



Computer Engineering
Suan Sunandha Rajabhat University

Introduction to **HTML**

CPE5012-5013 Web Development

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Class code

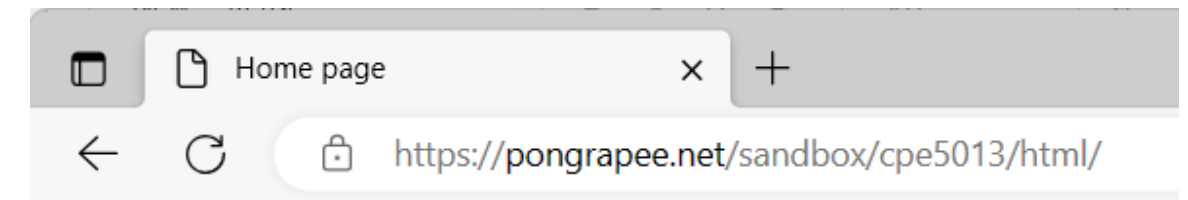
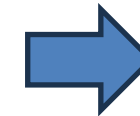
<https://www.classpoint.app/>

HTML

The HyperText Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser.

- It defines the structure of web content.

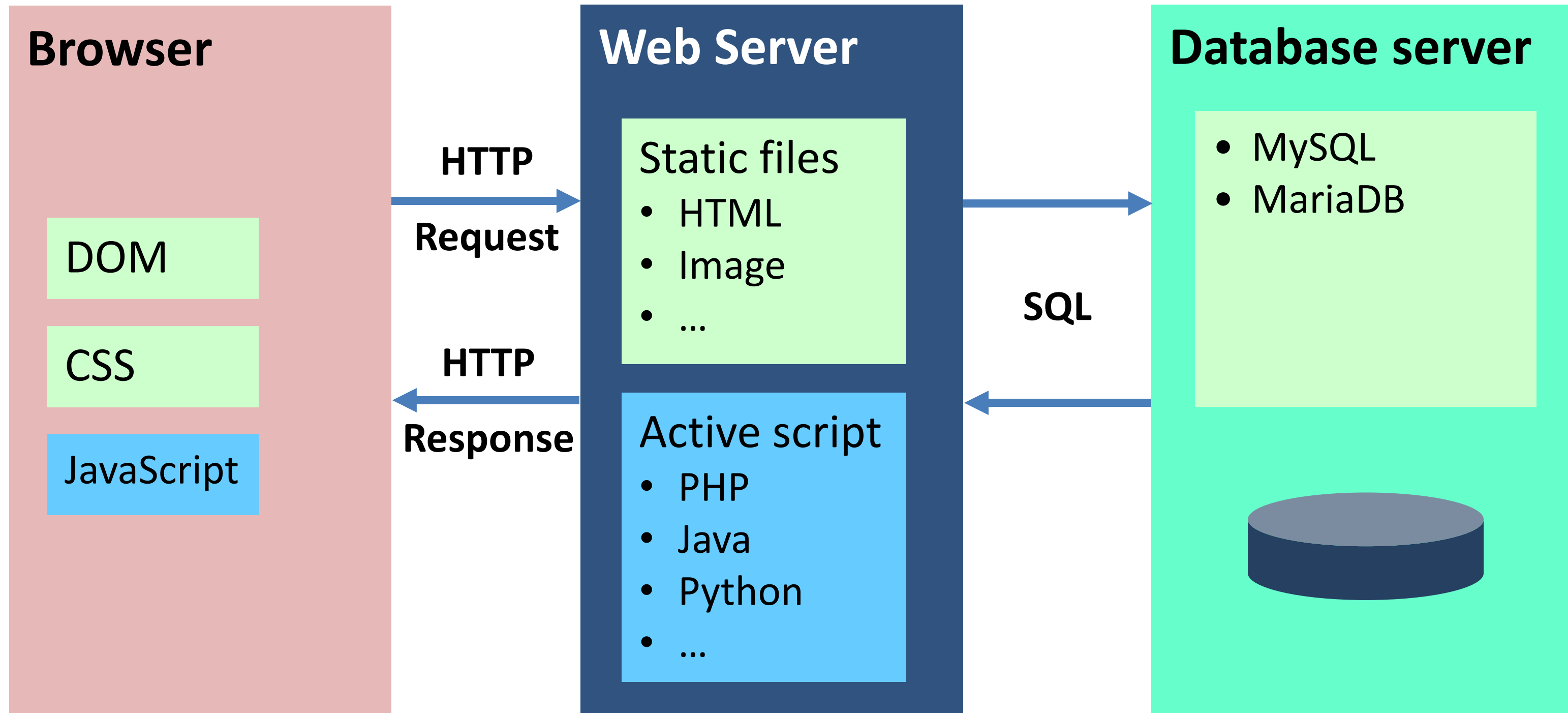
```
1 <html>
2 <head>
3   <title>Home page</title>
4 </head>
5 <body>
6 <h1>A list of things to learn</h1>
7 <ol>
8   <li>We start with <a href="page1_headings.htm">headings and paragraphs</a>.</li>
9   <li>We should learn about <a href="page2_lists.htm">lists</a>.</li>
10  <li>We should learn more about <a href="page3_links.htm">links</a>.</li>
11  <li>We should learn about <a href="page4_images.htm">images</a>.</li>
12  <li>We should learn about <a href="page5_tables.htm">tables</a>.</li>
13  <li>We need to encode <a href="page6_symbols.htm">special characters</a> to show them in HTML.</li>
14  <li>We can see that <a href="bad.htm">Bad HTML</a> works just fine.</li>
15  <li>But HTML can be <a href="broken.htm">Broken</a> so badly it does not render at all.</li>
16 </ol>
17 </body>
18 </html>
19
```



A list of things to learn

1. We start with [headings and paragraphs](#).
2. We should learn about [lists](#).
3. We should learn more about [links](#).
4. We should learn about [images](#).
5. We should learn about [tables](#).
6. We need to encode [special characters](#) to show them in HTML.
7. We can see that [Bad HTML](#) works just fine.
8. But HTML can be [Broken](#) so badly it does not render at all.

- Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.



- HTML is often used along with Cascading Style Sheets (**CSS**) to separate content from displaying style.
- HTML is often used with scripting languages, such as JavaScript, to provide dynamic features, such as clock, action buttons, and user input fields.
- HTML displays outputs from a server-side script (e.g., PHP) on a web page.

```
6 p {  
7   margin: 20px auto;  
8   max-width: 500px;  
9 }
```

Add two textbox values without pressing any buttons

454 748

Result:

Id	name	Mobile	email
1	ram	31231546879	dsamfklm@mail.com
2	shyam	4578954987	terteiuo@yahoo.com
3	Manish Sharma	9806565886	manish2@gmail.com
4	Sharad Gupta	8665322422	sharad@gmail.com
73	vinod kumar	8506800799	vinod.87@gmail.com

History



- HTML was invented in 1980 by a physicist Tim Berners-Lee, a contractor at CERN, as a prototype system for researchers to use and share documents.
- He defined the term HTML and wrote the browser and server software in late 1990.

Old HTML

Capitalized tags

`<H1>Tacky HTML</H1>`

Hi there.

`<p><img src=tiny.png>`

Browsers tolerate a lot of completely broken HTML.

`<UL>`

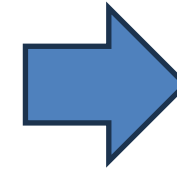
`<LI>List one`

`<LI>List 2`

`</UL>`

No closing tag

No closing tag



Tacky HTML

Hi there.



Browsers tolerate a lot of completely broken HTML.

- List one
- List 2

Standards



Since 1996, the World Wide Web Consortium (W3C) along with some commercial software vendors, have developed standards around HTML, CSS, XML, etc. to ensure that the web was based on open standards rather than proprietary vendor products.

Standards



- In 2000, HTML became an international standard with HTML 4.01 published in late 1999.
- In 2004, development began on HTML5 in the Web Hypertext Application Technology Working Group (WHATWG), which became a joint deliverable with the W3C in 2008.

Recent HTML

```
<h1>Tacky HTML</h1>
```

Hi there.

```
<p>
```

Browsers tolerate a lot of completely broken HTML.

```
</p>
```

```
<ul>
```

```
<li>List one</li>
```

```
<li>List 2</li>
```

```
</ul>
```

Tags must be lowercase.

Tags must be closed.

Attributes must be enclosed in quotes.

Question

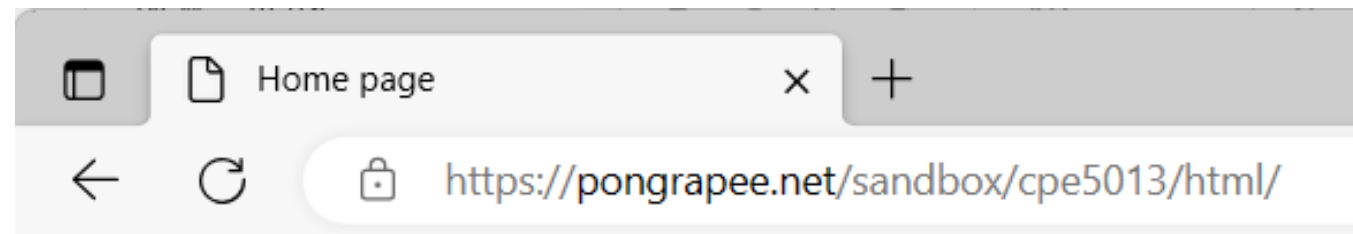
What is the current HTML version?

- A. HTML 1.1
- B. HTML 2.0
- C. HTML5
- D. XHTML



Multiple Choice

Activity



A list of things to learn

1. We start with [headings and paragraphs](#).
2. We should learn about [lists](#).
3. We should learn more about [links](#).
4. We should learn about [images](#).
5. We should learn about [tables](#).
6. We need to encode [special characters](#) to show them in HTML.
7. We can see that [Bad HTML](#) works just fine.
8. But HTML can be [Broken](#) so badly it does not render at all.

- Open this link on a web browser
<https://pongrapee.net/sandbox/cpe5013/html/>
- Or, download the ZIP file from the course page and unzip it on your computer.



Sample site (Online)



Sample site (ZIP)

Files and directories

 html	→		
 html.zip			
Name	Size	Type	
 images		File folder	
 bad.htm	1 KB	Chrome HTML Document	
 broken.htm	1 KB	Chrome HTML Document	
 index.htm	1 KB	Chrome HTML Document	
 medium.jpg	63 KB	JPG File	
 page1_headings.htm	2 KB	Chrome HTML Document	
 page2_lists.htm	1 KB	Chrome HTML Document	
 page3_links.htm	1 KB	Chrome HTML Document	
 page4_images.htm	2 KB	Chrome HTML Document	
 page5_tables.htm	1 KB	Chrome HTML Document	
 page6_symbols.htm	1 KB	Chrome HTML Document	

On a local disk

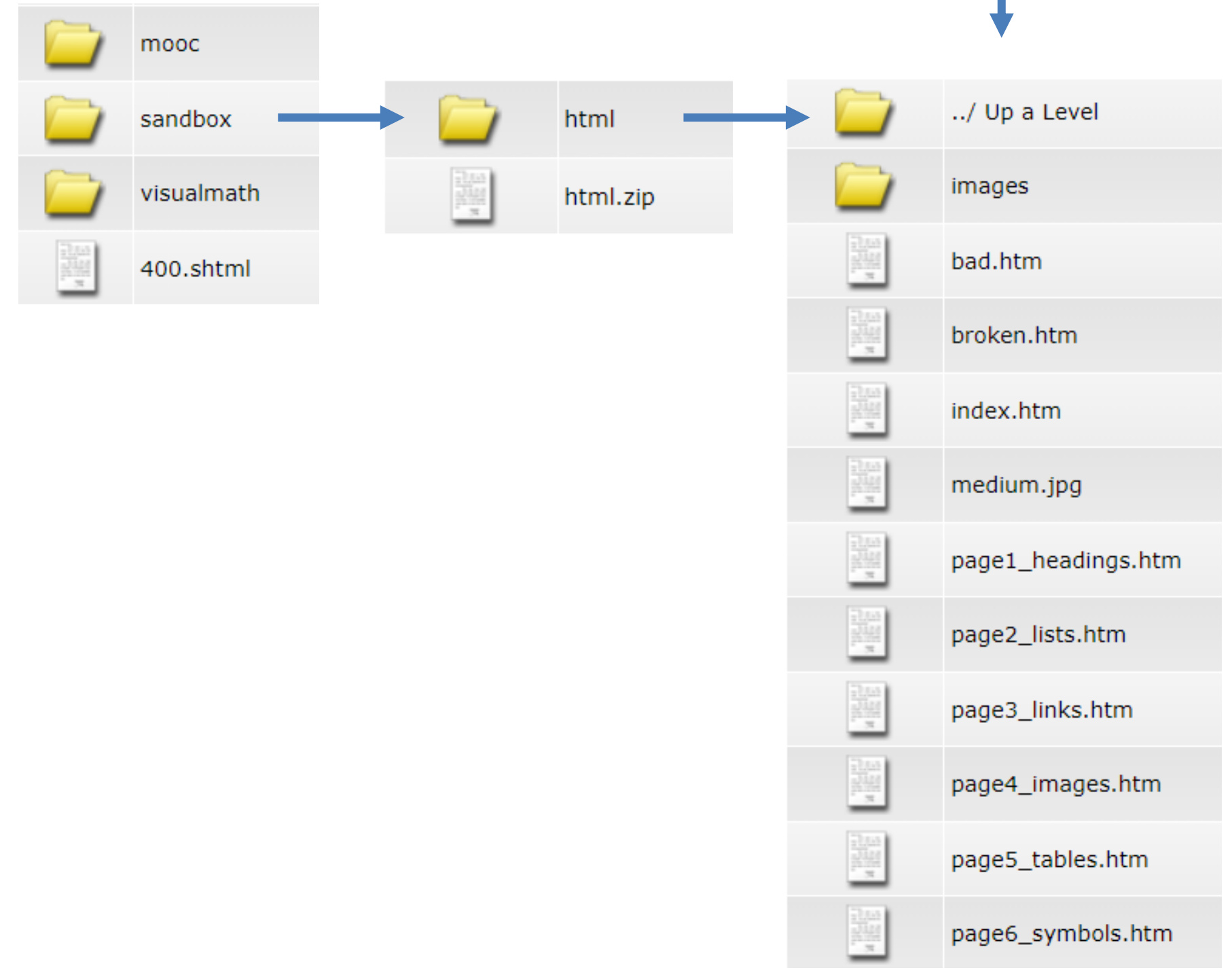
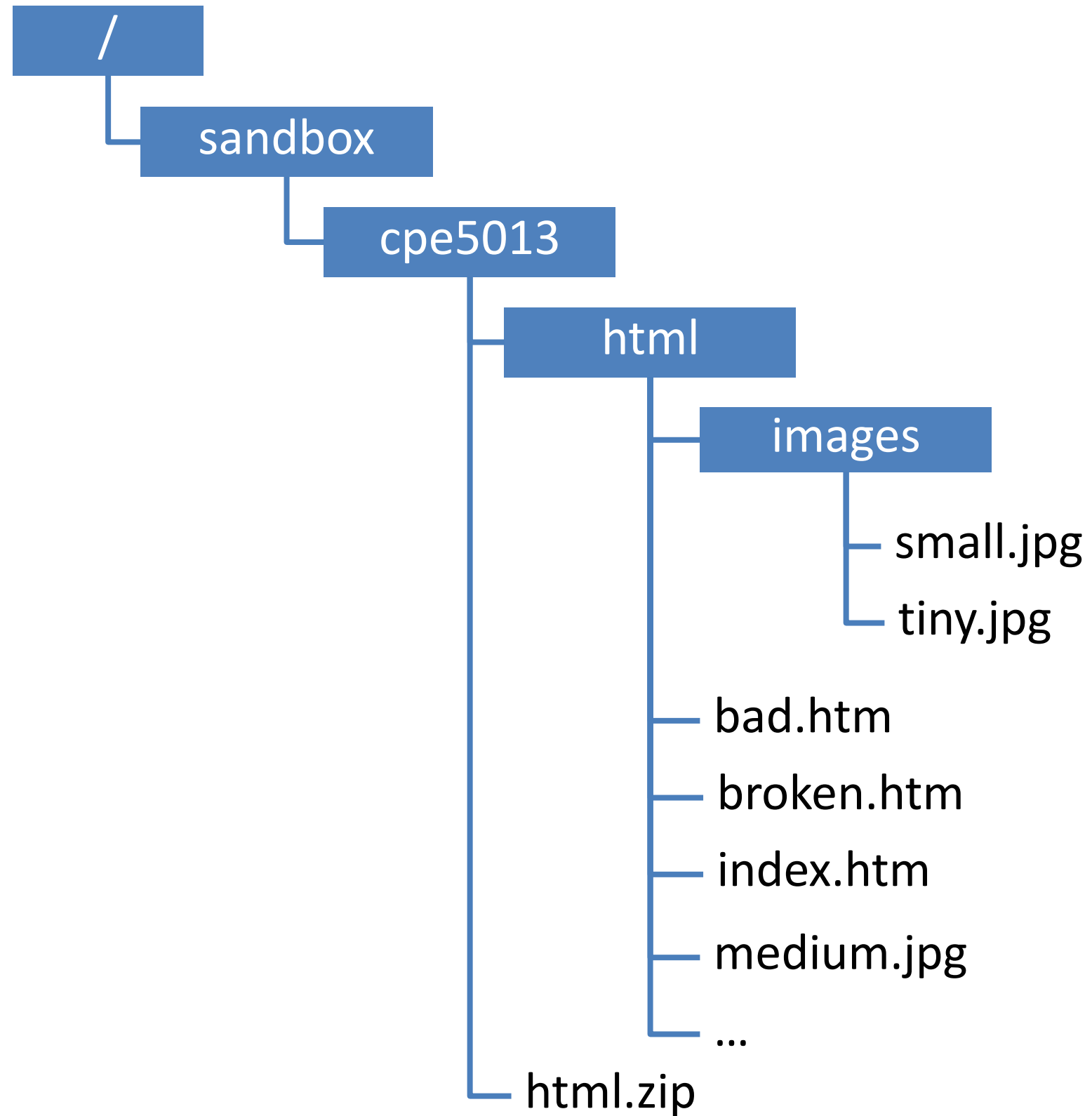
<C:\Users\Admin\Documents\html\>

 html	→	
 html.zip		
Type	Name	
	../ Up a Level	
	images	
	bad.htm	
	broken.htm	
	index.htm	
	medium.jpg	
	page1_headings.htm	
	page2_lists.htm	
	page3_links.htm	
	page4_images.htm	
	page5_tables.htm	
	page6_symbols.htm	

On a web server

<https://pongrapee.net/sandbox/cpe5013/html/>

<https://pongrapee.net/sandbox/cpe5013/html/>

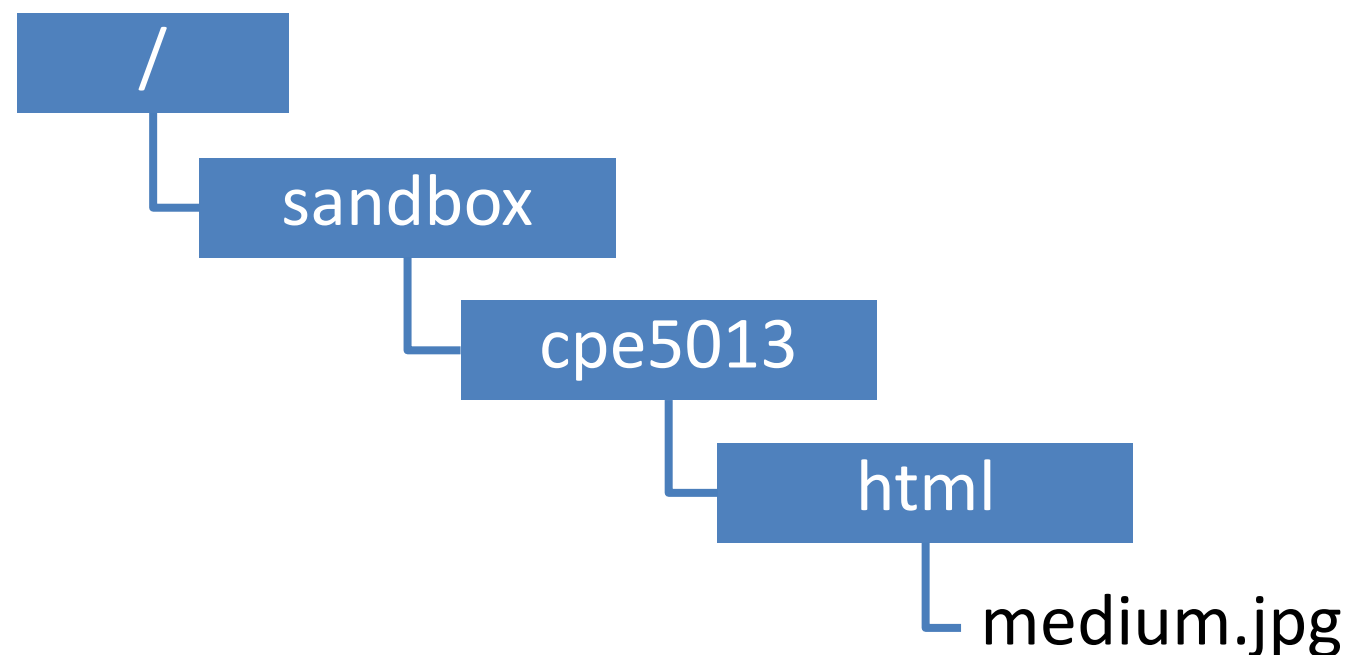


Absolute reference

An absolute reference of a file/directory starts from a root directory.

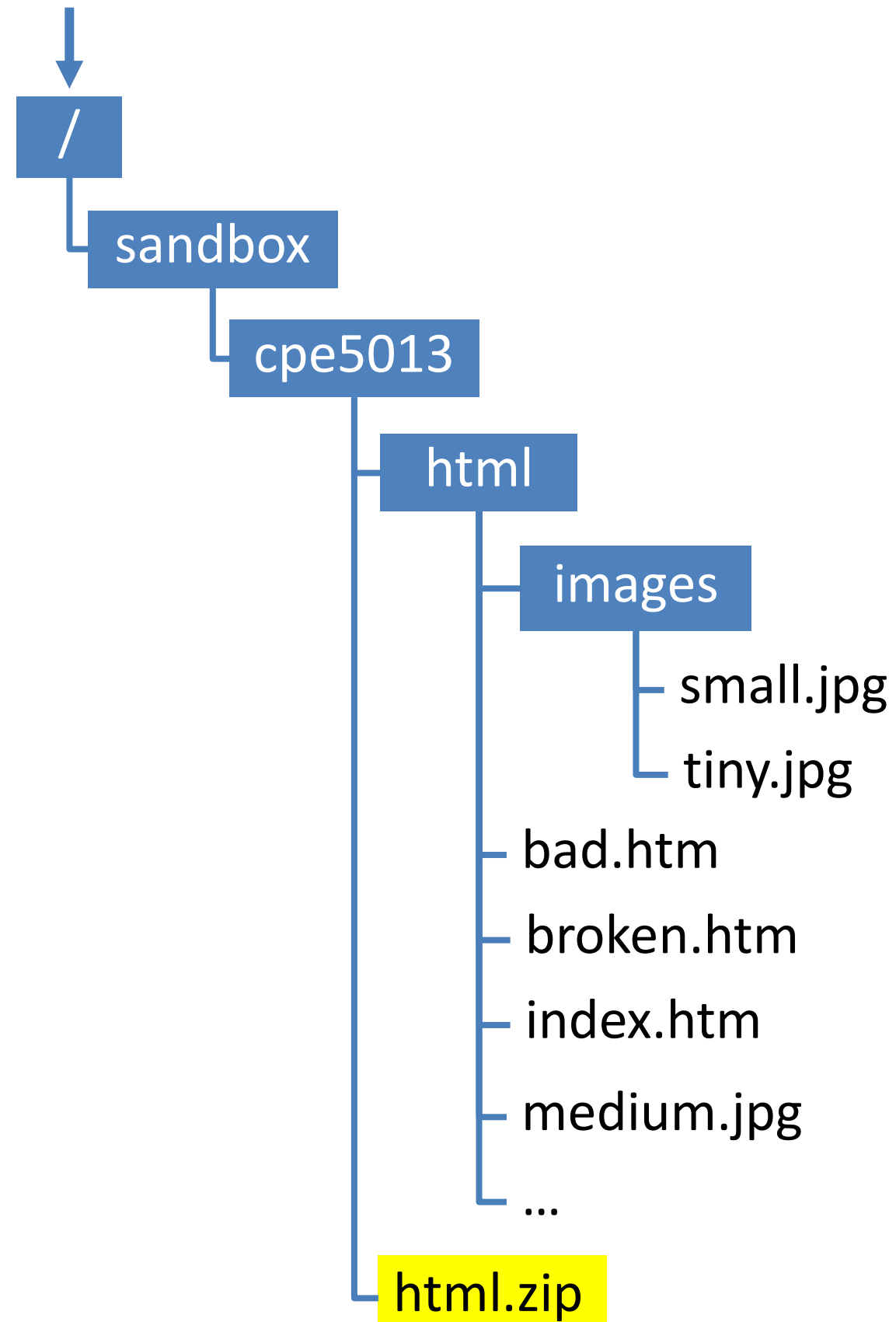
Web server → <https://pongrapee.net/sandbox/cpe5013/html/medium.jpg>

Local disk → <C:\Users\Admin\Downloads\html\medium.jpg>



Absolute references are typically used to link to files on different domains/drives.

https://pongrapee.net/



Question

What is the absolute path to the file `html.zip`?

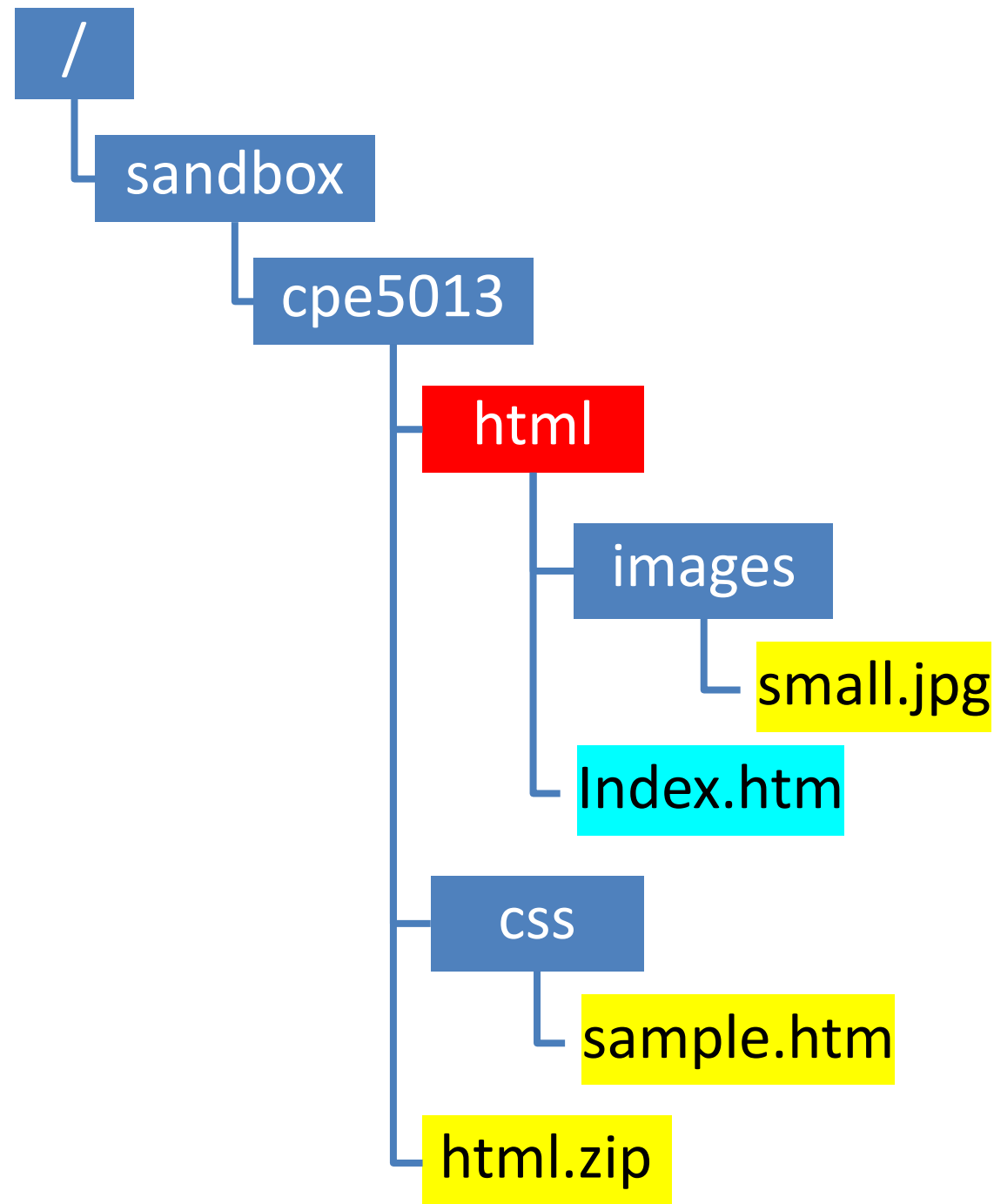
- A. `https://pongrapee.net/html.zip`
- B. `https://pongrapee.net/sandbox/html.zip`
- C. `https://pongrapee.net/sandbox/cpe5013/html.zip`
- D. `https://pongrapee.net/sandbox/cpe5013/html/html.zip`



Multiple Choice

Relative reference

A relative reference of a file/directory starts from the working directory.



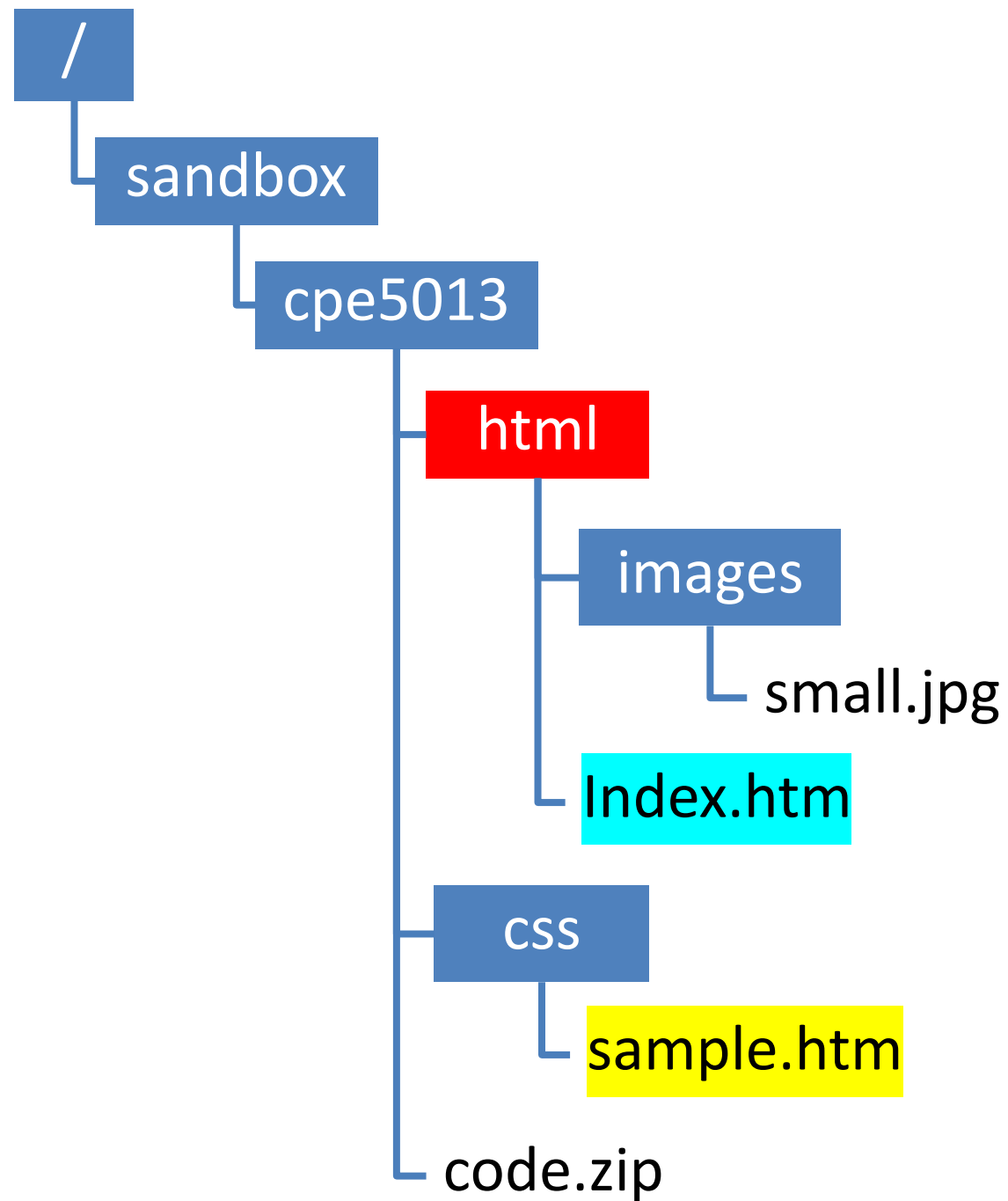
Assuming that we are opening the “index.htm” file, which is in the “html” directory, the relative path to “small.jpg” is

`images/small.jpg`

The relative path to “html.zip” is

`../html.zip`

Relative references are typically used to link to files on the same web server, or when moving the entire app to a new server.



Question

Assuming that we are opening the “index.htm” file, which is in the “html” directory, what is the relative path to “sample.htm” ?

- A. `../css/sample.htm`
- B. `css/sample.htm`
- C. `../cpe5013/css/sample.htm`
- D. `/cpe5013/css/sample.htm`



Multiple Choice

Index files

When a URL points to a directory in a web server, instead of a file, it will look for a file with a special name:

`index.html` `index.htm` `index.php` etc.

This only works when viewing through a web server.

When viewing from disk, you must view the file directly.

<https://pongrapee.net/sandbox/cpe5013/html/> 

Without an index file, the directory tree will show up (unsecured) unless the web server provides a security measure.

Type	Name
	../ Up a Level
	images
	bad.htm
	broken.htm
	index.htm
	medium.jpg

Source code

On the home page

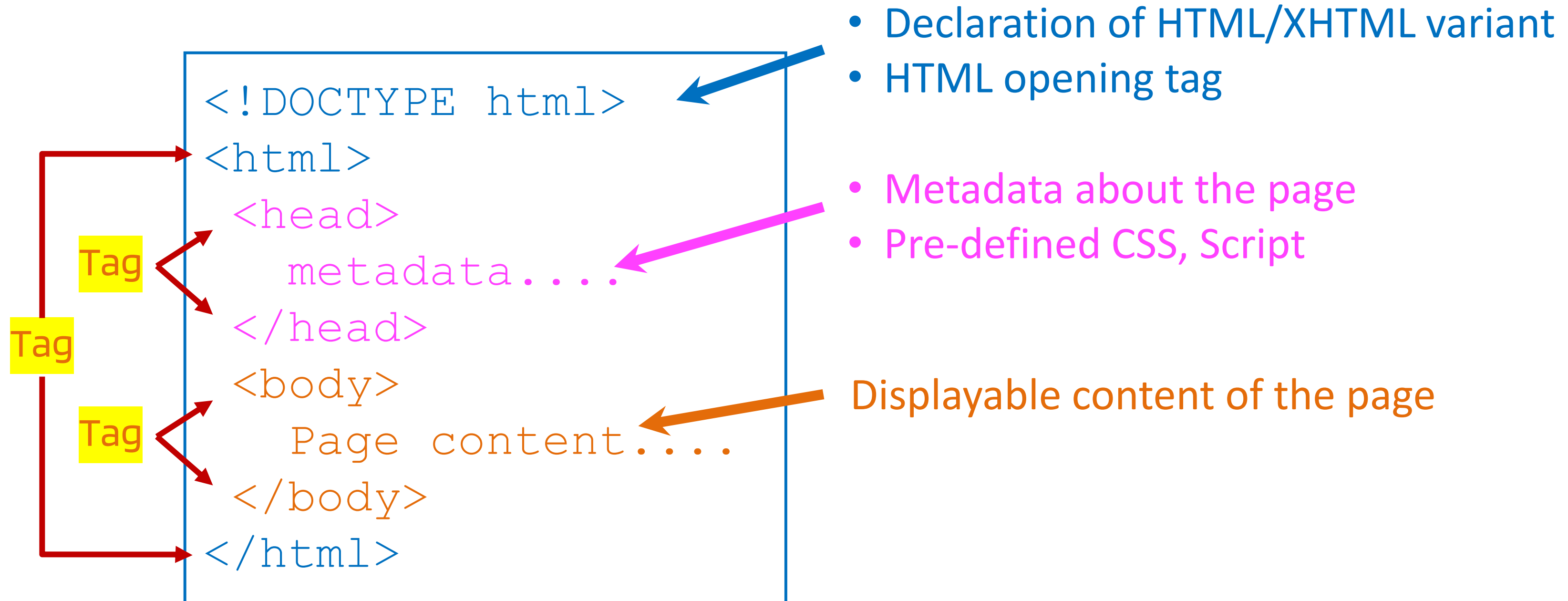
<https://pongrapee.net/sandbox/cpe5013/html/>

right click and select: (not available on mobile)

- View page source (Chrome, Firefox, Edge)
- Show page source (Safari)

```
Line wrap ☐
1 <html>
2 <head>
3   <title>Something Descriptive</title>
4 </head>
5 <body>
6 <h1>A Header</h2>
7 <p>
8 These pages are intended to be explored in the
9 developer console of your browser.
10 </p>
11 <p>
12 A paragraph of text.
13 Whatever line wrapping that is present in the
14 file or lots
15 of extra spaces in the file are generally ignored
16 and the text is re-wrapped based on the width
17 of browser.
18 </p>
19   <p>You can add a style like <strong>bold</strong>
20   to some text by enclosing it in the <em>appropriate</em>
21   tag.
22 </p>
23 <p>
24   You can even mark some text so that it is a
25   <a href="lists.htm">link to another page</a>.
26 </p>
27 <p>
28 <pre>
29 If you use the pre tag
30 The browser respects spaces
31 and
32 line
33 ends
34 and shows the text in a
35 monospace font.
36
37
38
39 </pre>
40 </p>
```

Structure of an HTML document



Head

```
<html>
```

```
<head>
```

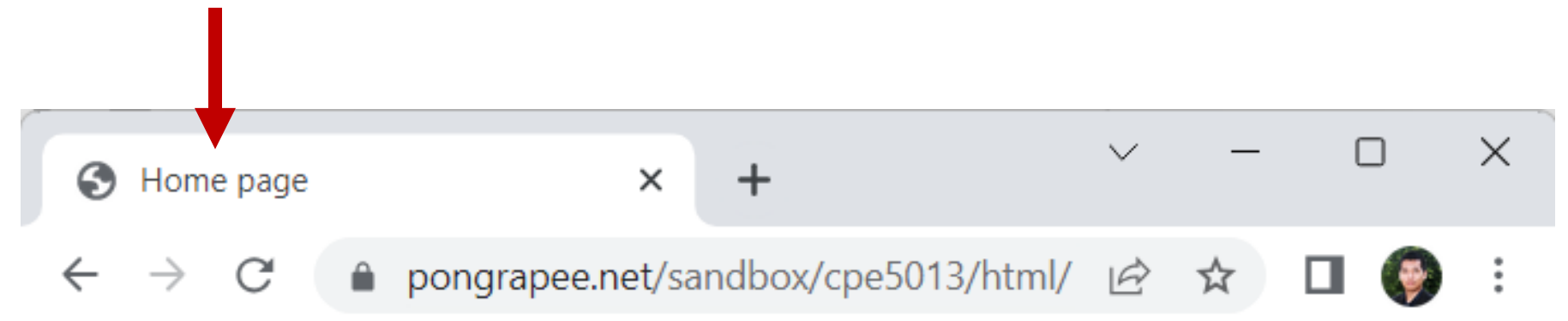
```
  <title>Home page</title>
```

```
</head>
```

```
<body>
```

```
...
```

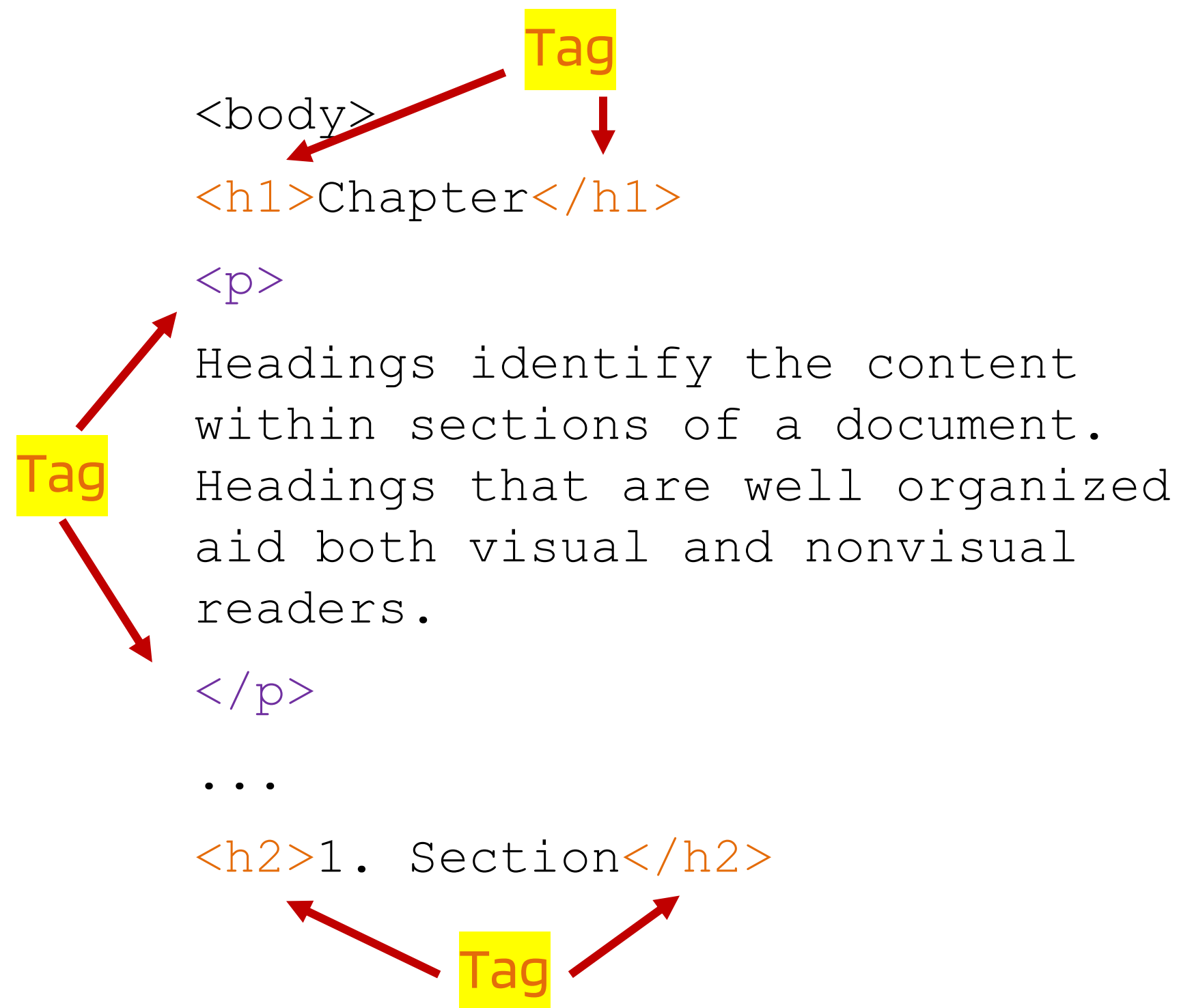
Text to be shown on the browser tab,
mostly a page name.



A list of things to learn

1. We start with [headings and paragraphs](#).
2. We should learn about [lists](#).
3. We should learn more about [links](#).
4. We should learn about [images](#).
5. We should learn about [tables](#).
6. We need to encode [special characters](#) to show them in HTML.
7. We can see that [Bad HTML](#) works just fine.
8. But HTML can be [Broken](#) so badly it does not render at all.

Body



Chapter

Heading level 1

Paragraph text

Headings identify the content within sections of a document. Headings that are well organized aid both visual and nonvisual readers.

The text "Chapter" above is assigned to h1, which is the highest-priority heading. Often h1 is assigned to chapters.

1. Section

Heading level 2

The text "Section" above is assigned to h2, which has the priority below h1. Often h2 is assigned to sections.

Chapter

Headings identify the content within section

The text "Chapter" above is assigned to h1

1. Section

The text "Section" above is assigned to h2,

1.1 Subsection

Please note that subsections 1.1 and 1.2 are

1.2 Subsection



Please note that subsections 1.1 and 1.2 are

2. Next section

The text "Next section" above is at the same

Fonts, sizes, and alignments of headings are

Paragraph text

A paragraph of text. Whatever line wrapping

Question

What is the heading level of "1.2 Subsection" on this page?

A . h1

B . h2

C . h3

D . h4



Multiple Choice

Paragraph

<p>

A paragraph of text.

Whatever line wrapping that is present in the
file or lots
of extra spaces in the file are generally ignored
and the text is re-wrapped based on the width
of browser.

</p>

Paragraph text

A paragraph of text. Whatever line wrapping that is present in the file or lots of extra spaces in the file are generally ignored and the text is re-wrapped based on the width of browser.

<p>You can add a style like bold
to some text by enclosing it in the
appropriate
tag.
</p>



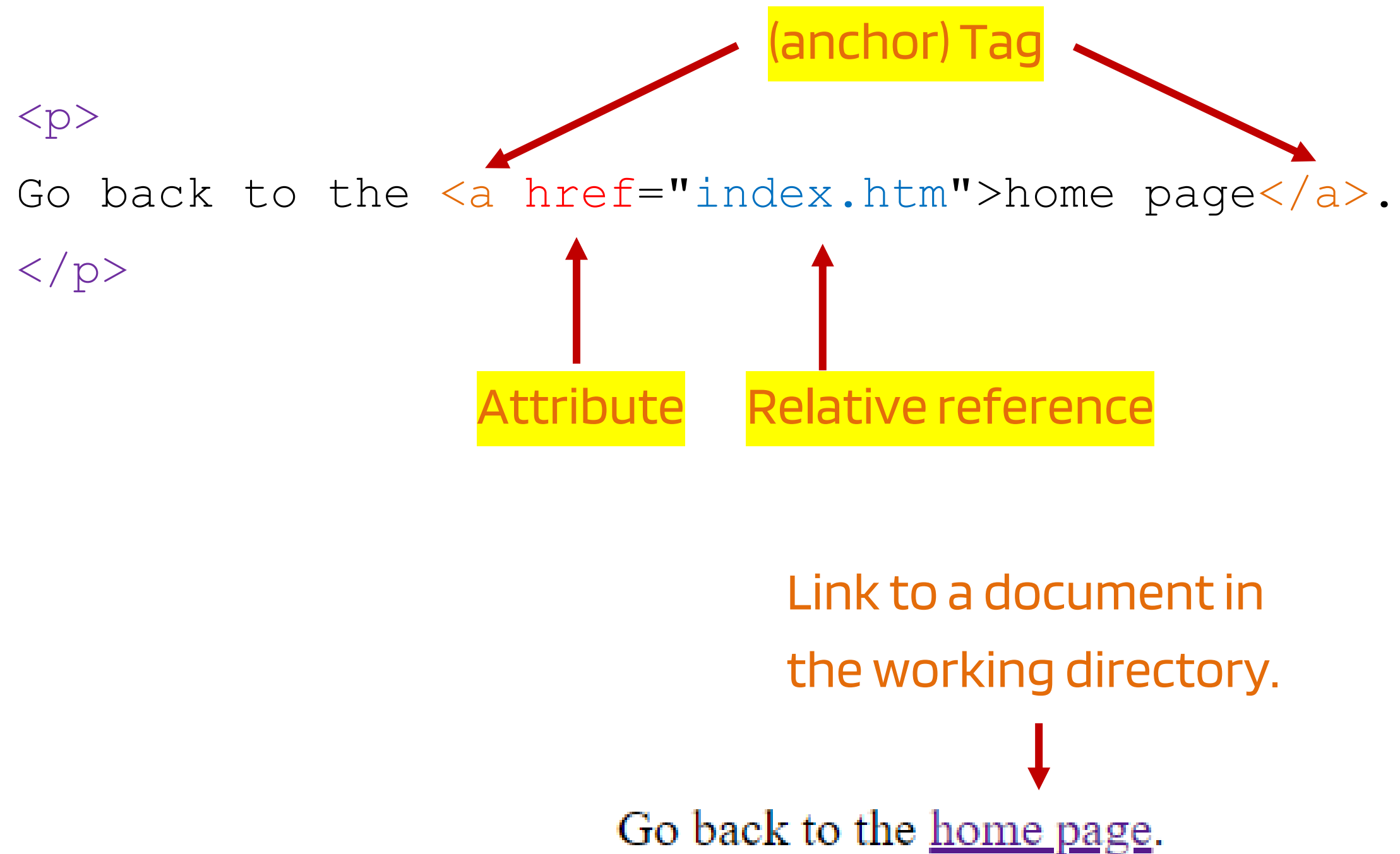
You can add a style like **bold** to some text by enclosing it in the *appropriate* tag.

Old HTML tags

bold

<i>italic</i>

Anchor tag



Type	Name
	../ Up a Level
	images
	bad.htm
	broken.htm
	index.htm
	medium.jpg
	page1_headings.htm

<p>This material is part of the **Absolute reference**

<a
href="https://elchm.ssru.ac.th/pongrapee_ka/"
target="_blank">

CPE5013 Back-end Programming . You can
download a ZIP file of the

source code

for these examples.</p>

Relative reference

https://pongrapee.net/sandbox/cpe5013/html/index.htm

https://pongrapee.net/sandbox/cpe5013/html.zip

This material is part of the CPE5013 Back-end Programming. You can
download a ZIP file of the source code for these examples.

/

- **sandbox**
- **cpe5013**
- html.zip
- html
- images.htm
- index.htm
- links.htm
- ...

Image

```
<h1>How images look</h1>
```

```
<p>Sometimes you put the image all by itself  
in a paragraph.</p>
```

```
<p></p>
```

Image tag attributes

src → image file path

width → image width

height → image width

alt → alternative text →

- Specify only width or height to keep aspect ratio.
- Default unit of measurement (pixels: px).
- Specify as percentage (%) to keep the image proportion on a web page.

- For people who use screen readers.
- Show when image fails to load.

How images look

Sometimes you put the image all by itself in a paragraph.



If we knew CSS, we could center the image in the page. Don't be tempted use the **center** tag as it is deprecated.

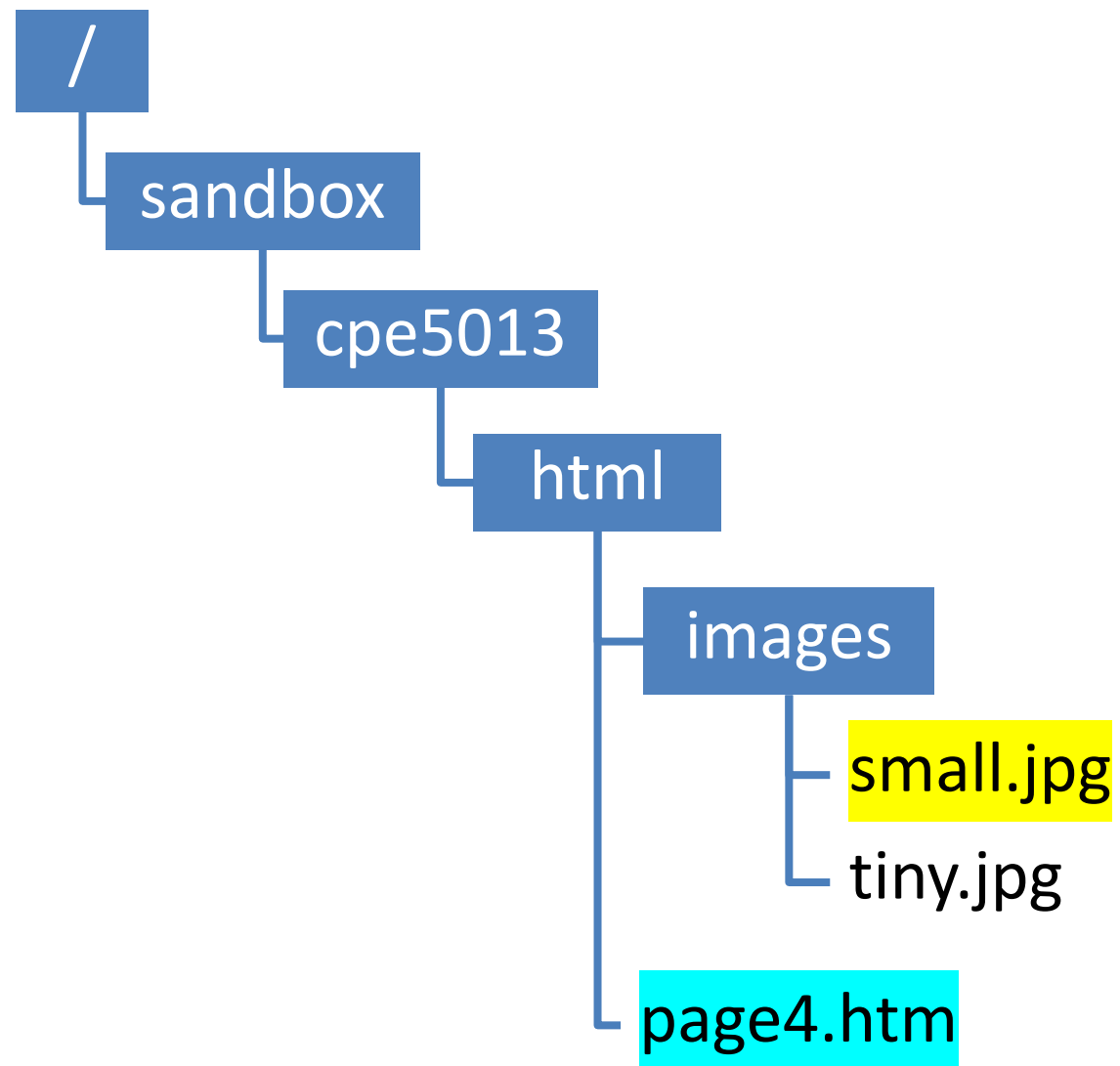
Image tag

We usually keep images in a separate directory for easy file management.

Type	Name
	../ Up a Level
	images
	bad.htm
	broken.htm
	index.htm
	medium.jpg
	page1_headings.htm
	page2_lists.htm
	page3_links.htm
	page4_images.htm

Images folder

Current document



Question

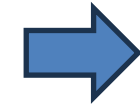
Assuming that we are working on “page4.htm” as shown. What is the corresponding **src** attribute of the **img** tag that points to “small.jpg”?

- A. ``
- B. ``
- C. ``
- D. ``

 Multiple Choice

Table

```
<table>
  <tr>
    <th>Make</th>
    <th>Model</th>
    <th>Mileage</th>
  </tr>
  <tr>
    <td>Ford</td><td>Edge</td><td>10348</td>
  </tr>
  <tr>
    <td>Pontiac</td><td>Vibe</td><td>73630</td>
  </tr>
  <tr>
    <td>Honda</td><td>Civic</td><td>7365</td>
  </tr>
</table>
```



Make	Model	Mileage
Ford	Edge	10348
Pontiac	Vibe	73630
Honda	Civic	7365

Before CSS was invented, we used tables to align images and other content. Now we only use tables to display tabular data.

Special character

<p>Less than `<`</p>

<p>Greater than `>`</p>

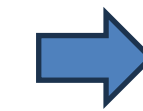
<p>Ampersand `&`</p>

<p>Semicolon just works `;`</p>

<p>Money characters: `£` `€` `¥`</p>

<p>Math characters: `∑` `∀` `∈`</p>

<p>Arrows: `←` `↑` `→` `↓`</p>



Less than <

Greater than >

Ampersand &

Semicolon just works ;

Money characters: £ € ¥

Math characters: $\sum$ $\forall$ $\in$

Arrows: $\leftarrow$ $\uparrow$ $\rightarrow$ $\downarrow$

Back to the [home page](#).

Question

What is the HTML entity for a Thai Baht (฿) symbol?

- A. `&baht;`
- B. `฿`
- C. `₩`
- D. `₹`



Multiple Choice

Bad HTML

```
Line wrap ☐  
1 <H1>Tacky HTML</H1>  
2 Hi there.  
3 <p><img src=medium.png>  
4 Browsers tolerate a lot of  
5 completely broken HTML.  
6 <UL>  
7 <LI>List one  
8 <LI>List 2  
9 </UL>  
10 <a href=index.htm>Going Back</a>  
11  
12
```

Tacky HTML

Hi there.

 Browsers tolerate a lot of completely broken HTML.

- List one
- List 2

[Going Back](#)

Broken HTML

Line wrap ☐

```
1 <html>
2 <head>
3   <title>Why blank?
4 </head>
5 <body>
6 <h1>How images look </h2>
7 <p>
8 
9 </p>
10 </body>
11
```

Question

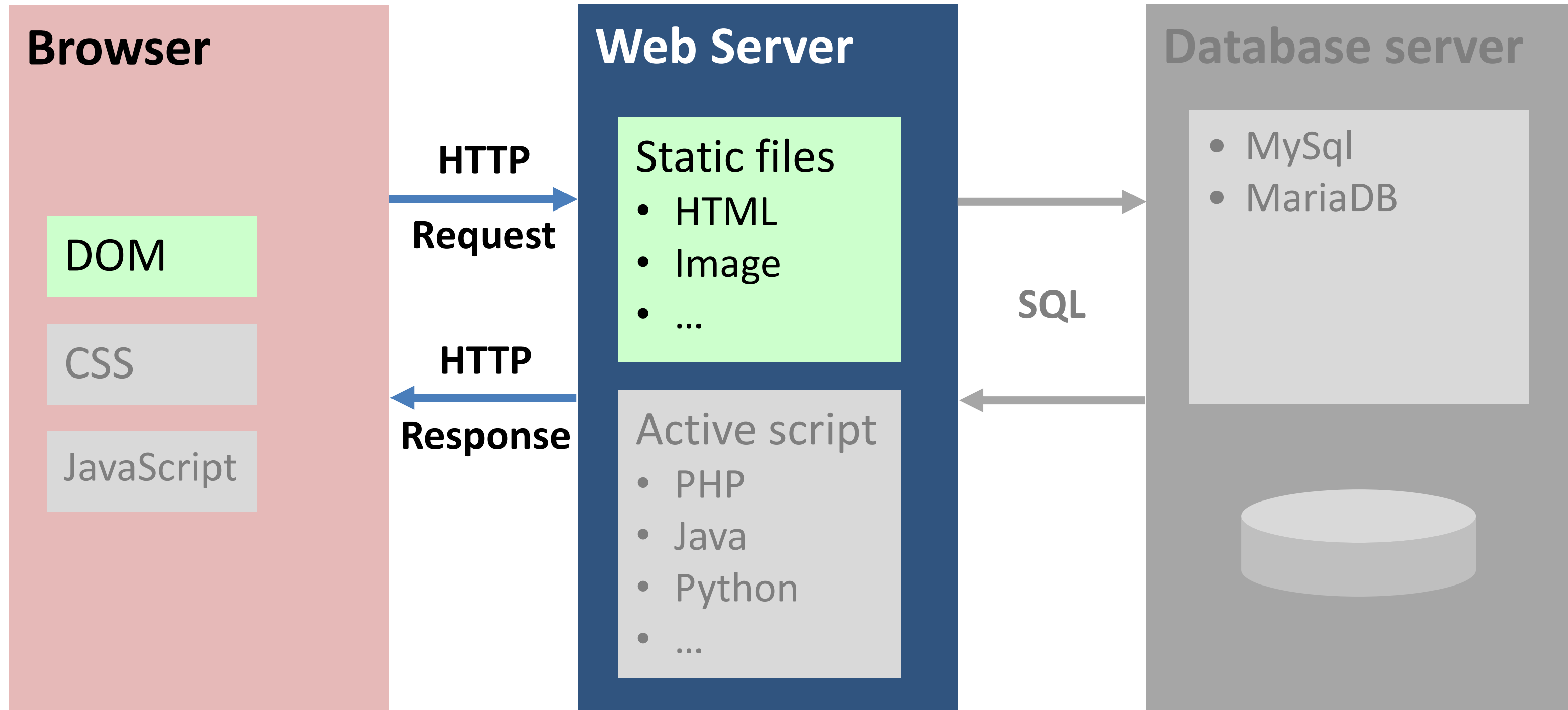
What causes a serious error on this page?

- A. </title>
- B. </h2>
- C. src="medium.png"
- D. </html>



Multiple Choice

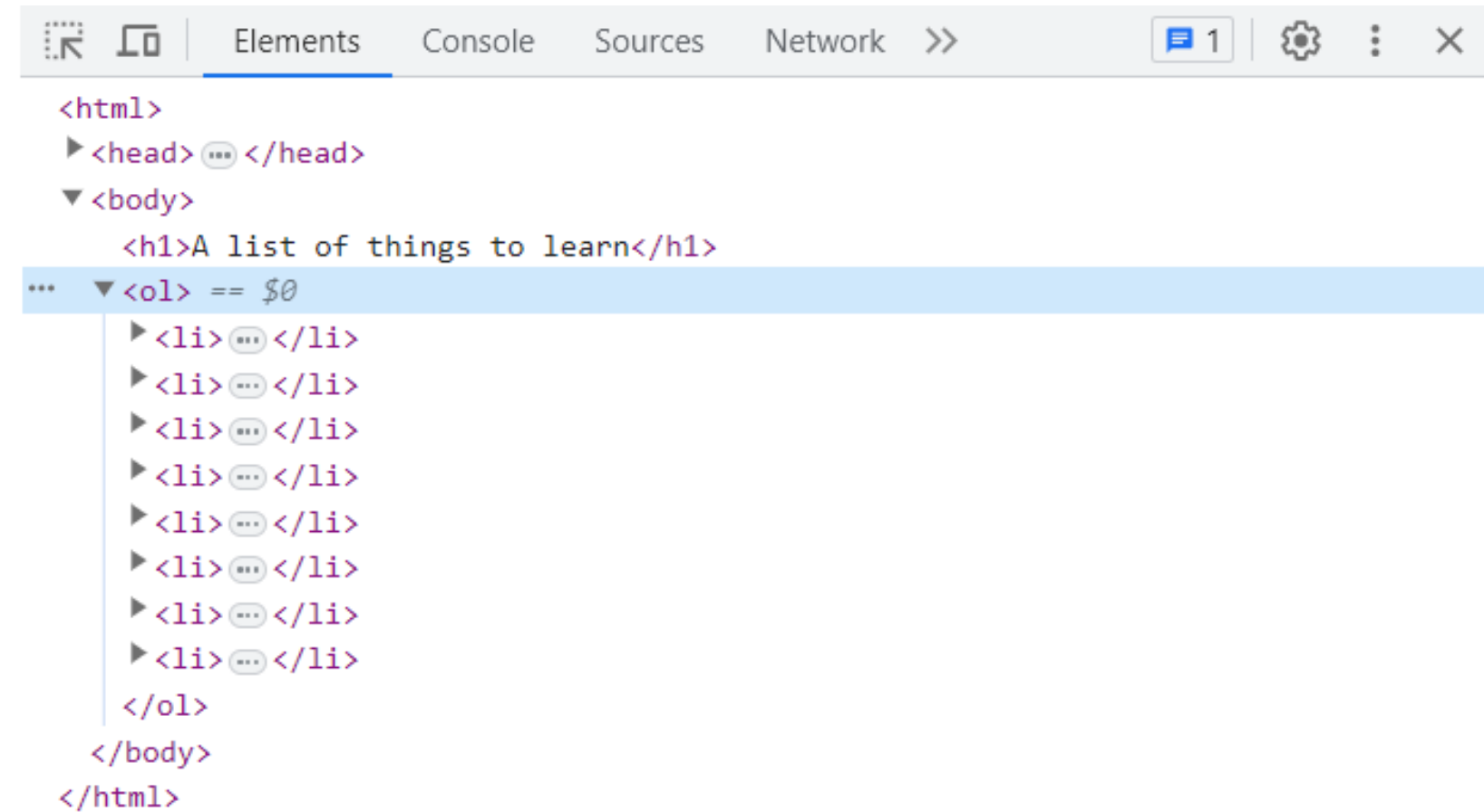
Web architecture



Document Object Model (DOM)

A list of things to learn

1. We start with [headings and paragraphs](#).
2. We should learn about [lists](#).
3. We should learn more about [links](#).
4. We should learn about [images](#).
5. We should learn about [tables](#).
6. We need to encode [special characters](#) to show them in HTML.
7. We can see that [Bad HTML](#) works just fine.
8. But HTML can be [Broken](#) so badly it does not render at all.



```
<html>
  <head> ... </head>
  <body>
    <h1>A list of things to learn</h1>
    <ol> == $0
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
      <li> ... </li>
    </ol>
  </body>
</html>
```