• Eg
`<a download href="https://web-stanford.edu/group/cep/c21/html/deest-sheet.pdf">Download `

• The `target` attribute is also used to specify if you want the link's destination to open on the same tab or a blank tab - we can set it this way
`... `

- That is, assuming you are currently working on "index.html" and you want to create a link to "aboutus.html" webpage, you simply type

`About us `

- It is important however to note that both webpages must be saved in the same location on your computer to make the link work properly.
- Another type of link we can create are links to sections of a page just like when you use the table of content at the beginning of a page to quickly navigate to a particular topic in the book.
- In order to make this work, you will need to
 - (i) Set up an anchor that will instruct the "link text" on the position of the web page you want users to be directed to.
 - (ii) Set up links to the anchor creating in step 1 above.
- The following figure illustrates a webpage which links sections of a page like in the wikipedia website

To create the anchor names, we use `<a>` tag but with "id" attribute and value same as the href value without the # tag.

Example to create named anchor for section 3

```
<a id="section3">
```

TOC

- Section 1
- Section 2
- Section 3
- Section 4

Please click on any of the following links to go to the section

Section 1

Section 2

Section 3 `<a>`

Section 4

`Section 1`

Note:

The # tag instructs the browser not to divert the user to a new page when the link is clicked. When it is followed by an "anchor name", which in this case is the "section1", the browser will only search for the "anchor name" on the existing page and then retrieve the content defined by the anchor position.