

Information Technology Essentials — Lecture 13

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Web Technology (Part 2)

HyperText Markup Language

?

HyperText Markup Language (HTML)

Definition

HTML. Is a standard declarative interpreted programming language used to write web documents (webpages) displayed by a web browser (interpreter).



A document containing HTML source code has extension *.html or *.htm.

HyperText Markup Language (HTML)

The **HTML** language has the following characteristics (some of them):

- HTML is a language to write static webpages or websites (i.e., fixed content, limited interactivity, quick loading, ease of hosting, etc).
- HTML is not a Turing-complete language. I.e., cannot perform any computation that can be described algorithmically.
- HTML is often complemented by other technologies like CSS (Cascading Style Sheets) for styling and layout, and JavaScript for adding interactivity and dynamic behavior to web pages.
- HTML is interpreted and compiled by a web-browser, e.g., Google Chrome, Mozilla Firefox, Apple Safari, Microsoft Edge, Opera, etc.
- HTML had several versions, the current version is HTML 5 (in 2014).
- Maintained by W3C, and then by WHATWG, and now both.



HyperText Markup Language (HTML)

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- HTML had several versions, the current version is HTML 5 (in 2014).
- Maintained by W3C, and then by WHATWG, and now both.



HTML Essentials

Well, HTML is a language, a webpage is a document written mostly in HTML, and a website is a collection of webpages that are logically connected using hyperlinks... but I do make a website using HTML?

☞ This is what you should do [**Legacy Way**]:

- ① Create a folder in your computer (put it wherever you want).
- ② Move into the folder and open notepad or any text editor.
- ③ Type in some HTML code, save the file with extension (html or htm), then close it. You've made a webpage.
- ④ Repeat Step 2 till you finish creating all your webpages. The code you inserted would contain some HTML hyperlinks connecting the various pages you created (it does not make sense if you do not use hyperlinks).
- ⑤ Name the main webpage as `index.html` (`index.htm`).
- ⑥ Use your web-browser and open the `index.html` page.
- ⑦ Congrats! you can surf over your website.

HTML Essentials

Well, HTML is a language, a webpage is a document written mostly in HTML, and a website is a collection of webpages that are logically connected using hyperlinks... but I do make a website using HTML?

☞ This is what you should do [**Modern Way**]:

- ① Use an IDE, e.g., Visual Studio Code (VS Code).
- ② Add Live-Server extension to the IDE.
- ③ Create a folder for your project.
- ④ Create an empty file inside the created folder.
- ⑤ Use VS code's text editor to write HTML code.
- ⑥ Type in some HTML code, save the file, then run the live server.
- ⑦ Your default web-browser will pop-up displaying your webpage.
- ⑧ Repeat Step 4 till you finish creating all your webpages. The code you inserted would contain some HTML hyperlinks connecting the various pages you created (it does not make sense if you do not use hyperlinks).
- ⑨ Use your web-browser and open the `index.html` page.
- ⑩ Congrats! you can surf over your website.

HTML Structure and Elements

What do we write inside our HTML files?

HTML Structure and Elements

In order for your HTML file to be compliant with basic HTML standards, your document should start with a “DOCTYPE declaration” (statement):

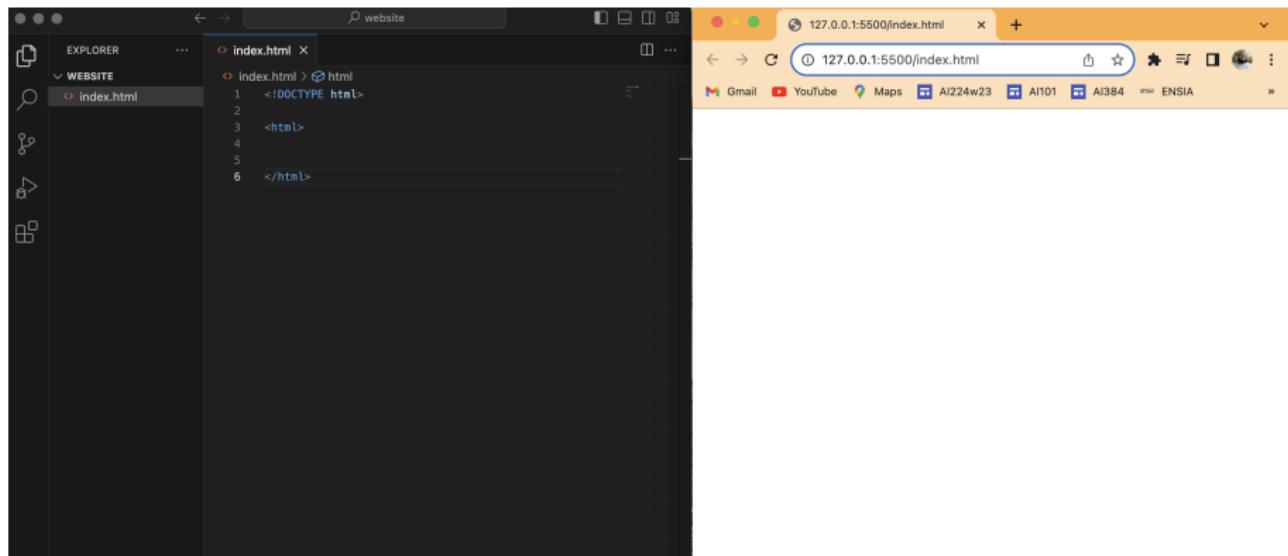
```
<!DOCTYPE html>
```

It lets the visitor's web-browser know that this is a, HTML 5 document.

Following this declaration, the file will start defining how the browser will start structuring and formating the content of the webpage. To that end, we use two **HTML tags** (an opening tag and a closing tag):

```
<html> ...content... </html>
```

Your entire HTML code will be placed within these two HTML tags.



HTML Structure and Elements (Head and Body)

Within the two HTML tags, you need to define two major sections: HEAD and BODY.

Using the opening and closing tags for head section, we can add information related to the webpage. E.g., the title of your webpage.

```
<head> ...head content... </head>
```

To add a title, you need to use the title-tags. The title will appear on the web-browser's tab displaying your webpage.

```
<head><title> ...my title... </title></head>
```

Next is the body section, where your main HTML code (what you want to display to the user — visitor of the webpage) will be placed.

```
<body> ...content... </body>
```

The image shows a screenshot of a web development environment, likely Microsoft Edge, displaying an HTML file named "index.html".

Explorer View:

- WEBSITE
- index.html

Code Editor:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
</body>
</html>
```

Browser Preview:

ITE HTML coding

127.0.0.1:5500/index.html

Gmail YouTube Maps AI224w23 AI101 AI384 ENSIA

HTML Structure and Elements (Header Formatting)

In the content of the BODY, you can add whatever content you want:

- ① You can put header tags, which allows you to write large titles:

```
<h1> ...title... </h1> you will get title
```

You can have smaller header text:

```
<h2> ...title... </h2> you get title
```

```
<h3> ...title... </h3> you get title
```

```
<h4> ...title... </h4> you get title
```

```
<h5> ...title... </h5> you get title
```

```
<h6> ...title... </h6> you get title
```

The image shows a dual-pane interface for web development. On the left, the 'EXPLORER' panel displays a 'WEBSITE' folder containing an 'index.html' file. The code editor pane shows the following HTML structure:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>ENSIA</h1>
<h2>ENSIA</h2>
<h3>ENSIA</h3>
<h4>ENSIA</h4>
<h5>ENSIA</h5>
<h6>ENSIA</h6>
</body>
</html>
```

On the right, a browser window titled 'ITE HTML coding' shows the rendered output: a vertical stack of six 'ENSIA' headings from h1 to h6.

HTML Structure and Elements (Some Formatting)

In the content of the BODY, you can add whatever content you want:

- ② You can create paragraph elements using p-tags:

```
<p> ...paragraph... </p>
```

- ③ You can add break line tags to break lines (don't need a closing tag):

```
<br>
```

- ④ You can add a horizontal rule (line) using the HR-tags (don't need a closing tag). Interesting if you want to separate your different sections:

```
<hr>
```

- ⑤ You can comments (not interpreted — not displayed by your browser) using comment-tags:

```
<!-- ... comments ... -->
```

The screenshot shows a code editor on the left and a browser window on the right. The code editor displays the HTML file 'index.html' with its code. The browser window shows the rendered HTML with the heading 'ENSIA' and a descriptive paragraph. Below this, there is a section titled 'Students Explore Algiers International Book Fair' with a paragraph of text.

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>ENSIA</h1>
<p>
The National School of Artificial Intelligence  

is an institution of excellence for education  

whose vocation is to educate engineers specializing  

in the theory of artificial intelligence and data  

sciences. They will also have the capacity to deve  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

(health, energy, agriculture, transport, etc.), th
</p>
<hr>
<h2>Students Explore Algiers International Book Fa
<p>
On Saturday, October 28, 2023, students from the s  

accompanied by a team of employees with the librar  

visited Algiers International Book Fair to explore
</p>
</body>
</html>
```

HTML Structure and Elements (Hyperlinks)

In the content of the BODY, you can add whatever content you want:

- ⑥ You can turn titles, words, paragraphs, boxes, images, ..., into hyperlinks using a-tags, which have an attribute "href" to specify the URL of another webpage (if clicked, the URL's webpage will be displayed):

```
<a href="another webpage | URL">...hypertext...</a>
```

- ☞ You can open the new page on a new tab by specifying the attribute target=_blank (the default is target=_self).
- ☞ The other webpage should be located on the same folder as the current webpage. Otherwise, the complete path should be specified.
- ☞ You could point to the same page using anchors: E.g., href="#bottom".
- ☞ You can turn a text into a mailing link to send an email:

```
<a href="mailto:karim.lounis@ensia.edu.dz">Email me</a>
```

The screenshot shows a development environment with two main windows. On the left is the 'EXPLORER' panel under 'WEBSITE', which lists 'index.html'. The right window displays the source code of 'index.html' and its rendered output.

Source Code (index.html):

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>
    <a href="https://www.ensia.edu.dz">ENSIA</a>
</h1>
<p>
    The National School of Artificial Intelligence  

    is an institution of excellence for education  

    whose vocation is to educate engineers specializing  

    in the theory of artificial intelligence and data  

    sciences. They will also have the capacity to deve  

    and deploy practical and innovative solutions to  

    the problems of the various socio-economic sectors  

    (health, energy, agriculture, transport, etc.), th
</p>
</body>
</html>
```

Renders:

The rendered page shows a blue header bar with the title 'ITE HTML coding'. The main content area has a yellow background. It features a large blue 'h1' heading with the text 'ENSIA'. Below it is a blue paragraph containing the text about the National School of Artificial Intelligence.

The screenshot shows a web development setup with two main windows. On the left is the 'EXPLORER' view of a 'WEBSITE' project, which contains an 'index.html' file. The code editor window on the right displays the HTML code for 'index.html'. The browser preview window on the right shows the live website at <https://www.ensia.edu.dz>. The website has a dark blue background with white text. It features a logo with three horizontal bars and the word 'ensia'. Below the logo, the text reads: 'The National School of Artificial Intelligence' and 'is an institution of excellence for education whose vocation is to educate engineers specializing in the theory of artificial intelligence and data sciences. They will also have the capacity to develop and deploy practical and innovative solutions to the problems of the various socio-economic sectors (health, energy, agriculture, transport, etc.).'. At the bottom, it says 'Welcome to a world of innovation.'

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>
<a href="https://www.ensia.edu.dz">ENSIA</a>
</h1>
<p>
The National School of Artificial Intelligence
is an institution of excellence for education
whose vocation is to educate engineers specializing
in the theory of artificial intelligence and data
sciences. They will also have the capacity to deve
and deploy practical and innovative solutions to
the problems of the various socio-economic sectors
(health, energy, agriculture, transport, etc.), th
</p>
</body>
</html>
```

The screenshot shows a web development interface with two main panes. On the left, the 'EXPLORER' pane displays a 'WEBSITE' folder containing an 'index.html' file. The right pane is a code editor showing the HTML code for 'index.html'. The browser tab at the top right is titled 'ITE HTML coding' and shows the URL '127.0.0.1:5500/index.html'. The browser window displays the rendered content of the HTML page.

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>
<a href="https://www.ensia.edu.dz" target="_blank">ENSIA</a>
</h1>
<p>
The National School of Artificial Intelligence  

is an institution of excellence for education  

whose vocation is to educate engineers specializing  

in the theory of artificial intelligence and data  

sciences. They will also have the capacity to develop  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

(health, energy, agriculture, transport, etc.), thus contribut
</p>
</body>
</html>
```

ENSIA

The National School of Artificial Intelligence is an institution of excellence for education whose vocation is to educate engineers specializing in the theory of artificial intelligence and data sciences. They will also have the capacity to develop and deploy practical and innovative solutions to the problems of the various socio-economic sectors (health, energy, agriculture, transport, etc.), thus contributing to the scientific and economic development of Algeria.

The screenshot shows a web development setup with two main windows. On the left is the VS Code code editor, displaying the HTML file 'index.html'. The code is as follows:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>
<a href="https://www.ensia.edu.dz" target="_blank">ENSIA</a>
</h1>
<p>
The National School of Artificial Intelligence  

is an institution of excellence for education  

whose vocation is to educate engineers specializing  

in the theory of artificial intelligence and data  

sciences. They will also have the capacity to develop  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

(health, energy, agriculture, transport, etc.), thus contribut
</p>
</body>
</html>
```

On the right is a browser window showing the live preview of the website. The browser title bar says 'ITE HTML coding' and the address bar shows 'ensia.edu.dz'. The website has a dark blue header with the 'ensia' logo. The main content area features a large white text area with the text 'The National School of Artificial Intelligence' repeated twice, followed by a horizontal orange bar and the tagline 'Welcome to a world of innovation.'

HTML Structure and Elements (Images)

In the content of the BODY, you can add whatever content you want:

- ⑦ You can insert images in your html file using the img-tag (a self-closing tag). Use the src attribute to specify the path to your image:

```

```

- ☞ You can adjust the scale of the image by assigning values to the height and width attributes, in pixels, e.g.,:

```

```

- ☞ You can add alternative text to the image to accomodate visitor using screen-readers. You can do that using the alt attribute.

```

```

The screenshot shows a web development interface with two main panes. The left pane, titled 'WEBSITE', contains an 'EXPLORER' view with a tree structure showing a 'Car.png' file and an 'index.html' file. The right pane shows the code editor for 'index.html' and its preview in a browser window.

index.html

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>ENSIA</h1>
<p>
The National School of Artificial Intelligence  

is an institution of excellence for education  

whose vocation is to educate engineers specializing  

in the theory of artificial intelligence and data  

sciences. They will also have the capacity to develop  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

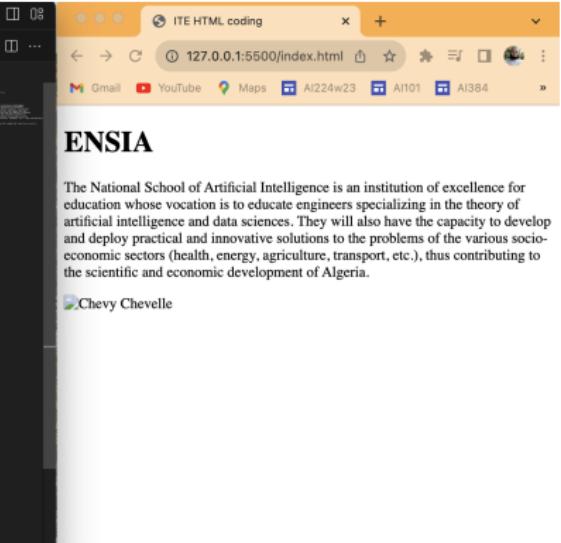
(health, energy, agriculture, transport, etc.), thus contribut
</p>

</body>
</html>
```

ENSIA

The National School of Artificial Intelligence is an institution of excellence for education whose vocation is to educate engineers specializing in the theory of artificial intelligence and data sciences. They will also have the capacity to develop and deploy practical and innovative solutions to the problems of the various socio-economic sectors (health, energy, agriculture, transport, etc.), thus contributing to the scientific and economic development of Algeria.

A black and white photograph of a classic Chevrolet Chevelle SS 396 coupe parked in front of a brick building. The car is dark-colored with prominent white racing stripes along the side. It has a distinctive front grille with the Chevrolet bowtie logo and a large hood scoop. The background shows some industrial or construction equipment, including a forklift and wooden pallets.



The screenshot shows a code editor on the left and a browser window on the right. The code editor displays the HTML file 'index.html' with the following content:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>ENSIA</h1>
<p>
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whose vocation is to educate engineers specializing  

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sciences. They will also have the capacity to develop  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

(health, energy, agriculture, transport, etc.), thus contribut
</p>

</body>
</html>
```

The browser window shows the rendered HTML page with the heading 'ENSIA' and the descriptive paragraph. Below the paragraph is an image of a Chevy Chevelle car.

HTML Structure and Elements (Audio)

In the content of the BODY, you can add whatever content you want:

- ⑧ You can add audio element to your webpage using the audio-tag (a self-closing tag). Use the src attribute to specify the path to your audio file (e.g., mp3, ogg, or wav file):

```
<audio src="path to audio">
```

- ☞ You can add a control pannel to control your audio using the boolean control attributes (true by default), and make it play automatically. You can also mute it or play it in a loop. E.g.,:

```
<audio src="path to audio" control autoplay mute loop>
```

- ☞ If suspect that a browser may not support audio, then you can set alternatives (e.g., display text) instead of playing the audio:

```
<audio controls><source src="a.mp3">Alternative text</audio>
```

The screenshot shows a Microsoft Edge browser window with two tabs. The left tab is titled 'P website' and displays the HTML code for 'index.html'. The right tab is titled 'ITE HTML coding' and shows the rendered HTML page.

index.html

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<h1>ENSIA</h1>
<p>
The National School of Artificial Intelligence  

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sciences. They will also have the capacity to develop  

and deploy practical and innovative solutions to  

the problems of the various socio-economic sectors  

(health, energy, agriculture, transport, etc.), thus contribut
</p>
<audio src="HTML_Audio.wav" controls autoplay>
</body>
</html>
```

ENSIA

The National School of Artificial Intelligence is an institution of excellence for education whose vocation is to educate engineers specializing in the theory of artificial intelligence and data sciences. They will also have the capacity to develop and deploy practical and innovative solutions to the problems of the various socio-economic sectors (health, energy, agriculture, transport, etc.), thus contributing to the scientific and economic development of Algeria.

HTML Structure and Elements (Videos)

In the content of the BODY, you can add whatever content you want:

- ⑨ You can add video element to your webpage using the video-tag (a self-closing tag). Use the src attribute to specify the path to your video file (e.g., mp4, ogg, or webm file):

```
<video src="path to video">
```

- ☞ You can add a control panel to control your video using the boolean control attributes (true by default), and make it play automatically. You can also mute it or play it in a loop. E.g.,:

```
<audio src="path to video" control autoplay mute loop>
```

- ☞ You can adjust the scale of the video by assigning values to the height and width attributes, in pixels, e.g.,:

```
<video src="path to video" height="200" weight="400">
```

HTML Structure and Elements (Videos)

In the content of the BODY, you can add whatever content you want:

- ⑨ You can add video element to your webpage using the `video`-tag (a self-closing tag). Use the `src` attribute to specify the path to your video file (e.g., mp4, ogg, or webm file):

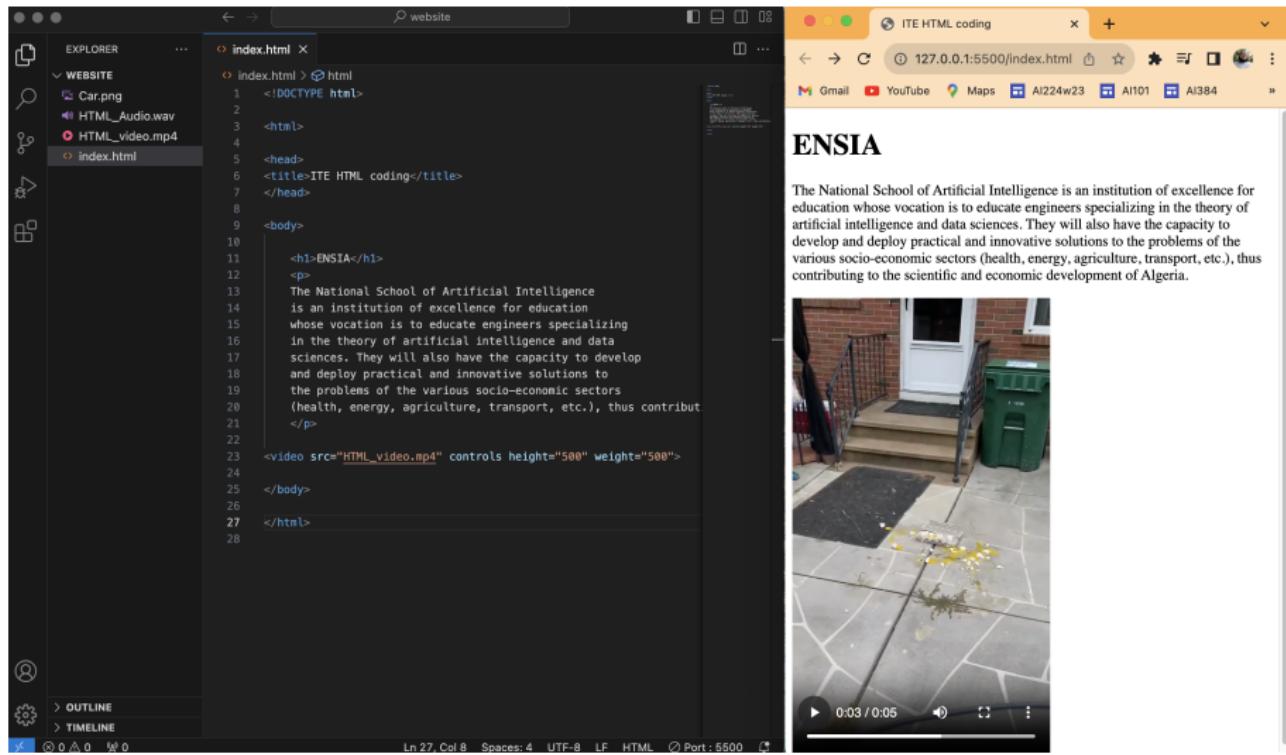
```
<video src="path to video">
```

- ☞ You can adjust the scale of the video by assigning values to the `height` and `width` attributes, in pixels, e.g.:;

```
<video src="path to video" height="200" weight="400">
```

- ☞ If suspect that a browser may not support video, then you can set alternatives (e.g., display text) instead of playing the video:

```
<video controls><source src="a.mp3">Alternative text</video>
```



The screenshot shows a web development environment with two main panes. The left pane is a code editor for 'index.html' with dark mode styling. The right pane is a browser window displaying the final output.

Code Editor (Left):

```
<!DOCTYPE html>
<html>
  <head>
    <title>ITE HTML coding</title>
  </head>
  <body>
    <h1>ENSIA</h1>
    <p>
      The National School of Artificial Intelligence  

      is an institution of excellence for education  

      whose vocation is to educate engineers specializing  

      in the theory of artificial intelligence and data  

      sciences. They will also have the capacity to develop  

      and deploy practical and innovative solutions to  

      the problems of the various socio-economic sectors  

      (health, energy, agriculture, transport, etc.), thus contribut
    </p>
    <video src="HTML_video.mp4" controls height="500" weight="500">
    </body>
  </html>
```

Browser Preview (Right):

ENSIA

The National School of Artificial Intelligence is an institution of excellence for education whose vocation is to educate engineers specializing in the theory of artificial intelligence and data sciences. They will also have the capacity to develop and deploy practical and innovative solutions to the problems of the various socio-economic sectors (health, energy, agriculture, transport, etc.), thus contributing to the scientific and economic development of Algeria.



A video player is overlaid on the browser preview, showing a frame from a video. The video depicts a messy outdoor area with debris and liquid on a paved surface near a brick building with a white door.

HTML Structure and Elements (Text Formatting)

In the content of the BODY, you can add whatever content you want:

- ⑩ You can make a text look bold:

```
<b>text</b>      this will show text
```

- ⑪ You can make a text look italic:

```
<i>text</i>      this will show text
```

- ⑫ You can make a text look big:

```
<big>text</big>      this will show text
```

- ⑬ You can make a text look small:

```
<small>text</small>      this will show text
```

The image shows a split-screen view of a web development environment. On the left, the code editor displays the contents of index.html. On the right, a browser window shows the rendered HTML with styled text.

index.html Content:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
    This text is normal<br><br>
    <b>This text is bold</b> <br><br>
    <i>This text is italic</i> <br><br>
    <big>This text's font is big</big> <br><br>
    <small>This text's font is small</small> <br><br>
</body>
</html>
```

Rendered HTML Output:

This text is normal

This text is bold

This text is italic

This text's font is big

This text's font is small

HTML Structure and Elements (Text Formatting)

In the content of the BODY, you can add whatever content you want:

- ⑯ You can create superscripts:

a⁵ this will show *a⁵*

- ⑰ You can create subscripts:

a₆ this will show *a₆*

- ⑯ You can make a text underlined (inserted):

<ins>text</ins> this will show text

- ⑰ You can cross a text (deleted)

text this will show ~~text~~

- ⑱ You can cross a text (deleted)

<mark>text</mark> this will show **text**

The screenshot shows a Microsoft Edge browser window displaying an HTML file named index.html. The browser's address bar shows the URL 127.0.0.1:5500/index.html. The page content includes:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
    &Delta; = b<sup>2</sup> - 4 a c <br><br>
    Two solution if &Delta;>0<br><br>
    x<sub>1</sub> and x<sub>2</sub><br><br>
    <ins>This is an underlined text, right?</ins><br><br>
    <del>This is a scratched text, isn't it?</del><br><br>
    <mark> This is a highlighted text </mark><br><br>
    <marquee> This is a highlighted text </marquee><br><br>
</body>
</html>
```

The browser interface includes an Explorer sidebar on the left showing files like Car.png, HTML_Audio.wav, HTML_video.mp4, and index.html. The title bar of the browser window says "ITE HTML coding". The status bar at the bottom shows navigation icons.

HTML Structure and Elements (Lists)

In the content of the BODY, you can add whatever content you want:

- ⑯ You can create unordered lists (bullet point list):

```
<ul><li>a</li><li> ... </li><li>z</li></ul>
```

- ⑰ You can create ordered lists (numbered list):

```
<ol><li>a</li><li> ... </li><li>z</li></ol>
```

- ㉑ You can create description lists:

```
<dl><dt>term</dt><dd>definition</dd></dl>
```

☞ You can create nested list out of the above three types of lists.

☞ You can specify the symbols of the lists: type="1|disc|square|a|I".

The screenshot shows a Microsoft Edge browser window with an open file named 'index.html'. The code in the file illustrates various HTML list structures and protocol definitions.

```

<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
    This is an unordered list of IT courses at ENSIA (1 Year):
    <ul>
        <li>Algorithms and Data Structures</li>
        <li>Information Technology Essentials</li>
        <li>Digital Systems</li>
    </ul>

    This is an ordered list of math courses at ENSIA:
    <ol>
        <li>Linear Algebra</li>
        <li>Probability and Statistics</li>
        <li>Analysis</li>
    </ol>

    This is description list of protocols:
    <dl>
        <dt>TCP:</dt> <dd>Transmission Control Protocol</dd>
        <dt>UDP:</dt> <dd>User Datagram Protocol</dd>
        <dt>FTP:</dt> <dd>File Transfer Protocol</dd>
    </dl>
</body>
</html>

```

This is an unordered list of IT courses at ENSIA (1 Year):

- Algorithms and Data Structures
- Information Technology Essentials
- Digital Systems

This is an ordered list of math courses at ENSIA:

- Linear Algebra
- Probability and Statistics
- Analysis

This is description list of protocols:

TCP:	Transmission Control Protocol
UDP:	User Datagram Protocol
FTP:	File Transfer Protocol

HTML Structure and Elements (Tables)

In the content of the BODY, you can add whatever content you want:

- ㉒ You can create tables in HTML using table-tags:

```
<table> ... </table>
```

We can define rows using the TR-tags:

```
<tr> ... </tr>
```

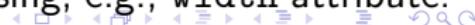
Within the TR-tags, we can define headers using the TH-tags:

```
<tr><th> ... </th><th> ... </th><th> ... </th></tr>
```

Within the TR-tags, we can define columns (data) using the TD-tags:

```
<tr><td> ... </td><td> ... </td><td> ... </td></tr>
```

We can use the attribute `bgcolor=""` to assign a color to the rows and to the table's background (borders). You can center the content using `align="center"`. You can scale the cells using, e.g., `width` attribute.



The image shows a screenshot of a web development environment. On the left, the Explorer panel lists files: WEBSITE (Car.png), HTML_Audio.wav, HTML_video.mp4, and index.html. The index.html file is open in the main editor area, displaying the following code:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body>
<table border="3" style="background-color: #rgb(124, 216, 208);>
<tr>
<th>Header 1</th> <th>Header 2</th> <th>Header 3</th>
</tr>
<tr>
<td>Element 11</td> <td>Element 12</td> <td>Element 13</td>
</tr>
<tr>
<td>Element 21</td> <td>Element 22</td> <td>Element 23</td>
</tr>
<tr>
<td>Element 31</td> <td>Element 32</td> <td>Element 33</td>
</tr>
</table>
</body>
</html>
```

To the right, the browser window shows the rendered HTML output. The table has three columns labeled Header 1, Header 2, and Header 3. The rows contain the elements defined in the code, such as Element 11 through Element 33.

HTML Structure and Elements (Colors)

In the content of the BODY, you can add whatever content you want:

- ㉓ You color the background of your webpage (using CSS properties):

```
<body style="background-color:black"> ... </body>
```

```
<body style="background-color:rgb(5,35,10)"> ... </body>
```

```
<body style="background-color:#267f44"> ... </body>
```

- ㉔ We can color for the text:

```
<body style="color:black"> ... </body>
```

We can color text and background of a paragraph:

```
<p style="color:black; background-color:orange"> ... </p>
```

Information Technology Essentials

This course introduces the foundations and essentials of information technology (IT). It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems. There will be a particular emphasis on computer systems, operating systems, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, artificial intelligence, and quantum computing. This course is intended for students with little or no background in computer technology.

HTML Structure and Elements (Spans and Divs)

In the content of the BODY, you can add whatever content you want:

- ㉕ You can change the style of a portion of a text (e.g., a sentence):

```
<span style="background-color:black">your text</span>
```

- ㉖ You can change the style of a portion of document:

```
<div style="color:black">content</div>
```

The screenshot shows a dual-pane interface. On the left is a code editor for 'index.html' with syntax highlighting for HTML. On the right is a web browser displaying the rendered content of the HTML file.

```

<!DOCTYPE html>
<html>
<body style="background-color: #rgb(217, 191, 64); color: black">
<h1> Information Technology Essentials</h1>
<p>
    This course introduces the <span style="background-color: white;> information technology</span>. It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems.
</p>
<p>
    There will be a particular emphasis on computer systems, operating systems, networks, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, <span style="background-color: white; color: red"> computing. This course is intended for students with little or no background in computer technology.
</p>
<div style="background-color: green; color: yellow;">
    <p>You will enjoy this course.</p>
</div>
</body>
</html>

```

Information Technology Essentials

This course introduces the foundations and essentials of information technology. It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems.

There will be a particular emphasis on computer systems, operating systems, networks, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, **artificial intelligence**, and quantum computing. This course is intended for students with little or no background in computer technology.

You will enjoy this course.

HTML Structure and Elements (Metadata)

In the content of the BODY, you can add whatever content you want:

- ㉗ We can tell a web-browser what our webpage is about, keywords in the webpage, set auto-refresh period, adjust webpage to user's device width, specify the encoding (ASCII or UTF-8), using a meta-tag, which expresses metadata (data about data) — good for search engines. This is placed in the head section of your HTML document:

```
<meta name="description" content="ITE course at ENSIA">  
  
<meta name="keywords" content="HTML, slides, labs">  
  
<meta name="author" content="Karim Lounis">  
  
<meta name="viewpoint" content="width=device-width">  
  
<meta http-equiv="refresh" content="60">
```

HTML Structure and Elements (iFrames)

In the content of the BODY, you can add whatever content you want:

- ② We can embed content from another source into your HTML document (e.g., used for ads):

```
<iframe src="URL" width="75" height="50" style="border:0">
```

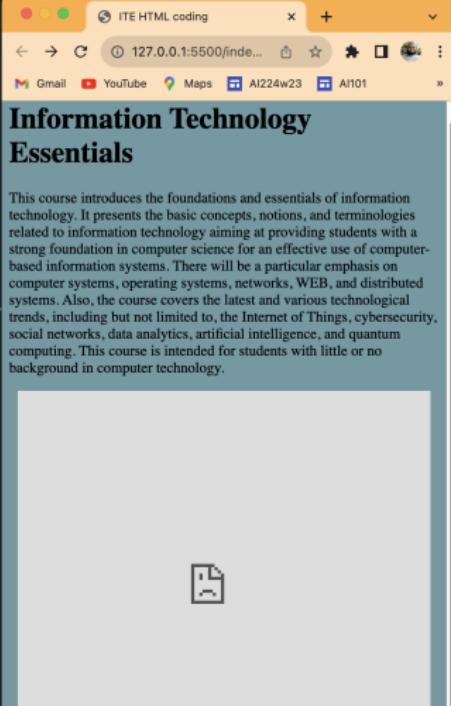
Some website have disabled the use of iframe to embed their website in other website, e.g., Google.com, usthb.dz, cerist.dz, ... you can try and see.

The screenshot shows a web browser window with two tabs open. The left tab is titled 'ITE HTML coding' and displays the source code of an HTML file named 'index.html'. The right tab shows the rendered content of the same file, which is a simple page titled 'Information Technology Essentials' with a descriptive paragraph about the course.

```

<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<h1> Information Technology Essentials</h1>
<p>
This course introduces the foundations and essentials of information technology. It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems. There will be a particular emphasis on computer systems, operating systems, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, artificial intelligence, and quantum computing. This course is intended for students with little or no background in computer technology.
</p>
<center>
<iframe src="https://www.ensia.edu.dz" width="450" height="425" style="border:none; border-radius:10px; margin: auto; display: block; width: 100%; height: 100%;"></iframe>
</center>
</body>
</html>

```



The screenshot shows a Microsoft Edge browser window titled "ITE HTML coding" displaying the content of "index.html". The page title is "Information Technology Essentials". The main text describes the course's focus on IT foundations and various technological trends. It includes a centered iframe linking to Google.

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<h1> Information Technology Essentials</h1>
<p>
This course introduces the foundations and essentials of information technology. It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems. There will be a particular emphasis on computer systems, operating systems, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, artificial intelligence, and quantum computing. This course is intended for students with little or no background in computer technology.
</p>
<center>
<iframe src="https://www.google.com" width="450" height="425" style="border:none;</iframe>
</center>
</body>
</html>
```

ITE HTML coding

Information Technology Essentials

This course introduces the foundations and essentials of information technology. It presents the basic concepts, notions, and terminologies related to information technology aiming at providing students with a strong foundation in computer science for an effective use of computer-based information systems. There will be a particular emphasis on computer systems, operating systems, networks, WEB, and distributed systems. Also, the course covers the latest and various technological trends, including but not limited to, the Internet of Things, cybersecurity, social networks, data analytics, artificial intelligence, and quantum computing. This course is intended for students with little or no background in computer technology.

Microsoft Bing

lounis karim ensia

SEARCH CHAT IMAGES

About 88,700 results

Google Scholar
https://scholar.google.com/citations?user=krA9QIMAAAAJ

Karim Lounis - Google Scholar
Web: 15. 15. Follow. Karim Lounis. Assistant Professor at ENSI. Intelligence, Algeria. Verified email at ensia.edu.dz. Network Se

EXPLORE FURTHER

Karim Lounis - Home

Github: Let's build from here - GitHub

HTML Structure and Elements (Buttons)

In the content of the BODY, you can add whatever content you want:

- 29 We can create button using button-tags:

```
<button>Click here</button>
```

You can have the button disabled:

```
<button disabled>Click here</button>
```

You can color the button disabled:

```
<button style="background-color:green">text</button>
```

We can associate a function (e.g., RunThis) to the button so that it is executed when the button is clicked. The code of the function will be written in JavaScript (Not covered in this course):

```
<button onclick="RunThis()">Click here</button>
```

The screenshot shows a code editor on the left and a browser window on the right. The code editor displays the HTML file 'index.html' with the following content:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<br><br>
This button rings the door bell of the director:<br>
<button>Click here and run away</button>
<br><br>
This button rings the door bell of the ...:<br>
<button disabled>Dare to click</button>
<br><br>
This button looks nice:<br>
<button style="background-color: #brown;">Unsubscribe</button>
<br><br>
This button also looks nice:<br>
<button style="background-color: #black; color: #yellowgreen;">Join us</button>
<br><br>
</body>
</html>
```

The browser window shows the rendered HTML with three buttons. The first button is enabled and says "Click here and run away". The second button is disabled and says "Dare to click". The third button has a brown background and white text that says "Unsubscribe". A fourth button with a black background and yellow-green text that says "Join us" is also present but is not visible due to the dark theme.

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ⑩ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Input elements:

```
<label>The label before the intput element </label>
```

```
<input type="text" name="input1" placeholder="ITE">
```

- Reset button (reset whatever in the input elements):

```
<input type="reset">
```

- Submit button (submit the data in the input elements):

```
<input type="submit">
```

The image shows a split-screen view. On the left is a code editor (VS Code) displaying the HTML code for 'index.html'. On the right is a web browser window titled 'ITE HTML coding' showing the rendered form.

Code Editor (VS Code):

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<form>
<label>Student name:</label>
<input type="text" name="" id="" placeholder="Your name">
<br><br>
<input type="reset">
<br><br>
<input type="submit">
</form>
</body>
</html>
```

Browser Preview:

Student name: Your name

Reset Submit

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

If we want the form to be sent to another page, we would specify the new page as well as the method used to transfer the data:

- GET method:

```
<form action="nextpage" method="GET">Form elms</form>
```

- POST method:

```
<form action="nextpage" method="POST">Form elms</form>
```

The GET method is going to append all input element variables to the URL, which is not secure (everything travels in plaintext + limit in URL length). The POST method however, sends data in the body of the HTTP request message (not visible in the URL + no limit in size of data).

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Password elements:

```
<label>Password </label>
```

```
<input type="password" name="input3" maxlength="12">
```

- Email elements:

```
<label>Email </label>
```

```
<input type="email" name="input4" placeholder="x@y.com">
```

- Telephone elements:

```
<label>Tel: </label>
```

```
<input type="tel" name="input5" placeholder="07394445">
```

The image shows a dual-pane interface. On the left, a code editor displays the HTML code for 'index.html'. On the right, a web browser window titled 'ITE HTML coding' shows the rendered form with input fields populated.

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<form>
<label>Username:</label>
<input type="text" name="" id="" placeholder="Your username">
<br><br>
<label>Password:</label>
<input type="password" name="" id="" placeholder="Your password">
<br><br>
<label>Email:</label>
<input type="email" name="" id="" placeholder="your@email.dz">
<br><br>
<label>Phone number:</label>
<input type="tel" name="" id="" placeholder="+213998123">
<br><br>
<input type="reset">
<br><br>
<input type="submit">
</form>
</body>
</html>
```

ITE HTML coding

Username: Lounis2013

Password: *****

Email: me@ensia.edu.dz

Phone number: +213564645645

Reset

Submit

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Date elements:

```
<label>Date </label>
<input type="date" name="input5">
```

- Quantity elements:

```
<label>Quantity</label>
<input type="quantity" name="input6" min="0" max="99">
```

- Telephone elements:

```
<label>Tel: </label>
<input type="tel" name="input5" placeholder="07394445">
```

The image shows a split-screen view. On the left, a code editor displays the HTML code for a form. On the right, a web browser window shows the form with input fields populated.

Code Editor (Left):

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<form>
<label>Date of Birth:</label>
<input type="date" name="" id="" placeholder="Your username">
<br><br>
<label>Quantity of purchased items:</label>
<input type="quantity" name="" id="" min="0" max="100">
<br><br>
<label>Email:</label>
<input type="email" name="" id="" placeholder="your@email.dz">
<br><br>
<label>Phone number:</label>
<input type="tel" name="" id="" placeholder="+213998123">
<br><br>
<input type="reset">
<br><br>
<input type="submit">
</form>
</body>
</html>
```

Browser Window (Right):

Date of Birth:

Quantity of purchased items:

Email:

Phone number:

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Radio buttons:

```
<label>Mr. </label>
<input type="radio" name="rank">
<label>Mrs. </label>
<input type="radio" name="rank">
<label>Ms. </label>
<input type="radio" name="rank">
```

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Drop down menu:

```
<label>Rank:</label>
<select name="rank">
<option value="atp">Assistant Professor</option>
<option value="asp">Associate Professor</option>
<option value="flp">Full Professor</option>
</select>
```

The image shows a screenshot of a web browser window titled "ITE HTML coding" at the URL "127.0.0.1". The browser interface includes a header with back, forward, search, and refresh buttons, and a toolbar with various icons.

The main content area displays an HTML form with the following code:

```
<!DOCTYPE html>
<html>
<head>
<title>ITE HTML coding</title>
</head>
<body style="background-color: #rgb(108, 153, 162); color:#black">
<form>
<label>Initials:</label><br>
<label>Mr:</label>
<input type="radio" name="" id="" placeholder="rank">
<label>Ms:</label>
<input type="radio" name="" id="" placeholder="rank">
<label>Mrs:</label>
<input type="radio" name="" id="" placeholder="rank">
<br><br>
<label>Rank:</label><br>
<select name="rank">
<option value="atp">Assistant Professor</option>
<option value="asp">Associate Professor</option>
<option value="flp">Full Professor</option>
<br><br>
</form>
</body>
</html>
```

The browser's developer tools are open, showing the DOM tree on the left and the rendered HTML on the right. A tooltip for a dropdown menu is visible, showing options: "Assistant Professor" (selected), "Associate Professor", and "Full Professor".

HTML Structure and Elements (Forms)

In the content of the BODY, you can add whatever content you want:

- ③ We can use forms using form-tags to send data from a client to a server:

```
<form>Form elements</form>
```

You can have the following form elements:

- Checkbox:

```
<label>Subscribe: </label>
<input type="checkbox" name="UserChoice">
```

The image shows a split-screen view. On the left, a code editor displays the HTML code for a form. On the right, a web browser window shows the rendered form with user input.

Code (index.html):

```
<!DOCTYPE html>
<html>
<body>
<form>
<br>
<label>Initials</label><br>
<label>Mr:</label>
<input type="radio" name="" id="" placeholder="rank">
<label>Ms:</label>
<input type="radio" name="" id="" placeholder="rank">
<label>Mrs:</label>
<input type="radio" name="" id="" placeholder="rank">
<br><br>
<label>Subscribe:</label><br>
<input type="checkbox" name="subscribed">
<br><br>
<label>Rank:</label><br>
<select name="rank">
<option value="atp">Assistant Professor</option>
<option value="asp">Associate Professor</option>
<option value="fpl">Full Professor</option>
</select>
</form>
</body>
</html>
```

Browser Preview:

ITE HTML coding

Initials
Mr: Ms: Mrs:

Subscribe:

Rank:
Assistant Professor
Associate Professor
Full Professor

HTML Structure and Elements (Frames)

The main page can be divided into multiple frames:

- ➊ We use the frameset-tag to divide a page into **rows** or into **columns**:

```
<frameset rows="10, *, 10">
```

```
<frameset cols="10, *, 10">
```

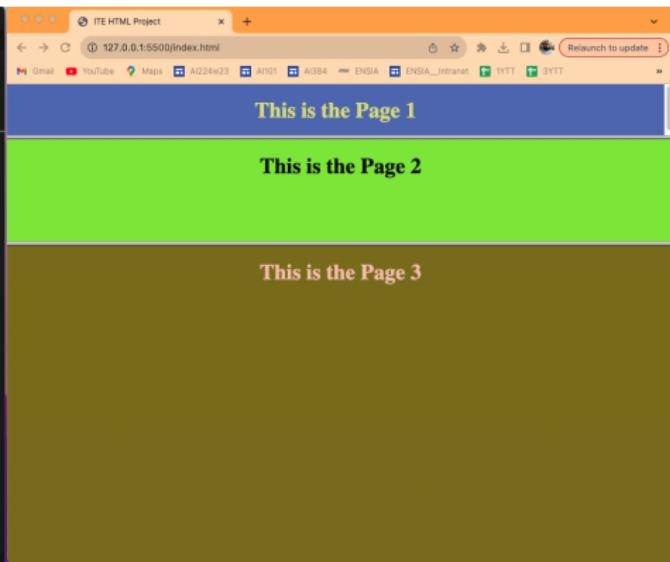
Given a frameset, we can define the pages that will appear on each frame using the frame-tag (these frames should be declared within the framesets):

```
<frame src="page_1.html">
```

```
<frame src="page_2.html">
```

```
<frame src="page_3.html">
```

The use of frames and the frameset element has been **deprecated** in HTML5, and it's not recommended to use them in modern web development.



The screenshot shows a code editor and a browser window side-by-side. The code editor on the left displays an HTML file named index.html with the following content:

```
<!DOCTYPE html>
<html>
  <head>
    <title>ITE HTML Project</title>
  </head>
  <frameset rows="75, 150, *">
    <frame src="a.html" />
    <frame src="b.html" />
    <frame src="c.html" />
  </frameset>
</html>
```

The browser window on the right shows the rendered output of the code. It consists of three vertically stacked frames. The top frame has a blue header bar with the text "This is the Page 1". The middle frame has a green header bar with the text "This is the Page 2". The bottom frame has a yellow header bar with the text "This is the Page 3". The browser's address bar shows the URL `127.0.0.1:5500/index.html`. A red box highlights the "Relaunch to update" button in the browser's toolbar.

The screenshot shows a web development environment with a code editor on the left and a browser window on the right.

Code Editor (VS Code):

```
<!DOCTYPE html>
<html>
  <head>
    <title>ITE HTML Project</title>
  </head>
  <frameset cols="33%, 33%, 33%">
    <frame src="a.html" />
    <frame src="b.html" />
    <frame src="c.html" />
  </frameset>
</html>
```

Browser Preview:

The browser displays a three-column layout with the following content:

- Page 1:** This is the Page 1
- Page 2:** This is the Page 2
- Page 3:** This is the Page 3

The browser's address bar shows the URL `127.0.0.1:5500/index.html`. The top right corner of the browser window has a red rounded rectangle with the text "Relaunch to update".

This is the Page 1

This is the Page 2

This is the Page 3

This is the Page 3

The screenshot shows a code editor and a browser side-by-side. The code editor on the left displays the following HTML code:

```
<!DOCTYPE html>...<html><head><title>ITE HTML Project</title></head><frameset cols="25%, 33%, 33%"><frame src="a.html" /><frame src="b.html" /><frame src="c.html" /></frameset></html>
```

The browser window on the right shows the rendered output of the code. It consists of three vertically stacked frames. The top frame is blue and contains the text "This is the Page 1". The middle frame is green and contains the text "This is the Page 2". The bottom frame is brown and contains the text "This is the Page 3". The browser's address bar at the top right shows "127.0.0.1:5500/index.html".

- End.