

HTML – Other Tags

Semantic Tags, Frames, Embed
Multimedia Content, Others



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```
<html>  
<head>  
  <meta name="TITLE" content="..."/>  
  <meta name="KEYWORDS" content="..."/>  
  <meta name="DESCRIPTION" content="..."/>  
  <meta name="stylesheet" type="text/css" rel="stylesheet"/>  
  <link rel="stylesheet" type="text/css" href="..."/>  
  <script language="javascript" type="text/javascript" src="..."/>
```



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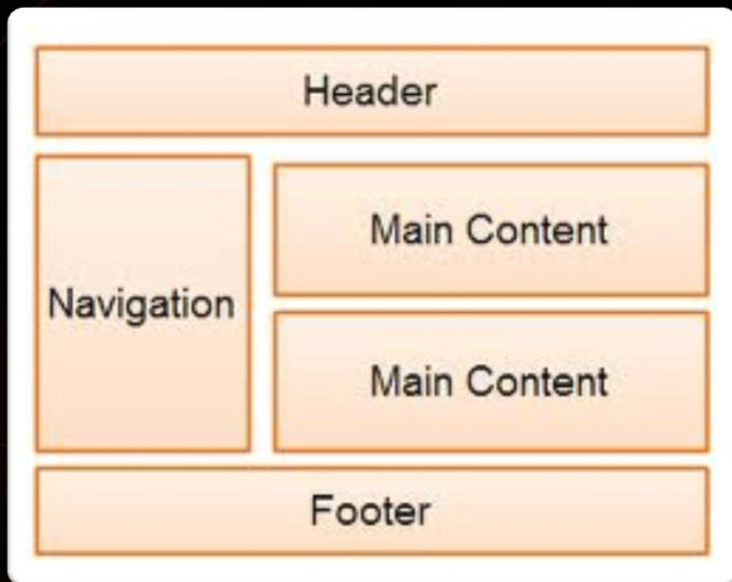
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`<nav>`
`<footer>`
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Semantic HTML



```
<address> <div>  
<ul> </fieldset> <  
</em> <h1>  
<form>  
<a> </ol> <head  
<p> <table> <ab
```

Semantic HTML

- Semantic HTML is:
 - HTML markup used to reinforce the **semantics** in Web pages
 - Make the content understandable for computers
 - Rather than merely to define its presentation
 - A kind of metadata about the HTML content
- Semantic HTML is processed by the Web browsers and other user agents
 - CSS is used to define its visual presentation to human users



Why Use Semantic HTML?

- Semantic HTML is:
 - Easier to read by **developers**
 - Easier to render by browsers
 - A way to present to the **search engines** the correct content



How To Write Semantic HTML?

- Just follow some guidelines when creating a Web site
 - Use HTML5 semantic tags
 - `<header>`, `<nav>`, `<section>`,
`<article>`, `<aside>`, `<footer>`
 - Use Headings when you need to structure the content into sub-headings
 - In increasing order: `<h1>`, `<h2>`, `<h3>`, ...
 - Do not use empty tags
 - Like a clearing `<div>`s



HTML5 Semantic Tags



HTML5 Semantic Tags (1)

- Imagine the following site:



- This is a common Web page structure
 - Used in the most Web sites in Internet

HTML5 Semantic Tags (2)

- It can be created using all kind of HTML elements
 - **<div>**, ****, even **<p>**
 - Browsers will render invalid / wrong / pseudo valid HTML
- The correct way: use the HTML 5 semantic tags:

```
<header> ... </header>
<section> ... </section>
<aside> ... </aside>
<footer> ... </footer>
```



HTML5 Semantic Tags (3)

- ◆ **<header>**

- ◆ Site header / section header / article header

- ◆ **<footer>**

- ◆ Site footer (sometime can be a section footer / article footer)

- ◆ **<main>**

- ◆ The site's main content (holds the main area of the content)

- ◆ **<nav>**

- ◆ Site navigation (usually used in the header)

- ◆ **<section>**

- ◆ Site section (e.g. news section, comments section, links section, ...)

HTML5 Semantic Tags (4)

- ◆ **<article>**

- ◆ Article in a section (e.g. news item in a news section)

- ◆ **<aside>**

- ◆ Sidebar (usually on the left or on the right of the site)

- ◆ **<figure> + <figcaption>**

- ◆ Figure (a figure, e.g. inside an article) + its caption

- ◆ **<details> + <summary>**

- ◆ Accordion-like widget (can be open / closed)

HTML5 Semantic Tags (5)

- ◆ **<hgroup>**
 - ◆ Groups article heading + sub-heading (e.g. **<h1>** + **<h2>**)
- ◆ **<address>**
 - ◆ Semantically denotes an address (e.g. in the contacts page)
- ◆ **<time>**
 - ◆ Specifies date / time (for a post / article / news)
- ◆ **<audio> / <video>**
 - ◆ Audio / video element (uses the built-in media player)

HTML5 Semantic Tags (6)

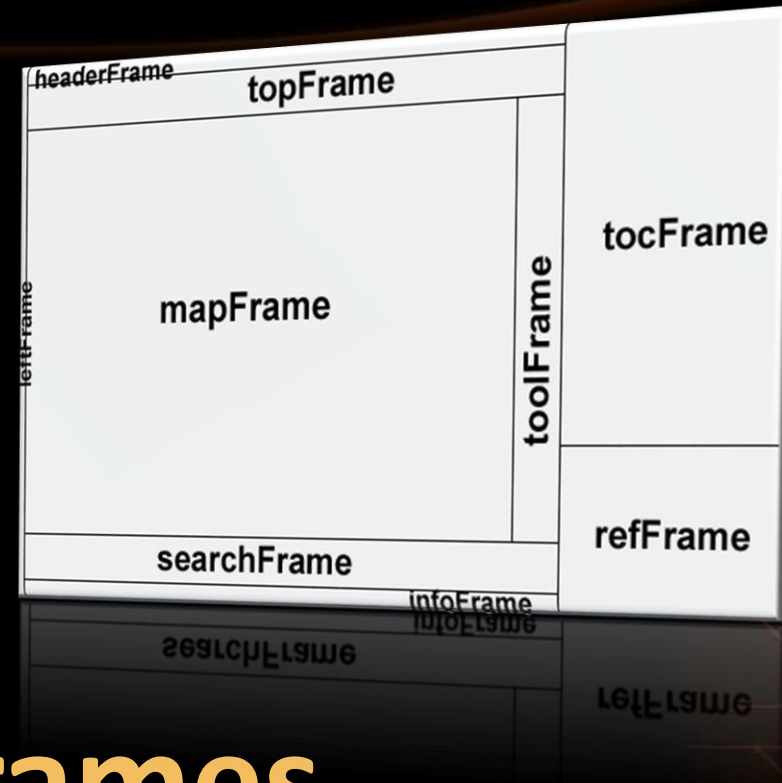
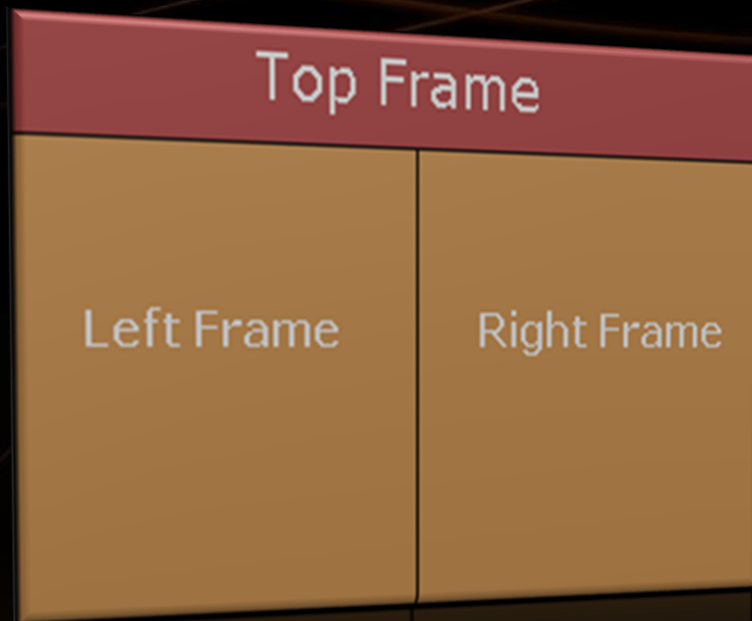
- ◆ **<cite>, <blockquote>, <q>, <dfn>, <abbr>**
 - ◆ Citation / quotation / quoted text / definition / abbreviation
 - ◆ Usually displayed in italic
- ◆ **<code>, <kbd>, <samp>, <var>**
 - ◆ Source code (e.g. JavaScript code, no syntax highlighting); sample **input** / **output** result from a program; **variable** in the code
- ◆ **<ins>, , <mark>**
 - ◆ Denote inserted / deleted / highlighted text in a document
- Old browsers (like IE6)? → use Modernizr or HTML5shiv

Other Semantics (1)

- Headings
 - Always use headings (**<h1>** – **<h6>**) for headings and titles
 - Like in a MS Word document (Heading 1, Heading 2, ...)
 - Google uses it to find the important content
- Strong **** vs. bold ****
 - **** does not mean anything, just makes the text bolder
 - **** marks the text is "*stronger*" than the other, surrounding text → more important text

Other Semantics (2)

- Emphasis `` vs. italic `<i>`
 - **Emphasis** does not always mean, that the code should be *italic*
 - It could be bolder, italic and underlined
 - The styles for the emphasis text should be set with CSS
- Small text `<small>` vs. smaller font defined in CSS
 - `<small>` denotes something as smaller → less important
- Strikethrough `<s>` vs. deleted text ``
 - `` brings "deleted" semantics



HTML Frames

<frameset>, <frame> and <iframe>

HTML Frames

- Frames display multiple HTML documents in a single Web page
- The page can be split into separate views (frames)
 - Horizontally and vertically, e.g. navigation and main content
- Frames were popular in the early ages of HTML development
 - Now frames are **deprecated**
 - Avoid using frames!
- Frames are not supported by all browsers
 - The **<noframes>** element provides alternative content

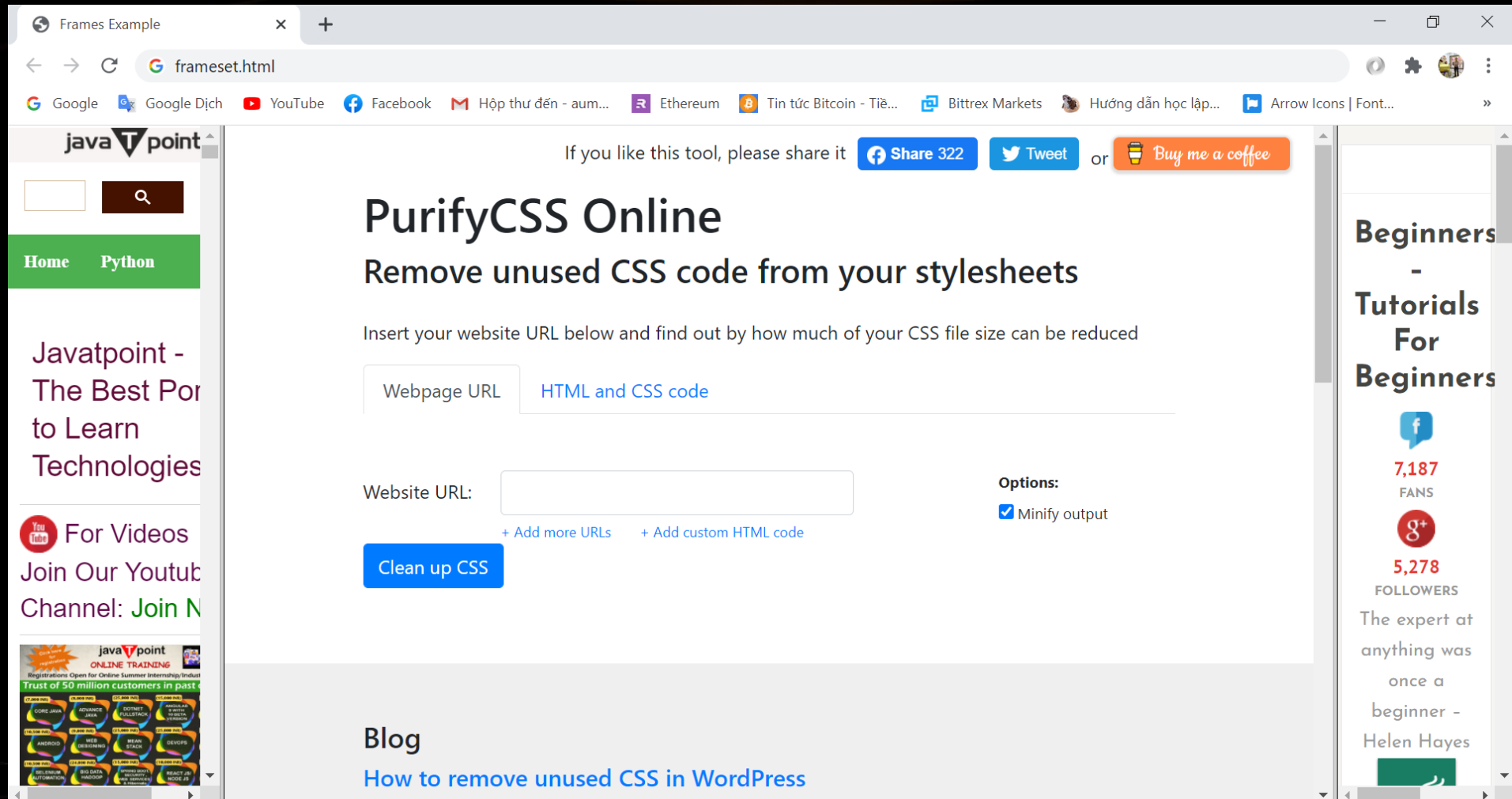
HTML Frames – Example (1)

- Using `<frameset>` and `<frame>`:

```
<html>
  <head><title>Frames Example</title></head>
  <frameset cols="180px, *, 150px">
    <frame src="https://www.javatpoint.com/" />
    <frame src="https://purifycss.online/" />
    <frame src="https://beginnersbook.com/" />
  </frameset>
</html>
```

HTML Frames – Example (2)

■ Result:



Inline Frames: <iframe> (1)

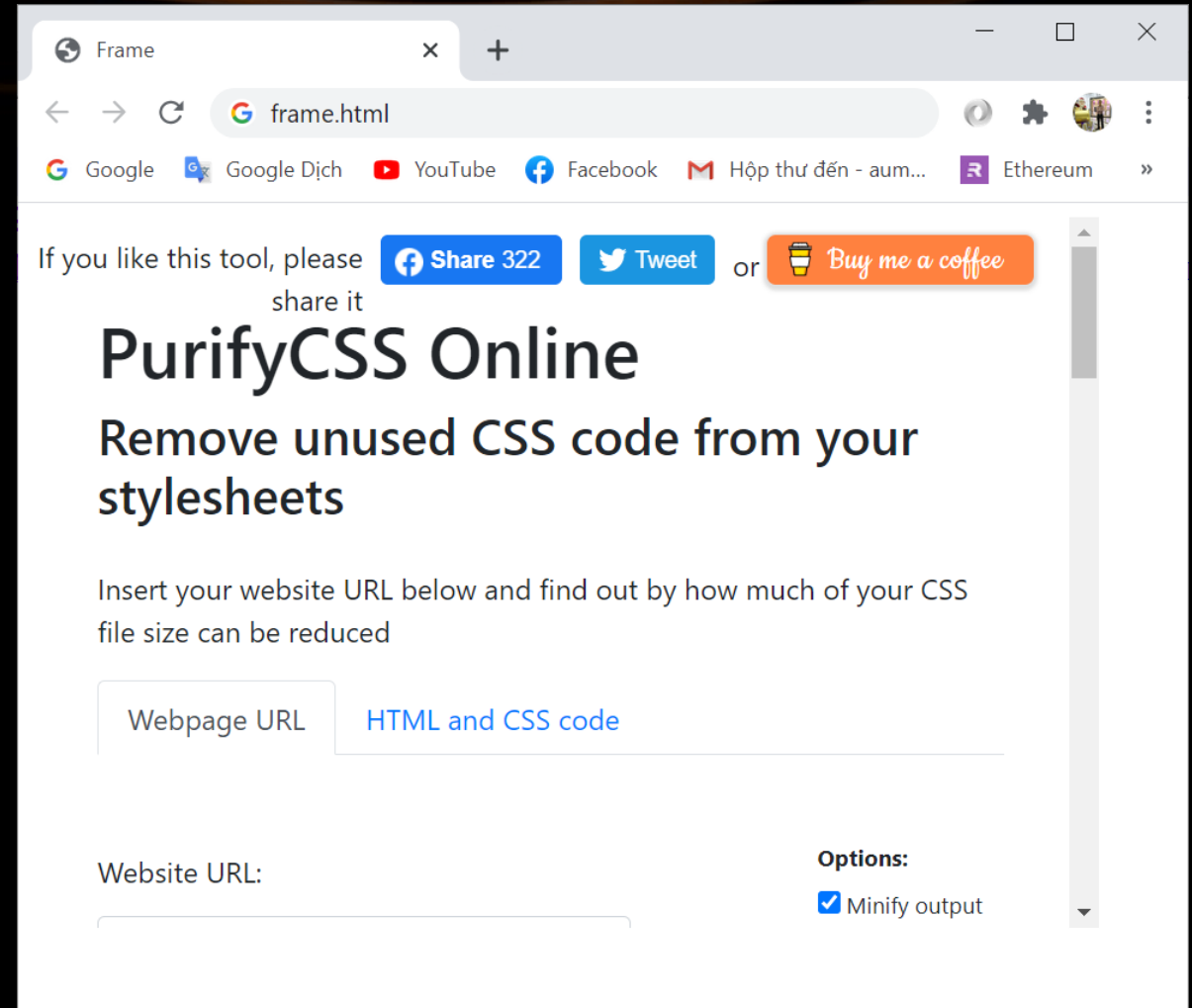
- Inline frames display a website inside another website:

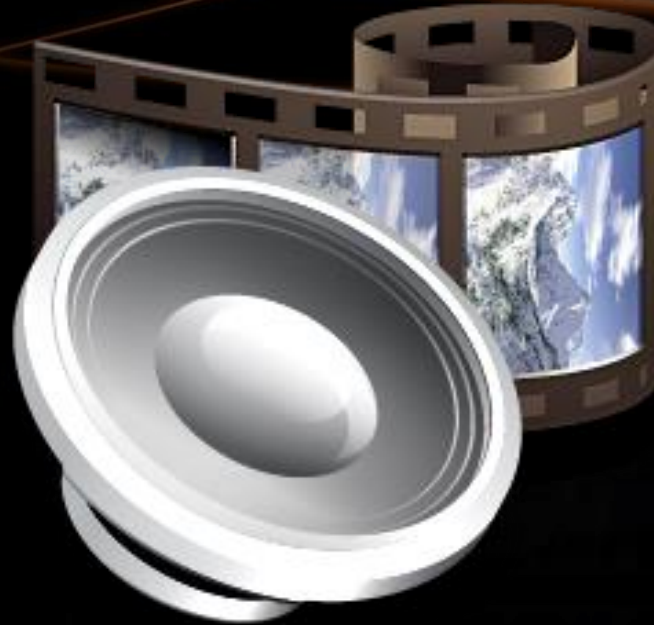
```
<iframe name="iframePurifycss" width="600" height="400"  
src="https://purifycss.online/" frameborder="yes"  
scrolling="yes"></iframe>
```

- Inline frames can display a page inside another page
 - The <iframe> has fixed size (cannot adjust its size by its content)
 - Limited parent-child page interaction
 - Due to security reasons

Inline Frames: <iframe> (2)

```
<iframe name="iframePurifycss"
width="600" height="400"
src="https://purifycss.online/"
frameborder="yes"
scrolling="yes"></iframe>
```





Multimedia Context

Embedding Audio, Video and Other Media

Embedding Audio (1)

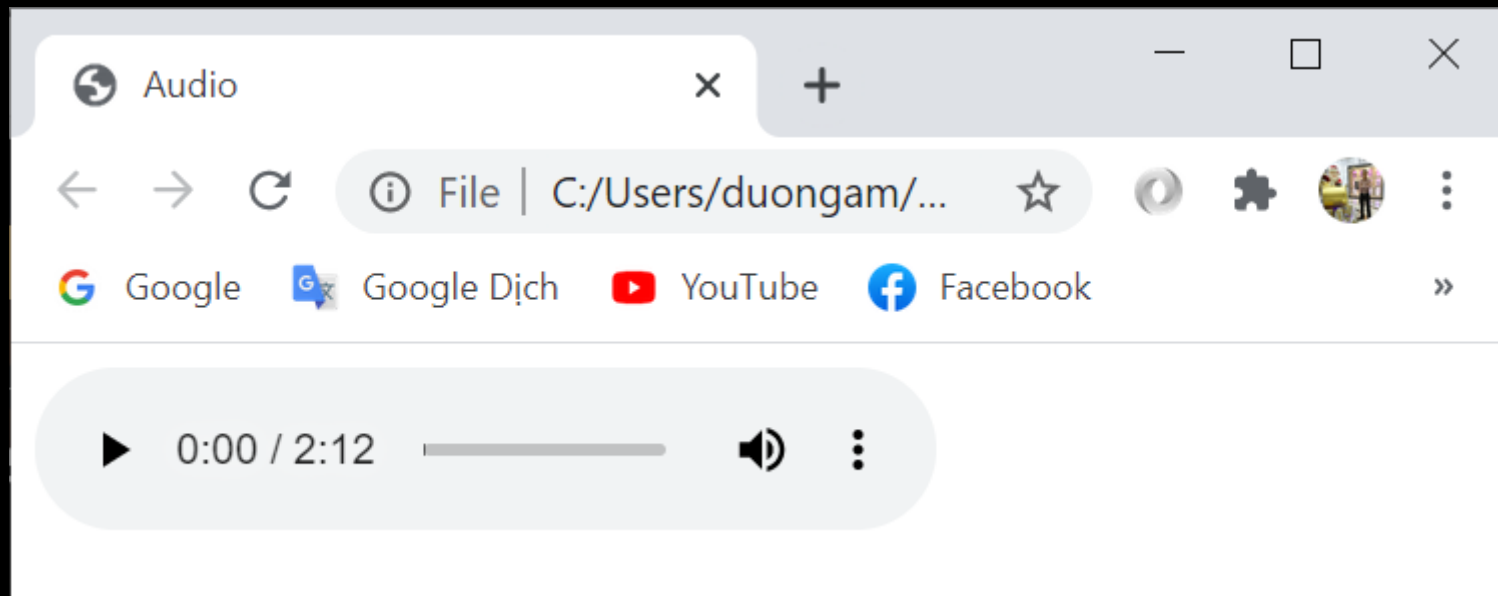
- The **<audio>** element inserts audio player in your site

```
<audio controls autoplay>  
  <source src="mysong.ogg" type="audio/ogg">  
  <source src="mysong.mp3" type="audio/mpeg">  
  Your browser does not support the <audio> tag.  
</audio>
```

- Audio formats supported:
 - MP3, OGG, WAV (some browsers don't play all formats)
- Attributes: **controls**, **autoplay**, **loop**, **preload**

Embedding Audio (2)

- Result:



Embedding Video (1)

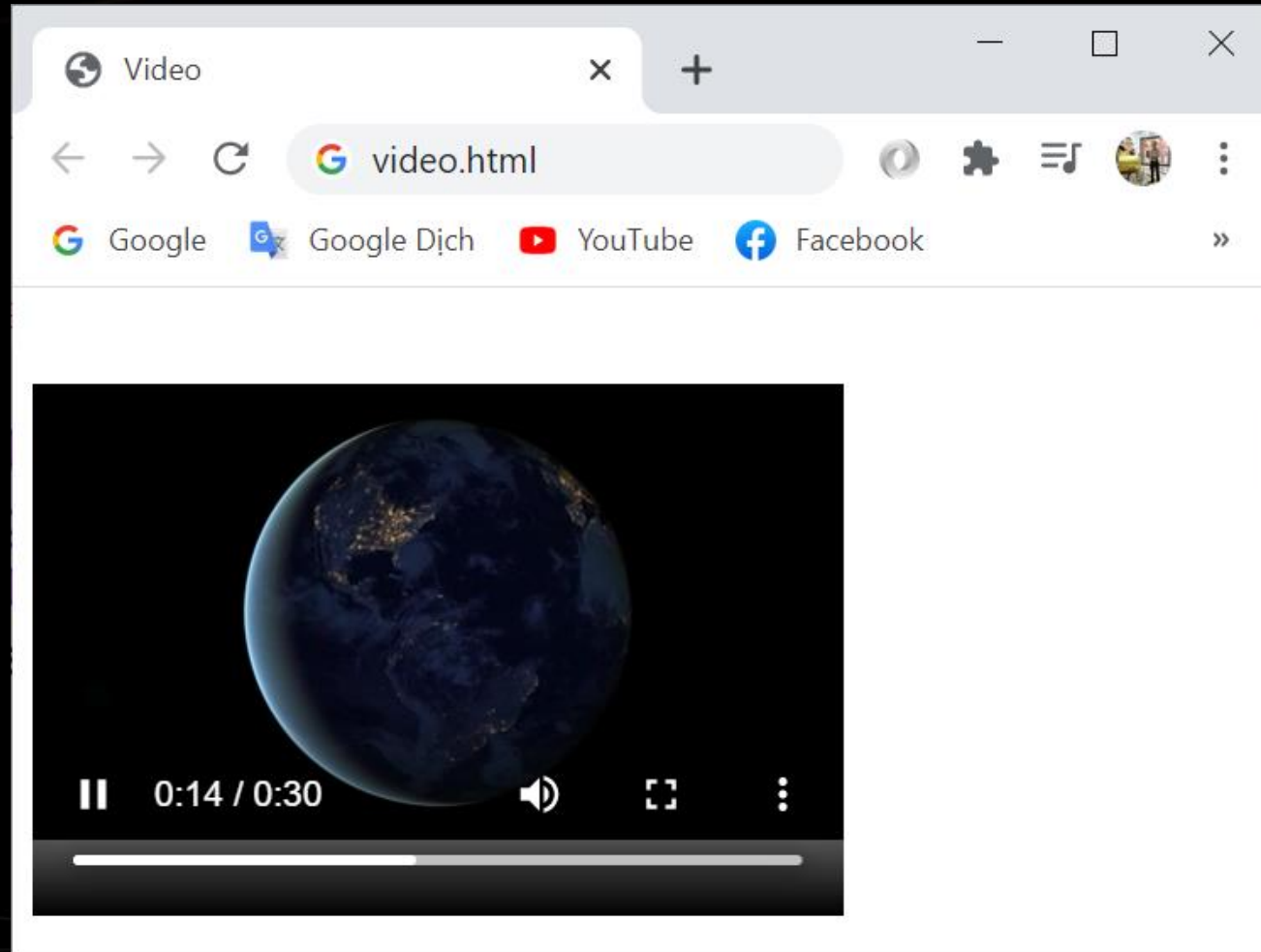
- The **<video>** element inserts video player in your site

```
<video width="320" height="240" controls poster="cover.gif">  
  <source src="movie.mp4" type="video/mp4">  
  <track src="subtitles_en.vtt" kind="subtitles" srclang="en">  
    Your browser does not support the video tag.  
</video>
```

- Video formats supported: MP4, OGG, WebM
(some browsers don't play all formats)
- Attributes: **width, height, poster, controls, autoplay, loop, preload**

Embedding Video (2)

- Result:



Embedding Other Objects (1)

- Using the **<embed>** tag to embed Flash objects / Java applets / PDF documents / other plugin-based content

```
<embed src="calculator.swf" width="300" height="200" />
```

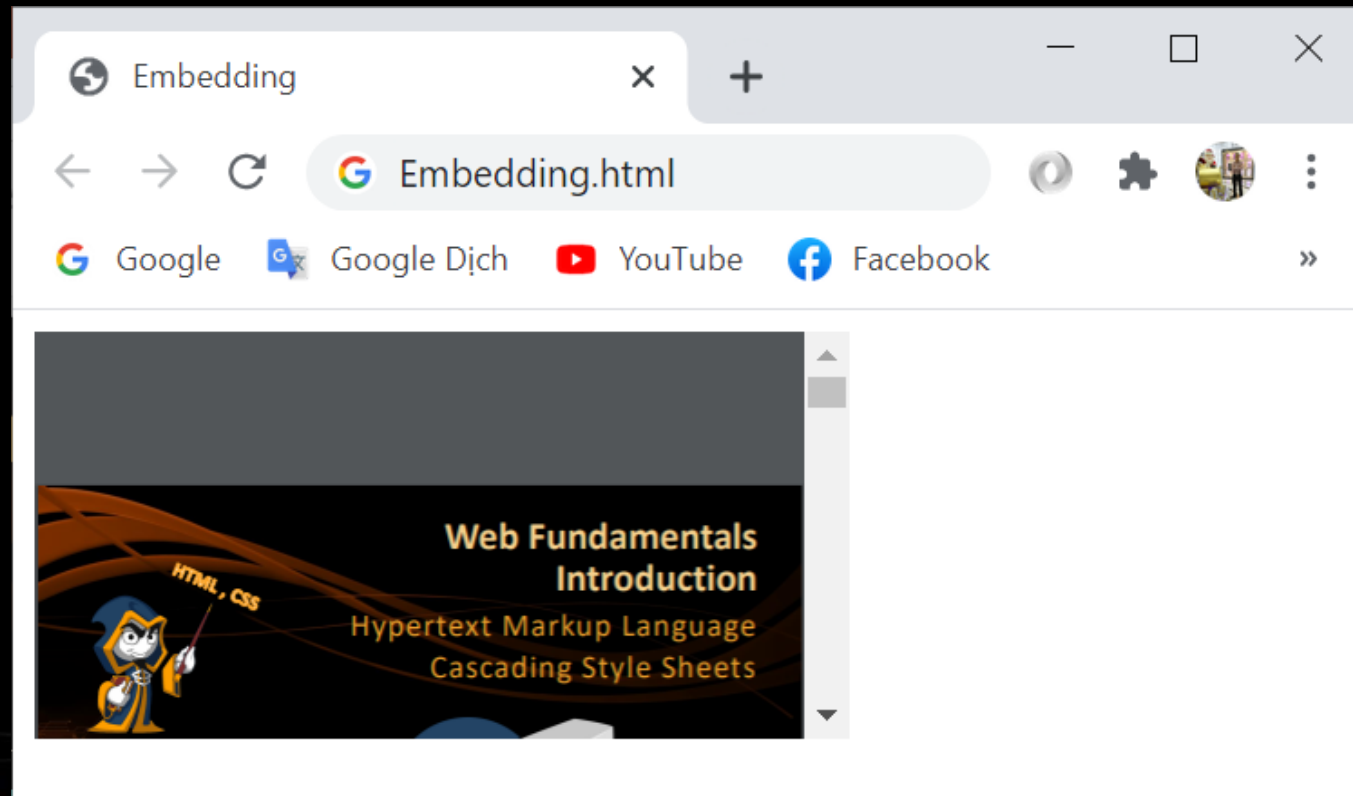
```
<embed src="footer.html" type="text/html" />
```

- **<object>** is very similar tag (newer and has body content):

```
<object data="invoice.pdf" type="application/pdf">  
  <a href="invoice.pdf">Download invoice.pdf</a>  
</object>
```

Embedding Other Objects (2)

```
<object data="test.pdf" type="application/pdf">  
  <a href="test.pdf">Download test.pdf</a>  
</object>
```



SVG Vector Graphics (1)

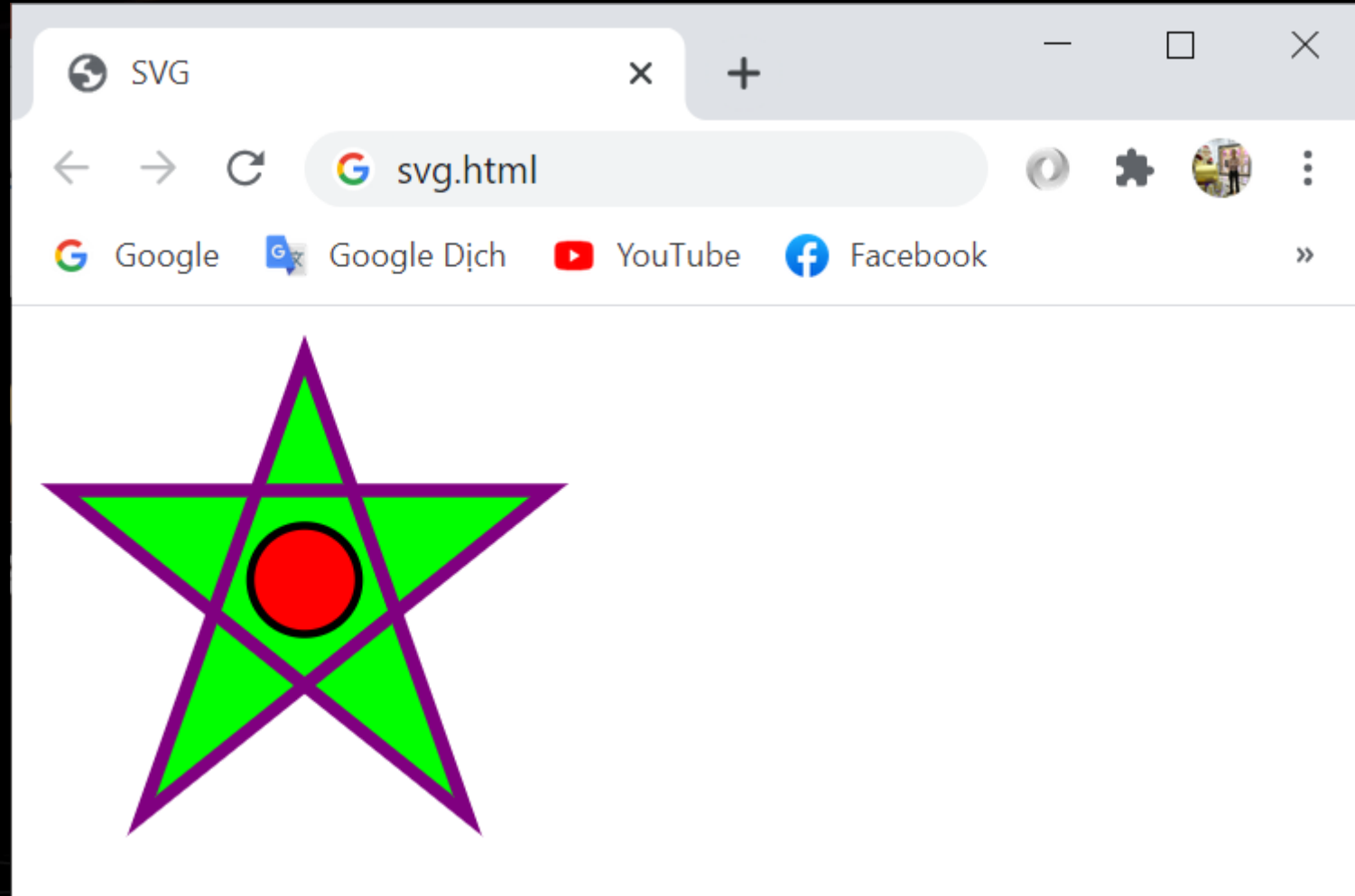
- In HTML5 you can include scalable vector graphics (SVG) through the **<svg>** tag:

```
<svg width="200" height="200">  
  <polygon points="100,10 40,180 190,60 10,60 160,180"  
    style="fill:lime;stroke:purple;stroke-width:5"/>  
  <circle cx="100" cy="93" r="20" stroke="black"  
    stroke-width="3" fill="red" />  
  Sorry, your browser does not support inline SVG.  
</svg>
```

- SVG is an XML based language for describing graphical objects like circles, ellipses, lines, polygons, shapes, strokes, text, etc.

SVG Vector Graphics (2)

- Result:



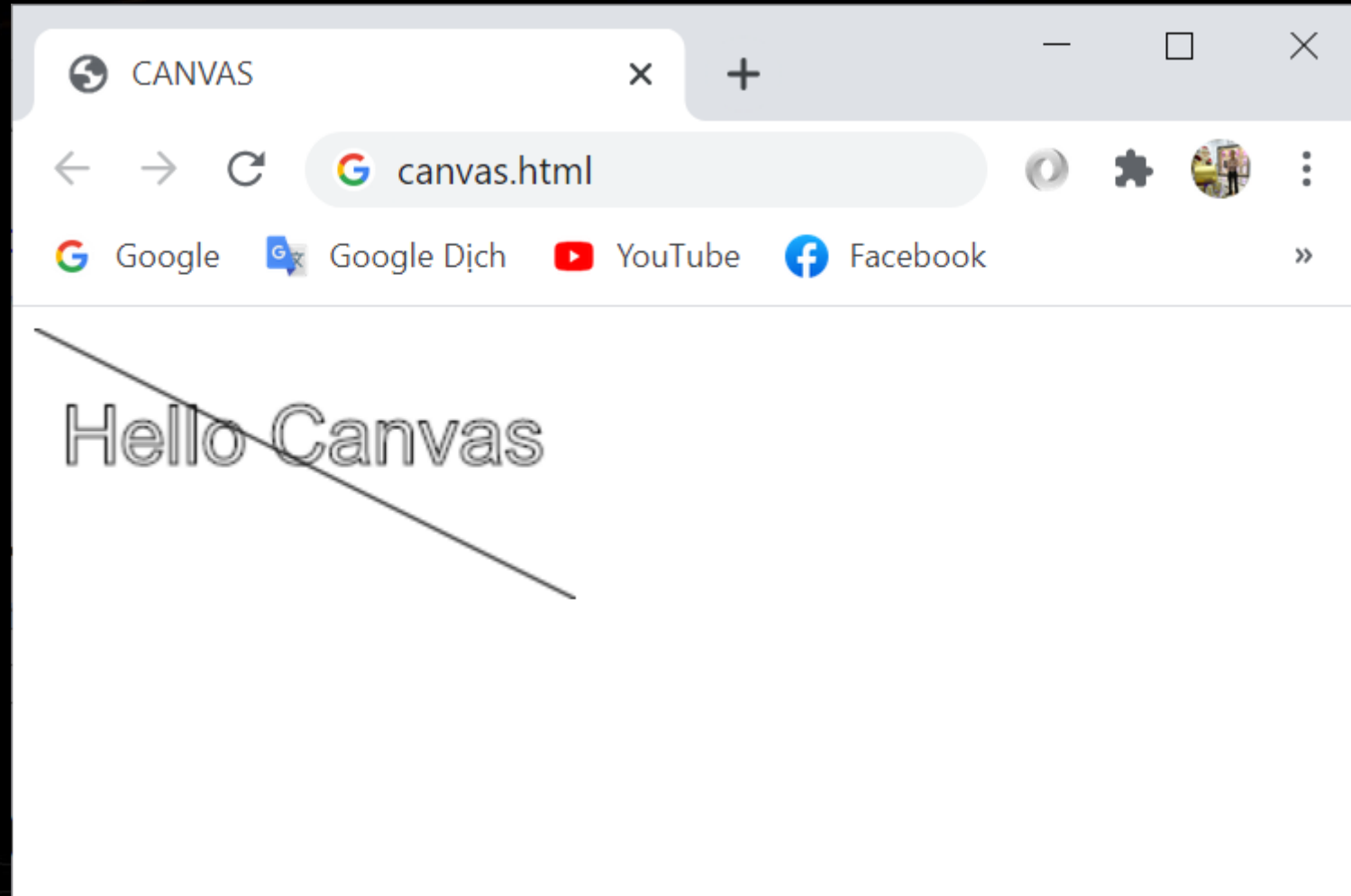
Canvas (1)

- The HTML elements **<canvas>** provides a field for drawing vector graphics through a JavaScript API:

```
<canvas id="myCanvas" width="200" height="100">Your browser does  
not support canvas.</canvas>  
<script>  
  var ctx = document.getElementById("myCanvas").getContext("2d");  
  ctx.font = "30px Arial";  
  ctx.strokeText("Hello Canvas", 10, 50);  
  ctx.moveTo(0,0);  
  ctx.lineTo(200,100);  
  ctx.stroke();  
</script>
```

Canvas (2)

- Result:





Other HTML Tags

Missing Pieces in the HTML Tag Universe

Progress and Meter

- **<progress>** displays the progress of operation:

```
<progress value="22" max="100"> </progress>
```

Download progress:



- **<meter>** displays a progress-bar

```
<meter value="2" min="0" max="10">2 out of 10</meter><br>  
<meter value="0.6">60%</meter>
```

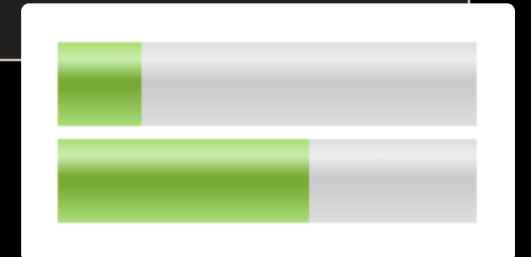


Image Maps (1)

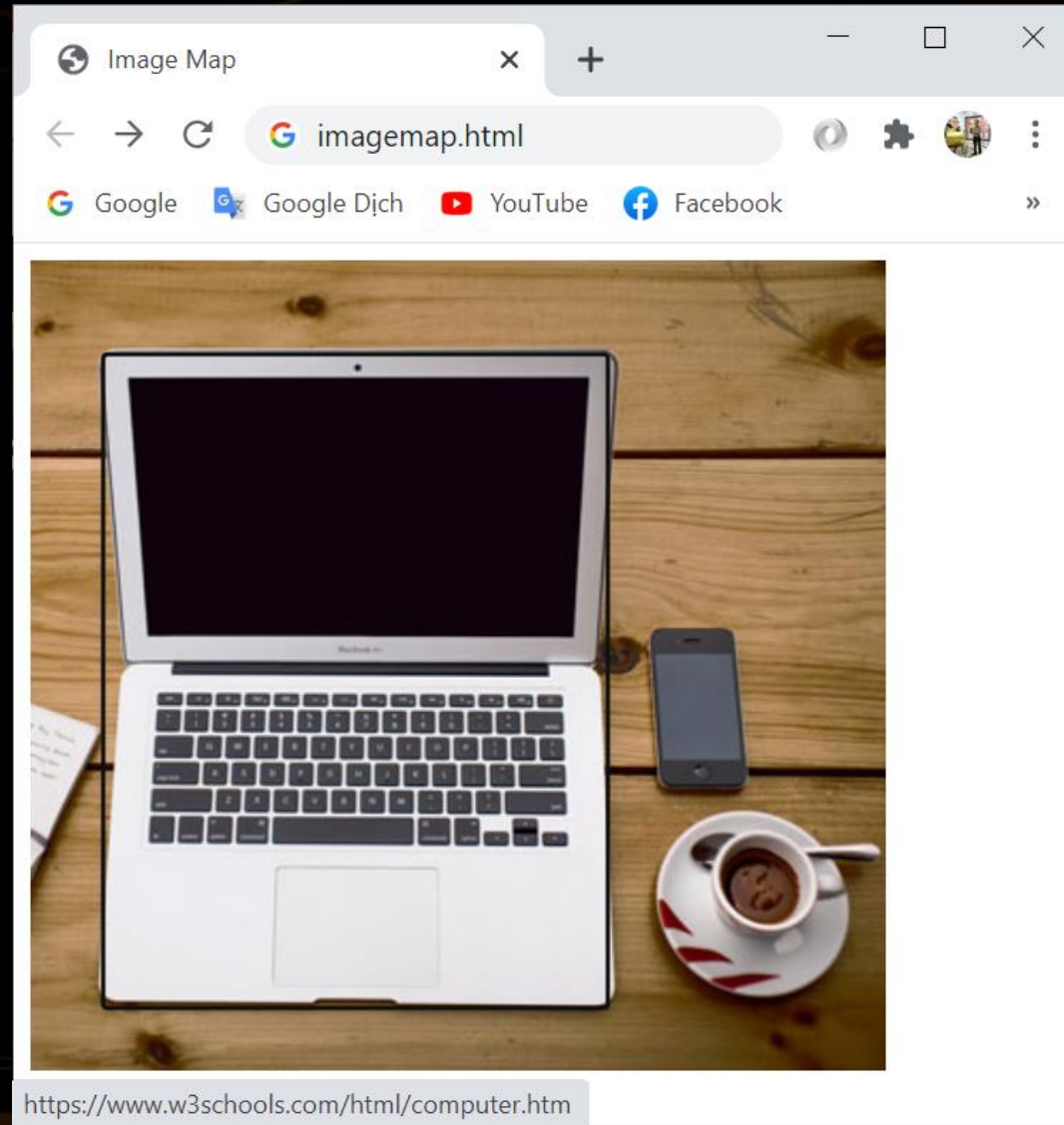
- Images can define maps and areas to make clickable some pieces an image (rectangular / circular areas)

```
  
<map name="planetmap">  
  <area shape="rect" coords="0,0,82,126" href="computer.htm">  
  <area shape="circle" coords="90,58,3" href="phone.htm">  
  <area shape="circle" coords="124,58,8" href="coffee.htm">  
</map>
```

Check result with link: <https://www.w3schools.com/html/>

Image Maps (2)

- Result:



Other Tags

- **<meta>** – HTML document metadata

```
<head>
  <meta charset="UTF-8">
  <meta name="author" content="DuongAM">
</head>
```

- **<wbr>** – optional break for long words (used in hyphenation)

```
<p>I am Very<wbr>Long<wbr>Word<wbr> that may be broken.</p>
```

- **
** – line break (like the **\n** in the console)
- **<hr />** – displays a horizontal line

Summary

1. Semantic HTML

- `<header>`, `<footer>`, `<aside>`, `<nav>`, `<article>`, `<section>`, `<h1>`, `<h2>`, `<h3>`, `<time>`, ...

2. HTML frames → embed HTML inside another HTML

3. Multimedia Content

- `<audio>`, `<video>`, `<embed>`, `<object>`
- `<svg>`, `<canvas>`

4. Other Tags: `<meter>`, `<progress>`, `<map>`, ...



HTML – Other Tags



Questions?

