Information and Communication Technology

Grade 13

Competency 10.3, 10.4, 10.5: HTML and CSS

Introduction to HTML

- o HTML(**H**yper**T**ext**M**arkup **L**anguage) is the standard markup language for creating Web pages.
- o HTML describes the structure of Web pages using markup
- o HTML elements are the building blocks of HTML pages
- o HTML elements are represented by tags
- o HTML tags label pieces of content such as "heading", "paragraph", "table", and so on

Following is a simple web page.

Title of the web page

Body of the web page

Following is a part of the source code for above web page.

Start of the web page

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
```

Title of the web page

```
<title>Department of Examinations - Sri Lanka</title>
<link rel="shortcut icon" href="https://www.doenets.lk/exam/icons/favicon.ico" />
<meta name="keywords" content="Department of Examinations, Sri Lanka, Education, Results, Government" />
<!-- &lt;link rel="stylesheet" href="https://www.doenets.lk/exam/css/responsivemobilemenu.css" type="text/css" /&gt; -->
<link rel="stylesheet" href="https://www.doenets.lk/exam/css/responsivemobilemenu.css?V=4" type="text/css" />

<link rel="stylesheet" href="https://www.doenets.lk/exam/css/doenets-styles.css?V=8" type="text/css" />
<link rel="stylesheet" href="https://www.doenets.lk/exam/css/responsivestyles.css?V=4" type="text/css" />
<link rel="stylesheet" href="http://fonts.googleapis.com/css?family=Didact+Gothic" type="text/css" />
<script type="text/javascript" src="https://www.doenets.lk/exam/js/responsive-nav.js"></script>

<style>
.menu_home{background: #4087ce;}
.foo1 .menu_home{background: #cfcfcf;}
</style>

</head>
<!-- END HEAD -->
<body style="margin:0px !important;">
<a href="#nav" class="nav-toggle">Menu</a>
.
.
.
.
.
```
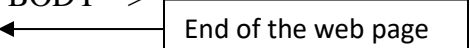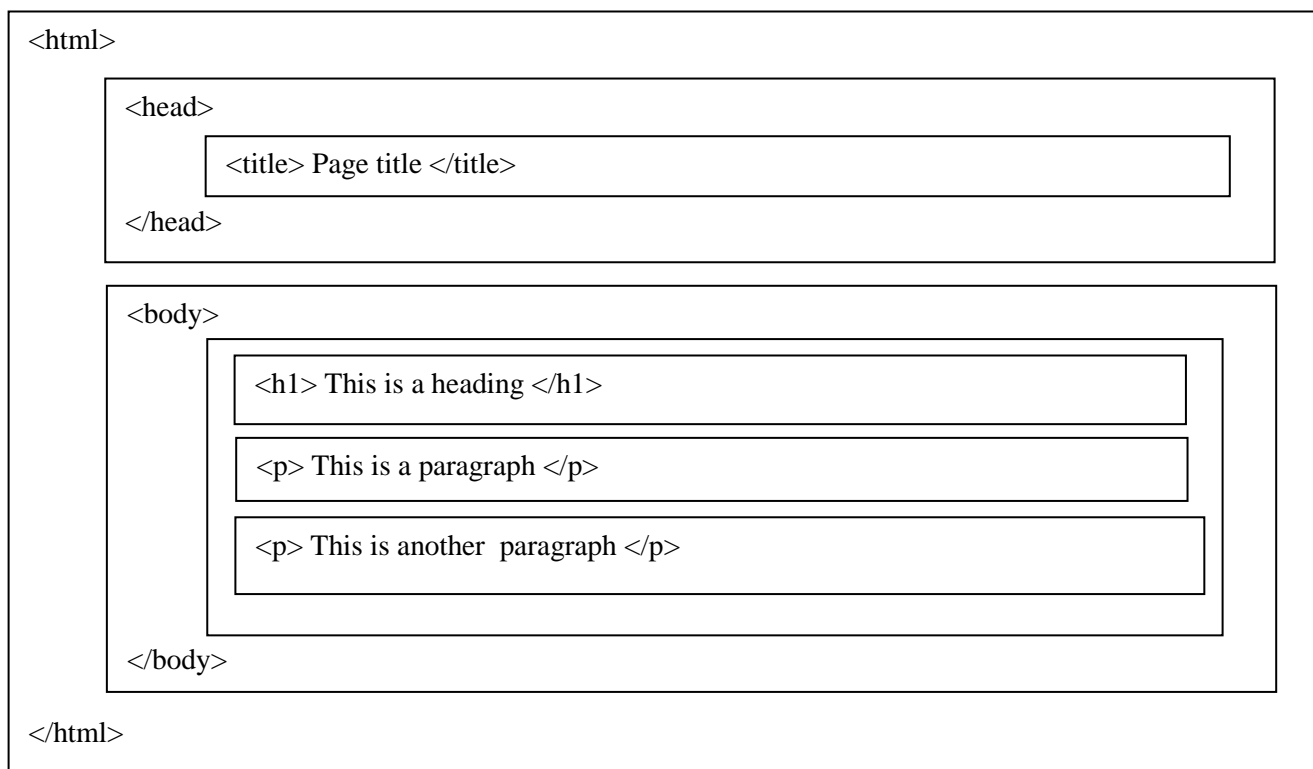
Body of the web page

```
</footer>
</div>
```

```
</div>
</div>
<script>
var navigation = responsiveNav("foo", {customToggle: ".nav-toggle"});
</script>
</body>
<!-- END BODY -->
</html>  ◄──────────  End of the web page
```

Below is a visualization of a 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>
```

- **Introduce Basic HTML tags**
    - Everything in an HTML file is enclosed by <html> and </html>
    - Body tag
      by <body> and</body>

Activity 01

Use text editor to write HTML coding

- o Create a new HTML file by clicking on "File" then "New" in the text editor menu.
- o Write html code.
- o Save new HTML file as follows
  File → save as → example1.html → save
  (here we must type .html extension to inform this is a web page written in HTML)
- Example 1 : Display without a tag

```
<html>
      <body>
            My first html code
      </body>
</html>
```
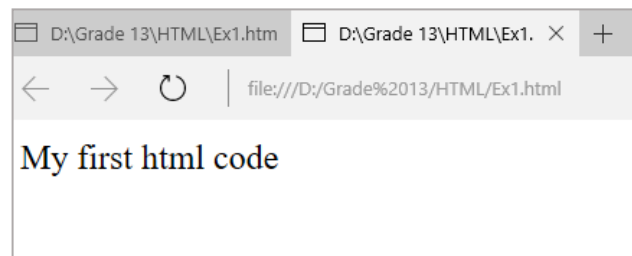

Fig 01.1 web page for example 1

- Example2: Use h1 tag.

```
<html>
      <body>
            <h1>This is the heading 1</h1>
      </body>
</html>
```


Fig 01.2 web page for Example 2

- Example 3 : Display your name on the web page as a heading
```
<html>
      <body>
            <h3>type your name</h3>
      </body>
</html>
```

- Example 4: Show the different types of headings and compare them.

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

- Container tags come in pairs.
  E.g.: <html></html>,

- Empty tags work on their own. e.g.: <br> or

Fig 01.4 web page for Example 4

Activity 02

Add a page title to a Web page

- Example 1 : Add a page title

```
<html>
    <head>
        <title> My first web title </title>
    </head>
    <body>
        My first web page
    </body>
</html>
```
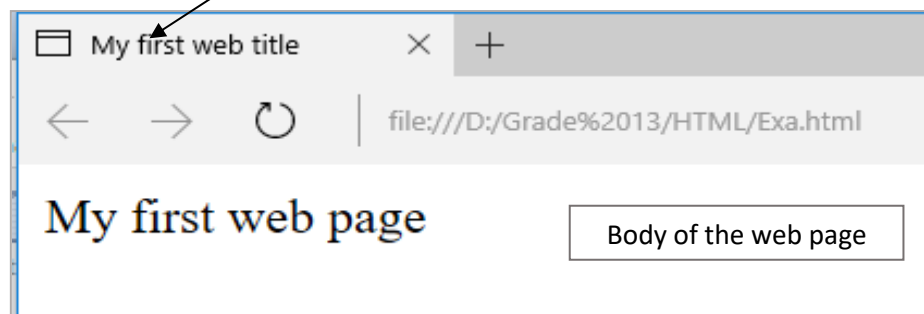
Title of the web page

Body of the web page

Fig 02.1 web page for example 1

- Example2: create a web page.

  Create a web page shown about your school by using above tags.

Activity 03

Insert Paragraph to a Web page

- Create a new HTML file with the name example2.html

- Example1: Use paragraph tag.
  ```
  <html>
        <body>
              <p>this is a paragraph</p>
        </body>
  </html>
  ```
- Example2: Insert multiple paragraphs and see it allows entering multiple line paragraphs in a web page. Browsers automatically add a blank line before and after a paragraph.

  ```
  <html>
        <body>
              <p>
              There are several features in a good web site. They are convenience of browsing, attractiveness and completeness. These are very critical for an effective web site.
              </p>

              <p>Convenience of browsing is the easiness of finding required information. Most good web sites have these features. </p>

              <p>Attractiveness is also important. If the structure of the web site is not attractive, users will not have much interest to browse the site. </p>

              <p>Completeness means the web site must have all the required information linked appropriately. </p>
        </body>
  </html>
  ```

here are several features in a good web site. They are convenience of browsing, attractiveness and completeness. These are very critical for a

onvenience of browsing is the easiness of finding required information. Most good web sites have these features.

ttractiveness is also important. If the structure of the web site is not attractive, users will not have much interest to browse the site.

ompleteness means the web site must have all the required information linked appropriately.

Fig 03.2 web page for the Example 1
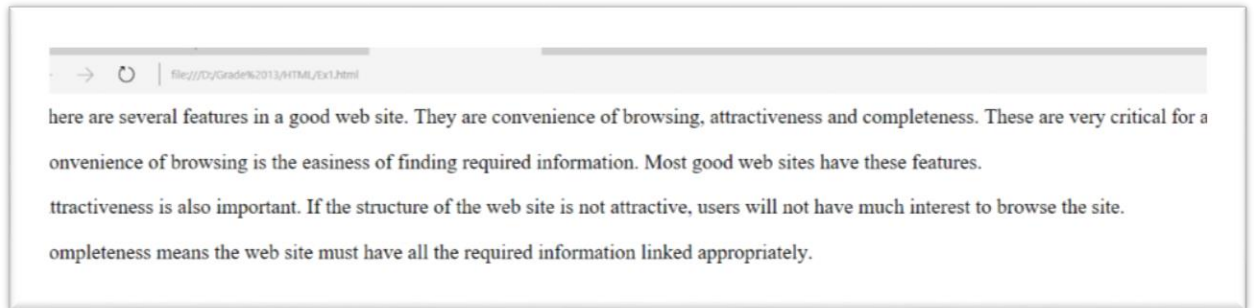
- Example3: Use break tag.

```
<html>
    <body>
        <p>
            Line 1
            Line 2
            Line 3
        </p>
        <p>
            Line 1<br>
            Line 2<br>
            Line 3<br>
        </p>
    </body>
</html>
```


Fig 03. 3 web page for example 3

- Example4: Use Bold, Italic, Underline tags .
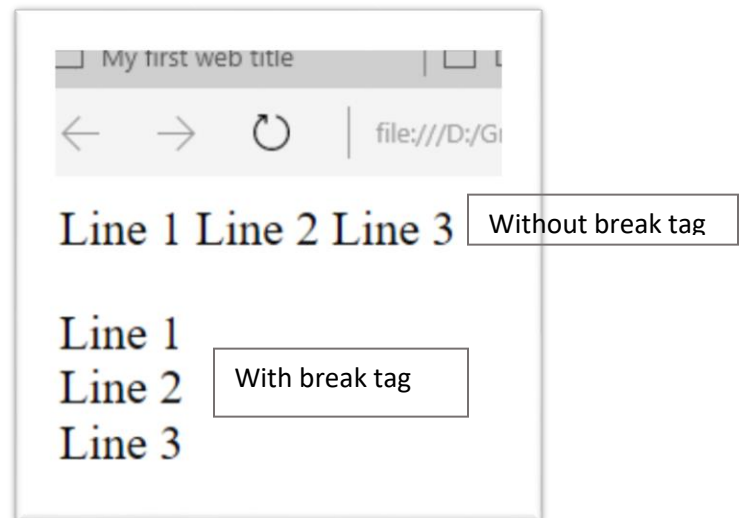
```
<html>
    <body>
        <p>
            <b>this is bold text</b><br>
            <i>this is italic text</i><br>
            <u>this is underline text</u><br>
        </p>
    </body>
</html>>
```
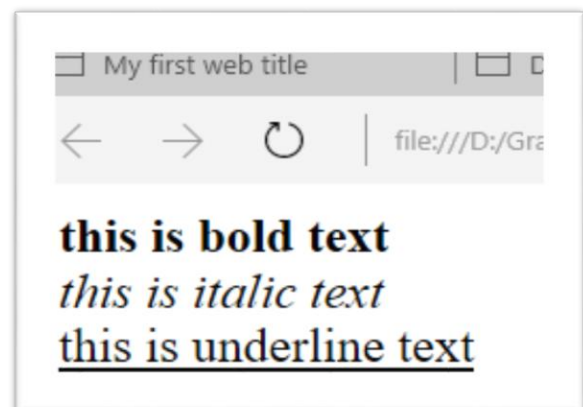
Fig 03. 4 web page for example 3

Activity 04

Create Definition list, Ordered List, Unordered List and Nested list
HTML tags and attributes for creating lists

<dt>   defines a term in a description table

<dd>   describes the term in a description data

   defines an unordered list

   defines an ordered list

   defines a list item

<dl>   defines a description list

Type attribute –selects the enumeration type

Example 1 : Insert Definition list.

<html>
        <body>
                <dl>
                 <dt>HTML</dt>
                        <dd>Hyper Text Markup Language</dd>
                 <dt>CSS</dt>
                        <dd>Cascade Style Sheet</dd>

</htr

Fig 04.1   web page for Example 1

Example 2 : Insert ordered list

```html
<html>
        <body>
            <h4>Numbered list:</h4>
            <ol>
                <li>Apples</li>
                <li>Bananas</li>
                <li>Oranges</li>
            </ol>
            <h4>Letters list:</h4>
            <ol type="A">
                <li>Lemons</li>
                <li>Oranges</li>
            </ol>
        </body>
</html>
```
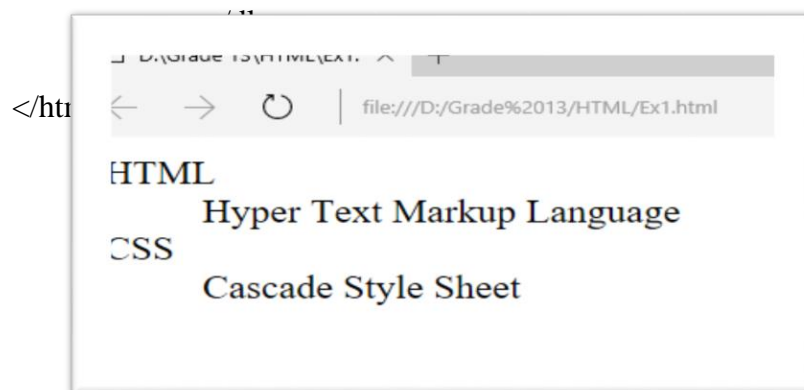

Fig 04.2 web page for Example 2

- Example 3 : Insert unordered list
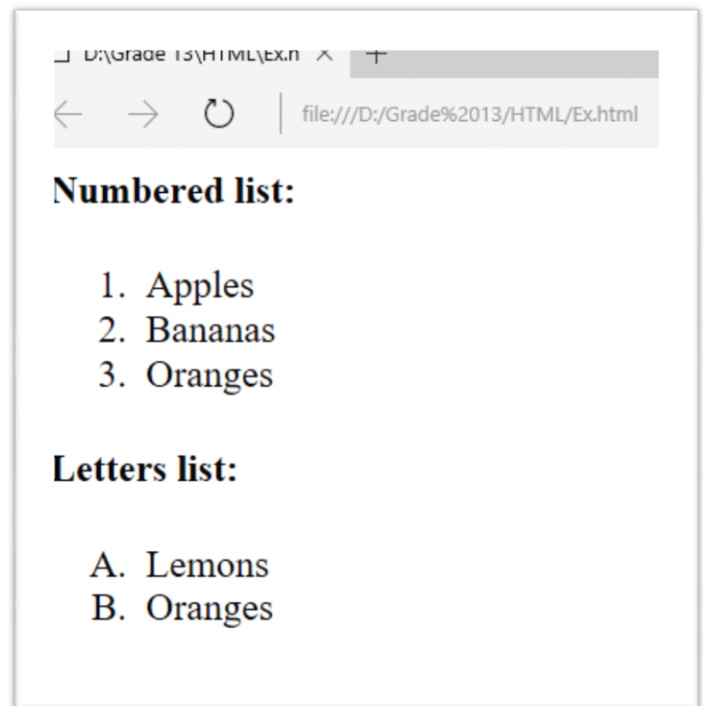
```
<html>
<body>
<h4>Unorderd lists:</h4>
<ul>
        <li>Apples</li>
        <li>Bananas</li>
        <li>Lemons</li>
        <li>Oranges</li>
</ul>

<h4>Disk list:</h4>
<ul type="circle">
        <li>Apples</li>
        <li>Bananas</li>
        <li>Lemons</li>
        <li>Oranges</li>
</ul>
</body>
</html>
```

Fig 04.3 web page for Example 3
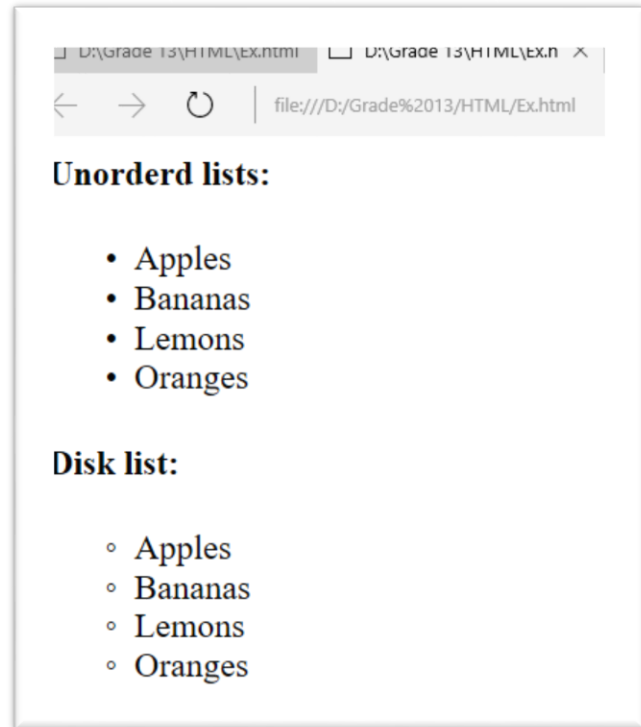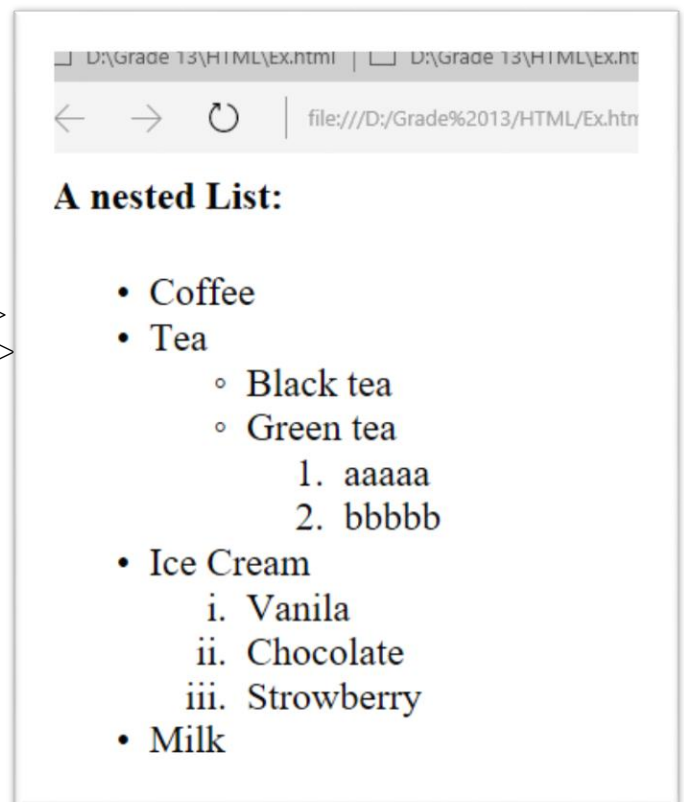
- Example 4: Insert nested list (a list under an object of another list).

```
<html>
<body>
<h4>A nested List:</h4>
<ul>
        <li>Coffee</li>
        <li>Tea
            <ul>
                <li>Black tea</li>
                <li>Green tea</li>
                <ol>
                    <li>aaaaa</li>
                    <li>bbbbb</li>
                </ol>
            </ul>
        </li>
        <li>Ice Cream
            <ol type="i">
                <li>Vanila</li>
                <li>Chocolate</li>
                <li>Strowberry</li>
            </ol>
        </li>
```

```
                <li>Milk</li>
        </ul>
        </body>                                    Fig 04. 4 web page for Example 4
        </html>
```

Activity 05
Insert Tables

HTML tags and attributes for creating tables.

<table>   -   Defines a table

<th>   -   Defines a header cell in a table

<tr>   -   Defines a row in a table

<td>   -   Defines a cell in a table
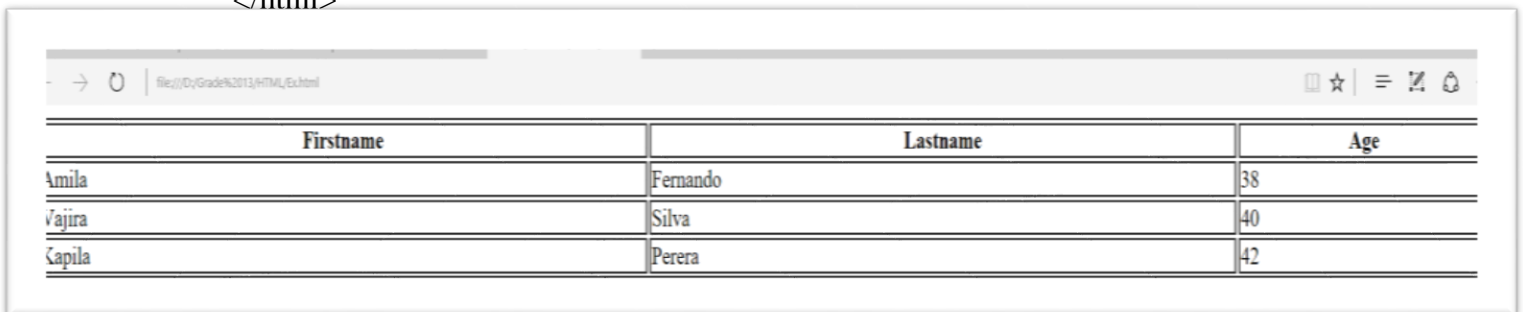
<caption> -   Defines a table caption

"colspan" attribute - makes a cell span many columns

"rowspan" attribute - makes a cell span many rows

"border" attribute – specifies the size of the table border
                    (If not specified, no border is displayed)

- Example 1 : Insert a table (table heading, 3 rows with data) with horizontal headings

```
<html>
    <body>
        <table style="width:100%" border="1">
            <tr>
                <th>Firstname</th>
                <th>Lastname</th>
                <th>Age</th>
            </tr>
            <tr>
                <td>Amila</td>
                <td>Fernando</td>
                <td>38</td>
            </tr>
            <tr>
                <td>Vajira</td>
                <td>Silva</td>
                <td>40</td>
            </tr>
            <tr>
                <td>Kapila</td>
                <td>Perera</td>
                <td>42</td>
            </tr>
        </table>
    </body>
</html>
```
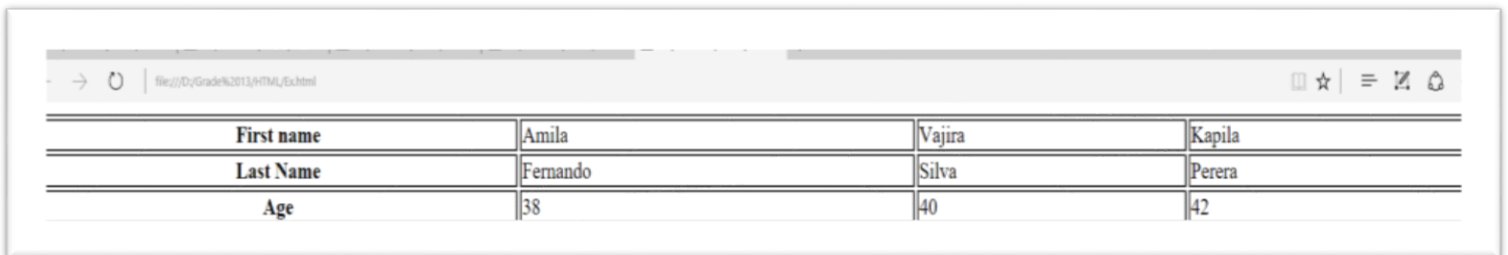
Firstname	Lastname	Age
Amila	Fernando	38
Vajira	Silva	40
Kapila	Perera	42

Fig 05.1 web page for Example 1

- Example 2 : Insert a table (table heading, 3 rows with data) - Vertical headings

```
<html>
    <body>
        <table style="width:100%" border="1">
            <tr>
                <th>First name</th>
                <td>Amila</td>
                <td>Vajira</td>
                <td>Kapila</td>
            </tr>
            <tr>
                <th>Last Name</th>
                <td>Fernando</td>
                <td>Silva</td>
                <td>Perera</td>
            </tr>
            <tr>
                <th>Age</th>
                <td>38</td>
                <td>40</td>
                <td>42</td>
            </tr>
        </table>
    </body>
</html>
```

First name	Amila	Vajira	Kapila
Last Name	Fernando	Silva	Perera
Age	38	40	42

Fig 05. 2 web page for Example 2

- Example 3 : Insert a table with a caption (table heading)
  ```
  <html>
        <body>
              <table style="width:60%" border="1">
                    <caption>Personal Information</caption>
                          <tr>
                                <th>Firstname</th>
                                <th>Lastname</th>
                                <th>Age</th>
                          </tr>
                          <tr>
                                <td>Amila</td>
                                <td>Fernando</td>
                                <td>38</td>
                          </tr>
                          <tr>
                                <td>Vajira</td>
                                <td>Silva</td>
                                <td>40</td>
                          </tr>
                          <tr>
                                <td>Kapila</td>
                                <td>Perera</td>
                                <td>42</td>
                          </tr>
              </table>

        </body>
  </html>
  ```
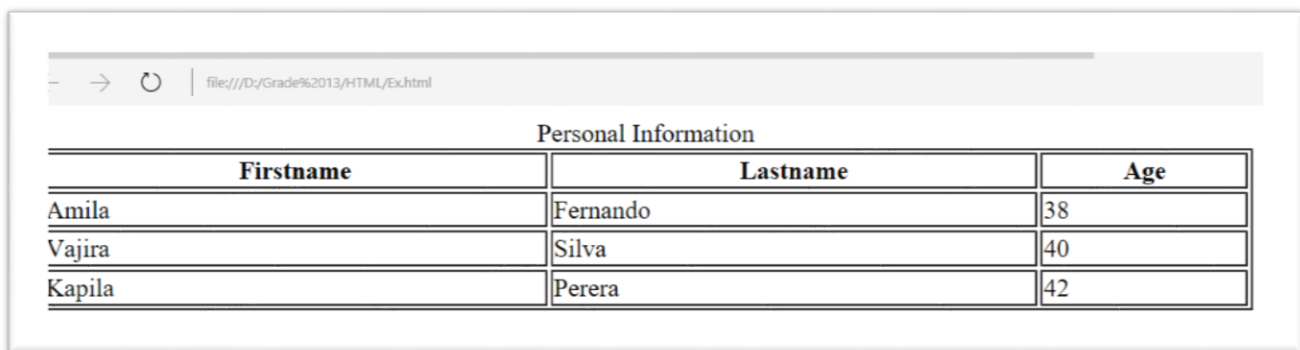
file:///D:/Grade%2013/HTML/Ex.html

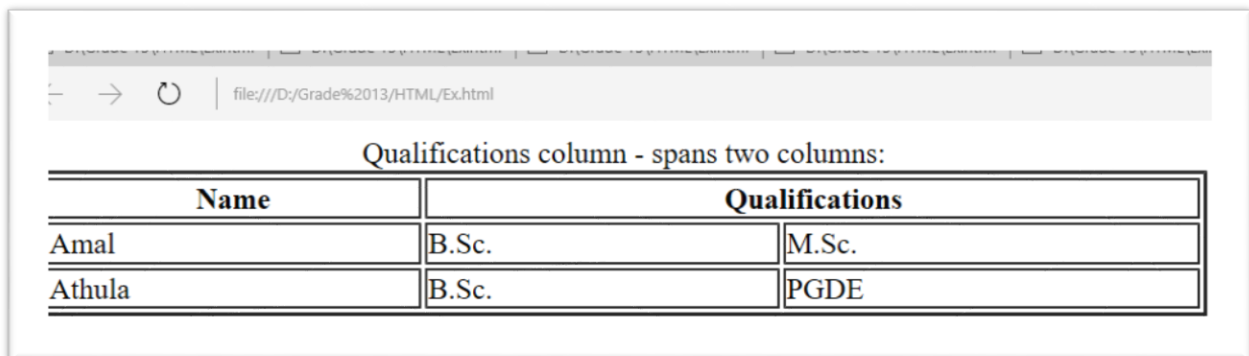| Personal Information		
Firstname	**Lastname**	**Age**
Amila	Fernando	38
Vajira	Silva	40
Kapila	Perera	42

Fig 05.3 web page for Example 3

Activity 06

Create tables with different column width and row height

- Example 1 : Insert a table with different column width

```
<html>
      <body>
                  <table style="width:50%" border="2">
                        <caption>
                        Qualifications column - spans two columns:
                        </caption>
                        <tr>
                              <th>Name</th>
                              <th colspan="2"> Qualifications</th></tr>
                        <tr>
                              <td>Amal</td>
                              <td>B.Sc.</td>
                              <td>M.Sc.</td>
                        </tr>
                        <tr>
                              <td>Athula</td>
                              <td>B.Sc.</td>
                              <td>PGDE</td>
                        </tr>
                  </table>
            </body>
      </html>
```

Name	Qualifications	
Amal	B.Sc.	M.Sc.
Athula	B.Sc.	PGDE

Qualifications column - spans two columns:

file:///D:/Grade%2013/HTML/Ex.html

Fig 05. 1 web page for Example 1

- Example 2 : Insert a table with different row height.

```
<html>
    <body>
        <table style="width:50%" border="1">
            <caption> Qualifications Row - spans two rows:
            </caption>
                <tr>
                    <th>Name:</th>
                    <td>Amal</td>
                    <td>Athula</td>
                </tr>
                <tr>
                    <th rowspan="2">Qualifications :</th>
                    <td>B.Sc.</td>
                    <td>B.Sc.</td>
                </tr>
                <tr>
                    <td>M.Sc.</td>
                    <td>PGDE</td>
                </tr>
        </table>
    </body>
</html>
```


Fig 05. 2 web page for Example 2

Activity 07

Insert image, audio clip, video clip into a web page

Insert an image to a web page.

- In HTML, images are defined with the <img> tag.

- <img> tag is empty, it contains attributes only, and does not have a closing tag.

- src attribute (source) specifies the URL (web address) of the image:

- alt attribute provides an alternate text for an image.The file name of the image appears on the image when mouse is kept over the image

- Size of the image in web page can be define by pixel size (height and the width) it's better to use style attribute, as you will apply CSS in the latter part of this)

  - Example 1 : Insert an image in your computer (if the image is in the same folder where web page located)

```
<html>
      <body>
              <img src="Elephant.jpg" alt="Elephants at Pinnawala" width="400"
              height="200">
      </body>
</html>
```
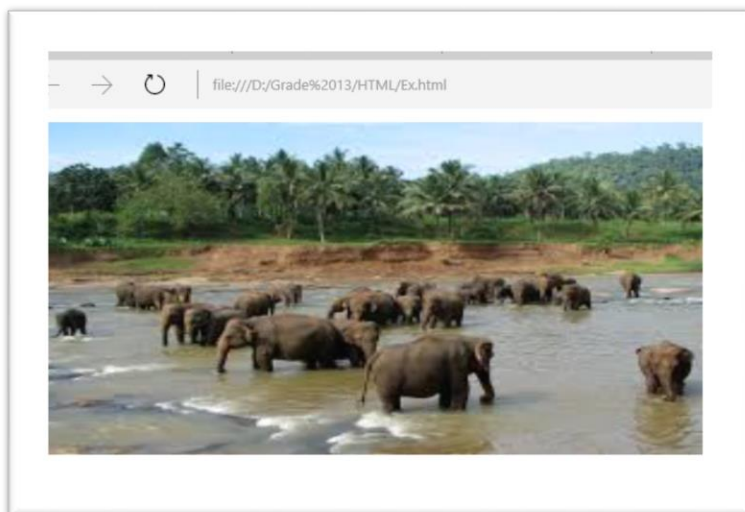

Fig 07. 1 web page for Example 1

- Example 2 : use an image in another folder
  - To get the image path – get the RUN program and drag the image into the RUN program window. Then it will show the path of the image.
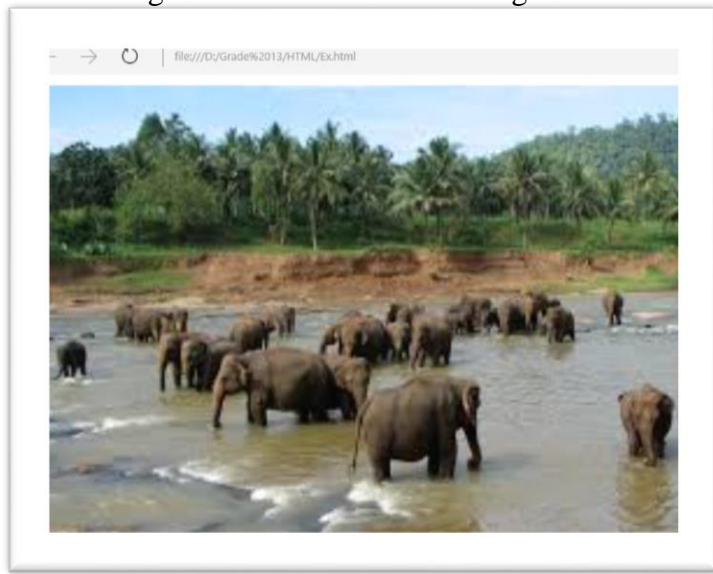 - Now you can copy the path of the image from RUN window, change the "\" into "/".

```
<html>
      <body>
            <img src="C:\Users/USER/Pictures/Elephant.jpg" alt="Elephants at
            Pinnawala" width="500" height="350">width="500" height="350">
      </body>
</html>
```


Fig 07. 2 web page for Example 2

- Example 3 : CSS style

```
<html>
      <body>
            <img src="C:\Users/USER/Pictures/Elephant.jpg"
            style="width:200px;height:180px;">
      </body>
</html>
```
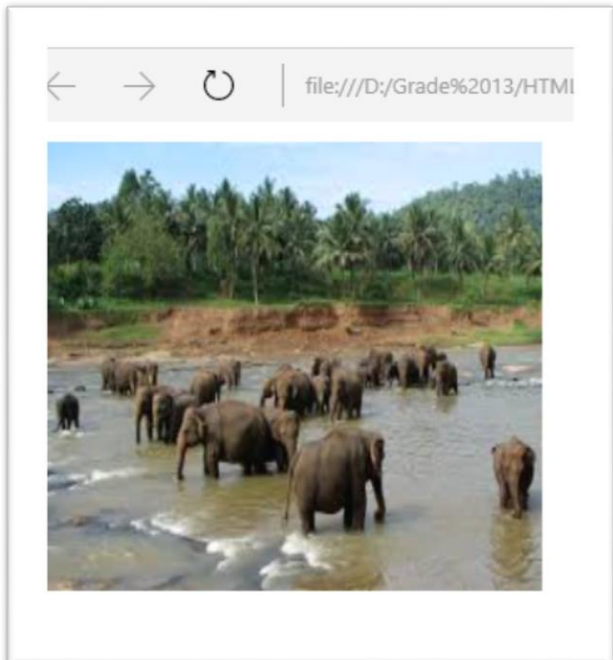
Fig 07. 3 web page for Example 3

- Example 4 : Insert an images from anothe... ... .

```
<html>
   <body>
      <img src="http://www.nie.lk/images/nielogo.jpg" alt="logo of NIE"  width="400"
      height="400">
   </body>
</html>
```
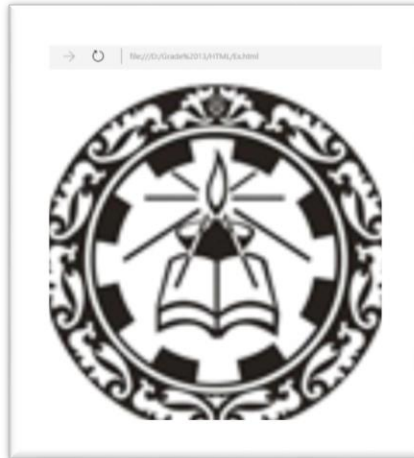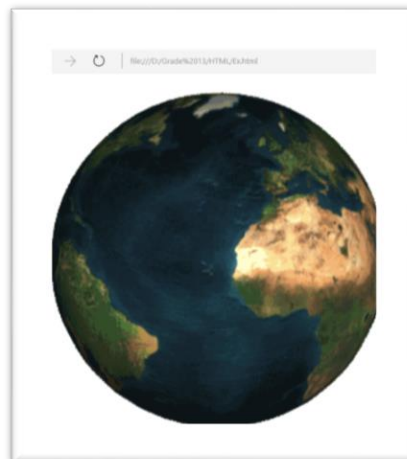

Fig 07. 4 web page for Example 4

- Example 5: Insert an animated images (In the same folder)

   o   By using a search engine of your choice, search for gif images.
   o   Select the image which shows rotating earth.
   o   Then right click → save image as → select the folder where you save the web page
       → save the file by giving the name " Rotating_earth"
   o   Now you can use the gif image in your web page.

```
<html>
   <body>
      <img src="Rotating_globe.gif" alt="Rotating Earth" width="400" height="400">
   </body>
</html>
```

Fig 07. 5 web page for Example 5

- Example 6: Insert an audio clip and a video cl

```
<html>
      <body>
            <a href="media\Bindu Bindu.mp3">
                  Audio Clip - BinduBindu</a><br />
            <a href="media\MadhuraJavanikaS.mp4">
                  Video Clip - MadhuraJawanika</a><br />
      </body>
</html>
```


Fig 07. 6 web page for Example 6

Activity 08

Use more text formatting – Font

HTML Elements

HTML elements have attributes. Attributes provide additional information of elements. Attributes always are specified in the start tag. Attributes usually come in name/value pairs like: name="value"

Example:

font color="red"

- Example1: change font color.

```
<html>
        <body>
                <p><font color="red">font Color is changed to red</font></p>
                <p><font color="blue">font Color is changed to blue</font></p>
                <p><font color="green">font Color is changed to green</font></p>
        </body>
</html>
```
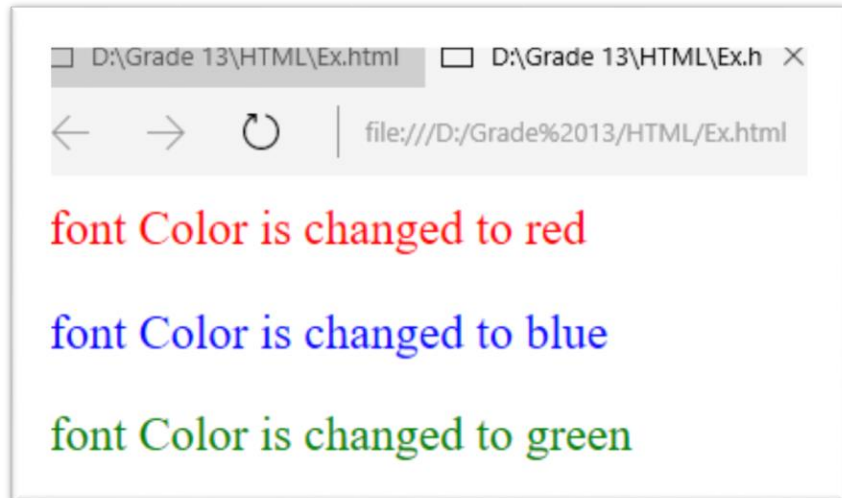

Fig 08. 1 web page for Example 1

- Example2: Change font size.

```
<html>
        <body>
                <p><font size="1" > Size of the font is changed to 1 </font></p>
                <p><font size="2" > Size of the font is changed to 2 </font></p>
                <p><font size="3" > Size of the font is changed to 3</font></p>
                <p><font size="4" > Size of the font is changed to 4 </font></p>
        </body>
</html>
```


Fig 08. 2 web page for example 2
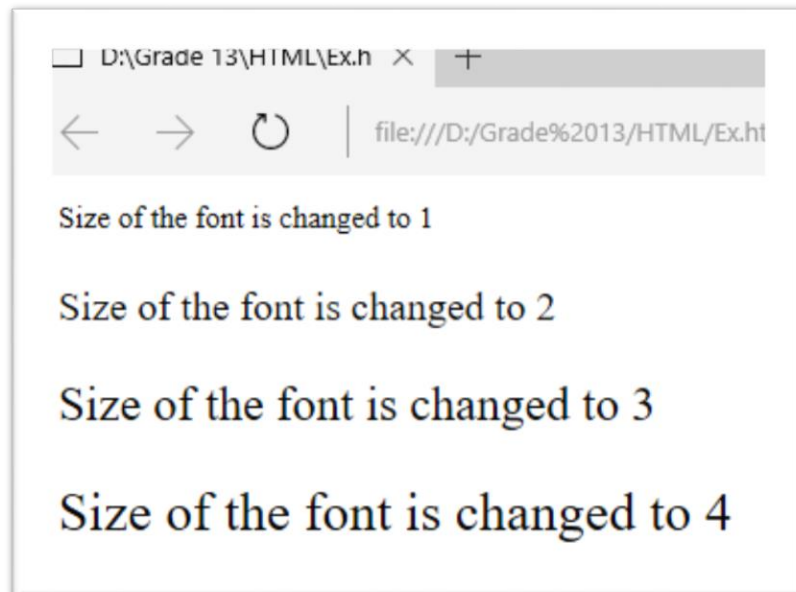
- Example3: Change the font type.
  ```
  <html>
        <body>
              <p><font face="verdana">font type is changed to "verdana"</font></p>
              <p><font face="Algerian">font type is changed to "Algerian"</font></p>
              <p><font face="Times New Roman">font type is changed to "Times New
              Roman"</font></p>
              <p><font face="Comic Sans MS">font type is changed to "Comic Sans
              MS"</font></p>
        </body>
  </html>
  ```


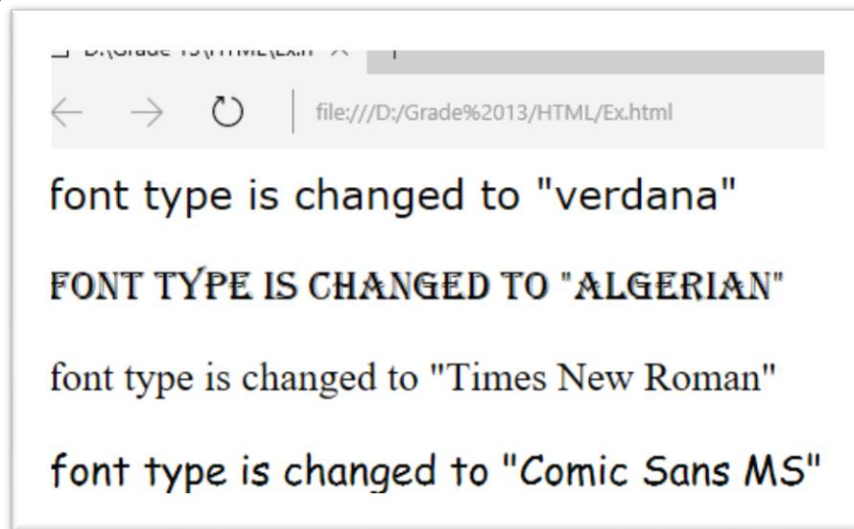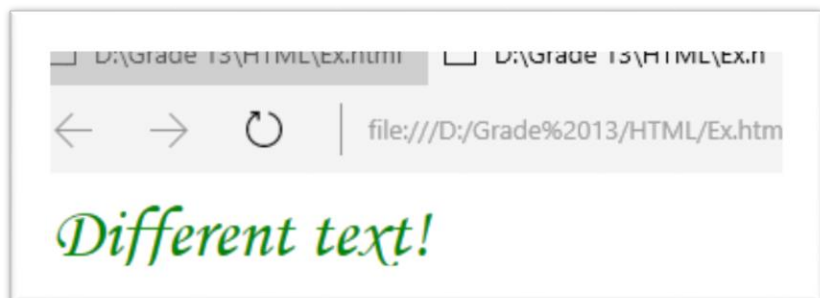Fig 08. 3 web page for example 3

- Example4: Change font attributes.
  ```
  <html>
        <body>
              <font size="5" face="Monotype Corsiva" color="green">Different
              text!</font>
        </body>
  </html>
  ```


Fig 08. 4 web page for example 4

Activity 09

Makes web pages attractive and readable using suitable colors.

RGB(*red, green, blue*) color format :

Each value (red, green, blue) defines the proportional amount of the colors between 0 and 255.

HEXADECIMAL Value color format :

color specified using a hexadecimal value in the form:#rrggbb Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

RGBA(*red, green, blue, alpha*) color format :

Each value (red, green, blue) defines the proportional amount of the colors between 0 and 255 as in RGB and alpha specifies the brightness amount between 0 and 1 (fractional values).

- Example 1 : Change background color

```
<html>
      <body>
              <h1 style="background-color:Yellow;">Web Development</h1>
              <p style="background-color:Cyan;">
                      Today lots of people are looking to buy products or hire services
                      online.
              </p>
      </body>
</html>
```


Fig 09.1 web page for example 1

- Example 2 : Change text color

```
<html>
        <body>
                <h2 style="color:Green;">Web Development</h2>
                <p style="color:Brown;">Today lots of people are looking to buy
                                products or hire services online.
                </p>
        </body>
</html>
```


Fig 09. 2 web page for example 2

- Example 3 : Select HTMLcolours – RGB, Hexa Decimal

```
<html>
        <body>
                <p>Similercolors in different formats <p>
                <h1 style="background-color:rgb(255, 99, 71);">RGB</ h1>
                <h1 style="background-color:#ff6347;">Hexa decimal</h1>
        </body>
</html>
```
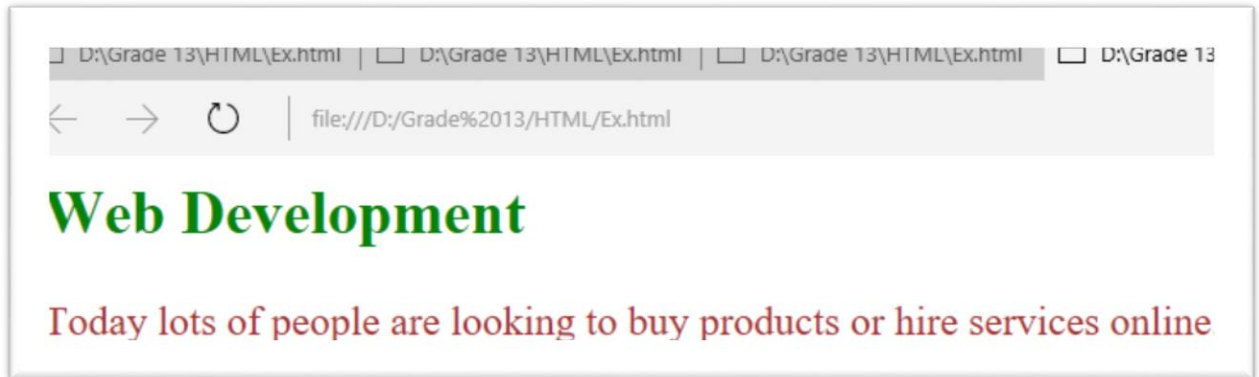

Fig 09. 3 web page for example 3

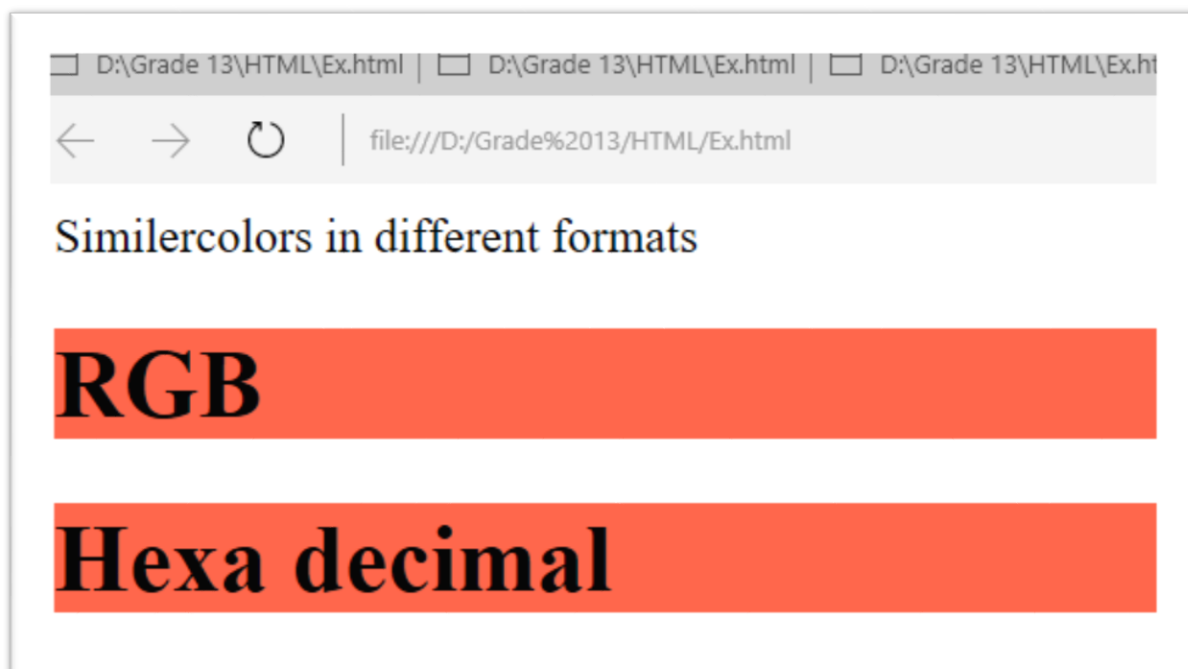- Example 4 : Set html colour with transparency –RGBA

```
<html>
        <body>
                <p>set transparency:</p>
                        <h1 style="background-color:rgba(255, 99, 71, 0.5);">RGBA Same Color,
                        Alpha Value .5</h1>
                        <h1 style="background-color:rgba(255, 99,
                        71, 0.3);">RGBA Same Color, Alpha Value
                        .3</h1>
        </body>
</html>
```
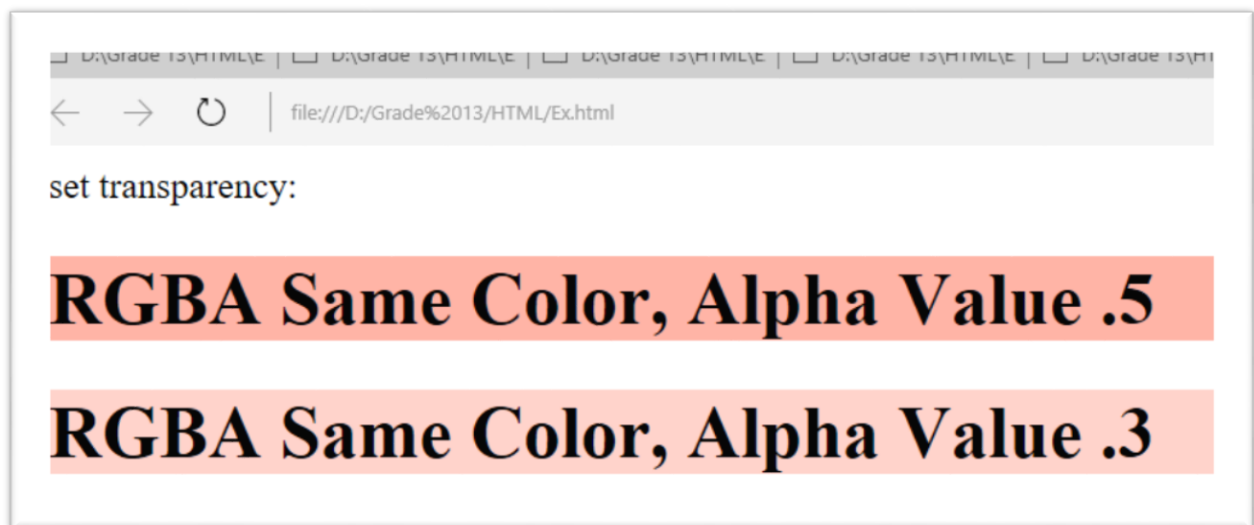

Fig 09. 4 web page for example 4

Activity 10

Make HTML web page attractive by using marquees

- Example 1 : basic marquee

```
<html>
        <body>
                <marquee>simple marquee</marquee>
        </body>
</html>
```


Fig 10. 1 web page for example 1

- Example 2 : Marquee which uses only 50%, 25%, 10% width of a page

```
<html>
        <body>
                <marquee width = "50%"> 50% width of page</marquee><br>
                <marquee width = "25%"> 50% width of page</marquee><br>
                <marquee width = "10%"> 50% width of page</marquee><br>
        </body>
</html>
```


Fig 10. 2 web page for example 2
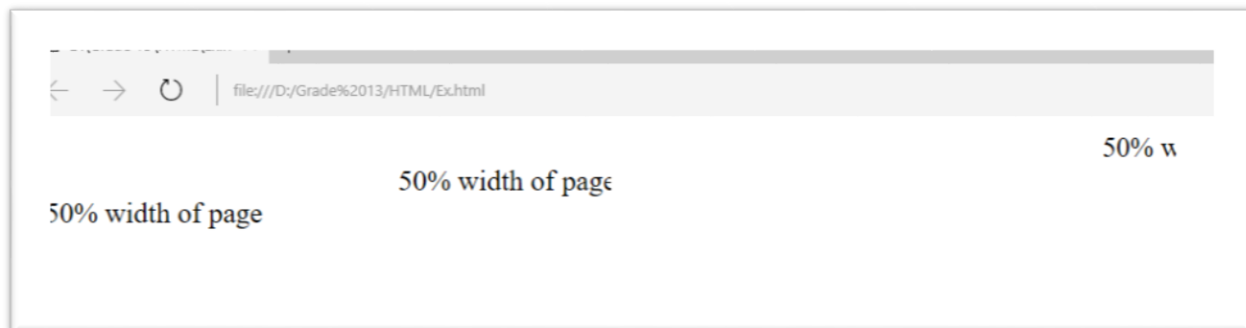
- Example 3 : Change Marquee direction

```
<html>
      <body>
                <marquee direction = "right">move  from left to right</marquee>
      </body>
</html>
```


Fig 10. 3 web page for example 3

The <marquee> Tag Attributes

Width - specifies the width of the page used by marquee. Percentage value -10% or 20% etc.

Height - specifies the height of the marquee.

Percentage value -10% or 20% etc.

Direction - specifies the scrolling direction of the marquee. Attributes- up, down, left or
right.

Activity 11

Create hyperlink

Website is a collection of web pages under single domain name. Those are linked pages. The main page a visitor navigating to a website from web search engine is called home page. Links are found in nearly all pages. Links allows users to click their way from page to page.

HTML Links are hyperlinks.

You can click on a hyperlink and

- can jump to different section on same page (book mark)
- can jump to different pages of a same website (local link)
- can jump to different pages of websites (external link)

In HTML, links are defined with <a> tag

```
<a href="url"> link text  </a>
```

- **Example 1 : create hyper link between different sections on same page (book mark)**

```
<html>
      <body>
            <p><a href="#C10">Jump to Chapter 10</a></p>
                <h2>Chapter 1</h2>
            <p>This chapter explains aaaaaaaaaaaaaa</p>
                <h2>Chapter 2</h2>
            <p>This chapter explains bbbbbbbbbbb</p>
                <h2>Chapter 3</h2>
            <p>This chapter explains cccccccccccc</p>
                <h2 id="C4">Chapter 4</h2>
            <p>This chapter explains dddddddddd</p>
                <h2>Chapter 5</h2>
            <p>This chapter explains eeeeeeeeee</p>
                <h2>Chapter 6</h2>
            <p>This chapter explains ffffffffffffff</p>
                <h2>Chapter 7</h2>
            <p>This chapter explains gggggggggg</p>
                <h2>Chapter 8</h2>
            <p>This chapter explains hhhhhhhhh</p>
                <h2>Chapter 9</h2>
            <p>This chapter explains iiiiiiiiiiiiiiiiii</p>
                <h2 id="C10">Chapter 10</h2>
            <p>This chapter explains jjjjjjjjjjjjjjj</p>
                <h2>Chapter 11</h2>
            <p>This chapter explains kkkkkkkk</p>
                <h2>Chapter 12</h2>
            <p>This chapter explains llllllll</p>
                <h2>Chapter 13</h2>
            <p>This chapter explains mmmmmmmmm</p>
                <h2>Chapter 14</h2>
            <p>This chapter explains nnnnnnnnn</p>
                <h2>Chapter 15</h2>
            <p>This chapter explains ooooooooo</p>
                <h2>Chapter 16</h2>
            <p>This chapter explains ppppppppp</p>
      </body>
</html>
```


Jump to Chapter 10 ← Hyperlink

Chapter 1

This chapter explains aaaaaaaaaaaaaa

Chapter 2

This chapter explains iiiiiiiiiiiiiiiiii

Chapter 10

This chapter explains jjjjjjjjjjjjjjj

- **Example 2 : create hyper link between different sites (external link)**

```
<html>
      <body>
              <h2>External Paths</h2>
              <p>This example uses a full URL to link to a web page:</p>
              <p><a href="https://www.w3schools.com/html/default.asp">HTML tutorial</a></p>
      </body>
</html>
```
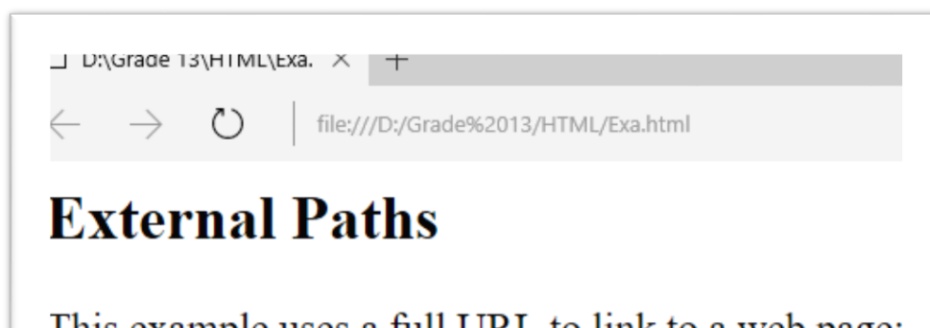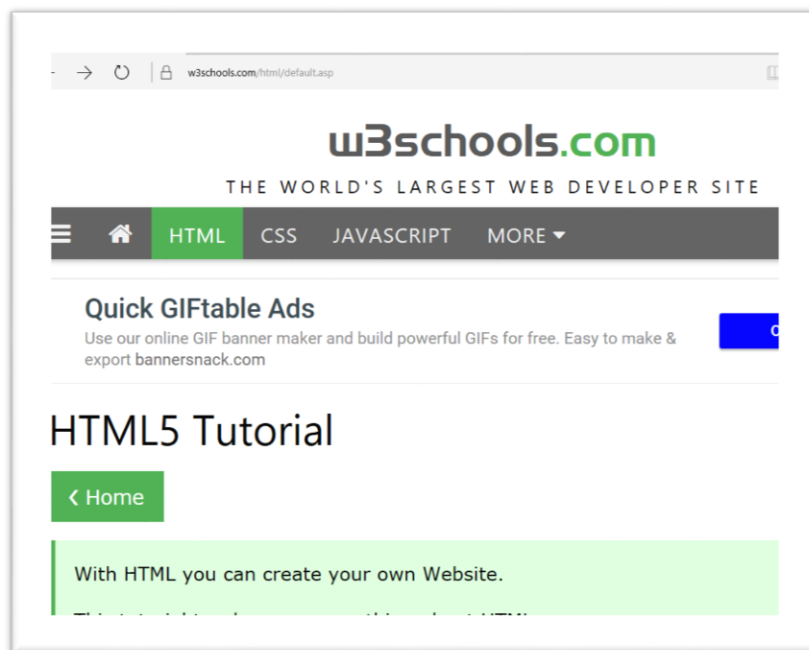

D:\Grade 13\HTML\Exa. ✕ +

← → ↻ | file:///D:/Grade%2013/HTML/Exa.html

External Paths

This example uses a full URL to link to a web page:

Fig 11. 2 web page for example 2

Fig 11. 3 after click on hyperlink (HTML tutorial)

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
- External style sheets are stored in **CSS files**

CSS Syntax

h1 { color:blue; font-size:12px;}

Propepety

Value

Property

Value

Example 01

```
<html>
    <head>
        <style>
        p {
            color: red;
            text-align: center;
        }
        </style>
    </head>
    <body>
        <p>Hello World!</p>
        <p>These paragraphs are styled with CSS.</p>
    </body>
</html>
```
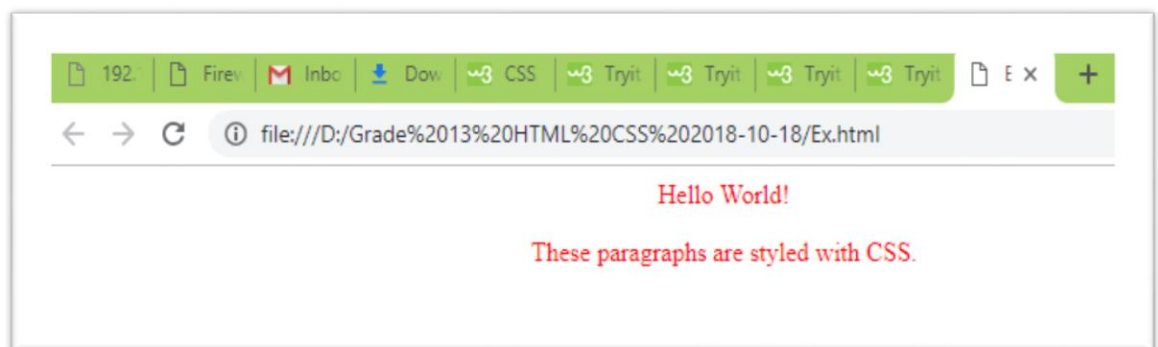

Fig 01 1 web page for example 01

CSS Selectors

CSS selectors are used to "find" (or select) HTML elements based on their element name, id, class, attribute, and more.

The element Selector

The element selector selects elements based on the element name.
You can select all <p> elements on a page like this (in this case, all <p> elements will be center-aligned, with a red text color):

Example 02

```
<html>
      <head>
          <style>
               p {
                  text-align: center;
                  color: red;
               }
          </style>
      </head>
      <body>
          <p>Every paragraph will be affected by the style.</p>
          <p id="para1">Me too!</p>
          <p>And me!</p>
      </body>
</html>
```
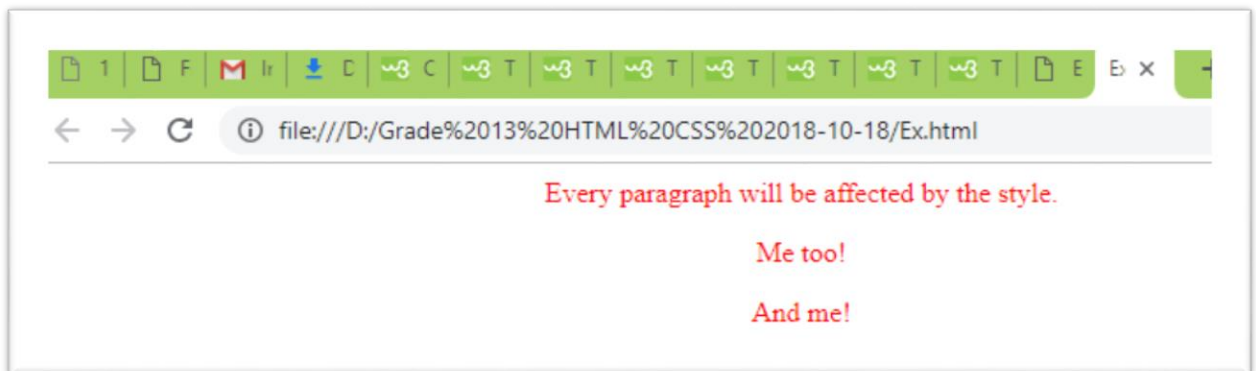

Fig 01 2 web page for example 02

The id Selector

The id selector uses the id attribute of an HTML element to select a specific element.
The id of an element should be unique within a page, so the id selector is used to select one unique element.
To select an element with a specific id, write a hash (#) character, followed by the id of the element.
The style rule below will be applied to the HTML element with id="para1":

Example 03

```
<html>
```

```
<head>
    <style>
        #para1 {
            text-align: center;
            color: red;
        }
    </style>
</head>
<body>
    <p id="para1">Hello World!</p>
    <p>This paragraph is not affected by the style.</p>
</body>
</html>
```
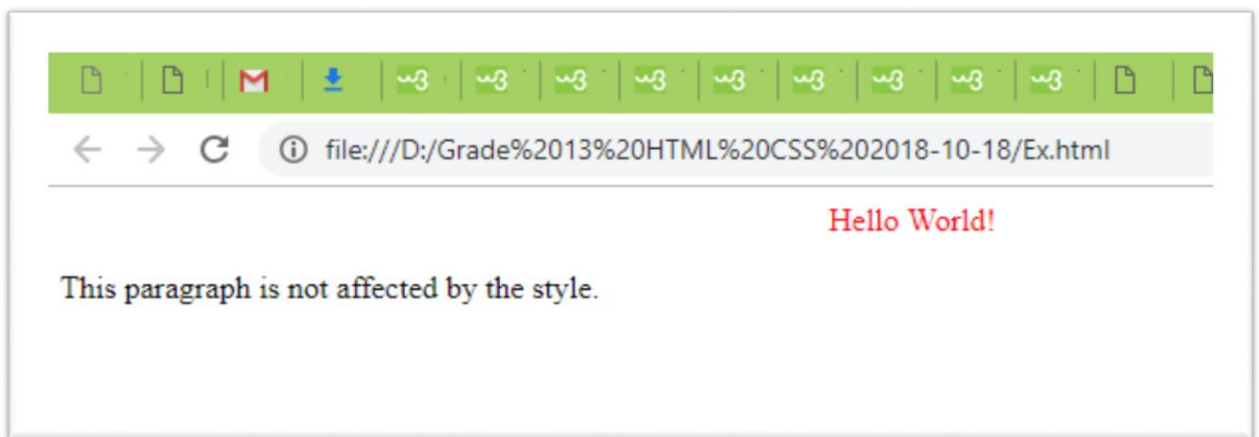

Fig 01 3 web page for example 03

The class Selector

The class selector selects elements with a specific class attribute.
To select elements with a specific class, write a period (.) character, followed by the name of the class.
In the example below, all HTML elements with class="center" will be red and center-aligned:

Example 04

```
<html>
    <head>
        <style>
            .center {
                text-align: center;
                color: red;
            }
        </style>
    </head>
    <body>
```

```
            <h1 class="center">Red and center-aligned heading</h1>
            <p class="center">Red and center-aligned paragraph.</p>
        </body>
    </html>
```
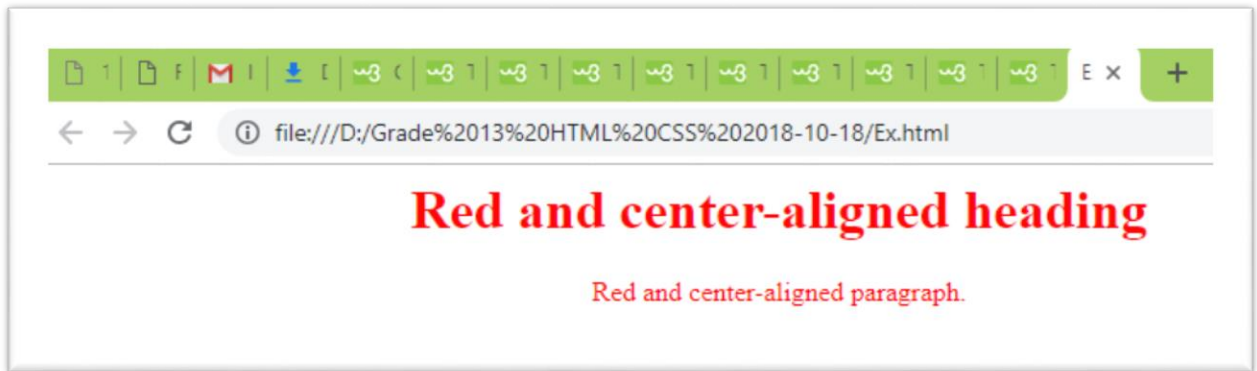

Fig 01 4 web page for example 04

You can also specify that only specific HTML elements should be affected by a class. In the example below, only <p> elements with class="center" will be center-aligned:

Example 05

```
    <html>
        <head>
            <style>
                p.center {
                        text-align: center;
                        color: red;
                }
            </style>
        </head>
        <body>
            <h1 class="center">This heading will not be affected</h1>
            <p class="center">This paragraph will be red and center-aligned.</p>
        </body>
    </html>
```


Fig 01 5 web page for example 5

HTML elements can also refer to more than one class.

In the example below, the <p> element will be styled according to class="center" and to class="large":

```
<html>
    <head>
        <style>
            p.center {
                text-align: center;
                color: red;
            }
            p.large {
                font-size: 300%;
            }
        </style>
    </head>
    <body>
        <h1 class="center">This heading will not be affected</h1>
        <p class="center">This paragraph will be red and center-aligned.</p>
        <p class="center large">This paragraph will be red, center-aligned, and in a large
        font-size.</p>
    </body>
</html>
```
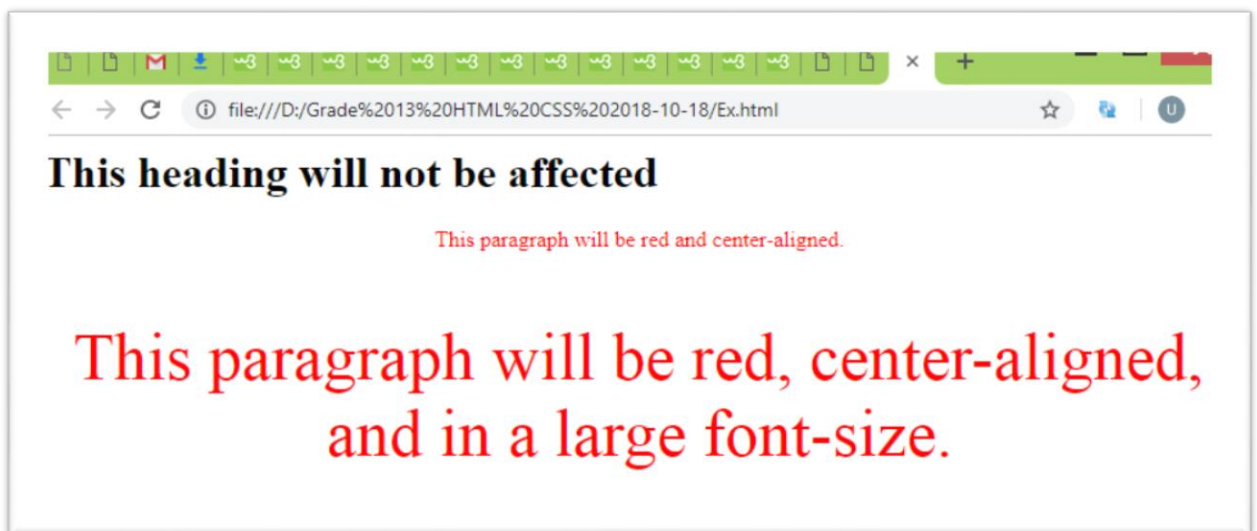

Fig 01 6 web page for example 6

Grouping Selectors

If you have elements with the same style definitions, like this:

```css
h1 {
    text-align: center;
    color: red;
}

h2 {
    text-align: center;
    color: red;
}

p {
    text-align: center;
    color: red;
}
```

It will be better to group the selectors, to minimize the code.
To group selectors, separate each selector with a comma.
In the example below we have grouped the selectors from the code above:

Example 07

```html
<html>
    <head>
        <style>
            h1, h2, p {
                text-align: center;
                color: red;
            }
        </style>
    </head>
    <body>
        <h1>Hello World!</h1>
        <h2>Smaller heading!</h2>
        <p>This is a paragraph.</p>
    </body>
</html>
```
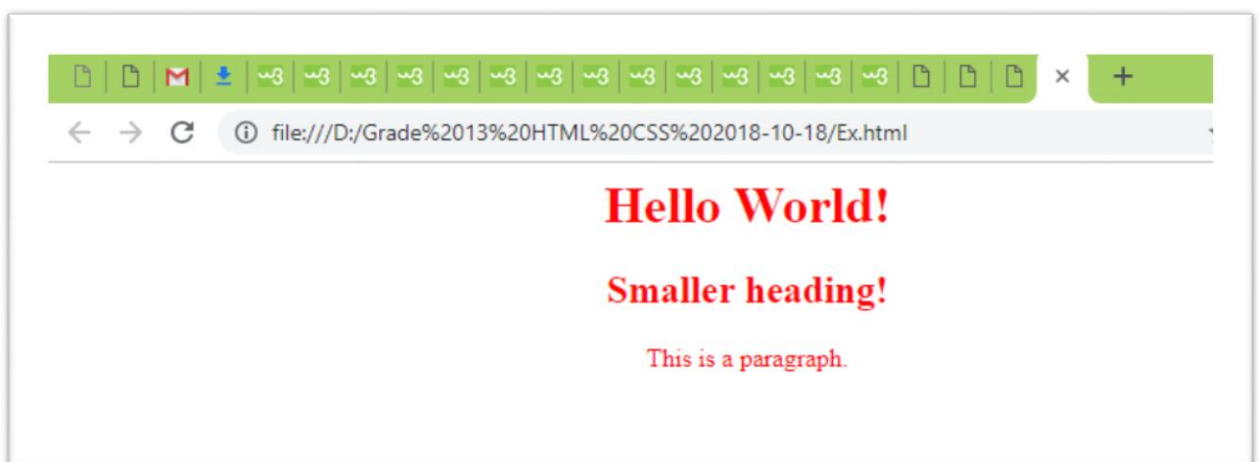

Fig 01 7 web page for example 07

Three Ways to Insert CSS

There are three ways of inserting a style sheet:

- External style sheet
- Internal style sheet
- Inline style

External style sheet

With an external style sheet, you can change the look of an entire website by changing just one file!
Each page must include a reference to the external style sheet file inside the <link> element. The <link>
element goes inside the <head> section:
An external style sheet can be written in any text editor. The file should not contain any html tags. The
style sheet file must be saved with a .css extension.

Example 08

```
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="mystyle.css">
    </head>
    <body>
        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>
    </body>
</html>
```


Fig 01 8 web page for example 08

Internal Style Sheet

An internal style sheet may be used if one single page has a unique style.
Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

Example 09

```
<html>
        <head>
                <style>
                body {
                        background-color: linen;
                    }
                h1 {
                        color: maroon;
                        margin-left: 40px;
                    }
                </style>
        </head>
                <body>
                        <h1>This is a heading</h1>
                        <p>This is a paragraph.</p>
                </body>
        </html>
```
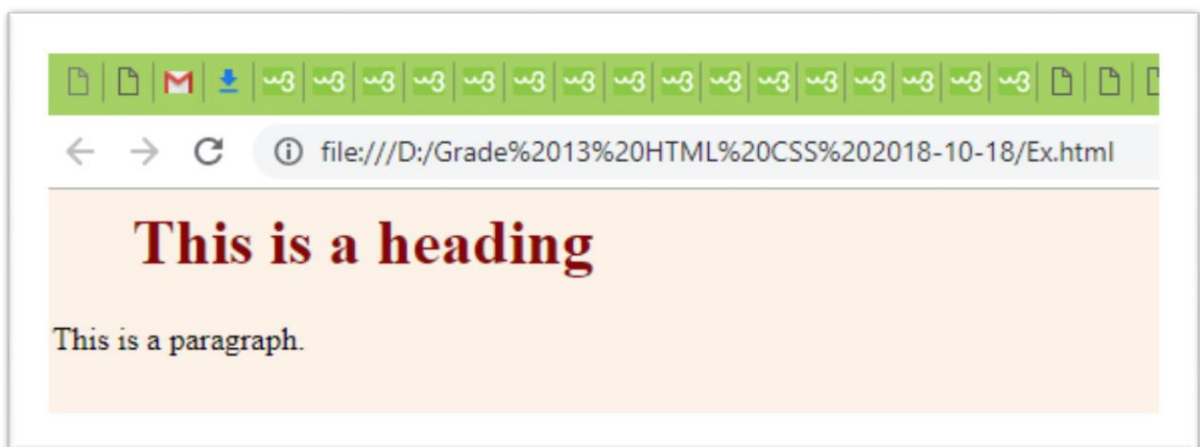

Fig 01 9 web page for example 09

Inline Styles

An inline style may be used to apply a unique style for a single element.
To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.
The example below shows how to change the color and the left margin of a <h1> element:

Example 10

```
<html>
        <body>
                <h1 style="color:blue;margin-left:30px;">This is a heading</h1>
                <p>This is a paragraph.</p>
        </body>
</html>
```


Fig 01 10 web page for example 10

Multiple Style Sheets

If some properties have been defined for the same selector (element) in different style sheets, the value from the last read style sheet will be used.
Assume that an external style sheet has the following style for the <h1> element:

```
h1 {
    color: navy;
}
```

then, assume that an internal style sheet also has the following style for the <h1> element:

```
h1 {
   color: orange;
}
```

If the internal style is defined after the link to the external style sheet, the <h1> elements will be "orange":

Example 11

```
<html>
  <head>
        <link rel="stylesheet" type="text/css" href="mystyle.css">
        <style>
        h1 {
           color: orange;
            }
        </style>
  </head>
  <body>
        <h1>This is a heading</h1>
        <p>The style of this document is a combination of an external stylesheet, and internal
        style</p>
  </body>
```

This is a heading
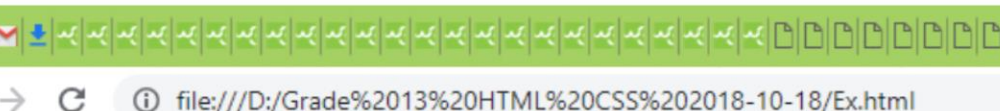
This is a paragraph.

Fig 01 11 web page for example 11

However, if the internal style is defined before the link to the external style sheet, the <h1> elements will be "navy":

Example 12

```
<html>
        <head>
                <style>
                h1 {
```

```
            color: orange;
        }
        </style>
        <link rel="stylesheet" type="text/css" href="mystyle.css">
    </head>
    <body>
        <h1>This is a heading</h1>
        <p>The style of this document is a combination of an external stylesheet, and
        internal style</p>
    </body>
</html>
```


Fig 01 12 web page for example 12

Cascading Order

What style will be used when there is more than one style specified for an HTML element?

All the styles in a page will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

1. Inline style (inside an HTML element)
2. External and internal style sheets (in the head section)
3. Browser default

So, an inline style has the highest priority, and will override external and internal styles and browser defaults.

Example 13

```
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="mystyle.css">
        <style>
            body {background-color: linen;}
```

```
        </style>
    </head>
    <body style="background-color: lightcyan">
        <h1>Multiple Styles Will Cascade into One</h1>
        <p>In this example, the background color is set inline, in an internal stylesheet,
        and in an external stylesheet.</p>
        <p>Try experimenting by removing styles to see how the cascading stylesheets
        work. (try removing the inline first, then the internal, then the external)</p>
    </body>
</html>
```
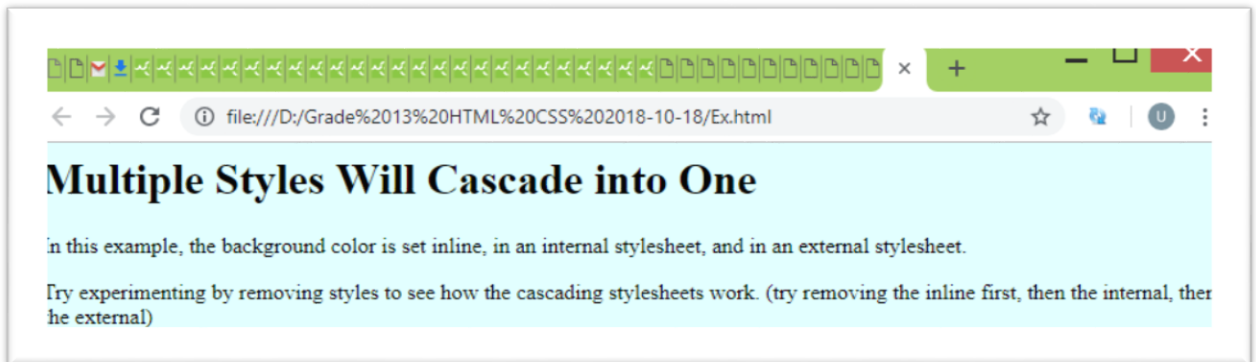

Fig 01 13 web page for example 13