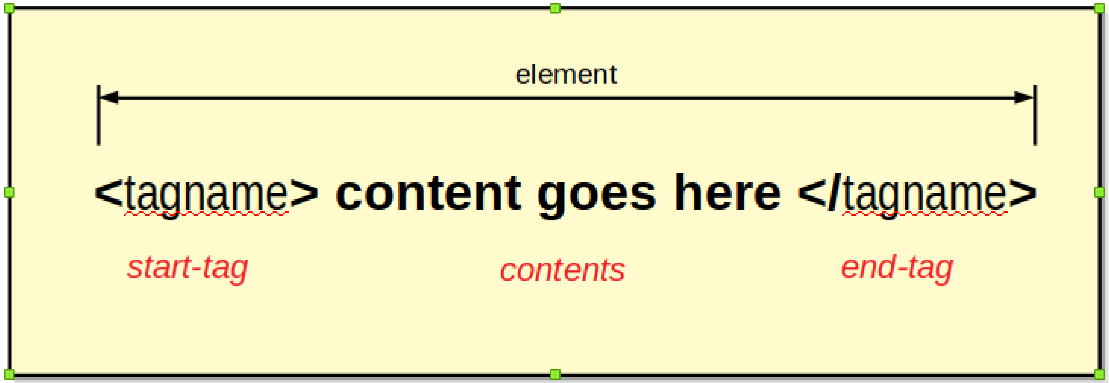
# EP1000

## HTML

# Hypertext Markup Language

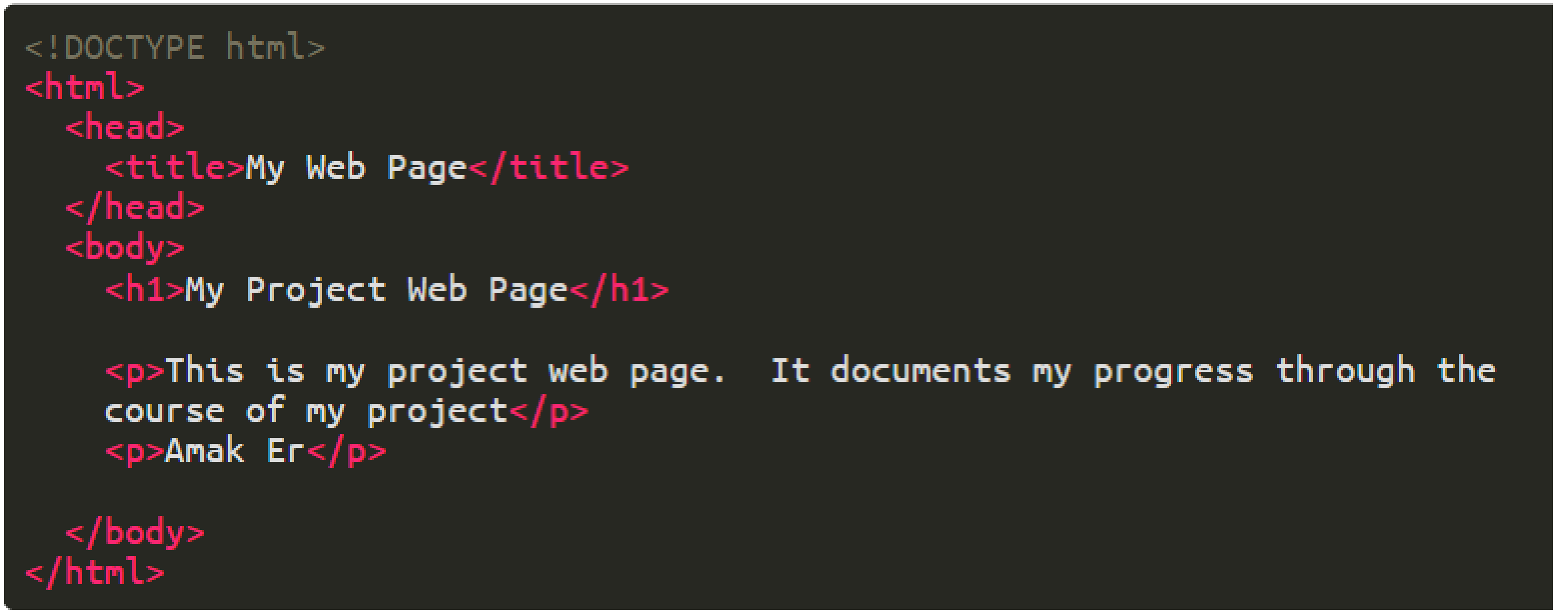
- HTML is the standard markup language for creating Web pages.
  - HTML describes the structure of a Web page
  - HTML consists of a series of elements
    - Each element has a start and end tag
    - Each element has content
  - Elements tell the browser how to display the content
  - HTML define CONTENT.



Ref:
- W3 Schools HTML tutorial
- W3 Schools HTML reference

# Web Page

- Structure
  - Use a folder to hold the contents of your website.
  - The starting page of your website is name index.html.
  - All webpages have the default extension HTML
  - The website is uploaded to a Web Server, which hosts the pages.

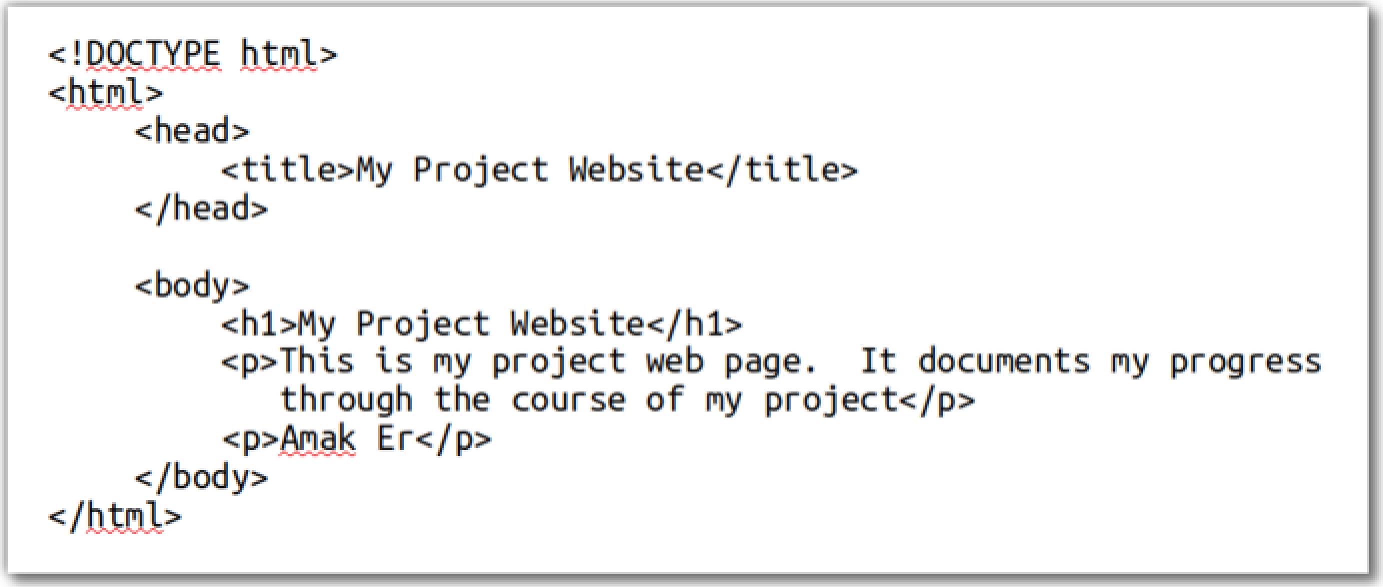


```
<!DOCTYPE html>
<html>
  <head>
    <title>My Web Page</title>
  </head>
  <body>
    <h1>My Project Web Page</h1>

    <p>This is my project web page.  It documents my progress through the
    course of my project</p>
    <p>Amak Er</p>

  </body>
</html>
```

# Structure

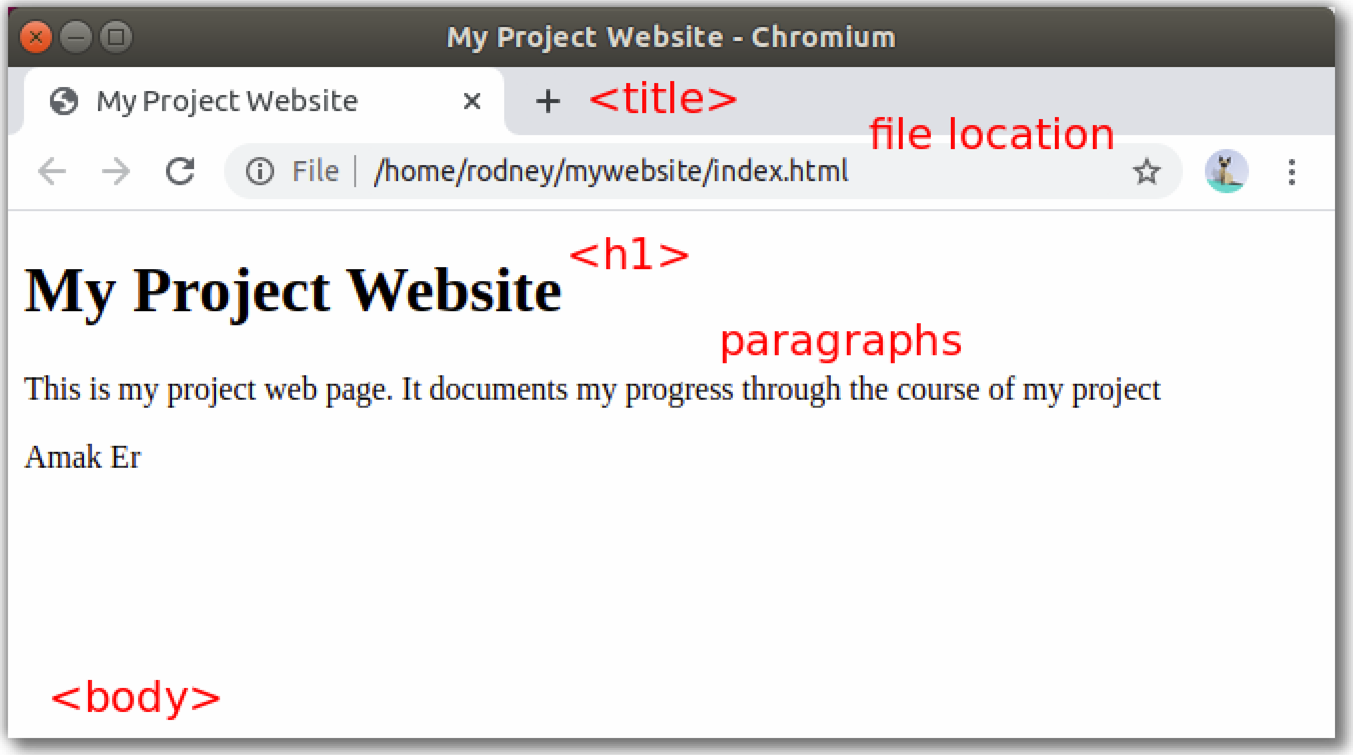


```
<!DOCTYPE html>
<html>
    <head>
        <title>My Project Website</title>
    </head>

    <body>
        <h1>My Project Website</h1>
        <p>This is my project web page.  It documents my progress
           through the course of my project</p>
        <p>Amak Er</p>
    </body>
</html>
```

- !DOCTYPE html identifies this as a HTMLv5 document.
- the <html> </html> tags show the content of the page.
- the content is made up of a head and a body
- the head section has
    - a title which identifies the page
- the body section, has the bulk of the content
    - has a heading (bold large text)
    - has paragraphs of text

# Rendered by a Browser


My Project Website - Chromium
My Project Website
<title>
file location
File
/home/rodney/mywebsite/index.html
<h1>
paragraphs
<body>

My Project Website

This is my project web page. It documents my progress through the course of my project

Amak Er

Drag-and-drop your file (index.html) on a browser window.
Your browser will convert (render) the contents.
This includes text, images, audio and video.

# Build your first Website

1. Create a folder mywebsite
2. Create a file index.html within the folder.
3. Edit and enter the contents of a basic web-page.
4. Save your file and display it on the browser.

## Tips (especially for Windows users)

- use a Pure Text Editor (NOT notepad)
- turn ON file extensions viewing in Explorer.
- create a folder for your website, this is called the root folder.
- the starting file must be named index.html
- name all your files in lowercase
- do NOT use spaces in the filenames.
- keep all your files in the same folder (you can have sub-folders)
- file location is relative to this root folder

# Learning HTML

- You will need to understand and know how to use BASIC HTML.
- We don't expect you to be experts.

## A list of what you need to learn

- Elements
- Attributes
- Headings
- Paragraphs
- Style
- Formatting
- Colors
- Comments
- Images
- Lists
- Bookmarks
- Links
- Tables
- Layouts

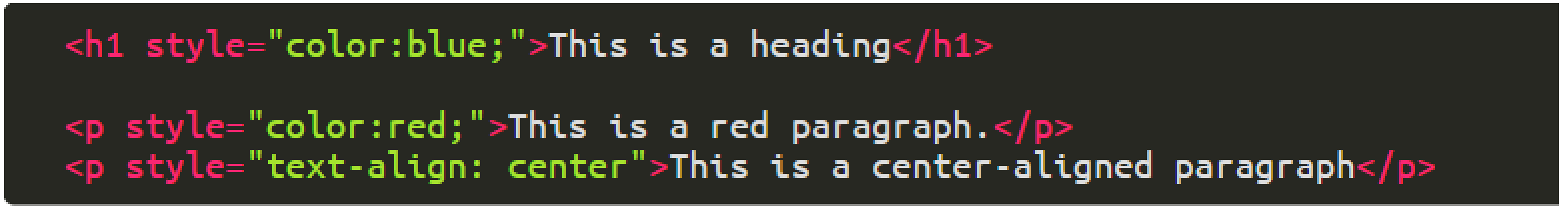
# Headings and Paragraphs

- Headings
  - Headings are used as titles or sub-titles on the webpage
  - Keep H1 as the title of the page.
  - Use H2 and H3 for your sub-headings/titles
  - Limit your headings up to 3-levels.
- Paragraphs
  - Paragraphs are used to define text.
  - Paragraphs makes text appear on a new line.
  - White space is ignored in paragraphs.
  - Remember to start and end your paragraphs with the <p> tags.
  - special tags/characters:
    - &nbsp; non-breaking white space
    - <br> line-break
    - special characters: &amp; (&), &lt; (&), gt; (>), &copy; (©)
  - <pre> pre-formatted text

# Styles

- the <style> attribute is used to add styles your elements.
- you can change color, font, size, and more.
- we will use CSS to apply styles

- ## Inline Styles
  - styles can also be applied inline (for a particular element)
  - however,
    - leads to confusing web-sites
    - only used as a quick-patch solution
    - more on styles, when we work on CSS



```
<h1 style="color:blue;">This is a heading</h1>

<p style="color:red;">This is a red paragraph.</p>
<p style="text-align: center">This is a center-aligned paragraph</p>
```

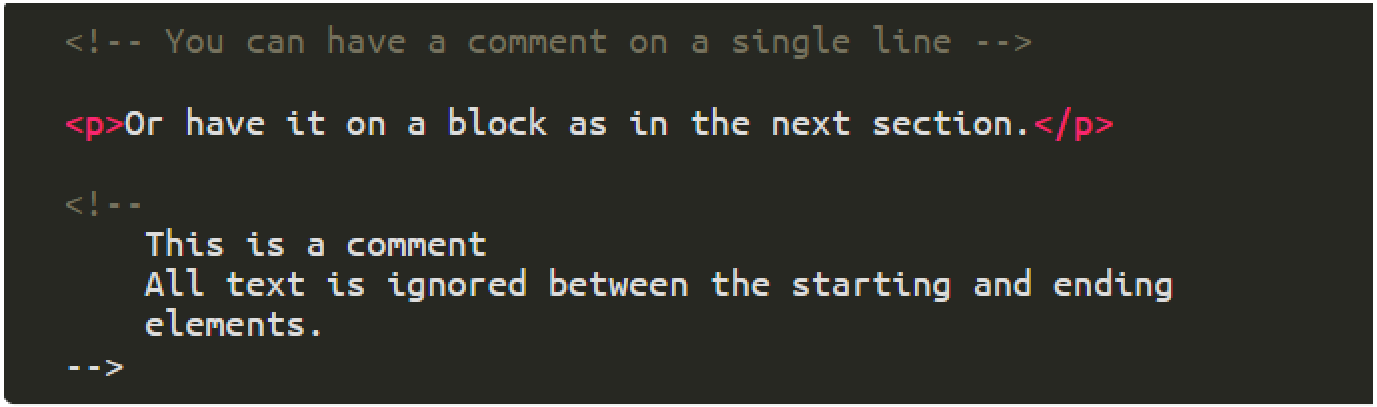
# Formatting

- You can format your text to emphasize what your intentions.
- Here is a short list of formatting elements
  - <b> - Bold text
  - <i> - Italic text
  - <em> - Emphasized text
  - <strong> - Important text
  - <small> - Smaller text
  - <del> - Deleted text
  - <ins> - Inserted text
  - <mark> - Marked text
  - <sub> - Subscript text
  - <sup> - Superscript text

- **Colors**
  - You can also manipulate the colors of your elements
  - More elaborate explanation can be found here

# Comments

- Comments help in putting messages in your code to help you document your work.
- Comments are also used to block out code for experimentation/debugging.
- Comments are not displayed/rendered by the browser.
- You can read more here.



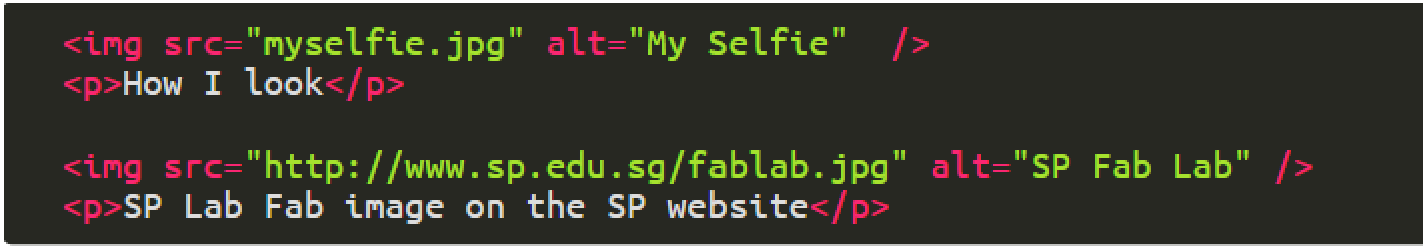
```
<!-- You can have a comment on a single line -->

<p>Or have it on a block as in the next section.</p>

<!--
    This is a comment
    All text is ignored between the starting and ending
    elements.
-->
```

# Images

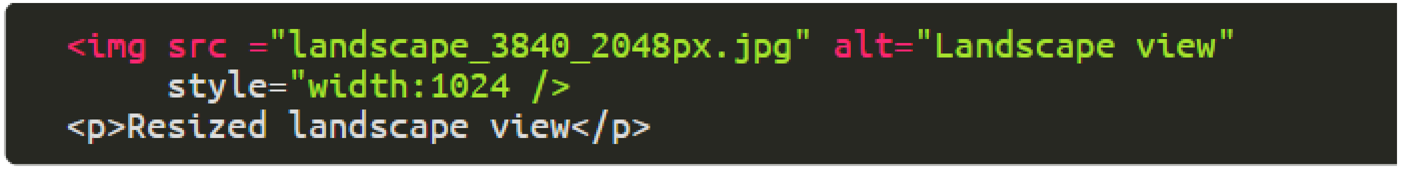
- You can display images on a web page using the <img> tag.
- Images are linked to the web page using the <img> tag.
- The <img> tag has the end-tag as />
- The <img> has two required attributes
  - the src which references the image
  - the alt which provides a text explanation



```
<img src="myselfie.jpg" alt="My Selfie"  />
<p>How I look</p>

<img src="http://www.sp.edu.sg/fablab.jpg" alt="SP Fab Lab" />
<p>SP Lab Fab image on the SP website</p>
```

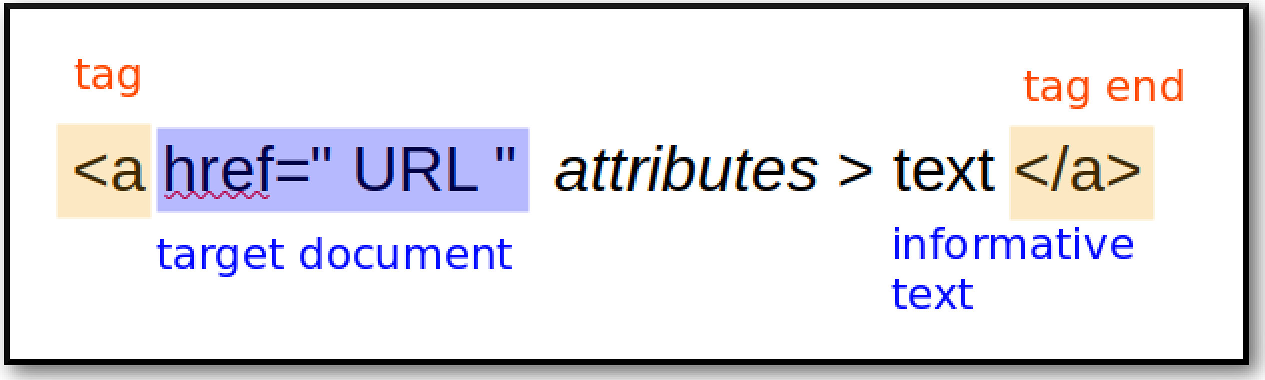
- If your images are too large (or small), you can format them
  - I suggest you use the inline-style attribute
  - You can specify both width and height.
  - However, if you only specify one, then the aspect ratio is kept
- The following images are accepted: .jpg, .png, .gif, .ico, .jpeg, .svg

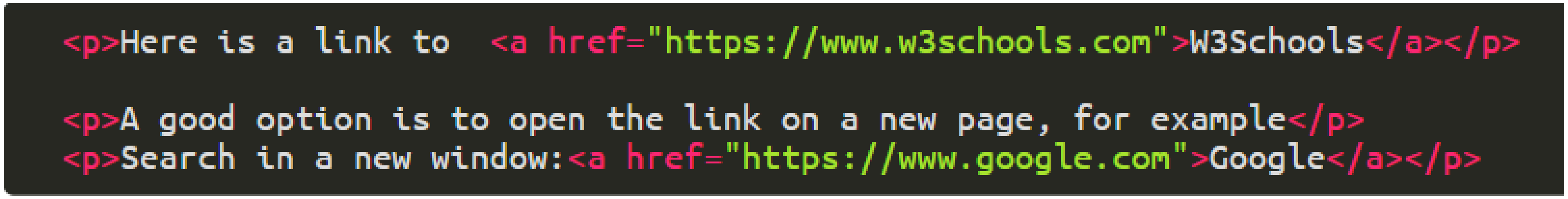


```
<img src ="landscape_3840_2048px.jpg" alt="Landscape view"
     style="width:1024 />
<p>Resized landscape view</p>
```

# Hyperlinks

- The true power of the WWW is hyperlinks.
- Links allow pages to be connected together.
- When you click on a link, you can "jump" to another document.
- A link DOES NOT need to be text!



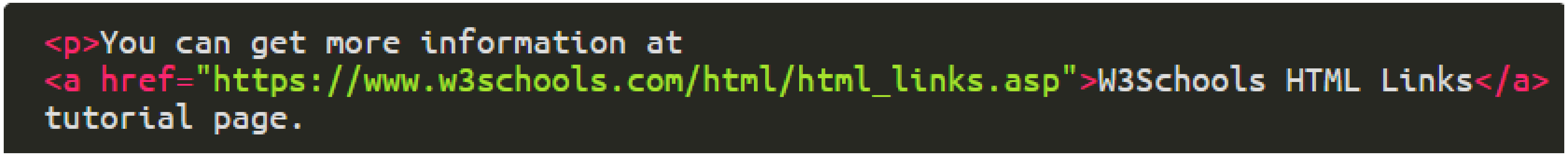


```
<p>Here is a link to  <a href="https://www.w3schools.com">W3Schools</a></p>

<p>A good option is to open the link on a new page, for example</p>
<p>Search in a new window:<a href="https://www.google.com">Google</a></p>
```

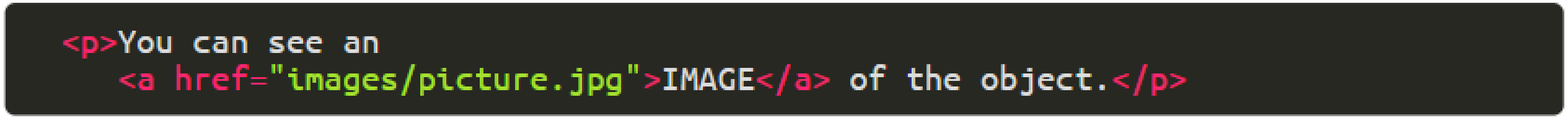
# Absolute and Relative URLs

- Absolute URLs have the full (absolute) URL address in the link
- Usually link to documents outside of the site



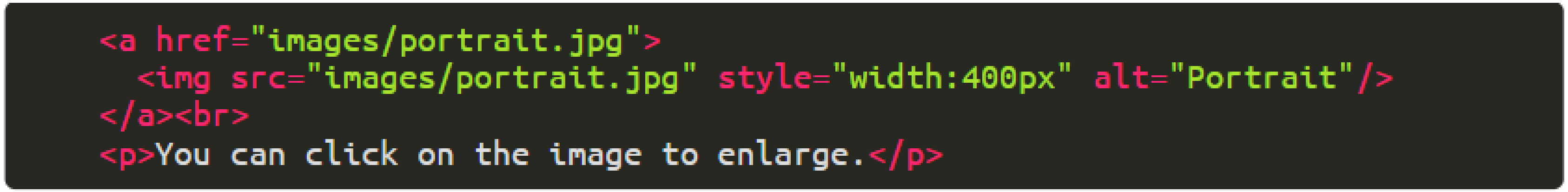
```
<p>You can get more information at
<a href="https://www.w3schools.com/html/html_links.asp">W3Schools HTML Links</a>
tutorial page.
```

- Relative URLs are used for documents within the site
- For example, if images are kept within a sub-folder



```
<p>You can see an
   <a href="images/picture.jpg">IMAGE</a> of the object.</p>
```

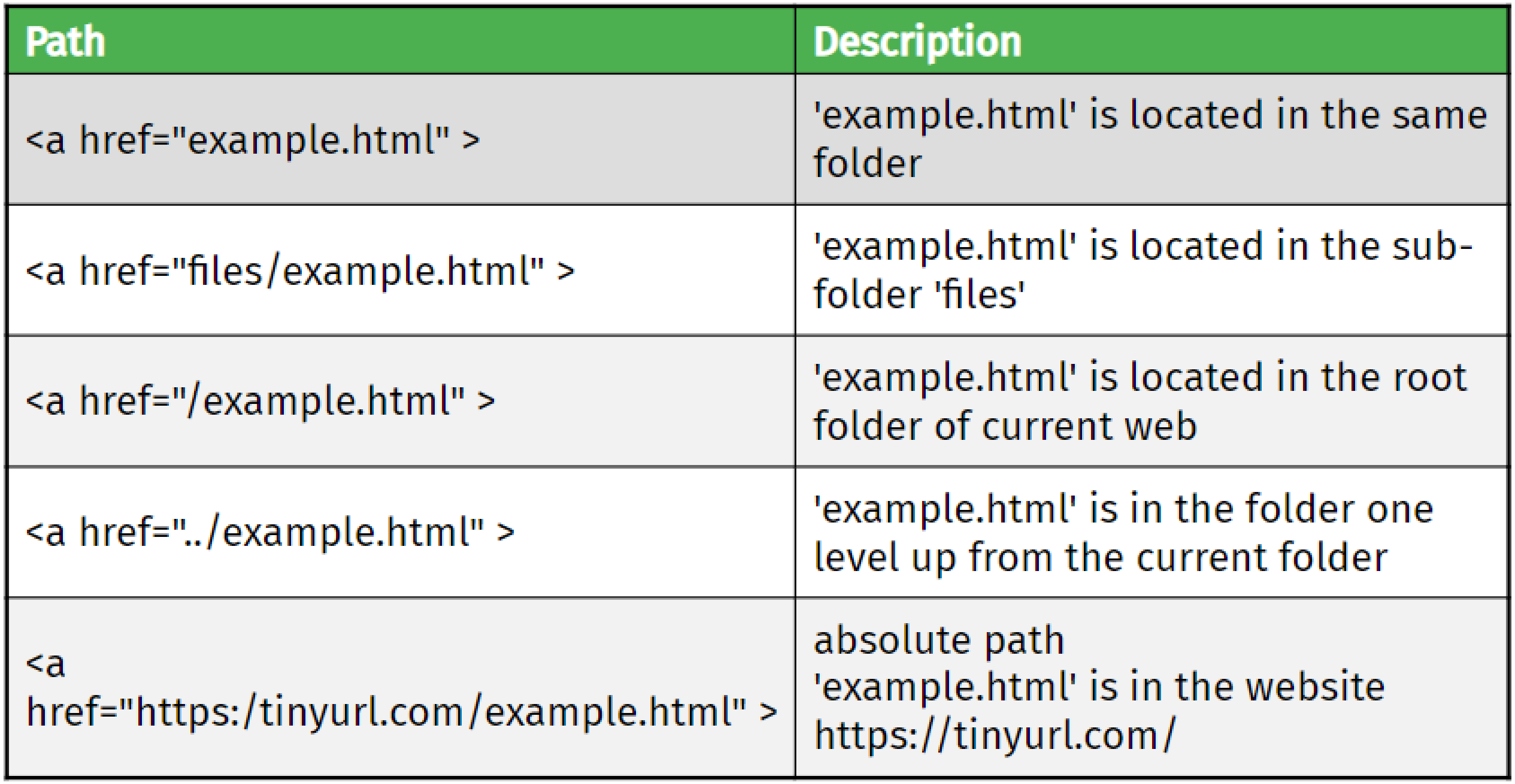
- Links are not limited to text, but to other objects as well!



```
<a href="images/portrait.jpg">
  <img src="images/portrait.jpg" style="width:400px" alt="Portrait"/>
</a><br>
<p>You can click on the image to enlarge.</p>
```

# HTML File Paths

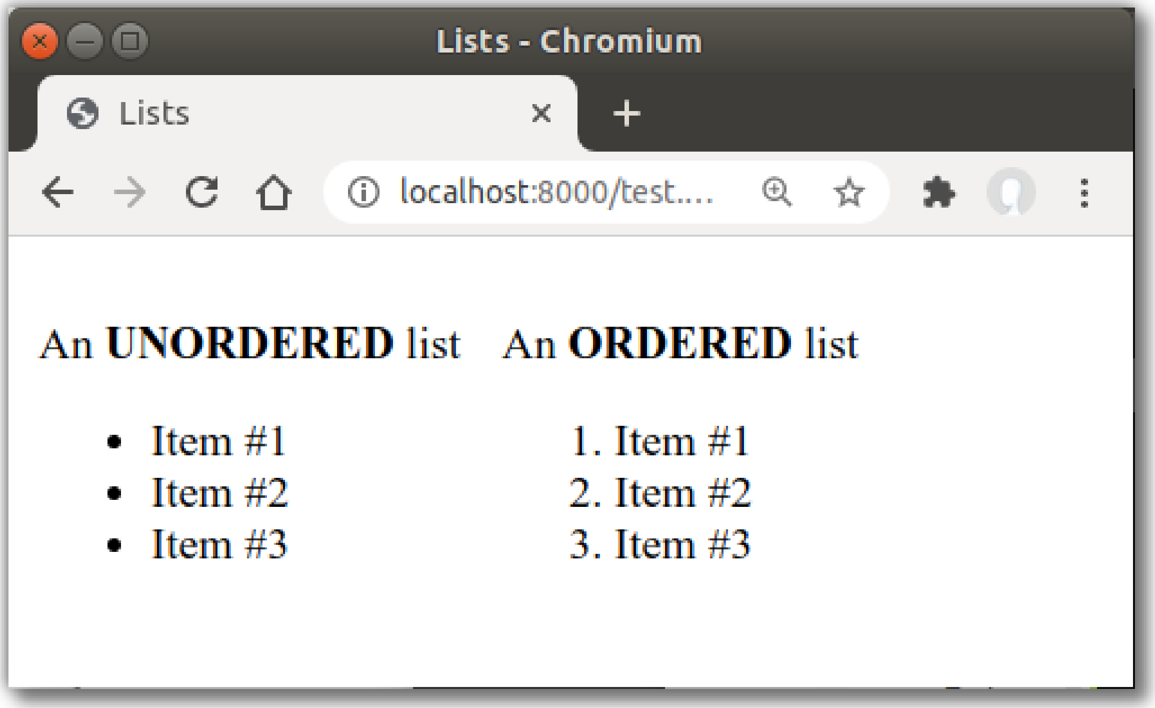
- Examples
  applies to <img> as well



| Path | Description |
|---|---|
| <a href="example.html" > | 'example.html' is located in the same folder |
| <a href="files/example.html" > | 'example.html' is located in the sub-folder 'files' |
| <a href="/example.html" > | 'example.html' is located in the root folder of current web |
| <a href="../example.html" > | 'example.html' is in the folder one level up from the current folder |
| <a href="https:/tinyurl.com/example.html" > | absolute path<br>'example.html' is in the website https://tinyurl.com/ |

# Lists

- Lists are used to organise information in groups.
- There are two types of lists
- You can nest the lists



An **UNORDERED** list

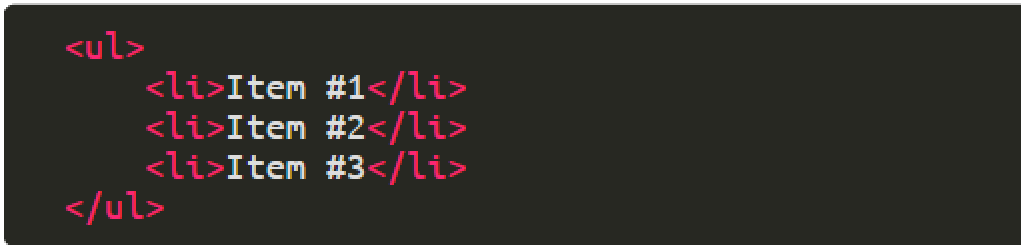
- Item #1
- Item #2
- Item #3

An **ORDERED** list

1. Item #1
2. Item #2
3. Item #3

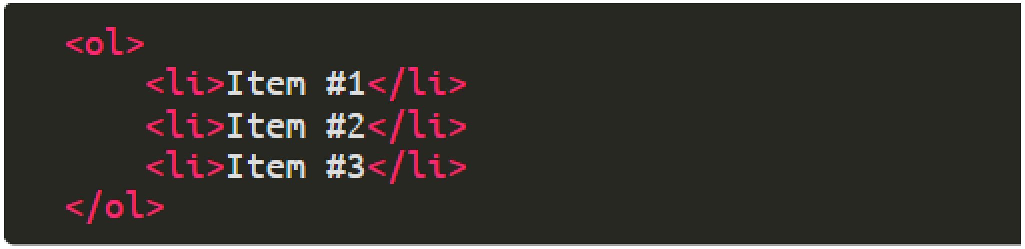
# Lists

- Unordered lists use the <ul> tag



```
<ul>
    <li>Item #1</li>
    <li>Item #2</li>
    <li>Item #3</li>
</ul>
```

- Ordered lists use the <ol> tag

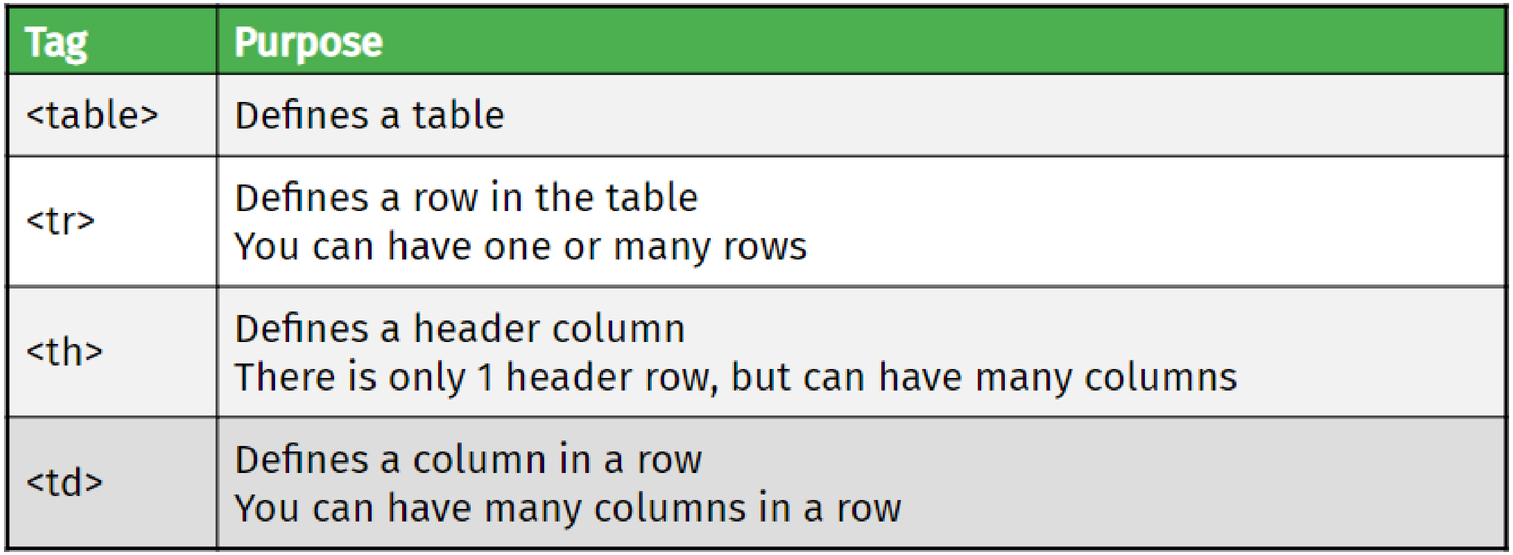


```
<ol>
    <li>Item #1</li>
    <li>Item #2</li>
    <li>Item #3</li>
</ol>
```

- In both cases, the list items are tagged using <li>

# Tables

- Tables allow you to organise your information in rows and columns.
- Limit the sizes of your tables, as the browser needs to load the table before it can be rendered.



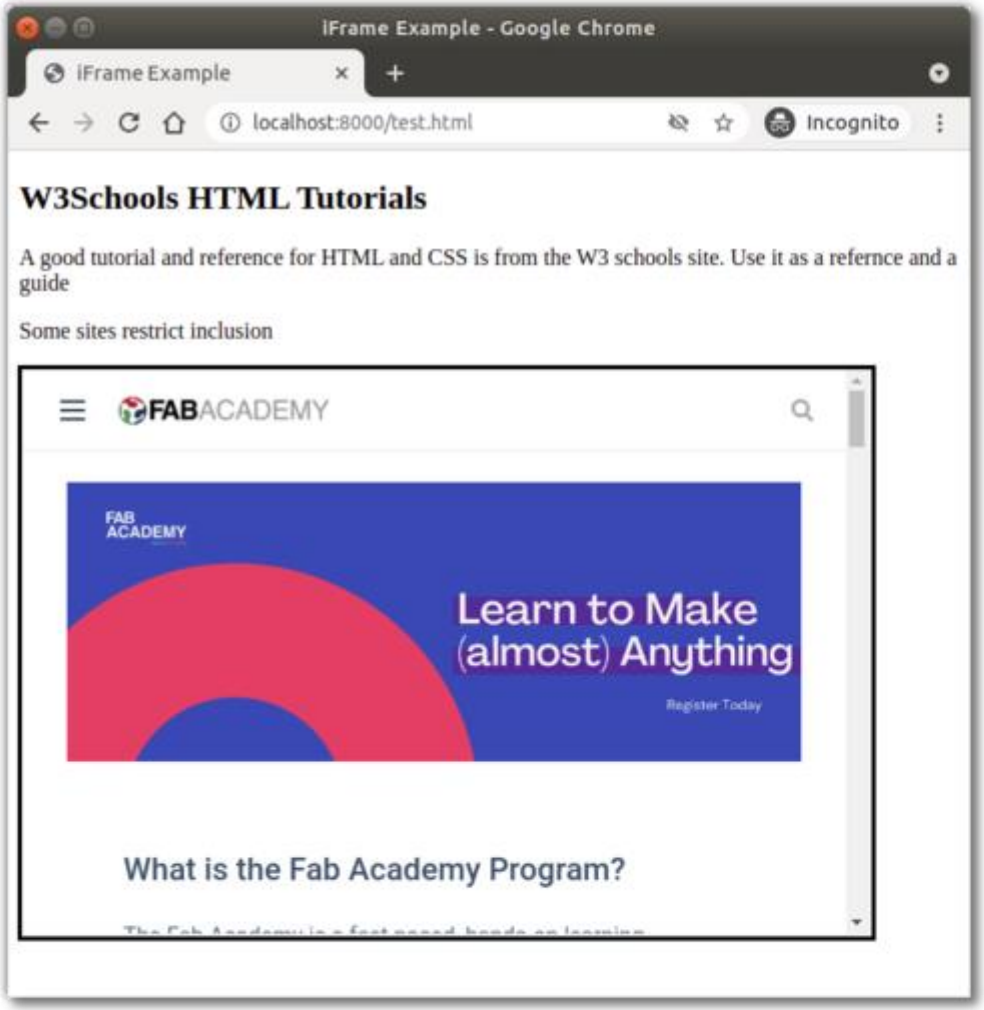
| Tag | Purpose |
|---|---|
| <table> | Defines a table |
| <tr> | Defines a row in the table<br>You can have one or many rows |
| <th> | Defines a header column<br>There is only 1 header row, but can have many columns |
| <td> | Defines a column in a row<br>You can have many columns in a row |

- More on tables at W3Schools
- Alternatively, you can use a table generator

# Iframe Element

- Used to display a webpage within a web page.
- You will use it to display your Fusion 360 drawings

```
<iframe
    src="http://fabacademy.org/"
    frameborder="2"
    width="600px" height="400px"
    title="Fabacademy.org" >
 </iframe>
```



iFrame Example - Google Chrome

**W3Schools HTML Tutorials**

A good tutorial and reference for HTML and CSS is from the W3 schools site. Use it as a refernce and a guide

Some sites restrict inclusion

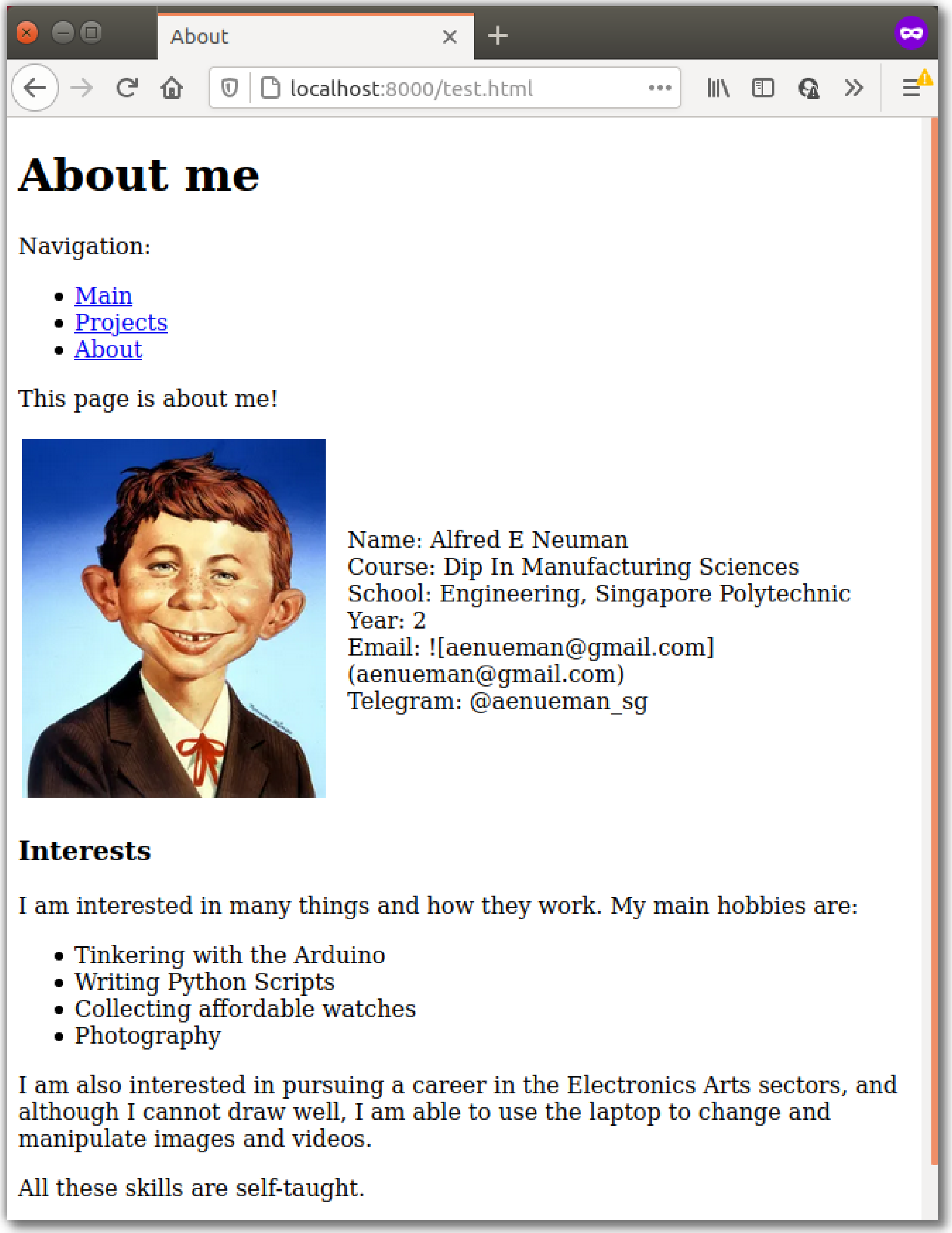
What is the Fab Academy Program?

The Fab Academy is a fast-paced, hands-on learning

# About Page

  - Every site has an About page
  - The about page informs the reader about the author/purpose of the site.

- Task
  1. Create an About page, which is linked from the main page (index.html)
  2. Write one or two paragraphs informing the reader about the purpose of this site.
  3. Use a table with two columns, to show
     1. A selfie of the author (on the left)
     2. Some information about the author (on the right)
  4. Provides some means of contacting the author
  5. Have links that can return to the main page
- Extra Credit
  - Store your images in a folder named "images"
  - Images is located as a sub-folder to the root of the site.



# About me

Navigation:

- Main
- Projects
- About

This page is about me!

Name: Alfred E Neuman
Course: Dip In Manufacturing Sciences
School: Engineering, Singapore Polytechnic
Year: 2
Email: ![aenueman@gmail.com]
(aenueman@gmail.com)
Telegram: @aenueman_sg

### Interests

I am interested in many things and how they work. My main hobbies are:

- Tinkering with the Arduino
- Writing Python Scripts
- Collecting affordable watches
- Photography

I am also interested in pursuing a career in the Electronics Arts sectors, and although I cannot draw well, I am able to use the laptop to change and manipulate images and videos.

All these skills are self-taught.

# Sample

Hints:

- Use a table to separate the image from the text and to provide a side-by-side layout
- Use <div> to divide sections

# Tools

- Use your text editor and your browser for most of the work
- Essential visual tools
  - Html code editor – check your code immediately
  - Html linter – format and validate your code
  - ResizeImage your image (alt. imageResizer)
- References:
  - W3Schools HTML Tutorial & Reference
  - HTML Color Picker

# EP1000

## HTML

End