2_HTML_1

Agenda

- heading , paragraphs, images,
- list -> ordered and unordered
- links and attributes
- tables

Heading, paragraphs , images, links

Headings

HTML headings are used to define headings and subheadings on a webpage. They range from `<h1>` to `<h6>`, with `<h1>` being the highest level and `<h6>` the lowest.

```html
<!-- Page title -->
<h1>I am heading</h1>
<!-- Section level heading -->
<h2>I am heading</h2>
<!-- Card level heading -->
<h3>I am heading</h3>
<h4>I am heading</h4>
<h5>I am heading</h5>
<h6>I am heading</h6>
```

- `<h1>`: Used for the main title of the page.
- `<h2>`: Used for major section headings.
- `<h3>` to `<h6>`: Used for subsections and smaller headings within sections.

Paragraphs

Paragraphs are used to group blocks of text together.

```html
<p>Paragraph :dshjbfjhdsbfjhdbfhj</p>
<p>Paragraph :dshjbfjhdsbfjhdbfhj</p>
<p>Paragraph :dshjbfjhdsbfjhdbfhj</p>
<p>Lorem ipsum dolor sit amet consectetur, adipisicing elit. In eos
```

```
delectus molestiae corporis vitae dolore. Eum deleniti labore nostrum?
Tenetur quos mollitia natus magni corporis similique exercitationem?
Molestias, iste? Quidem?</p>
```

- `<p>`: Defines a paragraph. It will create a new block of text everytime

Buttons

Buttons are interactive elements that users can click to perform actions.

```
<button>I am a button</button>
<button>I am a button2</button>
<button>I am a button3</button>
```

- `<button>`: Defines a clickable button. It can contain text and other inline elements.

Anchor Tags (Links)

Anchor tags are used to create hyperlinks, which are clickable links that navigate to other pages or resources.

```
<a href="https://www.google.com/">Go to google</a>
<!-- Open the link in a new tab -->
<a href="https://picsum.photos" target="_blank">Open picsum in new page</a>
<br>
<!-- Download link -->
<a href="./image.jpg" download></a>
```

- `<a>`: Defines a hyperlink.
  - `href`: Specifies the URL of the page the link goes to. by default it opens in the current tab
  - `target="_blank"`: Opens the link in a new tab.

HTML Anchor Tag with Download Attribute

The `<a>` tag in HTML, commonly known as the anchor tag, is used to create hyperlinks. One of its useful attributes is `download`, which instructs the browser to

download the resource linked in the `href` attribute instead of navigating to it.

Syntax

```
<a href="path/to/file" download>Link Text</a>
```

Example

```
<a href="./image.jpg" download>Download Image</a>
```

Attributes Breakdown

- `href`: This attribute specifies the URL of the file you want to link to. It can be a path to a file on the web or a local file relative to the HTML file.
- `download`: When present, this attribute tells the browser to download the file instead of opening it. The value of the `download` attribute, if provided, will be the new file name of the downloaded file. If no value is given, the original file name is used.

```
<a href="./image.jpg" download="MyImage.jpg">Download Image</a>
```

In this case, clicking the link will download the file as `MyImage.jpg`.

Use Cases

1. **Downloading Files**:
   - **Images**: You can link to image files and allow users to download them.

     ```
     <a href="./image.jpg" download>Download Image</a>
     ```

   - **Documents**: Useful for linking to PDFs, Word documents, spreadsheets, etc.

     ```
     <a href="./document.pdf" download>Download Document</a>
     ```

2. **Offering Software**:
   - Providing software downloads, such as applications or ZIP files.

```
<a href="./software.zip" download>Download Software</a>
```

3. **Media Files**:

- Linking to audio or video files for download.

```
<a href="./video.mp4" download>Download Video</a>
```

Images

Images are embedded in webpages using the `<img>` tag.

```
<img src="https://picsum.photos/200/300" alt="random image"
height="200px">
<br>
<img src="./car1.png" alt="car image" height="200px">
<img src="./cycle.png" alt="cycle image" height="100px">
<br>
<img src="./image.jpg" alt="flower image" height="300px">
```

- `<img>`: Embeds an image into the webpage.
  - `src`: Specifies the path to the image file. This can be a URL linking to an image on the web or a relative path to a local image file.
  - `alt`: Provides alternative text for the image if it cannot be displayed.It is also useful in making the images more accessible
  - `height` and `width`: Set the dimensions of the image.

Image Types and Sources

- **Image Formats**:
  - **JPG**: Commonly used for images with visible backgrounds.
  - **PNG**: Often used for images with transparent backgrounds.
- **Image Sources**:
  - **Local Images**: Use a relative path to access images stored in the same directory or a subdirectory (e.g., `./car1.png`).

- **Web Images**: Use a URL to access images hosted on the internet (e.g., `https://picsum.photos/200/300`).

Line Breaks

The `<br>` tag is used to insert a line break, which moves the following content to a new line.

- `<br>`: Produces a line break in the text. It is an empty tag, meaning it does not have a closing tag. It is commonly used to improve readability or format content.

HTML lists:

In HTML, lists are used to group a set of related items. There are two main types of lists: unordered lists and ordered lists. Below is a breakdown of the provided code, explaining each part and its purpose.

Unordered List (`<ul>`)

An unordered list is a collection of items where the order does not matter. Each item in the list is marked with a bullet point by default.

```html
<h2>Unordered list</h2>
<ul>
    <li>Apple</li>
    <li>Oranges</li>
    <li>Grapes</li>
    <li>Water Melon</li>
    <li>Coffee</li>
</ul>
```

Explanation:

- `<h2>Unordered list</h2>`: This is a heading element (`<h2>`) that titles the section as "Unordered list". It is not part of the list itself but serves as a label.
- `<ul>`: This tag defines the start of an unordered list.

- `<li>Apple</li>`: Each `<li>` tag defines an individual list item. In this case, "Apple" is an item in the unordered list.
- The list continues with more `<li>` tags for "Oranges", "Grapes", "Water Melon", and "Coffee".
- `</ul>`: This tag defines the end of the unordered list.

Ordered List (`<ol>`)

An ordered list is a collection of items where the order does matter. Each item in the list is marked with a number by default.

```html
<h2>Ordered list</h2>
<ol>
    <li>HTML</li>
    <li>CSS</li>
    <li>JS</li>
    <li>REACT</li>
    <li>NEXTJS</li>
</ol>
```

Explanation:

- `<h2>Ordered list</h2>`: This is a heading element (`<h2>`) that titles the section as "Ordered list". It is not part of the list itself but serves as a label.
- `<ol>`: This tag defines the start of an ordered list.
- `<li>HTML</li>`: Each `<li>` tag defines an individual list item. In this case, "HTML" is an item in the ordered list.
- The list continues with more `<li>` tags for "CSS", "JS", "REACT", and "NEXTJS".
- `</ol>`: This tag defines the end of the ordered list.

Key Points to Remember

1. **Unordered List (`<ul>`):**
   - Use the `<ul>` tag to start an unordered list.
   - Use the `<li>` tag for each list item within the `<ul>`.

- The list items are typically marked with bullet points.
2. **Ordered List (`<ol>`):**
    - Use the `<ol>` tag to start an ordered list.
    - Use the `<li>` tag for each list item within the `<ol>`.
    - The list items are typically marked with numbers.
3. **List Items (`<li>`):**
    - The `<li>` tag is used to define each item in both unordered and ordered lists.
    - Each `<li>` tag should be a child of either `<ul>` or `<ol>`.

HTML Attributes and modifying ordered list:

HTML attributes provide additional information about HTML elements. They are always included in the opening tag of an element and typically come in key-value pairs.

Basic Structure of an HTML Attribute

```
<tagname attribute="value">Content</tagname>
```

Explanation:

- `tagname`: The name of the HTML element (e.g., `button`, `img`, `a`).
- `attribute`: The name of the attribute (e.g., `disabled`, `src`, `href`).
- `value`: The value assigned to the attribute (e.g., `disabled`, `image.jpg`, `https://example.com`).

Attributes modify the behavior or appearance of an HTML element. Let's look at some specific examples.

Example :Button with `disabled` Attribute

```
<button disabled="disabled">I am disabled</button>
```

Explanation:

- `<button>`: The HTML element representing a button.
- `disabled="disabled"`: The `disabled` attribute indicates that the button is not interactive. Users cannot click on it or focus on it.

Example : Image (`<img>`) Attributes

Images in HTML are displayed using the `<img>` tag, which requires several attributes to function correctly.

```
<img src="image.jpg" alt="Description of image" width="300" height="200">
```

Explanation:

- `<img>`: The HTML element representing an image.
- `src="image.jpg"`: The `src` (source) attribute specifies the path to the image file. This can be a relative path or an absolute URL.
- `alt="Description of image"`: The `alt` (alternative text) attribute provides a textual description of the image, which is useful for screen readers and in cases where the image cannot be displayed.
- `width="300"`: The `width` attribute sets the width of the image in pixels.
- `height="200"`: The `height` attribute sets the height of the image in pixels.

Example :Anchor (`<a>`) Attributes

Anchors in HTML are used to create hyperlinks, allowing users to navigate from one page to another.

```
<a href="https://example.com" target="_blank" title="Go to Example">Visit Example</a>
```

Explanation:

- `<a>`: The HTML element representing a hyperlink (anchor).
- `href="https://example.com"`: The `href` (hyperlink reference) attribute specifies the URL of the page the link goes to.

- `target="_blank"`: The `target` attribute specifies where to open the linked document. `_blank` opens the link in a new tab or window.
- `title="Go to Example"`: The `title` attribute provides additional information about the link, often displayed as a tooltip when the user hovers over the link.
- `Visit Example`: The text between the opening and closing `<a>` tags is the clickable part of the link.

Key Points to Remember

1. **Attributes in Opening Tags**:
   - Attributes are always included in the opening tag of an element.
   - They provide additional information or modify the behavior of the element.
2. **Key-Value Pairs**:
   - Attributes are written as key-value pairs: `key="value"`.
   - The key is the attribute name, and the value is the attribute's value.
3. **Modifying Behavior and Appearance**:
   - Attributes can change how an element behaves (e.g., `disabled` for buttons).
   - They can also modify the appearance or function of an element (e.g., `width`, `height` for images; `href`, `target` for anchors).

Understanding and using HTML attributes effectively allows you to create more dynamic and accessible web pages, enhancing both functionality and user experience.

Ordered HTML List with type attribute

The `type` attribute of the `<ol>` tag, defines the type of the list item marker:

Type	Description
type="1"	The list items will be numbered with numbers (default)
type="A"	The list items will be numbered with uppercase letters
type="a"	The list items will be numbered with lowercase letters
type="I"	The list items will be numbered with uppercase roman numbers

Type	Description
type="i"	The list items will be numbered with lowercase roman numbers

```html
<h2>Numeric value</h2>
    <ol type="1">
        <li>HTML</li>
        <li>CSS</li>
        <li>JS</li>
        <li>REACT</li>
        <li>NEXTJS</li>
    </ol>
    <h2>Alpha value</h2>
    <ol type="A">
        <li>HTML</li>
        <li>CSS</li>
        <li>JS</li>
        <li>REACT</li>
        <li>NEXTJS</li>
    </ol>

    <h2>Lower case alphabets </h2>
    <ol type="a">
        <li>HTML</li>
        <li>CSS</li>
        <li>JS</li>
        <li>REACT</li>
        <li>NEXTJS</li>
    </ol>
    <h2>Roman case alphabets </h2>
    <ol type="I">
        <li>HTML</li>
        <li>CSS</li>
        <li>JS</li>
        <li>REACT</li>
        <li>NEXTJS</li>
    </ol>
```
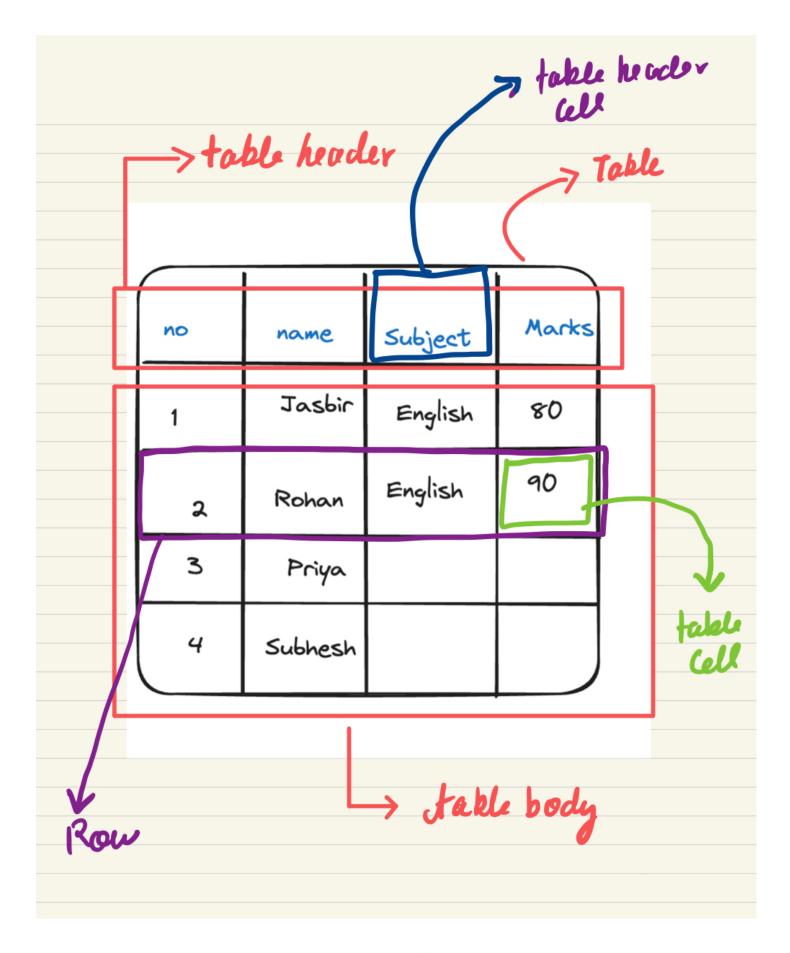
HTML Tables

Generally a table looks like this . Let' see how we can represent this table in html .

No.	Full Name	Position	Salary
1	Bill Gates	Founder Microsoft	$1000
2	Steve Jobs	Founder Apple	$1200
3	Larry Page	Founder Google	$1100
4	Mark Zuckeberg	Founder Facebook	$1300

Here is the visual breakdown of the table.

Let's see how these can be represented as different html tags

1. **Table Structure**:
   - `<table>`: Container for the table.
   - `<thead>`: Groups the header content. [table header]
   - `<tbody>`: Groups the body content. [table body]
   - `<tr>`: Represents a row in the table. [row]
   - `<th>`: Represents a header cell, typically bold. [header cell]
   - `<td>`: Represents a standard data cell. [body cell

Here is a more precise breakdown of the provided code, focusing on which tag is used for each part of the table.

Example Code

```html
<h2>Table example</h2>
<table>
    <!-- Table Header Section -->
    <thead>
        <!-- Header Row -->
        <tr>
            <!-- Header Cells -->
            <th>NO</th>
            <th>Name</th>
            <th>Subject</th>
            <th>Marks</th>
        </tr>
    </thead>

    <!-- Table Body Section -->
    <tbody>
        <!-- Data Row 1 -->
        <tr>
            <!-- Data Cells -->
            <td>1</td>
            <td>Jasbir</td>
            <td>English</td>
            <td>80</td>
        </tr>
        <!-- Data Row 2 -->
```

```html
                <tr>
                    <td>2</td>
                    <td>Rohan</td>
                    <td>English</td>
                    <td>90</td>
                </tr>
                <!-- Data Row 3 -->
                <tr>
                    <td>3</td>
                    <td>Priya</td>
                    <td></td>
                    <td></td>
                </tr>
                <!-- Data Row 4 -->
                <tr>
                    <td>4</td>
                    <td>Subhesh</td>
                    <td></td>
                    <td></td>
                </tr>
            </tbody>
</table>
```

Breakdown and Explanation

1. **Table Element**
   - `<table>`: Defines the start of the table.

2. **Table Header Section**
   - `<thead>`: Defines the header section of the table.
   - `<tr>`: Defines a row in the table.
   - `<th>`: Defines a header cell in the table. Header cells are bold and centered by default.
     - Examples: `<th>N0</th>`, `<th>Name</th>`, `<th>Subject</th>`, `<th>Marks</th>`

3. **Table Body Section**
   - `<tbody>`: Defines the body section of the table.
   - `<tr>`: Defines a row in the table.

- `<td>`: Defines a standard data cell in the table.
  - Examples:
    - Row 1: `<td>1</td>`, `<td>Jasbir</td>`, `<td>English</td>`, `<td>80</td>`
    - Row 2: `<td>2</td>`, `<td>Rohan</td>`, `<td>English</td>`, `<td>90</td>`
    - Row 3: `<td>3</td>`, `<td>Priya</td>`, `<td></td>`, `<td></td>`
    - Row 4: `<td>4</td>`, `<td>Subhesh</td>`, `<td></td>`, `<td></td>`

Assignments

Please complete the Assignments questions on the basis of above notes .

https://github.com/Jasbir96/Algoprep_cohort_1/tree/main/Lec_2_HTML_1/questions