**Lab 1 - HTML**

The goal of this lab is to help you familiarize with HTML tags, their properties and usages.

Completing the steps will require searching the answers on the Internet, which is the bread and butter of a software developer’s life.

TIP: try to learn some VS Code keyboard shortcuts as you progress with this exercise - shortcuts can greatly simplify a web developer’s life.

**I. Template and Live Server**

The template in the **src** folder contains a skeleton for your website that uses semantic HTML.

There are two files: **index.html** and **form.html** because we'll be creating two separate pages and then linking them together using <a> tags.

Assets, like images, audio and video that you'll be using are in the **assets** directory.

**Steps:**

1. Open the **src** folder in VS code and take a look at the template HTML files
2. With **index.html** opened, start the **Live Server** extension by clicking the Go Live button in the bottom right-hand corner of VS Code:



1. This should open <http://127.0.0.1:5500/index.html> in your browser.
   1. Change the above URL to load the **form.html** page, and then click the Home link to go back to index.

**II. HTML elements - metadata**

In this section you'll be editing the <head> section of the **index.html** file.

**Steps:**

1. Add a title using the HTML title tag.
2. Add metatags using HTML <meta> tags for the following 5 items:

* charset
* description
* keywords
* author
* viewport

**III. HTML elements - div, span, p, pre, ul, li, ol, article**

In this section you'll be editing the <body> section of the **index.html** file.

**Steps:**

1. Add 3 **div**s next to each other at the beginning of the body section and put some distinctive content into each of the divs, e.g.

<div>HTML</div> <div>CSS</div> <div>JavaScript</div>

1. Below the divs, add 3 **span**s next to each other and put some distinctive content into each span. Observe the difference between block and inline elements in the browser.

*TIP: In VSCode, you can highlight your code and then press Ctrl+K+F to auto-format the code. VSCode won't auto-format if code is invalid with tags that are improperly closed or nested.*

1. Below, add **p** and **pre** tags into your HTML body using the below contents:

<p>

p represents paragraph without preserving spacing

</p>

<pre>

Text in a pre element

is displayed in a fixed-width

font, and it preserves

both spaces and

line breaks

</pre>

Observe how the <pre> tag preserves the structure of the text inside, while the <p> tag collapses spaces and newlines.

1. Add an unordered list of 4 items to your page using **ul** and **li** tags.
2. Add an ordered list of 3 items to your page using **ol** and **li** tags.
3. Add a nested list of 2 items inside the last item of either the unordered or ordered list above.
4. Wrap all the elements you've created so far with an **article** tag.

<article>

<!-- Content added in previous points -->  
</article>

1. Add a page headline - add an **h1** tag *above* your article with any content, e.g. "My HTML learning journey"
2. Add an article headline - add an **h2** tag *within* the article tag with any content, e.g. "Learning elements - div, span, p, pre, ul, li, ol, article". Consider the difference between the page headline and article headline.

**IV. HTML elements - Tables - table, thead, tbody, tr, td, th**

In this section you'll be editing the <body> section of the **index.html** file.

**Steps:**

1. Start by adding another **article** below the first one, with a unique **h2** tag inside this newly created article.
2. Search the web for ‘HTML table’ and copy code you can find, e.g. from the Mozilla website:

<table>

<thead>

<tr>

<th>First header</th>

<th>Second header</th>

</tr>

</thead>

<tbody>

<tr>

<td>First cell - first row</td>

<td>Second cell - first row</td>

</tr>

</tbody>

</table>

1. Create another row by copying a **tr** tag, together with its children, below the first row.
2. By default, tables don't have any styles. Add basic styling by copying the code below to the **head** section of the page:

<style>

table, th, td {

border: 1px solid black;

}

</style>

1. Add a third cell inside one of the rows. Observe how the table lost its shape.
2. Each table row needs to account for the same amount of columns, and violating this rule will cause your table to lose shape. Fix the table by adding the missing **td** tag on the other row/s.
3. Now the header is missing for the third column. Fix this by adding a **colspan** attribute to the first **th** tag to make it span two columns.
4. Add a *third* row with 2 columns to the table and add a rowspan="2" attribute to one of the td tags on the *second* row, then observe what happens.

**V. HTML elements - img, video, audio**

In this section you'll be editing the <body> section of the **index.html** file.

**Steps:**

1. Start by adding another **article** below the second one, with a unique **h2** tag inside this newly created article.
2. Add an **image** to your website using the code below. Add a value for the **alt** attribute, and experiment with using one, then both of the **width** and **height** attributes to change the size of the image.

<img src="https://picsum.photos/400/400" alt="" />

1. Add a second image using the **html\_lab\_image.jpg** file from the assets folder. Give it an alt attribute and make it appear the same size as the first image.
2. Add a **video** using the example code below:

<video controls width="250">

<source src="/assets/flower.webm" type="video/webm">

Sorry, your browser doesn't support embedded videos.

</video>

1. Add an **audio** element using the example code below, then add a caption to it using figure and figcaption:

<audio controls src="/assets/t-rex-roar.mp3">

Your browser does not support the <code>audio</code> element.

</audio>

1. Try removing the **controls** attribute and adding **autoplay** attribute to both audio and video tags. Observe the changes.

**VI. HTML elements - Forms - form, input, label, select, option, button**

In this section you'll be editing the **form.html** file.

**Steps:**

1. Add a **form** using a <form> tag like this:

<form method="POST" action="http://127.0.0.1:5500/form.html">

</form>

1. Inside the form, add 2 **text inputs** - one for inputting first name and the second one for inputting last name.

* Remember to add a **label** for each input.
* Wrap each input, together with its label, in a **div** to stack the inputs one below another.

1. Add 3 **radio buttons** using <input type="radio" ...>, allowing the user to select their favourite coding language.

* Remember to **label** the inputs and add **name** and **value** attributes.
* Wrap the radio buttons in a **div** to separate them from the other form fields.

1. Add 3 **checkboxes** using <input type="checkbox" ...>, allowing the user to select the types of vehicle they own.

* Remember to **label** the inputs and add **name** and **value** attributes.
* Wrap the checkboxes in a **div** to separate them from the other form fields.

1. Add a **dropdown** element to your form using <select> and <option> tags, allowing the user to choose the brand of car they own.

* Remember to **label** the dropdown and add a **value** attribute for each **option**.

1. Add a **submit** button at the end of the form:

<button type="submit">Submit form</button>

**VII. Adding a link from Home to Form page**

In this section you'll extend both pages so users can navigate between Home and Form pages by clicking a link in the navigation bar.

**Steps:**

1. Add another <a> element, linking to the form page, inside the <nav> tag in both **index.html** and **form.html**.
2. Test your links by clicking them to navigate to both pages.

**VIII. Inspecting the HTML**

In this section you'll inspect the HTML that you've written on the page.

1. Use inspection tool – right click anywhere on the page and click ‘Inspect’
2. Select various elements on your website by clicking on them using the Elements tab of the Inspection tool. Observe how they are highlighted as you hover and click them.
3. Take a look at the CSS in the "Styles" subtab (under or right of the "Elements" tab) and try editing the CSS styles. For example you may try adding some of the following values:

margin: 20px; color: blue; font-size: 24px;

| Take a look at the screenshot and use element.style {} to add new styles to selected HTML elements. |  |
| --- | --- |