

HTML

HTML NOTE

WRITTEN
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HTML is an acronym for **Hyper-Text Markup Language**.

It was created by Tim Berners-Lee at CERN in late 1980, and released in 1993

2. HTML's Functions

It's the standard markup language for web pages.

It describes the structure of a website.

It consists of a series of elements.

Its elements tell the browser how to display the content.

3. References

WIKIPEDIA <https://en.m.wikipedia.org/wiki/HTML>

W3SCHOOLS <https://www.w3schools.com/html/default.asp>

**YOUTUBE
Bro Code** https://m.youtube.com/watch?v=HD13eq_Pmp8&pp=ygUNYnJvlGNvZGUgaHRtbA%3D%3D

**YOUTUBE
SuperSimpleDev** <https://m.youtube.com/watch?v=G3e-cpL7ofc&pp=ygUEaHRtbA%3D%3D>

Part II. conceptions

1. tags

reference <https://www.digitalocean.com/community/tutorials/what-is-an-html-tag>

tags list <https://www.w3schools.com/tags/default.asp>

A tag is a part of a website.

It tells a browser how to display the website.

It has three types: **paired tags** and **self-closing tags**.

Paired tags are surrounded by a pair of an opening tag and a closing tag.



Self-closing tags consist of a single pair of greater than and less than signs.

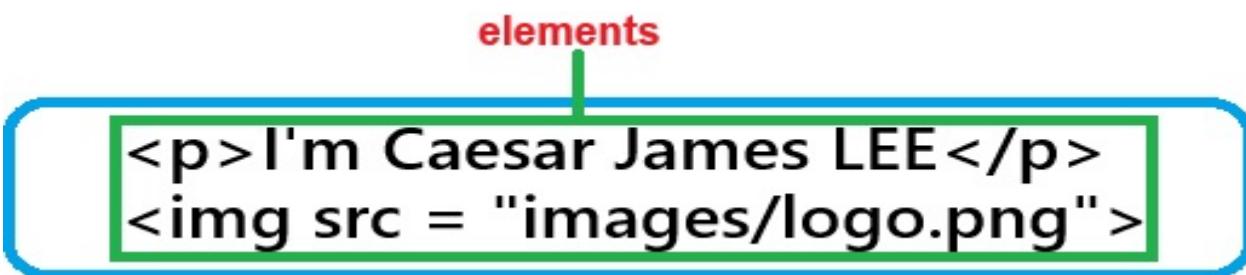


2. Elements

reference

https://www.w3schools.com/html/html_elements.asp

An element consists of a whole tag, whether it's a **paired tag** or a **self-closing tag**



3. Attributes

reference

https://www.w3schools.com/html/html_attributes.asp

attribute list

https://www.w3schools.com/tags/ref_attributes.asp

An attribute provides some additional information about the element to the browser.

It's added to the **opening tag**.



4. Hyperlinks

reference

https://www.w3schools.com/html/html_links.asp

A hyperlink is a link in the HTML.

It'll jump to a specific place, a specific website or anything else when you clicked this hyperlink.

5. Home Pages

Please name the home page "**index.html**".

Because most servers return the index file as the home page.

6. Ignored Extra White Spaces

According to the HTML syntax, extra white spaces(**spaces, tabs, new line characters, etc.**) are ignored.

7. Application Programming Interface

reference

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Client-side_web_APIs/Introduction

An API (**Application Programming Interface**) provides an easy way to achieve a specific function for developers.

Part III. basic tags

a. basic

1. `<!DOCTYPE html>`

referencehttps://www.w3schools.com/tags/tag_doctype.asp

It isn't a tag, but a declaration.

It'll tell to the browser that this document is an HTML5 document which is the most recent version.

It should be added at the top of HTML.

2. <!---->**reference**https://www.w3schools.com/tags/tag_comment.asp

This is a **multi-line comment** that means you can comment more than one line.

```
<!--single line comment-->
<!--multi-line
comment-->
```

3. <html></html>**reference**https://www.w3schools.com/tags/tag_html.asp

It represents the root element of HTML.

You should put all element in it except **<!DOCTYPE html>**.

And you should add **lang** attribute inside the html tag to tell the browser which type of languages of the website.

```
<html lang = "en-US">
</html>
```

4. <head></head>**reference**https://www.w3schools.com/tags/tag_head.asp

You should place it between **<html>** and **<body>**.

It's a container for **metadata** that's data about data.

metadata contains title, character set, icon, web description, styles, scripts, etc.

```
<head>
  <link rel = "icon" type = "image/png" href = "images/logo.png" _____ load an icon
  <title>Caesar James LEE</title> _____ define a title
  <meta charset = "UTF-8" > _____ define a character set
  <meta name = "viewport" content = "width=device-width,initial-scale=1.0"> _____ define width to screen width, and set the initial zoom to 100%
  <meta name = "keywords" content = "Caesar, James, LEE"> _____ define keywords for search engine
  <meta name = "description" content = "This is Caesar James LEE's website"> _____ define description for search engine
  <meta name = "author" content = "Caesar James LEE"> _____ define author for search engine
</head>
```

5. <body></body>

reference

https://www.w3schools.com/tags/tag_body.asp

You should place it between **<head></head>** and **<html></html>**. It's a container for all data what you want to display on the website. It's a important tag to interact with users.

```
<body>
  <h1>I'm Caesar James LEE</h1> _____ show a heading
  <hr> _____ show a separator
  <img src = "images/logo.png"> _____ show an image
  <p> _____ show a paragraph
    This is a test website.
  </p>
  <h3>---END---</h3> _____ show a heading
</body>
```

b. head

1. <title></title>

reference

https://www.w3schools.com/tags/tag_title.asp

This is important for search engine algorithm.

Generally, search engine will display **about 50 to 60 characters** of title, so don't more than this.

```
<head>
  <title>Caesar James LEE</title> _____
  <meta name = "charset" content = "UTF-8">
</head>
```

2. <link>

reference

https://www.w3schools.com/tags/tag_title.asp

This is a self-closing tag.

It's often used to link an external document(often is CSS) or a favicon that is a logo image of the website.

To Add A Favicon

reference

https://www.w3schools.com/html/html_favicon.asp

```
<head>
  <title>Caesar James LEE</title>
  <link rel = "icon" type = "images/png" href = "images/Code Slave Wallpaper.png"> Caesar James LEE
  <meta name = "charset" content = "UTF-8">
</head>
```

"**rel**" is the abbreviation of relationship.

"**href**" specifies a location of the external source that can be an **URL** (points to a website) or a **file path**.

For a favicon image, most modern web browsers accept **.ico**, **.png**, **.gif**, **.jpg**, **.svg** image type.
 The type of **.ico** is "**images/x-icon**";
 The type of **.png** is "**images/png**";
 The type of **.gif** is "**images/gif**";
 The type of **.jpg** is "**images/jpeg**";
 The type of **.svg** is "**images/svg+xml**".

reference

https://developer.mozilla.org/en-US/docs/Web/Media/Formats/Image_types

To Add A CSS

reference

https://www.w3schools.com/html/html_css.asp

This is one of 3 ways to use CSS named "**external**", because this method will use **all the code** of an external CSS file.

```
<!DOCTYPE html>
<html lang = "en-US">
  <head>
    <link rel = "stylesheet" href = "styles/index.css">
    <meta name = "charset" content = "UTF-8">
  </head>

  <body>
    <h1>I'm Caesar James LEE</h1>
    <hr>
    <p>This is a test web</p>
    <h3>---END---</h3>
  </body>
</html>
```

I'm Caesar James LEE

This is a test web
---END---

```
body{
  background-color: white;
  color: darkcyan;
  font-size: 32px;
  text-align: center;
  padding: 15px;
  border: solid 3px red;
}
```

3. <meta>

reference

https://www.w3schools.com/tags/tag_meta.asp

Those data won't display to users, but those will parsed by browser.
 This tag will define **keywords**, **description**, **author**, **view port**, **character set** and **refresh interval**, **language**, **switch IE to Edge**.
 This is an important tag for search engine algorithm.

To Add Keywords

<meta name = "keywords" content = "Caesar, James, LEE">

To Add A Description

<meta name = "description" content = "This is Caesar James LEE's website">

To Add An Author

<meta name = "author" content = "Caesar James LEE">

To Add A Viewport

<meta name = "viewport" content = "width=device-width,initial-scale=1.0">

To Add A Character Set

<meta charset = "UTF-8">

To Add A Refresh Interval

```
<meta http-equiv = "refresh" content = "3">
```

And you can change 3 to a different number of seconds.

Then you can add some contents to turn to a web.

```
<meta http-equiv = "refresh" content = "3; url = https://www.w3schools.com/tags">
```

The ";" is a **usual separator** between commands that means the end of a statement.

To Set A Language

If <html> tag you've already added the "lang" attribute to, you can ignore this statement.

```
<meta name = "language" content = "en-US">
```

To Switch IE To Edge

```
<meta http-equiv = "X-UA-Compatible" content = "ie = edge">
```

c. text

1. <hnum></hnum>

reference

https://www.w3schools.com/tags/tag_hn.asp

This tag defines a heading. But you can only define one <h1></h1> tag.
The "**num**" is between 1 and 6.

<body>	
<h1>This is h1</h1>	This is h1
<h2>This is h2</h2>	This is h2
<h3>This is h3</h3>	This is h3
<h4>This is h4</h4>	This is h4
<h5>This is h5</h5>	This is h5
<h6>This is h6</h6>	This is h6
</body>	

2. <p></p>

referencehttps://www.w3schools.com/tags/tag_p.asp

This tag defines a paragraph and adds a new line before and after the tag.
And this tag will consider all spaces, tabs, new lines to be a single space.

```
<p>Hello!</p>
```

```
<p>I'm
```

```
    Caesar  
    LEE
```

```
</p>
```

Hello!

James I'm Caesar James LEE

3. <pre></pre>

referencehttps://www.w3schools.com/tags/tag_pre.asp

This tag likes <p></p> tag, but this will consider spaces, tabs, new lines.

```
<p>Hello!</p>
```

```
<pre>I'm
```

```
    Caesar
```

```
    LEE
```

```
</pre>
```

Hello!

James I'm

Caesar
LEE

James

4.

referencehttps://www.w3schools.com/tags/tag_em.asp

This tag will **emphasize** the content.
And it's displayed in **italic**.

```
<p>it will be <em>emphasize</em></p>
    it will be emphasize
```

5. ****

referencehttps://www.w3schools.com/tags/tag_strong.asp

This tag will define the content **with strong important**.
And it's displayed in **bold**.

```
<p>it will be <strong>strong</strong></p>
    it will be strong
```

6. **<mark></mark>**

referencehttps://www.w3schools.com/tags/tag_mark.asp

This tag will **mark** the content.
And it's displayed in **highlight**.

```
<p>it will be <mark>mark</mark></p>
    it will be mark
```

7. ****

referencehttps://www.w3schools.com/tags/tag_b.asp

The content will be displayed in **bold** by this tag.

```
<p>it will be <b>bold</b></p>
    it will be bold
```

8. **<i></i>**

referencehttps://www.w3schools.com/tags/tag_i.asp

The content will be displayed in **italics** by this tag.

```
<p>it will be <i>italic</i></p>
    it will be italic
```

9. **<u></u>**

reference

https://www.w3schools.com/tags/tag_u.asp

The content will be displayed in **underline** by this tag.

```
<p>it will be <u>underline</u></p>
    it will be underline
```

10. ****

reference

https://www.w3schools.com/tags/tag_del.asp

The content will be displayed in **delete line** by this tag.

```
<p>it will be <del>delete</del></p>
    it will be delete
```

11. **<small></small>**

reference

https://www.w3schools.com/tags/tag_small.asp

The content will be displayed in a **small size** by this tag.

```
<p>it will be <small>small</small></p>
    it will be small
```

12. ****

reference

https://www.w3schools.com/tags/tag_sub.asp

The content will be displayed in a **subscripted manner** by this tag.

```
<p>it will be <sub>subscript</sub></p>
    it will be subscript
```

13.

reference

https://www.w3schools.com/tags/tag_sup.asp

The content will be displayed in a **superscripted manner** by this tag.

```
<p>it will be <sup>superscript</sup></p>
    it will be superscript
```

d. media

1. <a>

reference

https://www.w3schools.com/tags/tag_a.asp

This tag allows us to link something, like a website, a file, a part of the website, a telephone number, an email address, etc.

The "a" means anchor.

This is an important tag about **hyperlinks**.

This tag has many attributes, but I only list some useful ones.

href attribute

This is **the most important** attribute of <a> tag, because this attribute will link something.

link an email address	<pre> email me </pre> <p style="text-align: center;">email me</p>
-----------------------------	---

link a web address	<pre> to see tags list </pre> <p style="text-align: center;">to see tags list</p>
--------------------------	---

link a telephone number

```
<a href = "tel: +14081234567">
    call us: +1 408-123-4567(fake)
</a>
    call us: +1 408-123-4567(fake)
```

go to the linked ID

```
<p id = "test">
    This is a test paragraph
</p>
<br>
...
<br>
<a href = "#test">
    goto test
</a>
```

go to an empty ID

```
<a href = "#">
    void
</a>
```

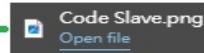
link something use other media file (image, video, etc.)

```
<a href = "#">
    <img src = "images/Code Slave Wallpaper.png"
        alt = "code slave"
        width = "100px"
        height = "70px">
</a>
```



download attribute

When you click on it, the file in the **href** attribute will be downloaded.

```
<a href = "images/Code Slave Wallpaper.png"
    download = "Code Slave">
    click here to download the image
</a>
click here to download the image → 
```

And the text within **download** attribute is a file name of the downloaded file.

target attribute

This tag specifies an open method.

This attribute has 5 values:

- _blank** opens the link in a new tab or window.
- _self** opens the link in the same frame.(default)
- _parent** opens the link in the parent frame.
- _top** opens the link in the full body of the window.
- name** opens the link in the name frame what you created.

But **_blank** and **_self** (or you can ignore the attribute, because it's a default value) are usual values.

2.

reference

https://www.w3schools.com/tags/tag_img.asp

This is a self-closing tag.

This tag allows us to display an image on the website.

This tag has many attributes, but I only list some useful ones here.

src attribute

This attribute specifies an image to show.

You should move this image to the directory where the HTML appears, and then move it to another subdirectory, whether absolute or relative. Because the most browsers cannot access your computer to find the image directly, unless you're using a local server.

```
<img src = "images/Code Slave Wallpaper.png"
      width = "150px">
```

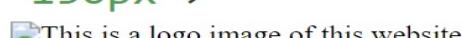


alt attribute

This attribute will show a sentence to describe this image when a browser cannot load this image or a visually impaired person is listening this website.

"**alt**" means alternative text.

```
<img src = "Code Slave Wallpaper.png"
      alt = "This is a logo image of this website"
      width = "150px">
```



width and height attributes

This attribute specifies a width or a height of this image.

This image will be displayed **at its original size** if you **don't add those attributes**.

And if you **change one of the values**, the other value will be **changed automatically with the original scale**.

```
<img src = "images/Code Slave Wallpaper.png"
      alt = "This is a logo image of this website"
      width = "160px"
      height = "90px">

```

3. <picture></picture>

reference

https://www.w3schools.com/tags/tag_picture.asp

This tag is used for providing multiple images for browser to select a fit one.

You need one or more **<source></source>** tag(s) and one **** tag.

If I've four different size .png images:

Large (1,920×1,080), Middle (960×540), Small (480×270) and Mini (240×135).

```
<picture>
  <source srcset = "images/CodeSlaveLarge.png"
          media = "(min-width: 1080px)">
  <source srcset = "images/CodeSlaveMiddle.png"
          media = "(min-width: 540px)">
  <source srcset = "images/CodeSlaveSmall.png"
          media = "(min-width: 270px)">
  <img src = "images/CodeSlaveMini.png"
       alt = "this is a logo image of this website">
</picture>
```

It likes:

```
if minimum screen width is more than 1,080 pixels:
  display large one
else if minimum screen width is more than 540 pixels:
  display middle one
else if minimum screen width is more than 270 pixels:
```

```

display small one
else:
    if browser can display:
        display mini one
    else:
        display an alternative text

```

But I recommend to **add type attribute** to specific which type are you added at the end strongly.

```

<picture>
    <source srcset = "images/CodeSlaveMiddle.png"
            media = "(min-width: 540px)"
            type = "image/png">
    <img src = "images/CodeSlaveSmall.png"
         alt = "this is a logo image of the website"
         type = "image/png">
</picture>

```

**image types
references**

https://developer.mozilla.org/en-US/docs/Web/Media/Formats/Image_types

<https://www.dofactory.com/html/media-types#image>

4. <video></video>

reference

https://www.w3schools.com/tags/tag_video.asp

This tag displays a video on the website.

This tag has many attributes but I only list some useful ones.

src, width and height attribute

Those attributes like tag.

controls attribute

This is the most important attribute in <video></video> tags.

This is a boolean attribute that means if you add it, it'll be enabled, or don't, it'll be disabled.

The video player is up to browsers, however it'll include **play, pause, seeking, volume, full screen button, subtitles** and **track** in general.

autoplay attribute

This is a boolean attribute as well.

This video will play automatically when you loaded the website if you enabled.

However it has been displayed by **Google Chrome** in April, 2018 to improve user experiences.

loop attribute

This is also a boolean attribute.

This video will play again and again when you enable it.

muted attribute

This is a boolean attribute as well.

This video will play mutely when you enable it.

```
<video controls autoplay loop muted  
        width = "100%"  
        src = "videos/  
        YouTubeSubScribeAndAddANotationBell.mp4">  
</video>
```



I suggest that you should add multiple **<source>** to include multiple video types, in case the browser doesn't support a particular type and add a sentence

between **<video>** and **</video>** to display a sentence if a user's browser doesn't support **<video>** tag.

```
<video controls autoplay loop muted width = "100%">
    <source src = "videos/YouTubeSubScribeAndAddANotationBell.mp4"
            type = "video/mp4">
    <source src = "videos/YouTubeSubScribeAndAddANotationBell.mov"
            type = "video/quicktime">
    <source src = "videos/YouTubeSubScribeAndAddANotationBell.webm"
            type = "video/webm">
    Your browser doesn't support videos.
</video>
```

And the most browsers support **.mp4 (video/mp4)**, **.mov (video/quicktime)**, **.webm (video/webm)** and **.ogg (video/ogg)**.

video types references

<https://developer.mozilla.org/en-US/docs/Web/Media/Formats/Containers>

<https://www.dofactory.com/html/media-types#video>

5. <audio></audio>

reference

https://www.w3schools.com/tags/tag_audio.asp

This tag is similar than **<video></video>** tag but used to display an audio. This tag has **controls**, **autoplay**, **loop**, **muted** and **src** attributes as well and those usages are the same as **<video></video>** tag's. For the most browsers, they support **.mp3 (audio/mpeg)**, **.wav (audio/wav)** and **.ogg (audio/ogg)**.

audio types references

<https://www.dofactory.com/html/media-types#audio>

```
<audio controls autoplay loop muted>
    <source src = "audios/YouTubeSubScribeAndAddANotationBell.ogg"
            type = "audio/ogg">
    <source src = "audios/YouTubeSubScribeAndAddANotationBell.wav"
            type = "audio/wav">
    <source src = "audios/YouTubeSubScribeAndAddANotationBell.mp3"
            type = "audio/mpeg">
    Your browser doesn't support audio.
</audio>
```



e. layout

1.

reference

https://www.w3schools.com/tags/tag_span.asp

This tag will create an inline container.

The span just occupied the element space.

And we **CANNOT CHANGE THE SPACE SIZE**.

```
<p>      index.html
    This is a <span id = "test">test</span>.
    This <span id = "paragraph">paragraph</span> is used to show <span id = "span">span</span> tag function.
</p>
This is a test. This paragraph is used to show span tag function.

*{index.css
color: gray;
}

#test{
font-size: 16px;
color: red;
}

#paragraph{
font-size: 18px;
color: blue;
}

#span{
font-size: 20px;
color: black;
}
```

2. <div></div>

reference

https://www.w3schools.com/tags/tag_div.asp

This tag will create a block container.

The div **occupied the whole space**.

And we **CAN CHANGE THE SPACE SIZE** and browsers always place

**
** tag after and before the **<div></div>** element.

This tags are **more widely used** than **** tags.

```
<div id = "redContainer">
    This is a test div container.
</div>index.html

#index.css
#redContainer{
background-color: red;
text-align: center;
font-size: 20px;
color: blue;
font-weight: bold;
}
```

This is a test div container.

3. <hr>

reference

https://www.w3schools.com/tags/tag_hr.asp

This is a self-closing tag as well.

hr means **horizontal rule**.

This is displayed as a line that **occupies the whole line usually**.

<hr>

4.

reference

https://www.w3schools.com/tags/tag_br.asp

This is a self-closing tag as well.

br means line **break**, which will add a new line after the element.

<p>

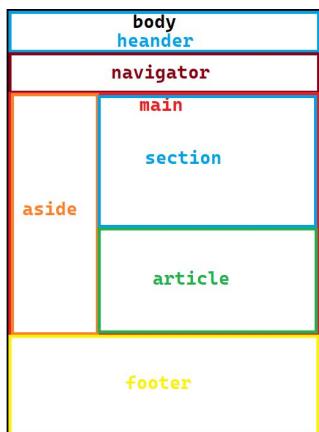
I'm Caesar James
LEE. I'm Caesar James
LEE.

</p>

5. <header></header>

reference

https://www.w3schools.com/tags/tag_header.asp



layout reference

https://www.w3schools.com/html/html_layout.asp

V@ Áæ Á á Á^ Á Á d[Á~ &q | ^ Á[} c^ } Á~ &@ Á Á
c| ^ Á
Á { |{ æ Á
Á Á

And you can add it in <main></main> and <footer></footer> tags as well.

```

<header id = "header">
  <div id = "LogoContainer">
    <img src = "images/CodeSlaveMini.png"
      alt = "a LOGO of Code Slave"
      id = "LogoImage">
  </div>
  <p id = "title">CODE SLAVE</p>
</header>index.html
<title>
  display: flex;
  align-items: center;
  justify-content: center;
  font: 25px Arial;
  color: cyan;
} index.css
#header{
  display: grid;
  grid-template-columns: 2fr 8fr;
  grid-template-rows: 50px;
  justify-content: space-around;
} index.css
#LogoContainer{
  display: flex;
  align-items: center;
  justify-content: center;
  height: 35px;
  opacity: 70%;
  padding: 5px;
} index.css
#LogoImage{
  height: 39px;
  border-radius: 50px;
} index.css
  CODE SLAVE

```

6. <footer></footer>

reference

https://www.w3schools.com/tags/tag_footer.asp

This tag defines an tail section of the website.
It contains **copyrights**, **author**, **back to top**, **contraction** and so on information.

```
<footer>
    author: <b>Caesae James</b> <i>LEE</i><br>
    copyright: no copyright &copy; yet<br>
</footer>
author: Caesae James LEE
copyright: no copyright © yet
```

7. <address></address>

reference

https://www.w3schools.com/tags/tag_address.asp

This tag defines a set of contact information about author or owner of the website.

It's added in **<footer></footer>** tags usually.

The text in the **<address></address>** tag will be displayed in **italic**.
And browsers will **add a line before and after** the tag.

```
<footer>
    author: <b>Caesae James</b> <i>LEE</i>
    <address>
        email us: <a href = "mailto:fake@gmail.com">Caesar James LEE</a><br>
        call us: <a href = "tel: +14081234567">+1 408-123-4567(fake)</a>
    </address>
    copyright: no copyright &copy; yet<br>
</footer>
author: Caesae James LEE
email us: Caesar James LEE
call us: +1 408-123-4567(fake)
copyright: no copyright © yet
```

8. <nav></nav>

reference

https://www.w3schools.com/tags/tag_nav.asp

You can link something to help users visit your website fast.
And sometimes you might find a set of navigation links at the bottom of the website, but having a navigation bar in **<header></header>** tag is fairly common now.

And we should put all items into a **list** in the most cases, but we haven't learned it yet.

```

<nav id = "navigator">
    <a href = "html/home.html">
        <div class = "navigation">Home</div>
    </a>
    <a href = "#caesar">
        <div class = "navigation">Caesar</div>
    </a>
    <a href = "#james">
        <div class = "navigation">James</div>
    </a>
    <a href = "#lee">
        <div class = "navigation">LEE</div>
    </a>
    <a href = "html/about.html">
        <div class = "navigation">About</div>
    </a>
</nav>index.html

```

```

#navigator{
    display: grid;
    grid-template-columns: repeat(5, 1fr);
    grid-template-rows: 50px;
}
.index.css
.navigation{
    display: flex;
    align-items: center;
    justify-content: center;
    font: 25px "Times New Roman";
    color: cyan;
    background-color: gray;
    border: solid 1px black;
    border-radius: 50px;
    padding: 5px;
}
.index.css

```

[Home](#) [Caesar](#) [James](#) [LEE](#) [About](#)

9. <main></main>

reference

https://www.w3schools.com/tags/tag_main.asp

It contains many elements such as **<aside></aside>**, **<section></section>**, **<article></article>** and so on but **<header></header>** and **<footer></footer>**.

This is a **main area** to alternate to users in a website.

```

<main id = "main">
    <h2 id = "title">Welcome to Caesar James LEE's website</h2>
</main>
#main{
    border: solid 1px red;
    padding: 5px 12px;
    margin: 5px 3px;
}
.title{
    font: 50px "New Times Roman";
    text-transform: capitalize;
    color: cyan;
    text-align: center;
}

```

Welcome To Caesar James LEE's Website

10. <aside><aside>

reference

https://www.w3schools.com/tags/tag_aside.asp

This tag will create a side bar.

It can include contents, advertisements, etc.

```

<body>
    <main id = "main">
        <aside id = "aside">
            <a href = "#caesar" class = "contents">
                <div>Caesar</div>
            </a>
            <a href = "#caesar" class = "contents">
                <div>James</div>
            </a>
            <a href = "#caesar" class = "contents">
                <div>LEE</div>
            </a>
        </aside>
        <h2 id = "title">welcome to caesar james LEE's website</h2>
    </main>
</body>
#title{
    text-transform: capitalize;
    font: 39px Arial;
    color: cyan;
    text-align: center;
} index.css

```

```

#main{
    margin: 5px 3px;
    padding: 3px 1px;
    display: grid;
    grid-template-columns: 1fr 9fr;
    grid-template-rows: auto;
    column-gap: 10px;
    border: solid 1px red;
} index.css
#aside{
    padding: 3px;
    display: flex;
    flex-direction: column;
    background-color: #rgb(72, 72, 72);
} index.css
.contents{
    font: 25px "New Times Roman";
    font-weight: bold;
    color: lightcyan;
    text-decoration: none;
    height: 100%;
    width: 100%;
    border-top: solid 1px lightskyblue;
    border-bottom: solid 1px lightskyblue;
    text-align: center;
} index.css

```



11. <section><section>

reference

https://www.w3schools.com/tags/tag_section.asp

You can know its functions by its name that it defines a section content in the website.

And you can define multiple **<section>** tags to divide website.

```

<section id = "caesar">
    <h1>Caesae</h1>
    <p>This is my first name.</p>
</section>

<br>

<section id = "james">
    <h1>James</h1>
    <p>This is my middle name,<br>and it's inherited from my daddy.</p>
</section>

<br>

<section id = "lee">
    <h1>LEE</h1>
    <p>This is my last name.</p>
</section>

```

Caesae
This is my first name.

James
This is my middle name,
and it's inherited from my daddy.

LEE
This is my last name.

12. <article><article>

reference

https://www.w3schools.com/tags/tag_article.asp

It likes **<section>** tags, but its content should be **independent** and **self-contained**.

It should include **news articles, blog posts, job posts**, etc.

```
<article>
  <h1>What A Happy Day!</h1>          What A Happy Day!
  <p>Please write your story...</p> Please write your story...
</article>
```

f. data type**1. tables****reference**

https://www.w3schools.com/html/html_tables.asp

STEPS

- I. We need a pair of **<table></table>** tag to define a table area.
- II. We need multiple pair of **<tr></tr>** tags that means **table row** to tell browsers how many rows we need.
- III. We need multiple pair of **<th></th>** tags that means **table header** to tell browsers how many columns we need in the first pair of **<tr></tr>** tags.
- IV. We need multiple pair of **<td></td>** tags that means **table data** to show data into cells within **every pair** of **<tr></tr>** tags **but the first**. And the number of **<td></td>** tags must **equal to** the number of **<th></th>** tags.

You can decorate it by HTML's attributes, but I don't recommend it.

Decorating it with CSS is a good way.

```
<table>
  <tr>
    <th>name</th>
    <th>score</th>
    <th>grade</th>
    <th>class</th>
  </tr>
  <tr>
    <td>Caesar</td>
    <td>100</td>
    <td>A+</td>
    <td>No.1</td>
  </tr>
  <tr>
    <td>Clack</td>
    <td>70</td>
    <td>C</td>
    <td>No.1</td>
  </tr>
  <tr>
    <td>Jessica</td>
    <td>80</td>
    <td>B</td>
    <td>No.2</td>
  </tr>
  <tr>
    <td>Taylor</td>
    <td>97</td>
    <td>A</td>
    <td>No.2</td>
  </tr>
</table>
```

name	score	grade	class
Caesar	100	A+	No.1
Clack	70	C	No.1
Jessica	80	B	No.2
Taylor	97	A	No.2

2. lists**reference**

https://www.w3schools.com/html/html_lists.asp

HTML has three types of lists: unordered lists, ordered lists and description lists.

Unordered Lists

You can think of a grocery list.

And the list items will be marked with **bullets** (small black circles) by default.

STEPS

- I. We need a pair of **** tag that means **unordered list** to define **an unordered list area**.
- II. We need multiple pair of **** tags that means **list item** to tell browsers **what's the item**.

```
<h2>My favourite songs</h2>
<ul>
  <li>黃明志 我還是我</li>
  <li>黃明志 不想放開</li>
  <li>aespa Life's Too Short</li>
  <li>(G)I-DLE Allergy</li>
  <li>(G)I-DLE Nxde</li>
  <li>(G)I-DLE TOMBOY</li>
  <li>BLACKPINK Shut Down</li>
  <li>BLACKPINK Kill This Love</li>
  <li>BLACKPINK How You Like That</li>
  <li>Taylor Swift Love Story (Taylor's Version)</li>
  <li>Taylor Swift You Belong With Me (Taylor's Version)</li>
  <li>Taylor Swift You're Losing Me (From The Vault)</li>
  <li>...</li>
</ul>
```

My favourite songs

- 黃明志 我還是我
- 黃明志 不想放開
- aespa Life's Too Short
- (G)I-DLE Allergy
- (G)I-DLE Nxde
- (G)I-DLE TOMBOY
- BLACKPINK Shut Down
- BLACKPINK Kill This Love
- BLACKPINK How You Like That
- Taylor Swift Love Story (Taylor's Version)
- Taylor Swift You Belong With Me (Taylor's Version)
- Taylor Swift You're Losing Me (From The Vault)
- ...

Ordered Lists

You can think of a rank.

And the list items will be marked with **numbers** by default.

STEPS

- I. We need a pair of **** tag that means **ordered list** to define **an ordered list area**.
- II. We need multiple pair of **** tags that means **list item** to tell browsers **what's the item**.

```
<h2>companies worth more than US$ 1 Trillion:</h2>
<ol>
  <li>Apple</li>
  <li>Amazon</li>
  <li>Alphabet (Google)</li>
  <li>Tesla</li>
  <li>Meta</li>
  <li>Microsoft</li>
  <li>NVIDIA</li>
</ol>
```

companies worth more than US\$ 1 Trillion:

1. Apple
2. Amazon
3. Alphabet (Google)
4. Tesla
5. Meta
6. Microsoft
7. NVIDIA

Description Lists

You can think of a dictionary.

STEPS

- I. We need a pair of **<dl></dl>** tag that means **description list** to define **a description list area**.
- II. We need multiple pair of **<dt></dt>** tags that means **description term** to tell browsers **what's the term**.
- III. We need a pair of **<dd></dd>** tag per a pair of **<dt></dt>** tag that means **define descriptions** to tell browsers **what's descriptions of the term**.

```
<h2>Translation</h2>
<dl>
  <dt>I love HTML</dt>
  <dd>我愛 HTML</dd>
  <dt>I love programming</dt>
  <dd>我愛程式設計</dd>
  <dt>But I dislike to be a code slave</dt>
  <dd>但我不喜歡成為一個程式碼奴隸</dd>
</dl>
```

Translation

I love HTML
我愛 HTML

I love programming
我愛程式設計

But I dislike to be a code slave
但我不喜歡成為一個程式碼奴隸

3. buttons

reference

https://www.w3schools.com/tags/tag_button.asp

This tag is used to **create a button**.

I'll discuss "**reset**" and "**submit**" type buttons in "**forms**".
It has many attributes, but I list some useful ones here.

autofocus attribute

This is a boolean attribute.

If you've added it, the button will be selected when the website loads.

```

<button id = "hi">hi</button> index.html
<button id = "hello" autofocus>hello</button>
#hello{index.css
    background-color: lightgreen;
    font-size: 20px;
    color: brown;
    opacity: 50%;
}
#hello:focus{ index.css
    opacity: 100%;

#hi{index.css
    background-color: darkcyan;
    font-size: 20px;
    color: darkgray;
    opacity: 50%;

#hi:focus{ index.css
    opacity: 100%;

button test }

hi hello
  
```

disabled attribute

This is a boolean attribute as well.

If you've added it, a user cannot click the button.

```

<button id = "hi">hi</button>
<button id = "hello" disabled>hello</button>
#hello{
    background-color: lightgreen;
    font-size: 20px;
    color: brown;
    opacity: 100%;

}
#hello:disabled{
    opacity: 20%;
    cursor: not-allowed;

#hi{index.css
    background-color: darkcyan;
    font-size: 20px;
    color: darkgray;
    opacity: 100%;

#hi:disabled{
    opacity: 20%;
    cursor: not-allowed;

button test }

hi hello
  
```

popovertarget & popovertargetaction attributes

Those attributes are used to hide or show a popover element.

popovertarget attribute is used to **select an element**.

popovertargetaction attribute is used to **set a popover style of the element**.

But the first at all, you should **add popover and id attributes to the element** to set it to be a popover element and give it an id name to select it.

And **popovertargetaction** attribute has three values:

hide to hide the popover element.

show to show the popover element.

toggle to hide/show the popover element. (**default**)

```
<button popovertarget = "codeSlave"
|   |   |   popovertargetaction = "hide">click me to hide the picture</button>
<button popovertarget = "codeSlave"
|   |   |   popovertargetaction = "show">click me to show the picture</button>
<button popovertarget = "codeSlave">click me to hide/show the picture</button>
<img src = "images/Code Slave Wallpaper.png"
|   width = 500px
|   popover
|   id = "codeSlave">
click me to hide the picture | click me to show the picture | click me to hide/show the picture
```



4. forms

reference

https://www.w3schools.com/html/html_forms.asp