# Web Designing

HTML5 NOTES

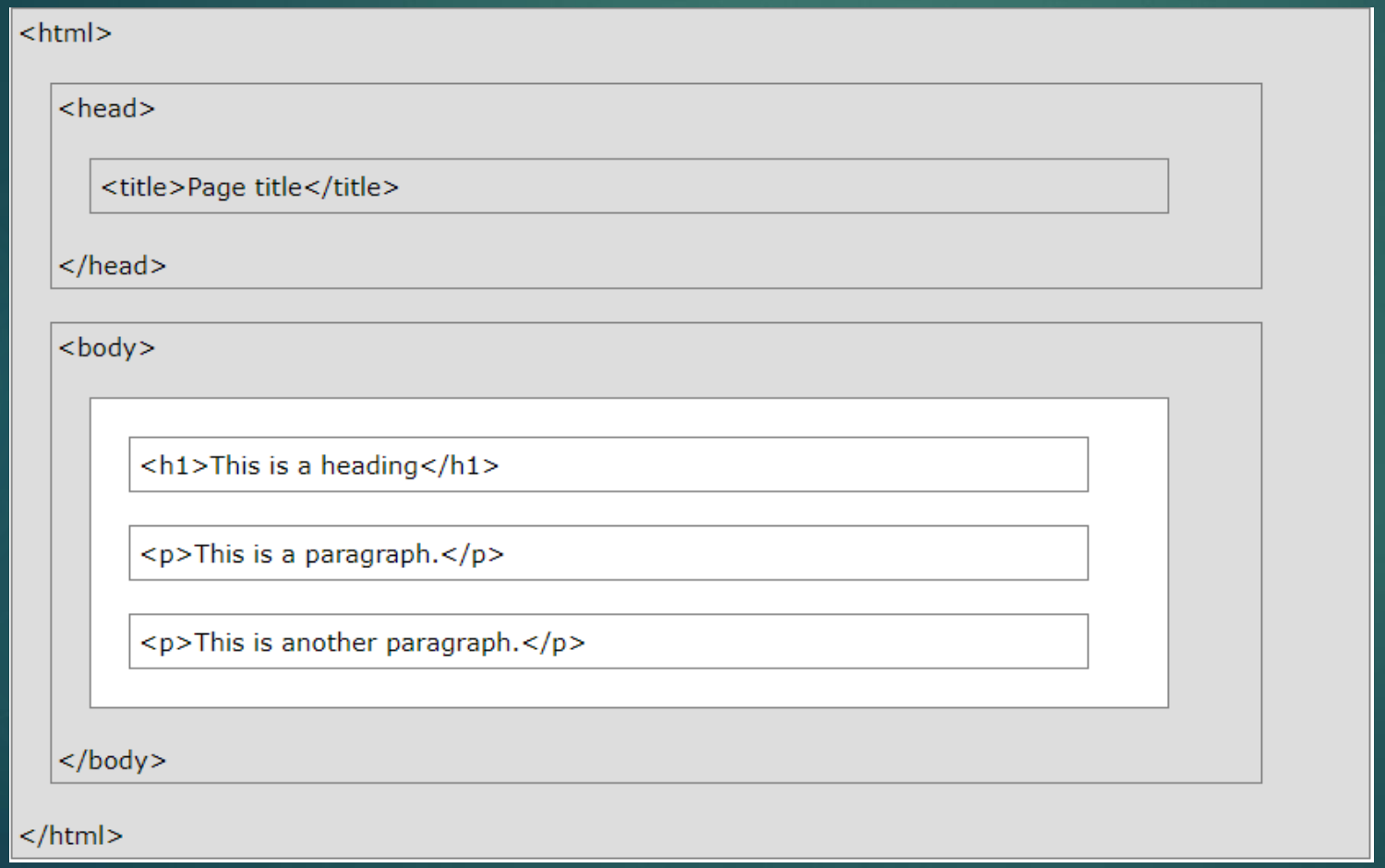
# HTML Introduction – What is HTML?

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

# HTML Page Structure

- Below is a visualization of an HTML page structure:




**Note:** Only the content inside the <body> section (the white area on the left) is displayed in a browser.

# HTML Tags

- HTML tags are element names surrounded by angle brackets:
- <tagname>content goes here...</tagname>
- HTML tags normally come in pairs like  and 
- The first tag in a pair is the start tag, the second tag is the end tag
- The end tag is written like the start tag, but with a forward slash inserted before the tag name
- **Tip:** The start tag is also called the opening tag, and the end tag the closing tag.

# Example – A Simple HTML Document

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Heading 1</h1>
    <p>My first paragraph.</p>
  </body>
</html>
```

- The <!DOCTYPE html> declaration defines this document to be HTML5
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the document
- The <title> element specifies a title for the document
- The <body> element contains the visible page content
- The <h1> element defines a large heading
- The <p> element defines a paragraph

# The <!DOCTYPE> Declaration

- The <!DOCTYPE> declaration represents the document type, and helps browsers to display web pages correctly.
- It must only appear once, at the top of the page (before any HTML tags).
- The <!DOCTYPE> declaration is not case sensitive.
- The <!DOCTYPE> declaration for HTML5 is:
- <!DOCTYPE html>

# The HTML <head> Element

- The HTML <head> element has nothing to do with HTML headings.
- The <head> element is a container for metadata. HTML metadata is data about the HTML document. Metadata is not displayed.
- The <head> element is placed between the <html> tag and the <body> tag:

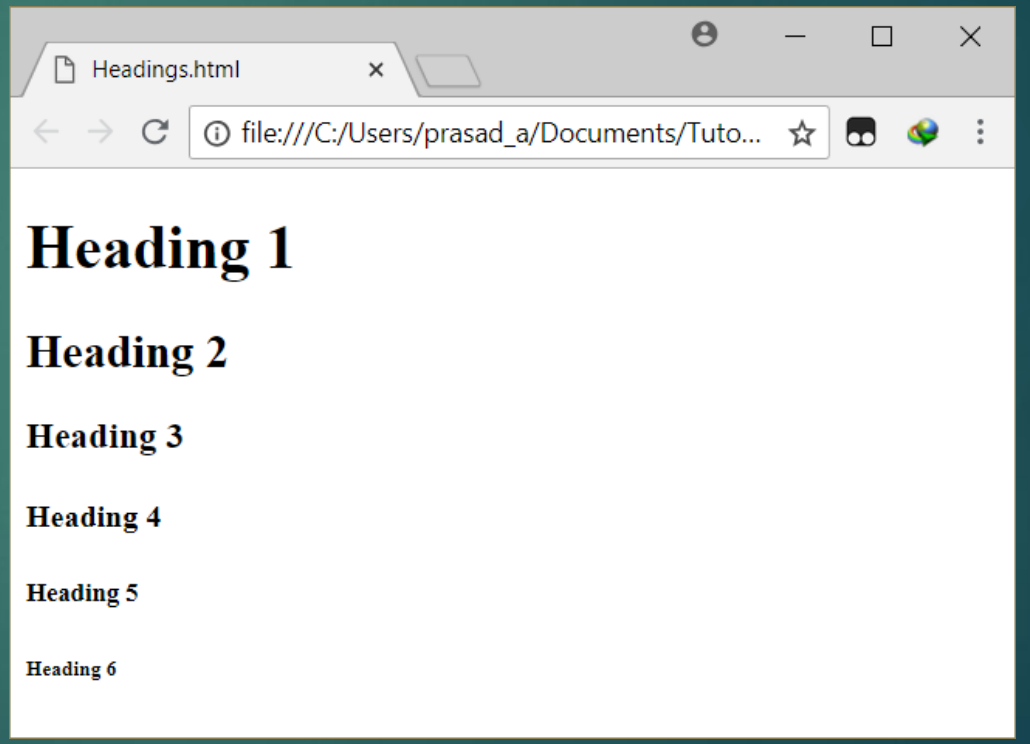
```
<!DOCTYPE html>
<html>
  <head>
   <title>My First HTML</title>
  <meta charset="UTF-8">
  </head>
  <body>
    <p>The HTML head element contains meta data.</p>
    <p>Meta data is data about the HTML document.</p>
  </body>
</html>
```

**Note:** Metadata typically define the document title, character set, styles, links, scripts, and other meta information.

# HTML Headings

- Headings are defined with the <h1> to <h6> tags.
- <h1> defines the most important heading. <h6> defines the least important heading.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Heading 1</h1>
    <h2>Heading 2</h2>
    <h3>Heading 3</h3>
    <h4>Heading 4</h4>
    <h5>Heading 5</h5>
    <h6>Heading 6</h6>
  </body>
</html>
```




**Note:** Browsers automatically add some white space (a margin) before and after a heading.

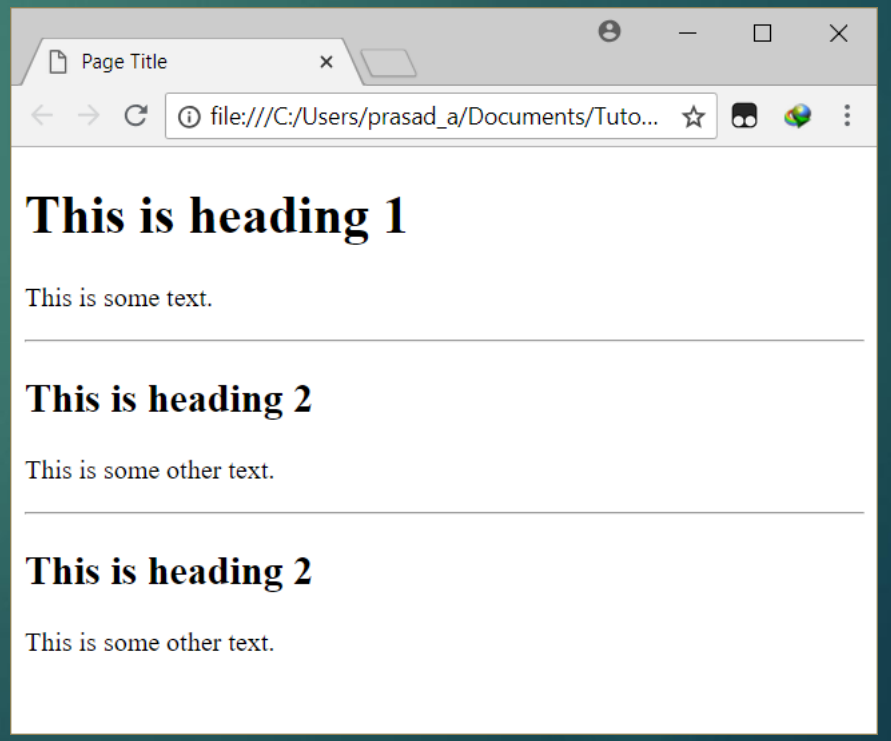
# HTML Horizontal Rules

- The <hr> tag defines a thematic break in an HTML page, and is most often displayed as a horizontal rule.
- The <hr> element is used to separate content (or define a change) in an HTML page:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>This is heading 1</h1>
    <p>This is some text.</p>
    <hr>

    <h2>This is heading 2</h2>
    <p>This is some other text.</p>
    <hr>

    <h2>This is heading 2</h2>
    <p>This is some other text.</p>
  </body>
</html>
```

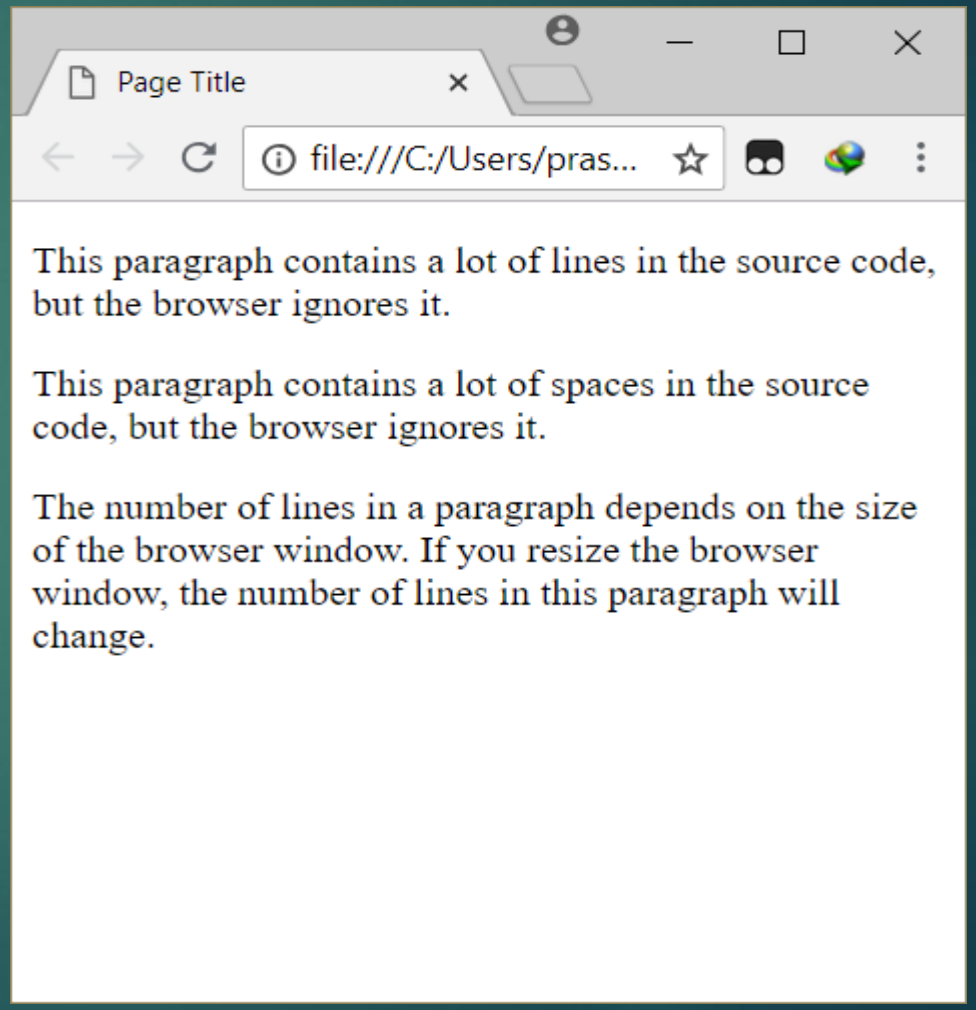


# Paragraphs

```
<!DOCTYPE html>
<html>
  <head>
   <title>Page Title</title>
  </head>
  <body>
    <p>
This paragraph
contains a lot of lines
in the source code,
but the browser
ignores it.
</p>

<p>
This paragraph
contains      a lot of spaces
in the source     code,
but the    browser
ignores it.
</p>

<p>
The number of lines in a paragraph depends on the size
of the browser window. If you resize the browser
window, the number of lines in this paragraph will
change.
</p>
  </body>
</html>
```



# Don't Forget the End Tag

- Most browsers will display HTML correctly even if you forget the end tag:

```
<!DOCTYPE html>
<html>
  <head>
   <title>Page Title</title>
  </head>
  <body>
    <p>This is a paragraph.
    <p>This is a paragraph.
    <p>This is a paragraph.

    <p>Don't forget to close your HTML tags!</p>
  </body>
</html>
```

- The example above will work in most browsers, but do not rely on it.
- **Note:** Dropping the end tag can produce unexpected results or errors.

# HTML Line Breaks

- The HTML <br> element defines a line break.
- Use <br> if you want a line break (a new line) without starting a new paragraph:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>This is<br>a paragraph<br>with line breaks</p>
  </body>
</html>
```

**Note**: The <br> tag is an empty tag, which means that it has no end tag.

# HTML Text Formatting

- Previously, you learnt about the HTML **style attribute**.
- HTML also defines special **elements** for defining text with a special **meaning**.
- HTML uses elements like <b> and <i> for formatting output, like **bold** or *italic* text.
- Formatting elements were designed to display special types of text:

# HTML Text Formatting (cont.)

| Tag | Description |
| --- | --- |
| <b> | Defines bold text |
|  | Defines emphasized text |
| <i> | Defines italic text |
| <small> | Defines smaller text |
|  | Defines important text |
| <sub> | Defines subscripted text |
| <sup> | Defines superscripted text |
| <ins> | Defines inserted text |
| <del> | Defines deleted text |
| <mark> | Defines marked/highlighted text |

# HTML <b> and  Elements

- The HTML <b> element defines bold text, without any extra importance.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>This text is normal.</p>
    <p>
      <b>This text is bold.</b>
    </p>
  </body>
</html>
```

- The HTML  element defines strong text, with added semantic "**strong**" importance.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>This text is normal.</p>
   <p>
     <strong>This text is strong.</strong>
   </p>
  </body>
</html>
```

# HTML <i> and  Elements

- The HTML <i> element defines italic text, without any extra importance.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>This text is normal.</p>
    <p>
      <i>This text is italic.</i>
    </p>
  </body>
</html>
```

- The HTML  element defines emphasized text, with added semantic importance.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>This text is normal.</p>
    <p>
      <em>This text is emphasized.</em>
    </p>
  </body>
</html>
```

**Note**: Browsers display  as <b>, and  as <i>. However, there is a difference in the meaning of these tags: <b> and <i> defines bold and italic text, but  and  means that the text is "important".

# HTML <small> Element

- The HTML <small> element defines smaller text:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h2>HTML <small>Small</small> Formatting</h2>
  </body>
</html>
```

# HTML <sup> Element

- The HTML <sup> element defines subscripted text.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>This is <sup>superscripted</sup> text.</p>
  </body>
</html>
```

# HTML Quotation and Citation Elements

# HTML <q> for Short Quotations

- The HTML <q> element defines a short quotation.
- Browsers usually insert quotation marks around the <q> element.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>Browsers usually insert quotation marks around the q element.</p>

   <p>WWF's goal is to: <q>Build a future where people live in harmony
with nature.</q>  </p>
  </body>
</html>
```

# HTML <blockquote> for Quotations

- The HTML <blockquote> element defines a section that is quoted from another source.
- Browsers usually indent <blockquote> elements.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>Browsers usually indent blockquote elements.</p>

   <blockquote cite="http://www.worldwildlife.org/who/index.html">
    For 50 years, WWF has been protecting the future of nature.
    The world's leading conservation organization,
    WWF works in 100 countries and is supported by
    1.2 million members in the United States and
    close to 5 million globally.
   </blockquote>
  </body>
</html>
```

# HTML <abbr> for Abbreviations

- The HTML <abbr> element defines an abbreviation or an acronym.
- Marking abbreviations can give useful information to browsers, translation systems and search-engines.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>

   <p>Marking up abbreviations can give useful information to browsers, translation systems and search-engines.</p>
  </body>
</html>
```

# HTML <address> for Contact Information

- The HTML <address> element defines contact information (author/owner) of a document or an article.
- The <address> element is usually displayed in italic. Most browsers will add a line break before and after the element.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>The HTML address element defines contact information (author/owner) of a document or article.</p>

   <address>
    Written by John Doe.<br>
    Visit us at:<br>
    Example.com<br>
    Box 564, Disneyland<br>
    USA
   </address>
  </body>
</html>
```

# HTML <cite> for Work Title

- The HTML <cite> element defines the title of a work.
- Browsers usually display <cite> elements in italic.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>The HTML cite element defines the title of a work.</p>
   <p>Browsers usually display cite elements in italic.</p>

   <img src="../Images/img_the_scream.jpg" width="220" height="277"
alt="The Scream">
   <p><cite>The Scream</cite> by Edvard Munch. Painted in 1893.</p>
  </body>
</html>
```

# HTML <bdo> for Bi-Directional Override

- The HTML <bdo> element defines bi-directional override.
- The <bdo> element is used to override the current text direction:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <p>If your browser supports bi-directional override (bdo), the next line will be written from right to left (rtl):</p>

   <bdo dir="rtl">This line will be written from right to left</bdo>
  </body>
</html>
```

# HTML Comments

# HTML Comment Tags

- Comment tags are used to insert comments in the HTML source code.
- You can add comments to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

- Notice that there is an exclamation point (!) in the opening tag, but not in the closing tag.
- **Note:** Comments are not displayed by the browser, but they can help document your HTML source code.

# HTML Comment Tags (cont.)

- With comments you can place notifications and reminders in your HTML:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <!-- This is a comment -->
    <p>This is a paragraph.</p>
    <!-- Comments are not displayed in the browser -->
  </body>
</html>
```

- Comments are also great for debugging HTML, because you can comment out HTML lines of code, one at a time, to search for errors:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <!-- This is a comment -->
    <p>This is a paragraph.</p>
    <!-- Comments are not displayed in the browser -->

    <!-- Do not display this at the moment
<img border="0" src="pic_trulli.jpg" alt="Trulli">
-->
    <p>This is a paragraph.</p>
  </body>
</html>
```

# HTML Links

# HTML Links - Hyperlinks

- HTML links are hyperlinks.
- You can click on a link and jump to another document.
- When you move the mouse over a link, the mouse arrow will turn into a little hand.
- **Note:** A link does not have to be text. It can be an image or any other HTML element.

# HTML Links - Syntax

- In HTML, links are defined with the <a> tag:
- <a href="*url*">*link text*</a>

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <h2>HTML Links</h2>
  <p><a href="https://www.google.com/">Click to open Google Search</a></p>
  </body>
</html>
```

- The href attribute specifies the destination address (https://www.google.com/) of the link.
- The **link text** is the visible part (Click to open Google Search).
- Clicking on the link text will send you to the specified address.

# HTML Links – Syntax (cont.)

- **Note:** Without a forward slash at the end of subfolder addresses, you might generate two requests to the server. Many servers will automatically add a forward slash to the end of the address, and then create a new request.

# Image

```
<img src="pic_trulli.jpg" alt="Italian Trulli">
```

```
<img src="img_girl.jpg" alt="Girl in a jacket" style="width:500px;height:600px;">
```

# Image Background

```
<!DOCTYPE html>
<html>
<body style="background-image:url('clouds.jpg')">

<h2>Background Image</h2>

<p>By default the background image will repeat itself if it is smaller than
the element where it is specified, in this case the BODY element.</p>

</body>
</html>
```

# Tables

```
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
</table>
```

# Unordered List

```
<ul>
    <li>Coffee</li>
    <li>Tea</li>
    <li>Milk</li>
</ul>
```

# Ordered List

```
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

# Block

```
<!DOCTYPE html>
<html>
<body>

<div>Hello</div>
<div>World</div>

<p>The DIV element is a block element, and will start on a new line.</p>

</body>
</html>
```

# Classes

```
<style>
.city {
    background-color: tomato;
    color: white;
    padding: 10px;
}
</style>

<h2 class="city">London</h2>
<p>London is the capital of England.</p>

<h2 class="city">Paris</h2>
<p>Paris is the capital of France.</p>

<h2 class="city">Tokyo</h2>
<p>Tokyo is the capital of Japan.</p>
```

# Classes with Javascript

```
<script>
function myFunction() {
  var x
= document.getElementsByClassName("city");
  for (var i = 0; i < x.length; i++) {
    x[i].style.display = "none";
  }
}
</script>
```

# ID

```
<style>
#myHeader {
    background-color: lightblue;
    color: black;
    padding: 40px;
    text-align: center;
}
</style>

<h1 id="myHeader">My Header</h1>
```

# iframe

```
<p>You can use the height and width attributes to specify the size of the iframe:</p>

<iframe src="https://www.usp.ac.fj" height="500" width="700"></iframe>
```

# Javascript

```
<button type="button"
onclick="document.getElementById('demo').innerHTML =
Date()">
Click me to display Date and Time.</button>
```

# Responsive

```
<!DOCTYPE html>
<html>
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<body>

<h2>Responsive Image</h2>
<p>When the CSS width property is set in a percentage value, the image will scale up and down when resizing the browser window. Resize the browser window to see the effect.</p>

<img src="img_girl.jpg" style="width:100%;">

</body>
</html>
```

# Form

```
<form action="/action_page.php">
  First name:<br>
  <input type="text" name="firstname" value="Mickey">
  <br>
  Last name:<br>
  <input type="text" name="lastname" value="Mouse">
  <br><br>
  <input type="submit" value="Submit">
</form>
```

# Radio Button

```
<form action="/action_page.php">
  <input type="radio" name="gender" value="male" checked> Male<br>
  <input type="radio" name="gender" value="female"> Female<br>
  <input type="radio" name="gender" value="other"> Other<br><br>
  <input type="submit">
</form>
```

# Video

```
<video width="400" controls>
  <source src="mov_bbb.mp4" type="video/mp4">
  <source src="mov_bbb.ogg" type="video/ogg">
  Your browser does not support HTML5 video.
</video>
```

# HTML Styles - CSS

# Styling HTML with CSS

- **CSS** stands for **C**ascading **S**tyle **S**heets.
- CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**.
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once.
- CSS can be added to HTML elements in 3 ways:
  - **Inline** - by using the style attribute in HTML elements
  - **Internal** - by using a <style> element in the <head> section
  - **External** - by using an external CSS file
- The most common way to add CSS, is to keep the styles in separate CSS files. However, here we will use inline and internal styling, because this is easier to demonstrate, and easier for you to try it yourself.

# Inline CSS

- An inline CSS is used to apply a unique style to a single HTML element.
- An inline CSS uses the style attribute of an HTML element.
- This example sets the text color of the <h1> element to blue:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
   <h1 style="color:blue;">This is a Blue Heading</h1>
  </body>
</html>
```

# Internal CSS

- An internal CSS is used to define a style for a single HTML page.
- An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
      body {background-color: powderblue;}
      h1   {color: blue;}
      p    {color: red;}
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# External CSS

- An external style sheet is used to define the style for many HTML pages.
- **With an external style sheet, you can change the look of an entire web site, by changing one file!**
- To use an external style sheet, add a link to it in the <head> section of the HTML page:
- An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.
- Here is how the "styles.css" looks:

```css
body {
    background-color: powderblue;
}
h1 {
    color: blue;
}
p {
    color: red;
}
```

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <link rel="stylesheet" href="../css/styles.css">
  </head>
  <body>
   <h1>This is a heading</h1>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# CSS Fonts

- The CSS color property defines the text color to be used.
- The CSS font-family property defines the font to be used.
- The CSS font-size property defines the text size to be used.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
      h1 {
          color: blue;
          font-family: verdana;
          font-size: 300%;
      }
      p  {
          color: red;
          font-family: courier;
          font-size: 160%;
      }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# CSS Border

- The CSS border property defines a border around an HTML element:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
      p {
        border: 1px solid powderblue;
      }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# CSS Padding

- The CSS padding property defines a padding (space) between the text and the border:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
       p {
        border: 1px solid powderblue;
        padding: 30px;
       }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# CSS Margin

- The CSS margin property defines a margin (space) outside the border:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
       p {
        border: 1px solid powderblue;
        margin: 50px;
      }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# The id Attribute

- To define a specific style for one special element, add an id attribute to the element:
- I am different
- then define a style for the element with the specific id:
- #p01 {
  color: blue;
  }
- **Note:** The id of an element should be unique within a page, so the id selector is used to select one unique element!

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
       #p01 {
        color: blue;
      }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
   <p id="p01">This is a paragraph.</p>
  </body>
</html>
```

# The class Attribute

- To define a style for a special type of elements, add a class attribute to the element:
- I am different
- then define a style for the elements with the specific class:
- p.error {
  color: red;
  }

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
       p.error {
        color: red;
      }
    </style>
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
   <p class="error">I am different.</p>
   <p>This is a paragraph.</p>
   <p class="error">I am different too.</p>
  </body>
</html>
```

# External References

- External style sheets can be referenced with a full URL or with a path relative to the current web page.
- This example uses a full URL to link to a style sheet:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <link rel="stylesheet" href="https://www.w3schools.com/html/styles.css">
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# External References (cont.)

- This example links to a style sheet located in the html folder on the current web site:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <link rel="stylesheet" href="../css/styles.css">
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# External References (cont.)

- This example links to a style sheet located in the same folder as the current page:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>
   <h1>This is a heading</h1>

   <p>This is a paragraph.</p>
   <p>This is a paragraph.</p>
  </body>
</html>
```

# Links

# Moodle

- Discussion Forum
- Assignment
- Questionnaire
- Quiz
- Lesson

# Moodle


Discussion Forum
VB Assignment
Web Dev Assignment
Workshop Feedback
VB.NET Workshop
VB.NET Quiz