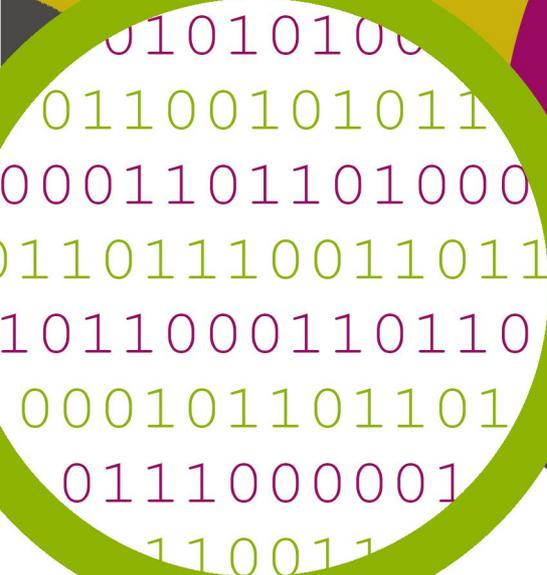# technocamps

HTML
Session Plan

Introduction - 10 minutes

HTML Introduction - 10 Minutes

My First HTML Program - 10 minutes

First HTML Program Breakdown - 10 minutes

HTML Tags - 2 hour 20 minutes

HTML Document Activity - 1 hours

CSS - 30 minutes

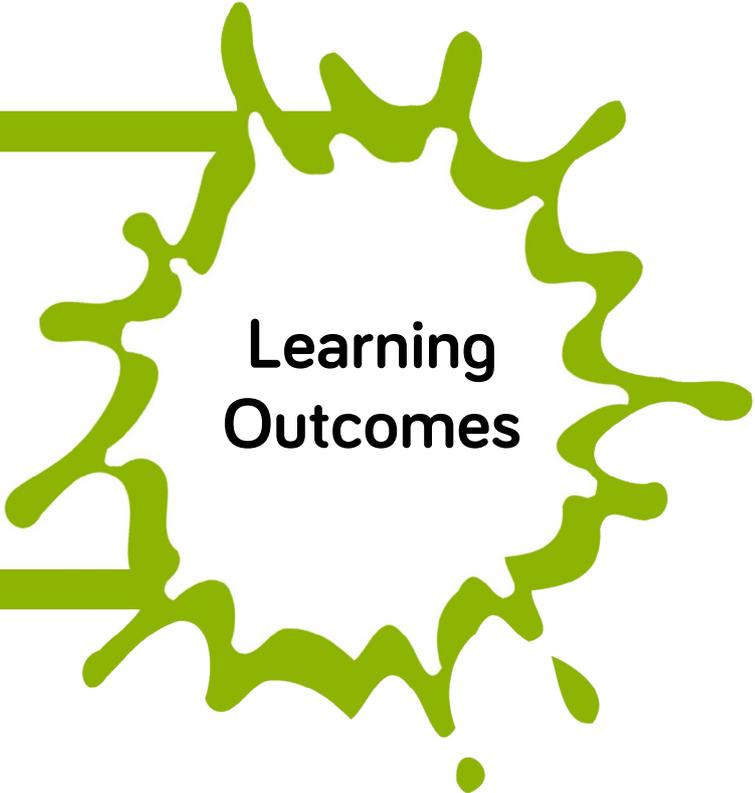Conclusion - 5 minutes

Post-Day Questionnaires - 5 minutes

Note: These are estimated times, these will vary between classes, schools etc. so times will need to be adjusted accordingly.

Total: 4 hours 40 minutes

Preparation

1. Ensure all computers have a text editor already installed and ready to use.
2. Print out HTML workbooks, one for each student attending workshop.
3. Each student will need a pen or pencil for writing answers and making notes and flowcharts.

Learning Outcomes

1. To learn what HTML is and what it is used for.
2. To understand that tags have different effects on text and be able to identify which tags correspond to which effects.
3. To use these tags to mark up a document to specific requirements.

Attendee Prerequisites

1. No previous knowledge of HTML is required.

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Session Plan Key

In this session plan we use the following colours to differentiate the types of activities:

- **Yellow - Explain.** Teachers should explain the slide/example to the class.
- **Green - Discuss.** Teachers should start an open discussion with the class to get them to feedback some answers/ideas.
- **Purple - Activity.** Students are expected to complete an activity whether it be in their workbooks or on the computer, followed by a discussion of their solutions.
- **Green - Introduction/Conclusion.** The introduction/conclusion is also colour coded green. Teachers should hand out materials in the introduction and conclude the day and collect materials at the end.

Introduction

Begin with introductions, and a brief explanation of the Technocamps programme, before handing out pre-day questionnaires to be filled out by the students and teacher.

Activity: What is HTML?

Students to write what they think HTML is and it's uses in their workbooks. Ask students for answers to see what they think:
- What is HTML?
- What does it stand for?
- What is it used for?
- What are HTML tags? Does anyone know?

Explain: HTML

- HTML is thought of as a programming language but it is not actually a true programming language as it does not process or manipulate data. It only defines layout.
- HTML is a markup language designed for processing and presenting text.
- Explain that almost all websites uses HTML as the foundation of the website.
- HTML uses tags which are used to build the HTML page.

Give helpful information on good free software to use when programming HTML. e.g. Notepad++ for Windows and textWrangler for MacOS.

Explain: What Does HTML Look Like?

Run the MyFirstHTML program– showing them what a basic HTML file looks like and how it is executed.

Explain the tags used in the MyFirstHTML program - starting with **<!DOCTYPE html>** HTML tag:

<!DOCTYPE html> must be the very first thing in your HTML document, before the **<html>** tag. This tag is not an HTML tag. The **<!DOCTYPE html>** is an instruction to the web browser about which version of HTML the page is written, in this case it is the latest HTML version 5.

The **<html>** tag tells the browser that this is an HTML document. The **<html>** tag is the container for all other HTML elements (or tags) except for the **<!DOCTYPE>** tag.

Activity: Fill the Blanks

Students should fill the blanks on the HTML description in their workbooks.

Activity: DOCTYPE

Ask the students to open a HTML editor and type in <!DOCTYPE html>, then the <html> and </html> as shown on the slides.

Explain: HTML Tags <head>, <title>, <body>

The **<head>** tag is a container for all the head elements. The <head> element can include a title for the document, scripts, styles, meta information, and more.

The **<title>** tag is required in all HTML documents. The <title> tag:
defines a title in the browser toolbar.
provides a title for the page when it is added to favourites.
displays a title for the page in search-engine results.

The **<body>** tag defines the document's body. The <body> tag contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.

Activity: <head>, <title>, <body>

Students should copy and execute the code from the slide.

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Activity: Blog

As students learn new tags throughout the day they can add them to their blog page.

Explain: Pairwise Tags

Tags comes in pairs, a start tag and an end tag. This is necessary because it defines the beginning and the end of the effects of a tag. Anything in the middle of the tags will be within the effect of that tag. Notice, the "/" to differentiate from the start tag and end tag.

```
<html> ... </html>
<head> ... </head>
<title> ... </title>
<body> ... </body>

<h1> ... </h1>
<p> ... </p>
<i> ... </i>
<b> ... </b>
```

Important: There are exceptions to this rule such as the <!DOCTYPE html> tag and later on we will see the <hr> and <img> tag.

Note: On the slides there are images of a pair of pears (shown below) if the tags are required to be used in a pair, the left image below will be located on the top left of the slide. If not then the right image will be displayed.
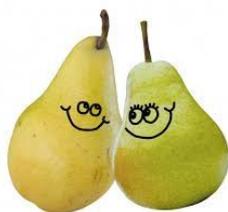
Explain: Headings <h1> - <h6>

The **<h1>** to **<h6>** tags are used to define HTML headings.
h1 defines the most important heading. h6 defines the least important heading.
Note: use h1 to h6 tags only for headings. Do not use them just to make text bold or big. Use other tags for that.

Activity: Headings <h1> - <h6>

Using the tags <h1> to <h6> students are to create a new HTML code to produce the output on the slide.

Note: use the HTML program examples provided or create the files using the code from the slides and run the program to show the students.

Explain: Paragraphs <p>

The **<p>** tag defines a paragraph in HTML. Browsers automatically adds line spacing before and after each <p> tags.

Activity: Paragraphs <p>

Students are to create and execute HTML code which generates the output on the slide.

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Explain: Comments <!- - text - ->

Commenting in HTML is done by surrounding the desired comments with "<!--" and "-->".

As you can see the comments are not seen in the output page or when the .html file is opened through a browser. The comments are only seen by those who are editing the HTML file.

Comments are used to notify others who will be using the HTML file of any important information regarding the HTML code.

Discuss: First HTML Program

Recall the First HTML program: highlight the fact that the comments are not visible in the output page. However they are visible in the code.

Talk about the main use of comments and how they are to inform others who will use HTML file of any additional information.

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Explain: Italic <i>

The **<i>** tag defines a part of text in an alternate tone. The content of the <i> tag is displayed in italic.

Explain: Bold <b>

The **<b>** tag specifies **bold** text.

Activity: Italic <i>

Using the tags <i> and <p> students are to create and execute HTML code to produce the output shown on the slide.

Activity: Bold <b>

Using the tags <b> and <p> students are to create and execute HTML code to produce the output shown in the slide.

Explain: Centre-Align <center>

The **<center>** tag is used to center-align text. Similar to that alignment function used in documents such as Microsoft word where the text is moved to the middle of the page or text box.
Important note: the word 'center' is spelt the American way, not the British way which is spelt 'centre'.

Activity: Centre-Align <center>

Using the tag <center> students are to create and execute HTML code to produce the output shown on the slide.

Explain: Anchor <a>

In HTML, links are defined with the <a> anchor tag. The anchor is often associated with an attribute. The href attribute is used to specify the destination of the link. The name attribute specifies the name of the link. When clicked the webpage will go to the specified location.

Important note: < a href= "#C10"> combined with **<a name= "C10 ">** can be used to create a shortcut to text in the web page e.g when the link 'Goto Chapter 10' is clicked the web page scrolls down as it jumps to Chapter 10. However because a low number of chapters are used, the 'jump' seems like a single scroll down the page.
<a href= "https://www...."> on its own is used to open a website via URL.

Activity: Anchor

Using the tag <a>, students are to copy and execute the HTML code. Afterwards, they are to click on the links "Goto Chapter 10" and "Link to Technocamps". Ask the students to explain the difference between the two links.

Explain: Horizontal Rule <hr>

The **<hr>** tag defines a thematic break in an HTML page (e.g. a shift of topic). The <hr> tag is used to separate content (or define a change) in an HTML page.
Important note: <hr> does not need a </hr>. It is just called on its own i.e. it does not have a pair as most tags do.

Activity: Horizontal Rule <hr>

Students are to add <hr> tags between their 'chapters' using their previous code from the anchor activity.

Activity: Tags and Uses

Students are to write a small sentence to explain what each of the tags do and when they would use them.

Activity: Tag Levels

Students are group the tags according to their hierarchical order.

Solution: **Tier 0** = <!Doctype html>, <html>. **Tier 1** = <head>, <body>. **Tier 2** = <title>, <p>, <h1>, <center>, <a>, <hr>, <h2 – h6>. **Tier 3** = <b>, <i>. Some in Tier 2 and Tier 3 are interchangeable depending on how they are used.

Discuss: Tier Level Mystery

Discuss with the students about where they think the <!— —> comment tag would go in the hierarchy. Talk about how the difference between the other tags and the comment tag is that the comment tag can be placed any where in the code.

Explain: Blockquote <blockquote>

The **<blockquote>** tag specifies a section that is quoted from another source. Browsers usually indent <blockquote> elements.

Discuss: Quoting Text

Discuss the importance of quoting text, for example referencing material.

Activity: Quoting

Students copy and execute the program example and quote their favourite famous person.

Explain: Images <img>

The **<img>** tag defines a image in an HTML page. The <img> tag has two **major** required attributes: src and alt; but can also have two minor attributes; width and height

The src attribute or the source of the image tag in this example is the filename of the image: "Technocamps Logo.jpg". The alt attribute is the alternative text that will display when the image is unavailable or takes too long to appear.

Images are not technically inserted into an HTML page, images are linked to HTML pages. The <img> tag creates a holding space for the referenced image.

Note: Students can just copy and execute the program example or use their own image choice.

Activity: Images

Students are to find an image of someone (on the slides it says Alan Turing - the Father of Computer Science) on the internet and save the image in the same location as your HTML files.

Explain: Images <img> as a Link

To link an image to another document, simply nest the <img> tag inside an anchor, <a>, tag.

As you can see in the program example the <img src= …..> line, line 8, is contained inside the anchor <a> tags. This allows the image to have the "href" property and therefore when the image is clicked the website link activates.

Activity: Images as a Link

Students are then to use that same HTML program but this time change it so that when the image is clicked it will take them to a Wikipedia website of that person.

Explain: Ordered List

An ordered list starts with the **<ol>** tag. Each list item starts with the **<li>** tag. The list items will be marked with **numbers by default.**

Explain: Unordered List

An unordered list starts with the **<ul>** tag. Each list item starts with the **<li>** tag. The list items will be marked with **bullets** (small black circles) by default.

Explain: List Item

The <li> tag defines a list item. The <li> tag is used in ordered lists(<ol>), unordered lists (<ul>), and in menu lists (<menu>).

Activity: Lists

Students are to create a new HTML file, then create two different lists. One list should be an ordered list, the other an unordered list. The students should work out from the below descriptions which list should be ordered and which should be unordered:

The first list should be a priority to do list of things that they have to do today.

The second list is a list of games they have at home or on their phone i.e. console games, mobile app games etc.

Explain: Ordered List Type

Ordered List: **<ol type="…">**, changes the numbering of the list depending on the type:

- Using type=**"1"** - The list will be numbered with numbers (default).
- Using type=**"A"** - The list will be numbered with uppercase letters.
- Using type=**"a"** - The list will be numbered with lowercase letters.
- Using type=**"I"** - The list will be numbered with uppercase roman numbers.
- Using type=**"i"** - The list will be numbered with lowercase roman numbers.

Activity: Ordered List Type

Students are to create three different ordered lists each with a different ordered list type:

The first list should be a list of their favourite drinks, their most favourite being at the top of the list.

The second list is a list of things which they would describe themselves e.g. I am quite adventurous I love to going to new places outside.

The third list should be a list of things that they dislike the most e.g. I don't like being caught in the rain.

Explain: Tables <table>, <tr>, <th>, <td>

An HTML table is defined with the **<table>** tag.
- Each table row is defined with the **<tr>** tag.
- A table header is defined with the **<th>** tag.
- By default, table headings are bold and centred.
- A table data/cell is defined with the **<td>** tag.

Activity: Tables

Students are to create a table which contains three columns, each column contains three rows:
- The first column is about their favourite Music/Songs
- The second column is the Artist/Band who made those songs.
- The third column is the number of times (estimate, unless they actually know the exact number of times) they've listened to that song.

Activity: Match Up

Using the HTML tags, students are to match up each tag with its corresponding output. Note: some tags may have been used twice.

Explain: Styling HTML Tables

Add the following code on the right inside your <head> tag and have a look at what happens to your table(s) in your HTML file.

After adding this bit of code to the students html file, the tables will be formatted with colours as shown in the following pages. This is an example of css/styling html tags to make them look more professional.

```
<style>
    table
    {
        font-family: arial, sans-serif;
        border-collapse: collapse;
        width: 100%;
    }

    td, th
    {
        border: 1px solid #FFFFFF;
        text-align: left;
        padding: 8px;
    }

    tr:nth-child(even)
    {
        background-color: #7FFF00;
    }
</style>
```

Activity: HTML Document

Students are to use all the tags learned up until now to mark up the document below to specific requirements. Show them the final HTML document running.

Explain: CSS

Explain how HTML can be styled using CSS. CSS stands for Cascading Style Sheets. CSS describes how HTML elements are to be displayed on screen, paper or in other media. CSS saves a lot of work. It can control the layout of multiple web pages all at once.

Activity: Styling Tables

Students are to open up their Table Activity code and add the style code from the previous page in the <head> tag to see what happens.

Next, students are to change the font used for their table and the size of the padding.

Using the internet students are to research different HTML #?????? colour code e.g. #FFFFFF is the code for the colour black. Students are to change the colour of their table rows.

Students need only to add codes inside <head> … </head> tags to their previous Table HTML file and change the background-colour using <styles> covered on the previous page. It is not necessary to write the rest of the code.

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Activity: Background Colour

Students should add background colour to the HTML.

Activity: Changing Font

Students should change their font in their HTML.

Activity: Highlighting Text

Students should highlight text in their HTML.

Activity: Create Your Own

Students are asked to create their own revision webpage on a subject of their choosing (preferably one which they are currently studying).

They are to use each of the tags learned at least once i.e. in their webpage there should be at least one table, one image, heading, sub-headings etc.

Students are to use the workbooks provided to first brainstorm ideas such as what subject, what topics within that subject, what sub-topics within those topics, what information regarding those sub-topics they need to include and how they would like it to look i.e. where will the headings, sub-headings, tables, images etc. be place.
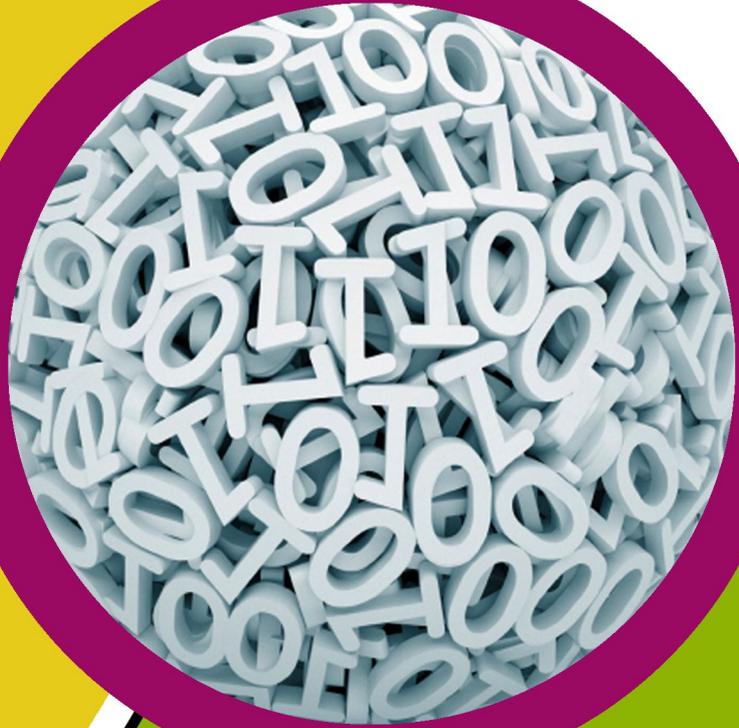
Students are to research all the information they need using their books or the internet. An example could be: Subject: Mathematics

Topics:
- Numbers
  - Prime Factors
  - Index notation
  - Venn diagrams
  - Ratio
- Algebra
  - Equation of lines
  - Equations of curves
  - Basic Algebra
- Geometry and Measure
  - Polygons
- Statistics
  - Probability
  - Histograms

etc.
(Topics taken from BBC Bitesize WJEC).

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