CACS-205
Web Technology
(BCA, TU)

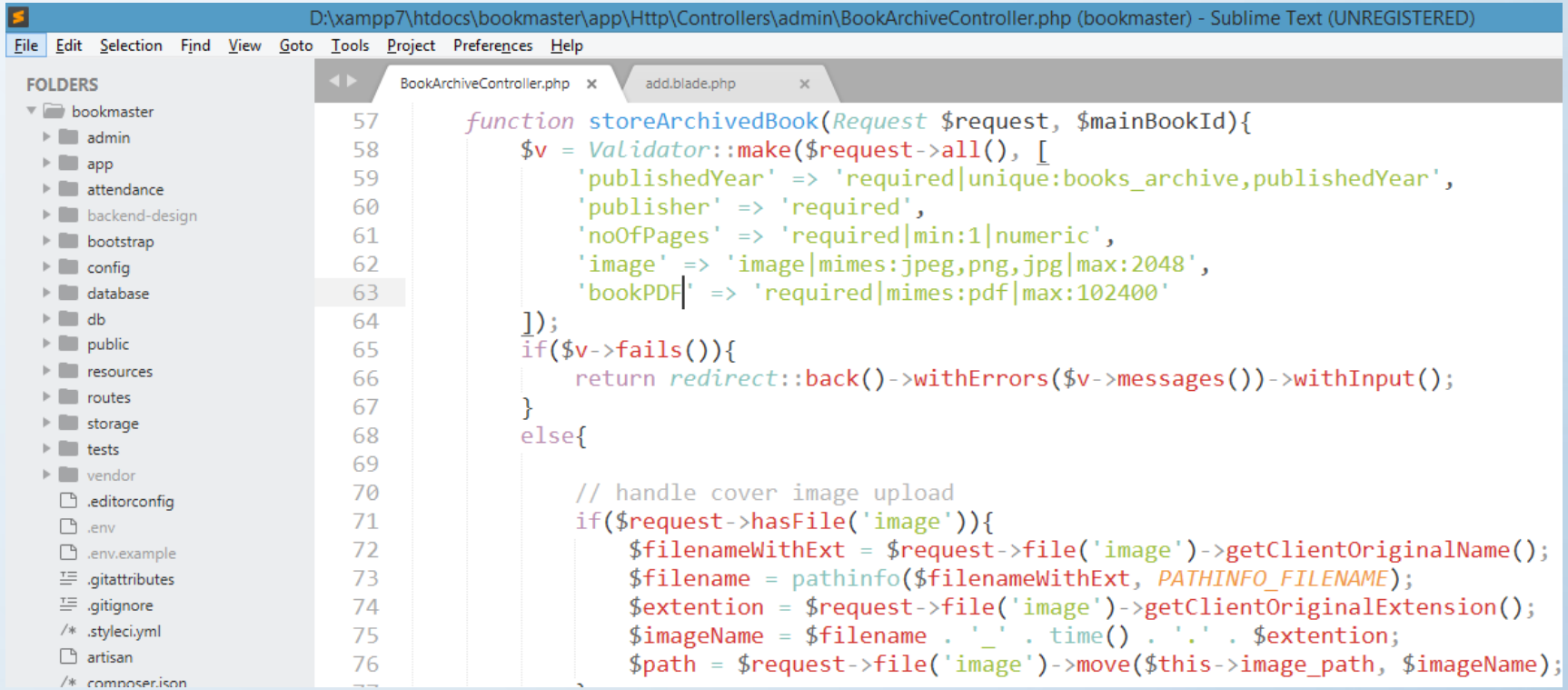
Ganesh Khatri
kh6ganesh@gmail.com

Module Structure

- Semester : III
- Nature of the Course
  - Theory + Lab
- Full Marks : 60 + 20 + 20
- Pass Marks : 24 + 8 + 8
- Credit Hours : 3
- Total Teaching Hours : 45

Code Editor

- Notepad++
- Recommended Editor : Sublime Text 3 (https://www.sublimetext.com/3)



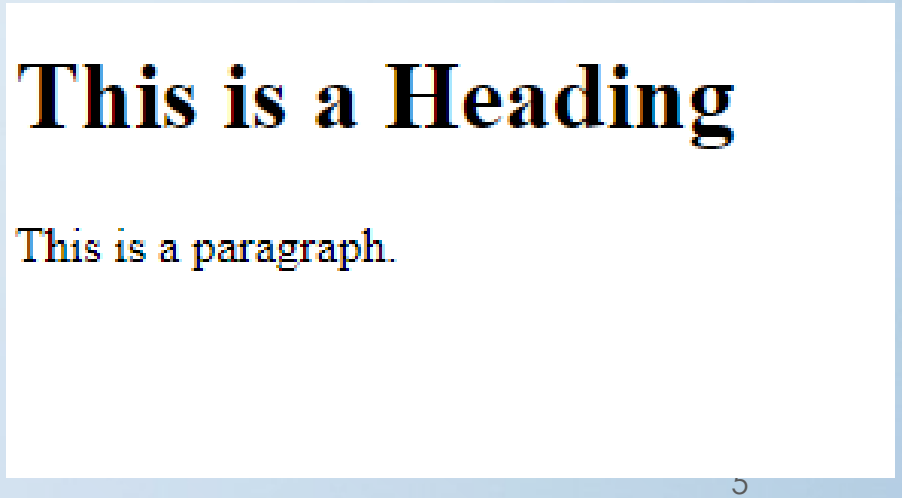
Unit 1 : HTML and CSS

- HTML is the standard markup language for Web pages.
- HTML stands for Hyper Text Markup Language
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- 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
- With HTML you can create your own Website.
- HTML is easy to learn - You will enjoy it!

HTML Basics

- 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

```
<!DOCTYPE html>
<html>
    <head>
        <title>Page Title</title>
    </head>
    <body>
        <h1>This is a Heading</h1>
        <p>This is a paragraph.</p>
    </body>
</html>
```



HTML Versions

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014

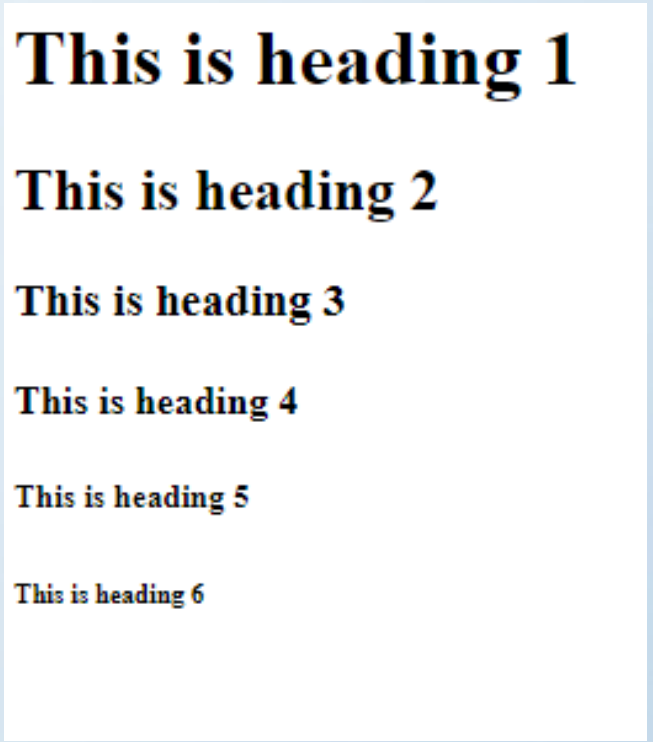
HTML Page Structure

```
<html>
<head>
<title>Page title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
</body>
</html>
```

HTML Headings

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

```
<!DOCTYPE html>
<html>
    <body>
        <h1>This is heading 1</h1>
        <h2>This is heading 2</h2>
        <h3>This is heading 3</h3>
        <h4>This is heading 4</h4>
        <h5>This is heading 5</h5>
        <h6>This is heading 6</h6>
    </body>
</html>
```



HTML Paragraphs

- HTML paragraphs are defined with the <p> tag:

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

    <p>This is a paragraph.</p>
    <p>This is another paragraph.</p>

</body>
</html>
```

This is a paragraph.

This is another paragraph.

HTML Links

- HTML links are defined with the <a> tag:

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

    <h2>HTML Links</h2>
    <p>HTML links are defined with the a tag:</p>

    <a href="https://www.w3schools.com">This is a link</a>

  </body>
</html>
```

HTML Images

- HTML images are defined with the <img> tag
- The source file (src), alternative text (alt), width, and height are provided as attributes:

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

      <h2>HTML Images</h2>
      <p>HTML images are defined with the img tag:</p>

      <img src="w3schools.jpg" alt="W3Schools.com"
      width="104" height="142">

  </body>
</html>
```

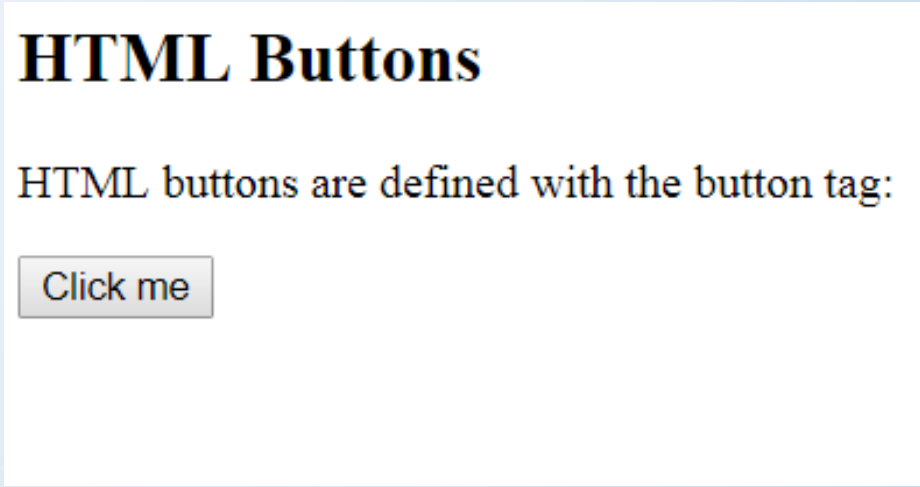
HTML Buttons

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

    <h2>HTML Buttons</h2>
    <p>HTML buttons are defined with the button tag:</p>

    <button>Click me</button>

  </body>
</html>
```



HTML Lists

```
<!DOCTYPE html>
<html>
  <body>
    <h2>An Unordered HTML List</h2>
    <ul>
      <li>Coffee</li>
      <li>Tea</li>
      <li>Milk</li>
    </ul>

    <h2>An Ordered HTML List</h2>
    <ol>
      <li>Coffee</li>
      <li>Tea</li>
      <li>Milk</li>
    </ol>
  </body>
</html>
```

HTML Horizontal Line (<hr>)

- used to draw a horizontal line or separate contents

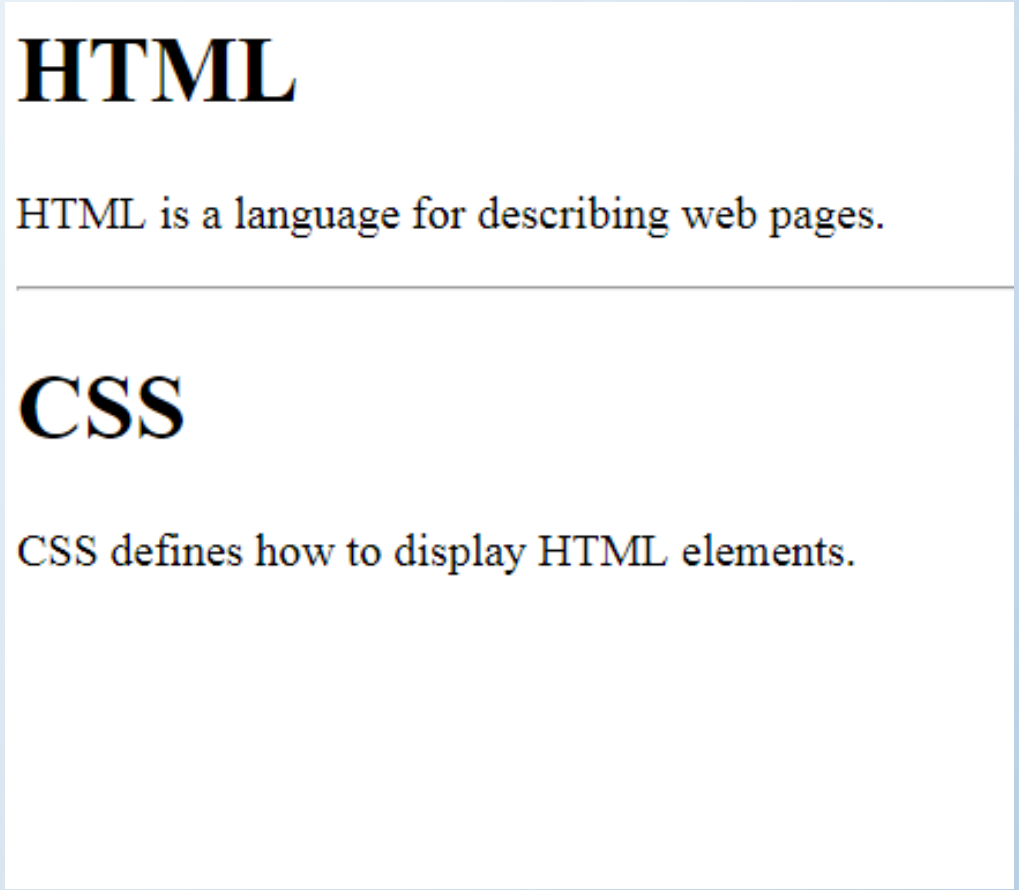
```
<!DOCTYPE html>
<html>
<body>

<h1>HTML</h1>
<p>HTML is a language for describing web pages.</p>

<hr>

<h1>CSS</h1>
<p>CSS defines how to display HTML elements.</p>

</body>
</html>
```



HTML Line Break (
)

- used to break line

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

<p>
To break lines<br>in a text,<br>use the br element.
</p>

</body>
</html>
```

To break lines
in a text,
use the br element.

HTML Attributes

- All HTML elements can have attributes
- Attributes provide additional information about an element
- Attributes are always specified in the start tag
- Attributes usually come in name/value pairs like: name="value"

HTML Attributes : href

- HTML links are defined with the <a> tag
- The link address is specified in the href attribute:
- This is a link

HTML Attributes : src

- HTML images are defined with the <img> tag.
- The filename of the image source is specified in the src attribute:
- <img src="img_girl.jpg">

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

    <h2>The src Attribute</h2>
    <p>HTML images are defined with the img tag:</p>

    <img src="img_girl.jpg" width="200" height="200">

  </body>
</html>
```

HTML Attributes : alt

- The alt attribute specifies an alternative text to be used, if an image cannot be displayed
- <img src="img_girl.jpg" alt="Girl with a jacket">

```
<!DOCTYPE html>
<html>
<body>
  <h2>The alt Attribute</h2>
  <p>
    The alt attribute should reflect the image
    content
  </p>
  <img src="img_girl.jpg" alt="Girl with a jacket"
  width="200" height="200">
</body>
</html>
```

HTML Attributes : alt

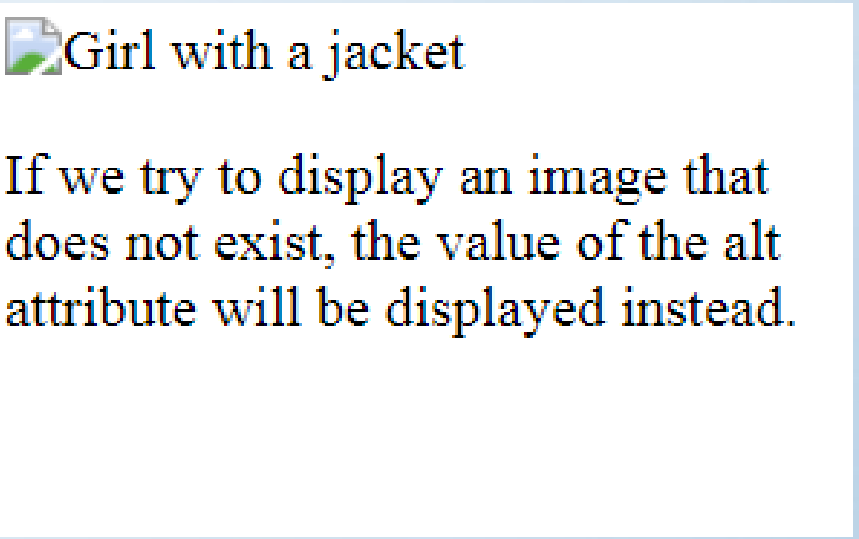
- See what happens if we try to display an image that does not exist
- <img src="img_typo.jpg" alt="Girl with a jacket">

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

    <img src="img_typo.jpg" alt="Girl with a jacket">

    <p>
        If we try to display an image that does not
        exist, the value of the alt attribute will
        be displayed instead.
    </p>

</body>
</html>
```



HTML Formatting Elements

- used for formatting text:

`<b>` - Bold text

`<strong>` - Important text

`<i>` - Italic text

`<em>` - Emphasized text

`<mark>` - Marked text

`<small>` - Small text

`<del>` - Deleted text

`<ins>` - Inserted text

`<sub>` - Subscript text

`<sup>` - Superscript text

HTML Formatting : <b> and

- used to make bold without and with extra semantic importance

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

    <p>This text is normal.</p>
    <p><b>This text is bold.</b></p>
    <p><strong>This text is bold.</strong></p>

</body>
</html>
```

This text is normal.

This text is bold.

This text is strong.

HTML Formatting : <i> and

- used to define italic text without and with extra semantic importance

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

    <p>This text is normal.</p>
    <p><i>This text is italic.</i></p>
    <p><em>This text is emphasized.</em></p>

</body>
</html>
```

This text is normal.

This text is italic.

This text is emphasized.

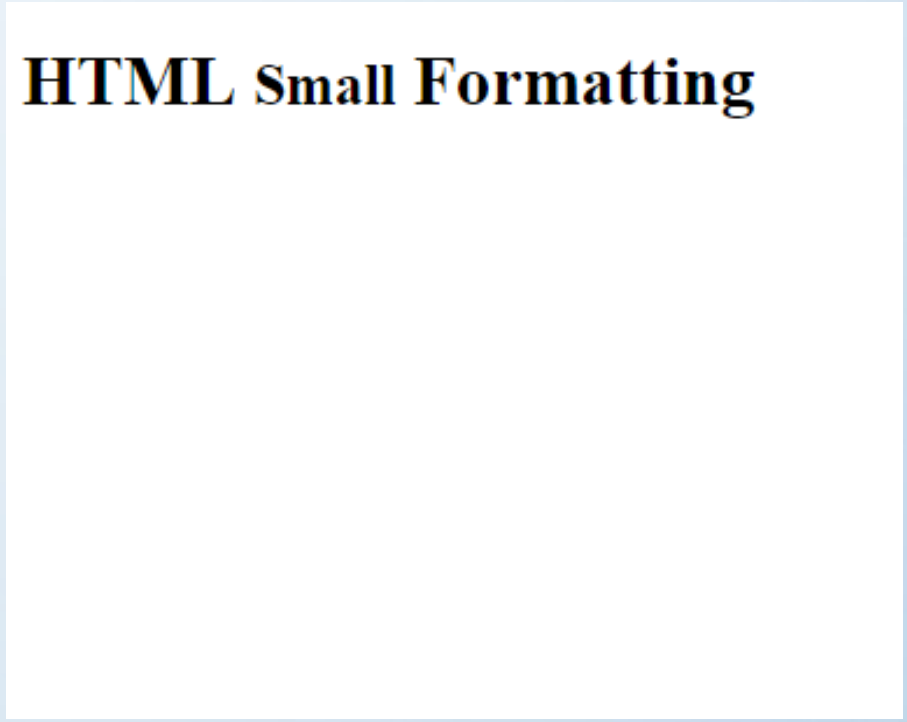
HTML Formatting : <small>

- The HTML <small> element defines smaller text:

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

    <h2>
        HTML <small>Small</small>
        Formatting
    </h2>

</body>
</html>
```



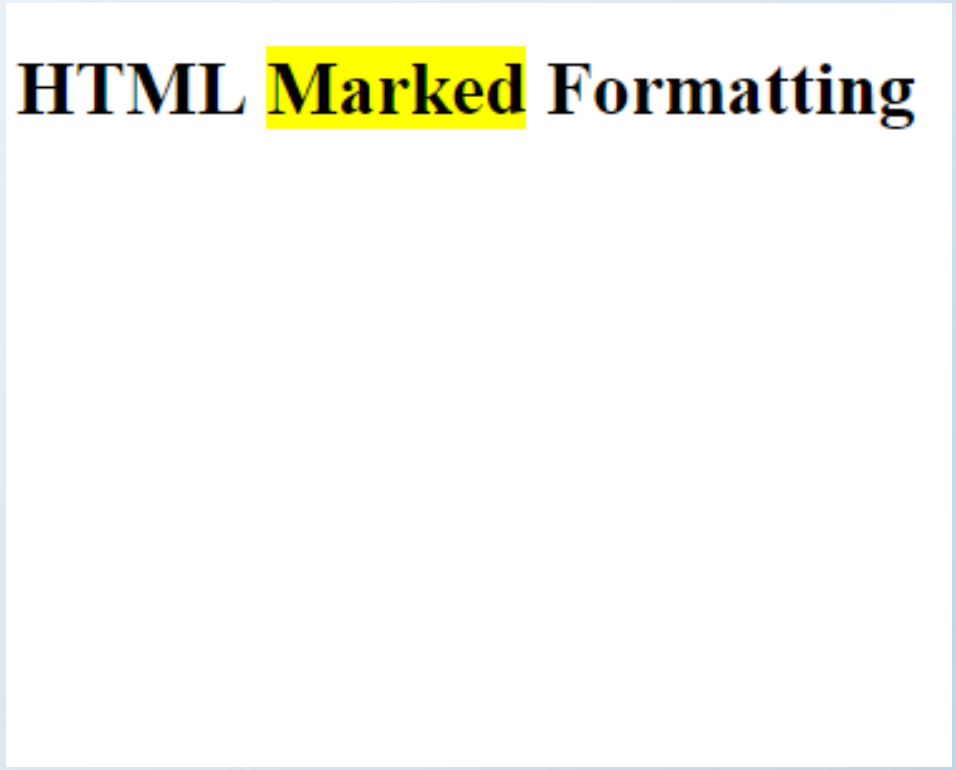
HTML Formatting : <mark>

- The HTML <mark> element defines marked/highlighted text:

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

<h2>HTML <mark>Marked</mark> Formatting</h2>

</body>
</html>
```



HTML Formatting : <del>

- The HTML <del> element defines deleted/removed text.

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

<p>The del element represents deleted (removed) text.</p>

<p>My favorite color is <del>blue</del> red.</p>

</body>
</html>
```

The del element represents deleted (removed) text.

My favorite color is ~~blue~~ red.

HTML Formatting : <ins>

- The HTML <ins> element defines inserted/added text.

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

<p>The ins element represent inserted (added) text.</p>

<p>My favorite <ins>color</ins> is red.</p>

</body>
</html>
```

The ins element represent inserted (added) text.

My favorite color is red.

HTML Formatting : <sub>

- The HTML <sub> element defines subscripted text.

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

<p>This is <sub>subscripted</sub> text.</p>

</body>
</html>
```

This is subscripted text.

HTML Formatting : <sup>

- The HTML <sup> element defines superscripted text.

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

<p>This is <sup>superscripted</sup> text.</p>

</body>
</html>
```

This is superscripted text.

HTML Comments

- Comment tags are used to insert comments in the HTML source code.
- <!-- Write your comments here -->
- **Note:** Comments are not displayed by the browser, but they can help document your HTML source code

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

  <!-- This is a comment -->
  <p>This is a paragraph.</p>
  <!-- Comments are not displayed
  in the browser -->

</body>
</html>
```

This is a paragraph.

Styling HTML with CSS

- CSS stands for Cascading Style Sheets
- CSS describes how HTML elements are to be displayed on browser
- 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
- Disadvantage : this type of CSS can not be reused

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

      <h1 style="color:blue;">
        This is a Blue Heading
      </h1>

  </body>
</html>
```

This is a Blue Heading

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
- Disadvantage : this type of CSS can be reused in a single page only

```
<!DOCTYPE html>
<html>
  <head>
    <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:

```html
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>

    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>

  </body>
</html>
```

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