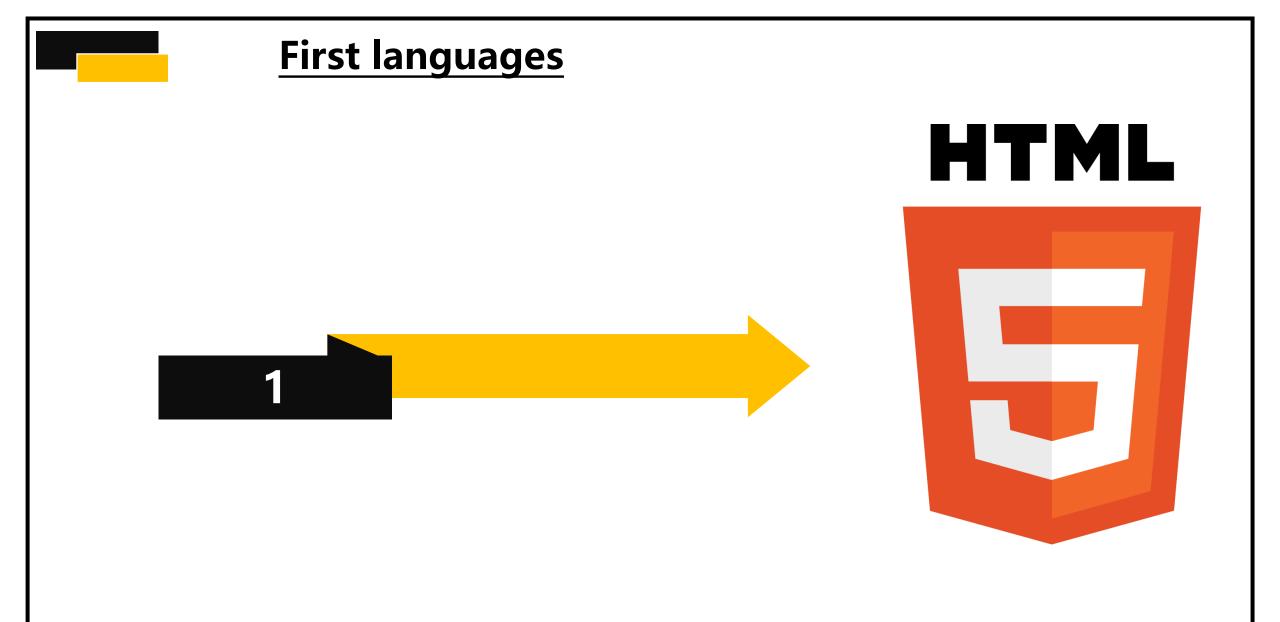


# Web design and and development 1

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#### **□** What is the Web?

- The web stands for World Wide Web (WWW).
- It is a system that connects pages and websites through hyperlinks.
- It works based on the HTTP/HTTPS protocol to transfer data.

#### □ Difference between Internet and Web?

- Internet: A global network of connected devices.
- Web: A service running on top of the internet that allows information sharing and browsing.

#### **☐** Main Components of the Web?

- **Browser**: (e.g., Google Chrome, Firefox, Edge) used to display websites.
- Server: Stores and serves website data to users.
- User: The person accessing websites through their device.
- Website: A collection of interconnected web pages.

#### ☐ Main Web Languages?

- HTML: Defines the structure of a web page.
- CSS: Provides styling and design.
- JavaScript: Adds interactivity and dynamic behavior.

#### ☐ Importance of the Web?

- A powerful tool for communication and information sharing.
- The backbone of e-commerce and digital marketing.
- A platform for online education and remote work.
- Provides global access to knowledge anytime, anywhere.

#### ☐ What is HTML?

- HTML stands for HyperText Markup Language.
- It is the standard language for creating web pages.
- It defines the **structure** of a web page: headings, paragraphs, images, links, tables, etc...
- It is not a programming language, but a markup language.
- Each element is written inside tags.

#### Create Html Project

- 1. Create a Project Folder: Make a new folder (e.g., MyWebsit) to store your project files.
- 2. Open the Folder in Visual Studio Code: Open Visual Studio Code → click file → open folder → choose your folder.
- 3. Create a New HTML File: Inside the folder, create a file called index.html, The index.html file is the main page of your website.
- 4. Write the Basic HTML Structure.
- **5.** Open the File in the Browse: Right-click on index.html → choose Open with Browser , Your website will appear in the browser

#### **Html Tags**

- What are HTML Tags? are the basic building blocks of web pages.
  - Each tag defines a specific type of content (text, image, link, table, etc.)
  - Most tags come in pairs.
  - Opening tag <tag>
  - Closeting tag </tag>
  - The content is placed between the opening and closing tags.
- ☐ General Structure of a Tag:



1 <tagname> content </tagname>

#### **Html Tags**

- ☐ Type of tags:
  - **Single Tags:** 
    - Do not require a closing tag.
  - **Paired Tags:** 
    - Consist of an opening tag + a closing tag Content goes between them.

# Basic HTML Components



# Basic HTML Components

Component	Explanation
html	Declares the document type as <b>HTML5</b> , ensures browsers render in standards mode.
<html lang="en"> </html>	The <b>root element</b> of the page, containing all other elements. Attribute lang="en" specifies the language (can be ar).
<head> </head>	Contains <b>metadata</b> such as charset, title, links to CSS/JS. Its content is not directly visible to users.
<meta charset="utf-8"/>	Sets character encoding to <b>UTF-8</b> , supporting all languages (Arabic, English, etc.).
<pre><meta content="width=device- width, initial-scale=1.0" name="viewport"/></pre>	Makes the page <b>responsive</b> across devices (mobile, tablet, desktop).
<title>Document</title>	Defines the <b>page title</b> , shown in browser tabs and search results.
<body> </body>	Contains all <b>visible content</b> such as text, images, buttons, tables, lists, etc.

#### **Html Head**

#### ☐ What is the <head> tag?

- The <head> element is located between <html> and <body>.
- It contains **metadata** (**information about the page**) that is not directly **visible to the user** but is essential for the browser and search engines.

#### □ What is the <meta> tag?

- The <meta> tag is placed inside the <head>
- It provides metadata (information about the webpage) such as encoding, description, keywords, viewport settings, etc.

### Html Head

Tag	Function
<title>&lt;/th&gt;&lt;th&gt;Sets the page title (appears in the browser tab).&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;pre&gt;&lt;link rel="stylesheet" href="style.css"&gt;&lt;/pre&gt;&lt;/th&gt;&lt;th&gt;Links an external CSS file.&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;script src="script.js"&gt;&lt;/script&gt;&lt;/th&gt;&lt;th&gt;Links an external JavaScript file.&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;style&gt; &lt;/style&gt;&lt;/th&gt;&lt;th&gt;Adds internal CSS styles.&lt;/th&gt;&lt;/tr&gt;&lt;/tbody&gt;&lt;/table&gt;</title>	

#### **Html Head :meta**



Html Head :meta

Attribute	Value	Description
charset	character_set	Specifies the character encoding for the HTML document
content	text	Specifies the value associated with the http-equiv or name attribute
name	author description keywords viewport	Specifies a name for the metadata

# Paragraph & Span

#### **□** Paragraph:

- Used to create a text paragraph.
- A **block** element.
- Adds spaces before and after the paragraph by default.
- Example: ADEN IS MY LOVE

#### ☐ Span:

- Used to style or highlight a small part of text inside another element (like a paragraph).
- An **inline** element.
- Adds no default formatting.
- Example: ADEN IS MY LOVE and<span>MY CITY</span>

## **Text Formatting**

Tag	Description	Example
<b></b>	Makes text bold.	<b>Bold Text</b>
<strong></strong>	Bold text with semantic importance	<strong>Important</strong>
<i>&gt;</i>	Makes text italic	<i>Italic Text</i>
<em></em>	Italic text with emphasis meaning	<em>Emphasized</em>
<u></u>	Underlines text	<u>Underlined</u>
<mark></mark>	Highlights text	<mark>Highlighted</mark>
<small></small>	Displays smaller text	<small>Small Text</small>
<del></del>	Shows deleted text	<del>Deleted</del>
<ins></ins>	Shows inserted text (underlined)	<ins>Inserted</ins>
<sub></sub>	Subscript (lower text)	H <sub>2</sub>
<sup></sup>	Superscript (upper text)	X <sup>2</sup>

#### **Text Formatting**

```
1 <!DOCTYPE html>
   <html lang="en">
3
   <head>
       <meta charset="UTF-8">
4
       <title>Example</title>
   </head>
   <body>
7
8
9
       <!-- Example using <p> -->
10
           This is a paragraph with a <b>bold word</b>,
11
12
           an <i>italic word</i>,
13
           and an <u>underlined word</u>.
14
       15
16
       <!-- Example using <span> -->
17
       >
18
           I am learning
19
           <span>HTML</span>,
20
           <span>CSS</span>,
21
           and
22
           <span>JavaScript</span>.
23
       24
25
       >
26
           Water formula: H<sub>2</sub>0 <br>
27
           Square: X<sup>2</sup> <br>
           Highlighted text: <mark>Important</mark>
28
29
       30
31 </body>
32 </html>
33
```

#### **Images**

- ☐ Images Tag: To insert an image into a web page, we use:
- **□** Main attributes:

Attribute	Description	Example
src	Specifies the path or URL of the image	<img src="images/photo.png"/>
alt	Alternative text displayed if the image fails to load	<img alt="Car" src="car.png"/>
width	Defines the width of the image	<img src="pic.jpg" width="300"/>
height	Defines the height of the image	<img height="200" src="pic.jpg"/>

#### **Images**



```
<!DOCTYPE html>
   <html lang="en">
 3
   <head>
     <meta charset="UTF-8" />
     <title>Images Example</title>
   </head>
   <body>
9
     <h2>Images in HTML</h2>
10
11
     <img src="cat.jpg" alt="Cute cat" />
12
13
     <br />
14
     <img src="https://tjh.com/wp-content/uploads/2023/06/TJH_HERO_TJH-HOME@2x-1.webp" alt="HOME" />
15
     <br />
16
     <img src="flower.jpg" alt="Flower" title="This is a flower image" />
18 </body>
19
20 </html>
```

#### Audio

- ☐ Audio Tag: used to embed and play audio files inside a web page.
- **□** Syntax:

#### Audio

#### **□** Main Attributes:

Attribute	Description	Example
1. controls	Displays audio controls (play, pause, volume)	<audio controls=""></audio>
2. autoplay	Starts playing automatically when the page loads	<audio autoplay=""></audio>
3. loop	loop Repeats the audio automatically after it ends <audio loop=""></audio>	
5. preload	Specifies how the audio file should be loaded	<audio preload="auto"></audio>

#### **□** Supported Audio Formats:

- 1. MP3 → audio/mpeg
- 2.  $OGG \rightarrow audio/ogg$
- 3. WAV  $\rightarrow$  audio/wav

#### Audio



```
<!DOCTYPE html>
2 <html lang="en">
   <head>
    <meta charset="UTF-8">
     <title>Audio Example</title>
6 </head>
   <body>
     <h2>Play an Audio File</h2>
 8
10
     <audio controls loop>
       <source src="song.mp3" type="audio/mpeg">
11
       <source src="song.ogg" type="audio/ogg">
12
       Your browser does not support the audio element.
13
     </audio>
14
15
16 </body>
   </html>
17
18
```

#### Video

- ☐ Audio Tag: used to embed and play video files inside a web page.
- **□** Syntax:



#### video

#### **☐** Main Attributes:

Attribute	Description	Example
1. controls	Displays video controls (play, pause, volume)	<video controls=""></video>
2. autoplay	2. autoplay Starts playing automatically when the page loads <video autoplay=""></video>	
3. loop	Repeats the video automatically after it ends	<video loop=""></video>

#### **□** Supported video Formats:

- 1. MP4  $\rightarrow$  video /mp4
- 2.  $OGG \rightarrow video / ogg$
- 3. WebM → video /webm

#### video



```
<!DOCTYPE html>
2 <html lang="en">
   <head>
    <meta charset="UTF-8">
     <title>Video Example</title>
  </head>
   <body>
8
     <h2>Play a Video File</h2>
     <video controls>
10
       <source src="movie.mp4" type="video/mp4">
11
       <source src="movie.webm" type="video/webm">
12
13
       Your browser does not support the video tag.
     </video>
14
15
16 </body>
   </html>
17
18
```

#### **Tables**

☐ **Table tag:** used to arrange data in rows and columns.

```
>table>

<pre
```

#### **□** Table Attributes:

Attribute	Used in	Description
border		Defines the border width of the table
width	, ,	Sets the width of the table or column
height	, ,	Sets the height of the table or cell
align	, ,	Sets alignment (left, right, center)
colspan	,	Merges multiple columns into one cell
rowspan	,	Merges multiple rows into one cell

#### **Tables**



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
  <meta charset="UTF-8">
  <title>Table Example</title>
6 </head>
7 <body>
  9
   ID
10
    Name
11
12
    Scores
13
   14
   15
    1
16
   Ali
17
   Math: 90
18
    Science: 85
19
   20
   21
    2
22
    Fatima
23
    Math: 88
24
    Science: 92
25
   26
   27
    30 </body>
31 </html>
```

- ☐ **List tag:** In HTML, there are 3 main types of lists:
  - 1. Ordered List
  - 2. Unordered List
  - 3. Description List

- □ Ordered List ():
  - The tag is used to create ordered lists.
  - The tag is used to create items lists.
  - Items are numbered by default (1, 2, 3).



```
1 
2      ...
3      <...</li>
4
```

- □ Unordered List ():
  - The 
     tag is used to create Unordered lists.
  - The tag is used to create items lists.
  - By default, items are displayed with bullet points (●)



- □ Description List (<dl>):
  - The <dl> tag is used to create Description lists.
  - The <dt> tag is used to create Definition Term.
  - The <dd> tag is used to create Definition Description.



```
1 <dl>
2 <dt>...</dt>
3 <dd>...</dd>
4 </dl>
```

### Lists



```
1 <!DOCTYPE html>
2 <html lang="en">
4 <head>
    <meta charset="UTF-8">
    <title>Example</title>
7 </head>
9 <body>
    <h2>Unordered List</h2>
11
    <l
    HTML
   CSS
    JS
    <hr>>
    <h2>Ordered List</h2>
    ... 1 1..... 11411.
```

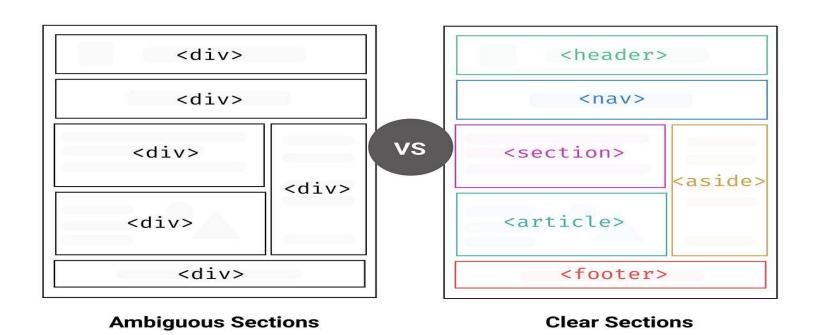
#### Lists

```
17
    <h2>Ordered List</h2>
18
    19
    First
20
     Second
21
     Third
22
    23
24
    25
     Option A
26
     Option B
27
    28
29
    30
     Step One
31
     Step Two
32
    33
    <hr>
34
    <h2>Description List</h2>
35
    <d1>
36
      <dt>HTML</dt>
37
      <dd>Markup language for structuring web pages</dd>
38
39
      <dt>CSS</dt>
40
      <dd>Styling language for web pages</dd>
41
42
      <dt>JavaScript</dt>
43
      <dd>Programming language for interactivity</dd>
44
    </dl>
45
46 </body>
48 </html>
```

- **Semantic Elements**: are tags that clearly describe the meaning of the content inside them, both to the browser and to developers, Instead of using generic tags like <div>, semantic tags give the content a clear purpose.
- **☐** Main Semantic Elements:
  - **1. <header>** : Represents the top section (logo, menu, etc.).
  - **2.** <nav>: Defines navigation links.
  - **3. <section>**: A thematic grouping of content .
  - **4. <article>**: Independent, self-contained content (e.g., blog post).
  - **5. <aside>**: Side information or ads related to the main content.
  - **6. <footer>** : Bottom part (copyright, contact info...).
  - **7. <main>**: Main unique content of the page.

#### **□** Benefits

- 1. Better SEO (search engine optimization).
- 2. Easier code readability.
- 3. Accessibility support for screen readers.





```
1 <!DOCTYPE html>
 2 <html lang="en">
 3 <head>
   <meta charset="UTF-8">
   <title>Semantic Elements Example</title>
 6 </head>
   <body>
    -- رأس الصفحة --!>
     *header>
       <h1>My Website</h1>
       <nav>
        <a href="#">Home</a>
        <a href="#">About</a>
        <a href="#">Contact</a>
       </nav>
     </header>
18
```

```
-- المحتوى الرئيسي --!>
xmain>
  <section>
   <h2>Latest Articles</h2>
    <article>
     <h3>What is HTML?</h3>
     HTML is the standard language for creating webpages...
   </article>
    <article>
     <h3>Why Semantic Elements?</h3>
     They make the code easier to read and improve SEO...
   </article>
  </section>
```

```
<-- جانب الصفحة --!>
      <aside>
       <h3>Related Links</h3>
       <l
         <a href="#">HTML Basics</a>
         <a href="#">CSS Guide</a>
       </aside>
    </main>
    -- تذييل الصفحة --!>
    *footer>
      © 2025 My Website - All rights reserved.
    </footer>
50 </body>
51 </html>
```

#### **ID & Class**

#### ☐ Difference Between id and class:

Property	class	id
Uniqueness	Can be shared by multiple elements	Must be unique
Main use	Target a group of elements	Target a single element

### ☐ Examples :



```
1 This is a single element
2 This is part of a group
3 This is another element in the same group
```

- ☐ **Hypertext**: The tag used for creating links is <a> (Anchor Tag).
  - The main attribute is href, which specifies the destination of the link.
- □ A link can point to:
  - 1. External website (e.g., google.com).
  - 2. Internal page in the same project.
  - 3. ... etc.
- Notes: Instead of using text as a link, we can use an image, This is done by placing the <img> tag or <buttons> tag inside the <a> tag</a>

**□** External website:

```
<a href="https://www.google.com" > Google Page </a>
```

☐ Internal page:

```
<a href= "home.html" > Home</a>
```

□ #id:

3. <a href= "about.html#line10" > Line 10 </a>



```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
       <meta charset="UTF-8">
       <title>Learn HTML</title>
7 </head>
   <body>
       <h1>Welcome to Learn HTML Page</h1>
10
11
       <!-- Navigation Links -->
12
13
       <nav>
           <a href="#intro">Introduction</a> |
14
15
           <a href="#tags">HTML Tags</a> |
16
           <a href="#resources">Learning Resources</a>
17
       </nav>
18
       <hr>>
19
       <!-- Introduction Section -->
20
       <h2 id="intro"> ★ Introduction</h2>
21
22
       >
           HTML is a markup language used to build web pages.
23
           It is the foundation of every website on the internet.
24
25
```

```
26
       <!-- Image as a Link -->
       <a href="https://developer.mozilla.org/en-US/docs/Web/HTML" target="_blank">
           <img src="html-logo.png" alt="HTML Logo" width="150">
       </a>
30
       Click the image to visit the HTML guide on MDN.
       <!-- Resources Section -->
       <h2 id="resources"> ★ Learning Resources</h2>
35
       <l
36
           <a href="https://www.w3schools.com/html/" target="_blank">HTML Tutorials on W3Schools
   </a>
           <a href="https://developer.mozilla.org/en-US/docs/Web/HTML" target="_blank">
37
   HTML Guide on MDN</a>
           <a href="mailto:teacher@example.com">Contact the teacher via email</a>
38
       <br>
       <a href="#intro"> fp Back to Top</a>
43 </body>
44
45 </html>
```

#### Form

- ☐ Form Tag:is used to create a form in HTML for collecting user input
  - A form can contain input fields like: (text, email, password, file upload...)
  - The data is sent to a server using the action attribute.
  - The method defines how the data is sent:
    - 1. **GET**: sends data in the URL.
    - **2. POST**: sends data in the background (more secure)

#### Form

#### ☐ Main Attributes:

- 1. action: where the form data will be sent.
- **2. Method**: defines sending method (GET or POST).
- **3.** Name: identifies the form.
- **4. Target**: defines where to display the response

### Input

- <input> tag: is used to collect data from the user, Its behavior and appearance depend on the type attribute.
- **□** Type of type attribute:

Type	Description	Example
text	Single-line text	<input name="username" type="text"/>
password	Hidden password input	<input name="pass" type="password"/>
email	Email input	<input name="useremail" type="email"/>
number	Numbers only	<input name="age" type="number"/>
date	Date picker	<input name="birthdate" type="date"/>
file	File upload	<input name="myfile" type="file"/>
hidden	Hidden field	<input name="id" type="hidden" value="123"/>
color	Color picker	<input name="favcolor" type="color"/>
range	Slider input	<input max="100" min="0" name="volume" type="range"/>

#### label

- <label> tag: defines a caption for an input element.
  - It improves accessibility and usability.
  - When linked with an input, clicking the label focuses on the input field.
- ☐ Two ways to link:
  - 1. Using for (must match input id)



```
1      <label for="email">Email:</label>
2      <input type="email" id="email" name="email">
```

label

- ☐ Two ways to link:
  - 2. Wrapping the input inside label:



1 <label>Password: <input type="password" name="password"></label>

- ☐ Checkbox: Checkboxes allow the user to select multiple options from a list.
- **□** Main attributes:
  - 1. id: uniquely identifies the checkbox (used with <label>)
  - 2. name: groups the data when submitting a form.
  - 3. value: the value sent if the box is checked.
  - 4. checked: pre-selects the option.



```
1 <form >
     <h3>Select your hobbies:</h3>
 3 <input type="checkbox" id="reading" name="hobby" value="reading">
 4 <label for="reading">Reading</label><br>
 5
 6 <input type="checkbox" id="sports" name="hobby" value="sports">
   <label for="sports">Sports</label><br>
 8
   <input type="checkbox" id="travel" name="hobby" value="travel" checked>
   <label for="travel">Travel</label>
11
12 </form>
```

- ☐ Radio buttons: allow the user to select only one option from a group.
- **□** Main attributes:
  - 1. name: all radio buttons with the same name belong to one group
  - 2. value: the value sent when the radio button is selected
  - **3. checked:** pre-selects the option.



```
1 <form>
       <h3>Select your account type:</h3>
       <input type="radio" id="free" name="account" value="free" checked>
       <label for="free">Free</label><br>
       <input type="radio" id="premium" name="account" value="premium">
       <label for="premium">Premium</label><br>
       <input type="radio" id="vip" name="account" value="vip">
       <label for="vip">VIP</label>
10
     </form>
```

<select> tag: is used to create a drop-down list that allows the user to choose one or more options.

#### ☐ Main attributes:

- **1. name:** specifies the name of the drop-down list.
- **2. id:** uniquely identifies the element (used with <label>).
- **3. multiple:** allows multiple selections.
- **4. size:** defines how many options are visible without scrolling.

- → <option > tag : defines each item inside the <select > drop-down list
- Main attributes:
  - **1. value:** the value submitted with the form if selected.
  - **2. selected:** pre-selects an option by default.





### **Buttons**

Type	Function	Example
Submit	Submits form data to the server	<button type="submit">send</button> / <input type="submit"/>
Reset	Resets (clears) all form fields	<button type="reset"> reset</button> / <input type="reset"/>
Button	General-purpose button	<button type="button"></button> / <input type="button"/>

#### **Download**

- download attribute: is used with the <a> (anchor) tag, Its purpose is to make the link download a file directly instead of opening it in the browser.
- ☐ Basic syntax: When clicked, the browser will download file.pdf



1 <a href="file.pdf" download>Download File</a>

Rename the file on download: The original file name is report.pdf, but it will be saved as MyReport.pdf when downloaded.



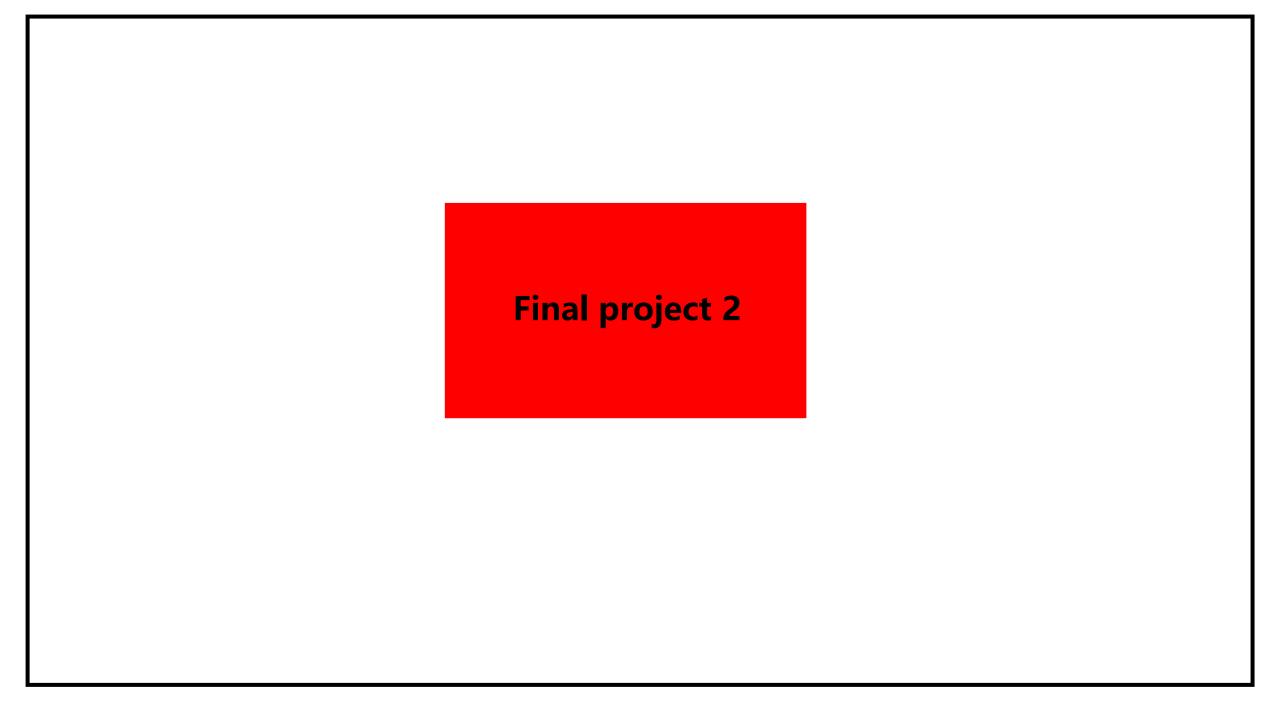
1 <a href="report.pdf" download="MyReport.pdf">Download Report</a>

#### **Download**



```
<!DOCTYPE html>
2 <html lang="en">
3 <head>
  <meta charset="UTF-8">
  <title>Download Example</title>
  </head>
   <body>
    <h2>Download Attribute in HTML</h2>
     <!-- Download with original name -->
10
     11
    <br><br><br>>
12
13
14
    <!-- Download with a new name -->
     <a href="image.jpg" download="MyPicture.jpg"> ... Download Image</a>
15
16
   </body>
17 </html>
```

Final project 1 Final project 1



# NEXT TO