Web technology
ch1: HTML & CSS

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Course Title: **Web Technology (3 Cr.)**
Course Code: **CACS205**
Year/Semester: **II/III**
Class Load: **6 Hrs. / Week (Theory: 3 Hrs, Practical: 3 Hrs.)**

Course Description

This course covers different aspect of web technology such as HTML, CSS, issues of web technology, client tier, server tier and advanced server side issue.

Course Objectives

The general objectives of this course are to provide fundamental concepts of Internet, Web Technology and Web Programming.

Course Contents

Unit 1 HTML and CSS **15 Hrs.**

HTML Basic: HTML Tag Reference, Global Attributes, Document, Structure Tags, Formatting Tags, Text Level Formatting, Block Level Formatting, List Tags, Hyperlink Tags, Executable Content Tags.

Image & Imagemaps: Introduction, Client-Side Imagemaps, Server-Side Imagemaps, Using Server-Side and Client-Side Imagempas Together, Alternative Text for Imagemaps.

Tables: Introduction To HTML Tables and Their Structure, The Table Tags, Alignment, Aligning Entire Table, Alignment within a Row, Alignment within a Cell, Attributes, Content Summary, Background Color, Adding a Caption, Setting the Width, Adding a Border, Spacing Within a Cell, Spacing between the Cells, Spanning Multiple Rows or Columns, Elements that can be Placed in a Table, Table Sections and Column Properties, Tables as a Design Tool.

Frames: Introduction to Frames, Applications, Frames document, The <FRAMESET> tag, Nesting <FRAMESET> tag, Placing content in frames with the <FRAME>Tag, Targeting named Frames, Creating Floating Frames, Using Hidden Frames.

Forms: Creating Forms, The <FORM> tag, Named Input fields, The <INPUT> tag, Multiple lines text windows, Drop Down and List Boxes, Hidden, Text, Text Area, Password, File Upload, Button, Submit, Reset, Radio, Checkbox, Select, Option, Forms and Scripting, Action Buttons, Labeling input files, Grouping related fields, Disabled and read-only fields, Form field event handlers, Passing form data.

Style Sheets: Definition, Importance, Different Approaches to Style Sheets, Using Multiple Approaches, Linking to Style Information in Separate File, Setting up Style Information, Using the <LINK>Tag, Embedded Style Information, Using <STYLE>Tag, Inline Style Information.

Unit 2 Issue of Web Technology **3 Hrs.**

Architectural Issues of Web Layer, Tier Technology: 2-Tier, 3-Tier and n-Tier.

Unit 3 The Client Tier **10 Hrs.**

Representing Content; Introduction to XML; Elements and Attributes; Rules for Writing XML; Namespaces; Schema: Simple Types and Complex Types, XSD Attributes, Default and Fixed Values, Facets, Use of Patterns, Order Indicators(All, Choice, Sequences), Occurrence Indicators (Maxoccurs, Minoccurs), DTD: Internal Declaration, Private External Declaration, Public External Declaration, Defining Elements and Attributes; XSL/XSLT; Xpath; Xquery; SAX; DOM , Creating XML Parser.

Unit 4 The Server Tier **8 Hrs.**

Web Server Concept, Creating Dynamic Content, Using Control Flow to Control Dynamic Content Generation, Sessions and State, Error Handling, Architecting Web Application, Using Tag Libraries, Writing Tag Libraries.

Unit 5 Introduction to Advanced Server Side Issues **9 Hrs.**

Database Connectivity; Creating an SQL statement: Select, Insert, Update, and Delete; Authentication: Anonymous Access, Authentication by IP address and Domain, Integrated Windows Authentication; Cookies; File Handling; Form Handling

Laboratory Works

Laboratory works should be done covering all the topics listed above and a small project work should be carried out using the concept learnt in this course. Project should be assigned on individual basis.

Evaluation

Examination Scheme				
Internal Assessment		External Assessment		Total
Theory	Practical	Theory	Practical	
20	-	60 (3 Hrs.)	20 (3 Hrs.)	100

Text Books

1. Harvey M. Deitel, Paul J. Deitel & Abbey Deitel, "*Internet and World Wide Web: How to Program*", 5th Edition, Pearson Education, 2012, ISBN: 9780273764021
2. Thomas A. Powell, "*HTML & CSS: The Complete Reference*", McGraw Hill, Fifth Edition, 2010, ISBN: 978-0-07-174170-5

Reference Books

1. Matt J. Crouch, "*ASP.NET and VB.NET Web Programming*", Pearson Education Asia, 2002
2. Rahul Banerjee, "*Internetworking Technologies*", Prentice-Hall of India Limited, Fourth Edition, 2000
3. Thomas A. Powell, "*Web Design: The Complete Reference*", Tata McGraw Hill, Second Edition, 2002

Introduction to HTML

- Hypertext refers to the way in which web pages are linked together. Thus the link available on a webpages are called Hypertext
- HTML (Hyper Text Mark-Up Language) is what is known as a “mark-up language” whose role is to prepare written documents using formatting tags. The tags indicate how the document is presented and how it links to other documents.
- HTML is also used for reading documents on the Internet from different computers, which allows users to remotely access documents stored at a specific address on the network, called a URL.
- HTML or Hyper Text Markup Language is the standard markup language used to create web pages.
- HTML is written in the form of HTML elements consisting of tags enclosed in angular brackets (like <html>).
- As its name suggest HTML is a markup language which means you use HTML to simply “mark up” a text document with tags that tell a we browser how to structure it to display
- HTML is the language interpreted by a Brower.
- The HTML file must have an extension “.htm “ or .”html”
- Any text editor can be used to create HTML file.

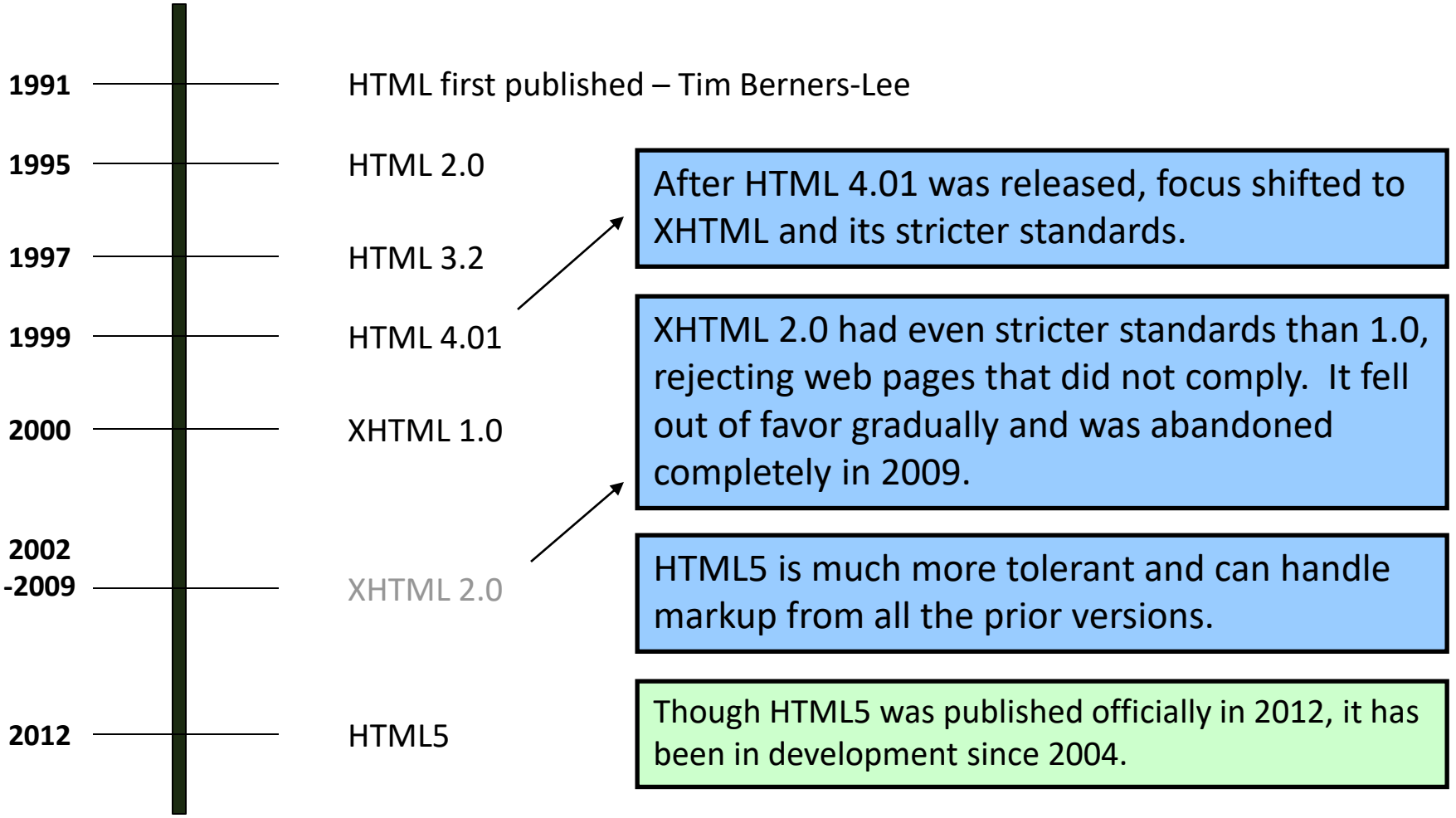
continue

- HTML tags most commonly come in pairs like<h1>and </h1>, although some tags represent empty elements and so are unpaired, for example <img>. The first tag in a pair is the start tag, and the second tag is the end tag (they are also called opening tags and closing tags).
- The browser does not display the HTML tags, but uses them to interpret the content of the page.
- HTML describes the structure of a website semantically along with cues for presentation, making it a markup language rather than a programming language.
- HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.
- Hyper Text Markup Language is a markup language that web browsers use to interpret and compose text, images and other material into visual or audible web pages.

Why to Learn HTML?

- **Create Web site** - You can create a website or customize an existing web template if you know HTML well.
- **Become a web designer** - If you want to start a carrer as a professional web designer, HTML and CSS designing is a must skill.
- **Understand web** - If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield best results.
- **Learn other languages** - Once you understands the basic of HTML then other related technologies like javascript, php, or angular are become easier to understand.

History of HTML



HTML 5

- HTML5 is the newest version of HTML
- It incorporates all features from earlier versions of HTML, including the stricter XHTML.
- It adds a diverse set of new tools for the web developer to use.
- It is still a work in progress. Browsers are still working toward full HTML5 support. It may be a few more years – perhaps not until 2018 or later - before being fully defined and supported…and then? (perpetual beta)

Goals of HTML5

- Support all existing web pages. With HTML5, there is no requirement to go back and revise older websites.
- Reduce the need for external plugins and scripts to show website content.
- Improve the semantic definition (i.e. meaning and purpose) of page elements.
- Make the rendering of web content universal and independent of the device being used.
- Handle web documents errors in a better and more consistent fashion.

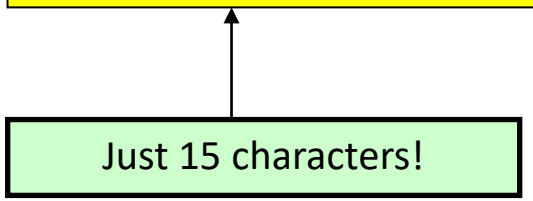
First Look at HTML5

XHTML had the DOCTYPE declaration…

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

In HTML5, there is just one possible DOCTYPE declaration and it is simpler:

```
<!DOCTYPE html>
```



The DOCTYPE tells the browser which type and version of document to expect. This should be the last time the DOCTYPE is ever changed. From now on, all future versions of HTML will use this same simplified declaration.

<!DOCTYPE> Declaration

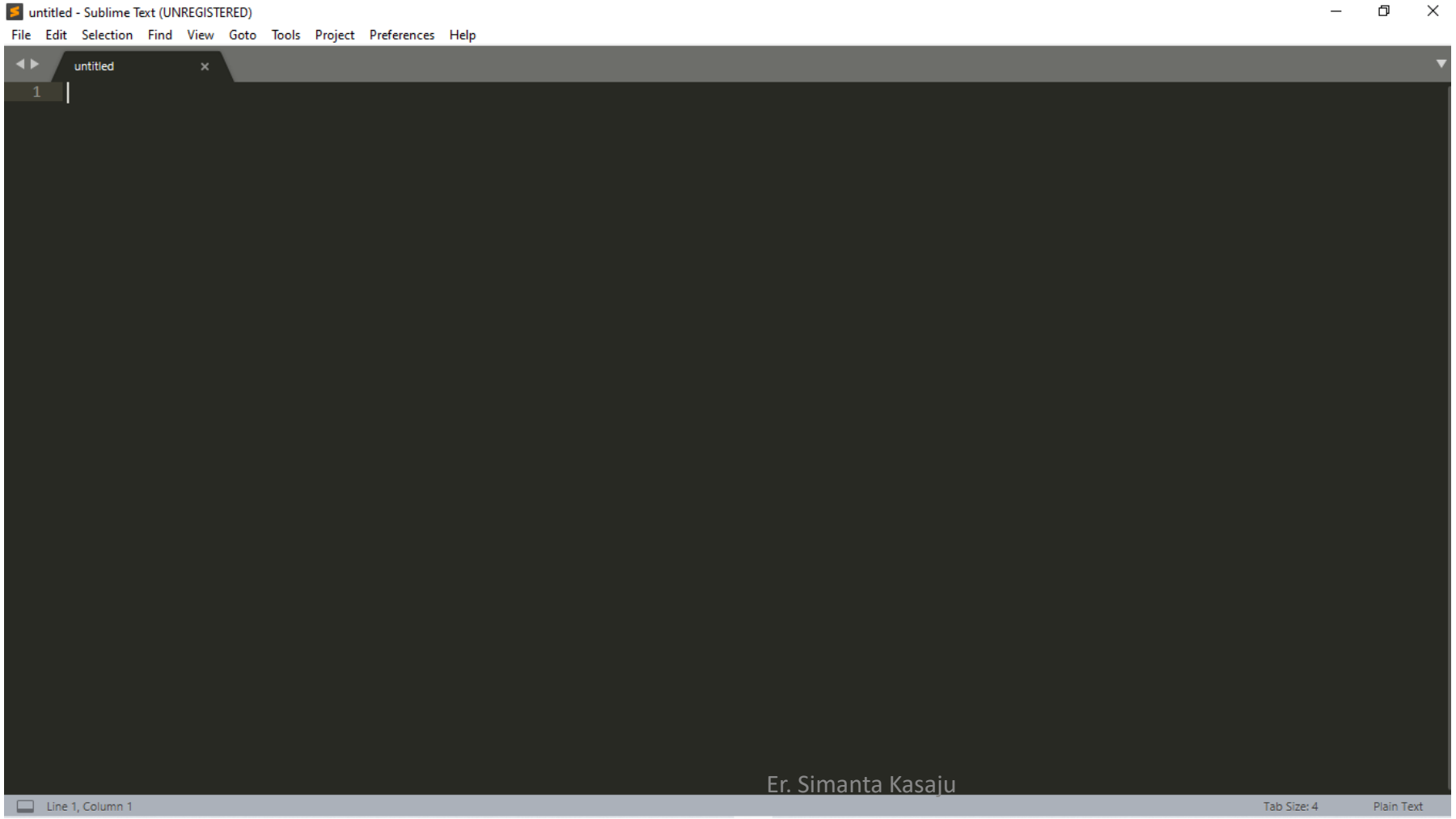
- <!DOCTYPE> Declaration helps the browser to display a web page correctly.
- There are many different documents on the web and a browser can only display an HTML page 100% correctly if it knows the HTML type and version used.
- <!DOCTYPE> Declaration tag is used by the web browser to understand the version of the HTML used in the document.
- There are many other declaration types which can be used in HTML document depending on what version of HTML is being used.

Summary

- HTML stands for Hyper Text 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
- HTML Documents contain HTML tags and plain text
- HTML documents are also called web pages.
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

Steps to prepare HTML document

- Step1: open any Editor on your computer(Notepad ,sublime etc)



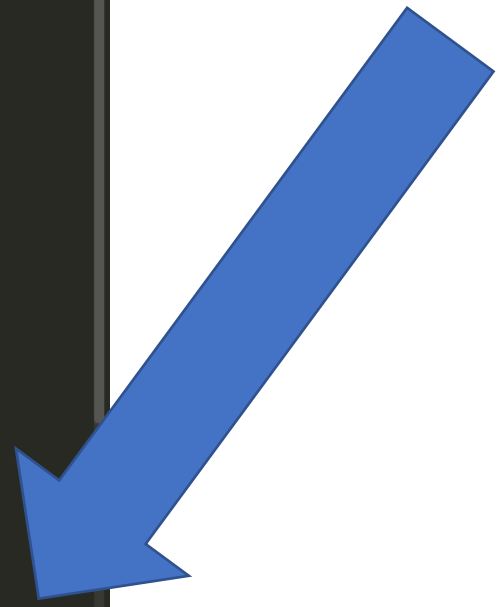
Step2: Write HTML code on it

untitled

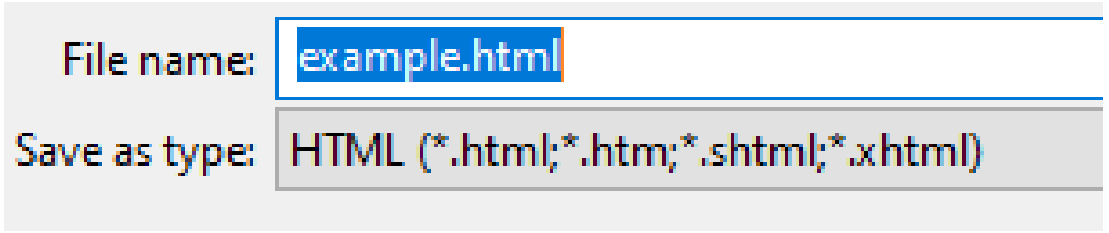
```
<!DOCTYPE html>
<html>
<head>
<title>THIS IS DOCUMENT TITLE</title>
</head>
<body>
<h1>THIS IS HEADING</h1>
<p>WEB TECHNOLOGY CLASS</p>
</body>
</html>
```

Line 10, Column 9 Tab Size: 4 HTML

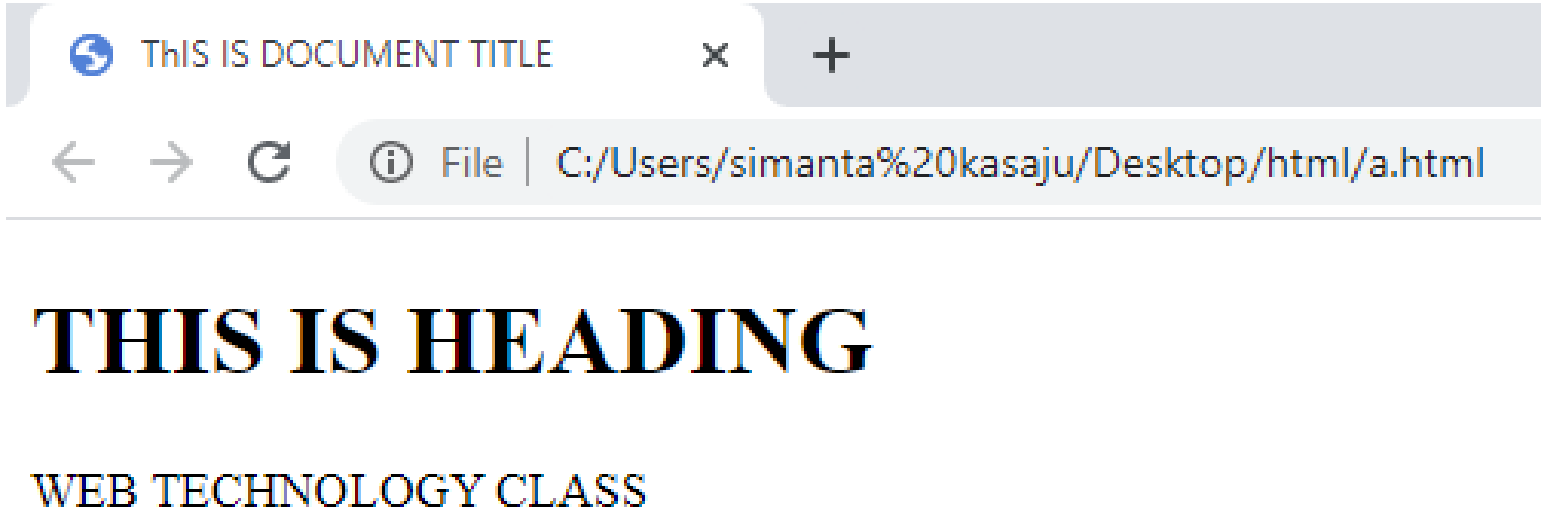
Plain Text:HTML



Step 3:Save that file with the extension htm or html format



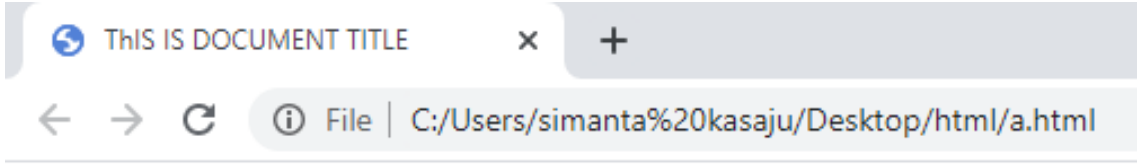
Step4: open the saved file with any browser.



Example(Basic Structure)

a.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>THIS IS DOCUMENT TITLE</title>
5  </head>
6  <body>
7  <h1>THIS IS HEADING</h1>
8  <p>WEB TECHNOLOGY CLASS</p>
9  </body>
10 </html>
```



THIS IS HEADING

WEB TECHNOLOGY CLASS

Note: World wide web Consortium(W3C) recommends to use lowercase tags from HTML 4

Example Explained

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

HTML text Editors

- An HTML file is a text file, so to create an HTML file we can use any text editors.
- Text editors are the programs which allow editing in a written text, hence to create a web page we need to write our code in some text editor.
- There are various types of text editors available which you can directly download, but for a beginner, the best text editor is Notepad (Windows) or TextEdit (Mac).
- After learning the basics, you can easily use other professional text editors which are, Notepad++, Sublime Text, Vim, etc.
- In our tutorial, we will use Notepad and sublime text editor. Following are some easy ways to create your first web page with Notepad, and sublime text.

Building blocks of HTML

- An HTML document consist of its basic building blocks which are:

- Tags: An HTML tag surrounds the content and apply meaning to it. It is written between “<“ “ >” brackets.
- Attribute: An attribute in HTML provides extra information about the element, and it is applied within the start tag. An HTML attribute contains two fields: name & value.

HTML Tags

- HTML tags are instruction that are embedded directly into the text of a HTML document.Each HTML tag describe the browser should do something instead of simply displaying the text.
- HTML tags are like keywords which defines that how web browser will format and display the content. With the help of tags, a web browser can distinguish between an HTML content and a simple content. HTML tags contain three main parts: opening tag, content and closing tag. But some HTML tags are unclosed tags.
- When a web browser reads an HTML document, browser reads it from top to bottom and left to right. HTML tags are used to create HTML documents and render their properties. Each HTML tags have different properties.
- An HTML file must have some essential tags so that web browser can differentiate between a simple text and HTML text. You can use as many tags you want as per your code requirement.
- All HTML tags must enclosed within < > these brackets.
- Every tag in HTML perform different tasks.
- If you have used an open tag <tag>, then you must use a close tag </tag> (except some tags)
- Syntax
- <tag> content </tag>

continue

- HTML Tag Examples
- Note: HTML Tags are always written in lowercase letters. The basic HTML tags are given below:
- Paragraph Tag
- <h2> Heading Tag </h2>
- Bold Tag
- Italic Tag
- <u> Underline Tag</u>

Two Types of Tag

- Paired tag: A tag is said to be paired tag if the text is placed between a tag and its companion tag. In paired tag the 1st tag refereed as opening tag and its companion tag can be called as closing tag.

Eg: Bold Tag

- Unpaired tag: An unpaired tag doesn't have a companion tag. Unpaired tag sometimes called stand alone tag or singular tag.

Eg:
 or
 This breaks the line

HTML Elements

- The HTML element is everything from the start tag to the end tag:

Syntax: <tagname>Content goes here...</tagname>

- Examples of some HTML elements:
- <h1>My First Heading</h1>
- My first paragraph.

- Note: Some HTML elements have no content (like the
 element). These elements are called empty elements. Empty elements do not have an end tag!

continue

Start tag	Element content	End tag
<h1>	My First Heading	</h1>
	My first paragraph.	
 	none	*none*

Empty HTML Elements

HTML elements with no content are called empty elements.
The `<br>` tag defines a line break, and is an empty element without a closing tag

Example

```
<p>This is a <br> paragraph with a line break.</p>
```

Nested HTML Elements

HTML elements can be nested (this means that elements can contain other elements).
All HTML documents consist of nested HTML elements.
The following example contains four HTML elements (<html>, <body>, <h1> and <p>):

Example

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

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

HTML Formatting

- HTML Formatting is a process of formatting text for better look and feel. HTML provides us ability to format text without using CSS. There are many formatting tags in HTML. These tags are used to make text bold, italicized, or underlined. There are almost 14 options available that how text appears in HTML and XHTML.
- In HTML the formatting tags are divided into two categories:
- Physical tag: These tags are used to provide the visual appearance to the text.
- Logical tag: These tags are used to add some logical or semantic value to the text.

Element name	Description
<b>	This is a physical tag, which is used to bold the text written between it.
	This is a logical tag, which tells the browser that the text is important.
<i>	This is a physical tag which is used to make text italic.
	This is a logical tag which is used to display content in italic.
<mark>	This tag is used to highlight text.
<u>	This tag is used to underline text written between it.
<tt>	This tag is used to appear a text in teletype. (not supported in HTML5)
<strike>	This tag is used to draw a strikethrough on a section of text. (Not supported in HTML5)
<sup>	It displays the content slightly above the normal line.
<sub>	It displays the content slightly below the normal line.
<del>	This tag is used to display the deleted content.
<ins>	This tag displays the content which is added
<big>	This tag is used to increase the font size by one conventional unit.
<small>	This tag is used to decrease the font size by one unit from base font size.

1) Bold Text

HTML and formatting elements

The HTML element is a physical tag which display text in bold font, without any logical importance. If you write anything within ..... element, is shown in bold letters.

See this example:

** **Write Your First Paragraph in bold text.** **

o/p: Write Your First Paragraph in bold text.

The HTML tag is a logical tag, which displays the content in bold font and informs the browser about its logical importance. If you write anything between ???????. , is shown important text.

See this example:

** **This is an important content****, and this is normal content** **

o/p: This is an important content, and this is normal content

2) Italic Text

HTML and formatting elements

The HTML element is physical element, which display the enclosed content in italic font, without any added importance. If you write anything within ..... element, is shown in italic letters.

See this example:

```
<p> <i>Write Your First Paragraph in italic text.</i></p>
```

Output:

Write Your First Paragraph in italic text.

The HTML tag is a logical element, which will display the enclosed content in italic font, with added semantics importance.

See this example:

```
<p><em>This is an important content</em>, which displayed in italic font.</p>
```

Output:

This is an important content, which displayed in italic font.

3) HTML Marked formatting

If you want to mark or highlight a text, you should write the content within <mark>.....</mark>.
See this example:
Do not forget to buy <mark>milk</mark> today.

Do not forget to buy milk today.

4) Underlined Text

If you write anything within <u>.....</u> element, is shown in underlined text.
See this example:

```
<p> <u>Write Your First Paragraph in underlined text.</u></p>
```

Output:
Write Your First Paragraph in underlined text.

```
<p>The following word uses a
<strike>strikethrough</strike> typeface.</p>
```

5) Strike Text

Anything written within <strike>.....</strike> element is displayed with strikethrough. It is a thin line which cross the statement.

The following word uses a ~~strikethrough~~ typeface.

Not Supported in HTML5.

The `<strike>` tag was used in HTML 4 to define strikethrough text.

```
<p><s>Only 50 tickets left!</s></p>
<p>SOLD OUT!</p>
```

~~Only 50 tickets left!~~

SOLD OUT!

6) Monospaced Font

If you want that each letter has the same width then you should write the content within <tt>.....</tt> element.

Note: We know that most of the fonts are known as variable-width fonts because different letters have different width. (for example: 'w' is wider than 'i'). Monospaced Font provides similar space among every letter.

See this example:

```
<tt>Local Echo is on</tt></p>
```

Local Echo is on

7) Superscript Text

If you put the content within ^{.....} element, is shown in superscript; means it is displayed half a character's height above the other characters.
See this example:

```
1.<p>Hello <sup>Write Your First Paragraph in superscript.</sup></p>
```

Output:

Hello Write Your First Paragraph in superscript.

8) Subscript Text

If you put the content within _{.....} element, is shown in subscript ; means it is displayed half a character's height below the other characters.
See this example:

```
1.<p>Hello <sub>Write Your First Paragraph in subscript.</sub></p>
```

Output:

Hello Write Your First Paragraph in subscript.

9) Deleted Text

Anything that puts within ~~.....~~ is displayed as deleted text.
See this example:
My favorite color is ~~blue~~ red.

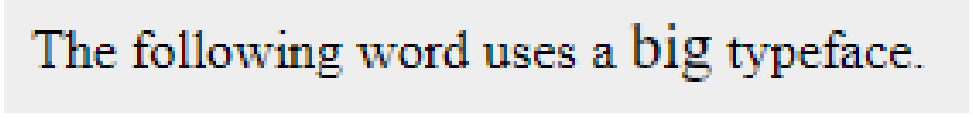
10) Inserted Text

Anything that puts within <ins>.....</ins> is displayed as inserted text.
See this example:
My favorite color is ~~blue~~ <ins>red</ins>.

11) Larger Text

If you want to put your font size larger than the rest of the text then put the content within <big>.....</big>. It increase one font size larger than the previous one.
See this example:

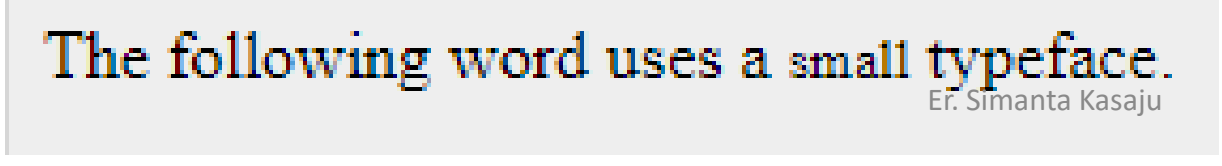
```
<p>The following word uses a <big>big</big> typeface.</p>
```



12) Smaller Text

If you want to put your font size smaller than the rest of the text then put the content within <small>.....</small>tag. It reduces one font size than the previous one.
See this example:

```
<p>The following word uses a <small>small</small> typeface.</p>
```



HTML Heading

A HTML heading or HTML h tag can be defined as a title or a subtitle which you want to display on the webpage. When you place the text within the heading tags <h1>.....</h1>, it is displayed on the browser in the bold format and size of the text depends on the number of heading.

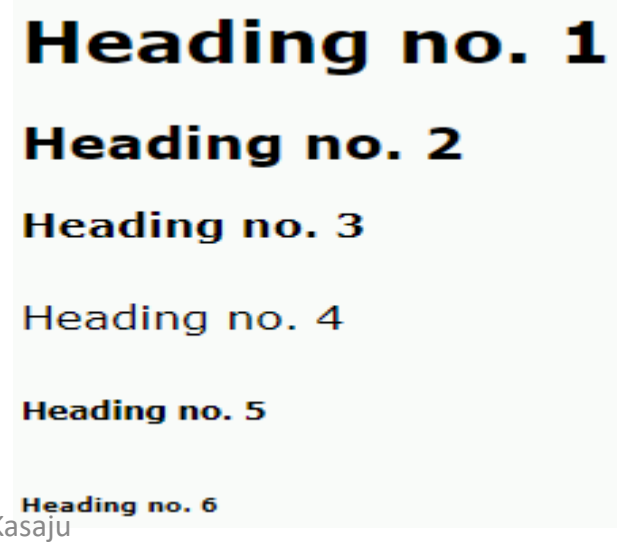
There are six different HTML headings which are defined with the <h1> to <h6> tags, from highest level h1 (main heading) to the least level h6 (least important heading).

h1 is the largest heading tag and h6 is the smallest one. So h1 is used for most important heading and h6 is used for least important.

Headings in HTML helps the search engine to understand and index the structure of web page.

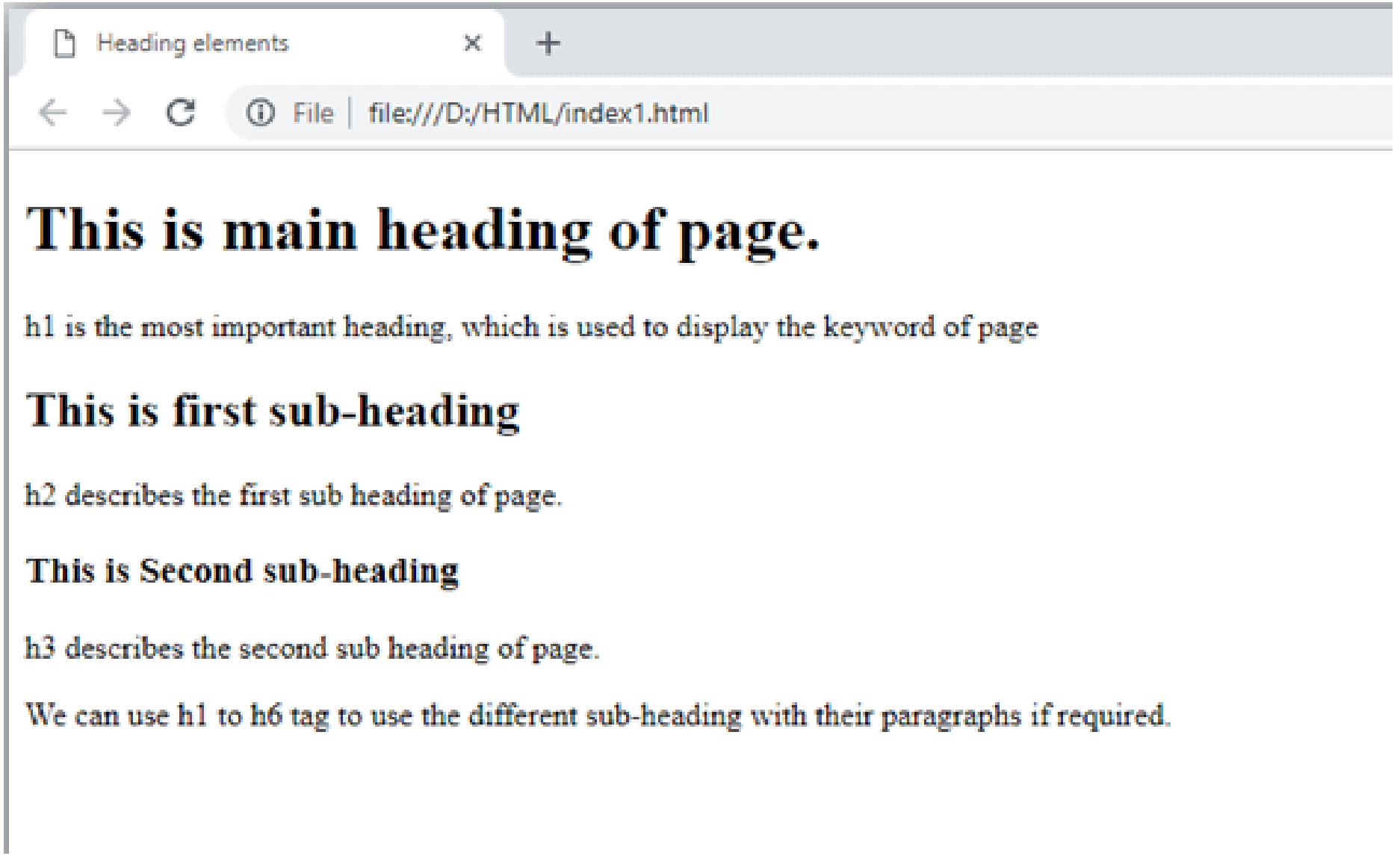
See this example:

1. **<h1>**Heading no. 1**</h1>**
2. **<h2>**Heading no. 2**</h2>**
3. **<h3>**Heading no. 3**</h3>**
4. **<h4>**Heading no. 4**</h4>**
5. **<h5>**Heading no. 5**</h5>**
6. **<h6>**Heading no. 6**</h6>**



```
<!DOCTYPE html>
<html>
<head>
<title>Heading elements</title>
</head>
<body>
<h1>This is main heading of page. </h1>
<p>h1 is the most important heading, which is used to display the keyword of page </p>
<h2>This is first sub-heading</h2>
<p>h2 describes the first sub heading of page. </p>
<h3>This is Second sub-heading</h3>
<p>h3 describes the second sub heading of page.</p>
<p>We can use h1 to h6 tag to use the different sub-heading with their paragraphs if required.
</p>
</body>
</html>
```

Output:

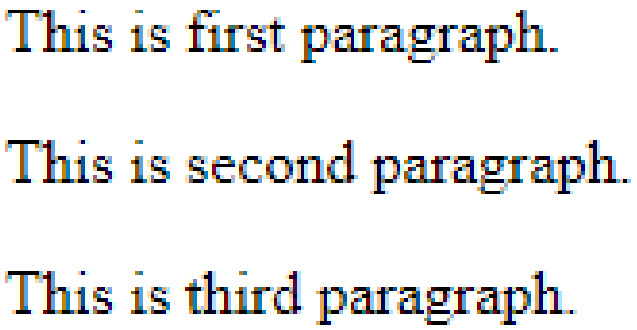

Heading elements
File | file:///D:/HTML/index1.html
This is main heading of page.
h1 is the most important heading, which is used to display the keyword of page
This is first sub-heading
h2 describes the first sub heading of page.
This is Second sub-heading
h3 describes the second sub heading of page.
We can use h1 to h6 tag to use the different sub-heading with their paragraphs if required.

Paragraph

HTML paragraph or HTML p tag is used to define a paragraph in a webpage.

Note: If we are using various <p> tags in one HTML file then browser automatically adds a single blank line between the two paragraphs.

```
<!DOCTYPE html>
<html>
<body>
<p>This is first paragraph.</p>
<p>This is second paragraph.</p>
<p>This is third paragraph.</p>
</body>
</html>
```



o/p

I am going to provide you a tutorial on HTML and hope that it will be very beneficial for you.

Look, I put here a lot of spaces but I know, Browser will ignore it.

You cannot determine the display of HTML

because resized windows may create different result.

```
<!DOCTYPE html>
<html>
<body>
<p>
I am
going to provide
you a tutorial on HTML
and hope that it will
be very beneficial for you.
</p>
<p>
Look, I put here a lot
of spaces                    but            I know, Browser will ignore it.
</p>
<p>
You cannot determine the display of HTML</p>
<p>because resized windows may create different result.
</p>
</body>
</html>
```


 and <hr> tag with paragraph

An HTML
 tag is used for line break and it can be used with paragraph elements.

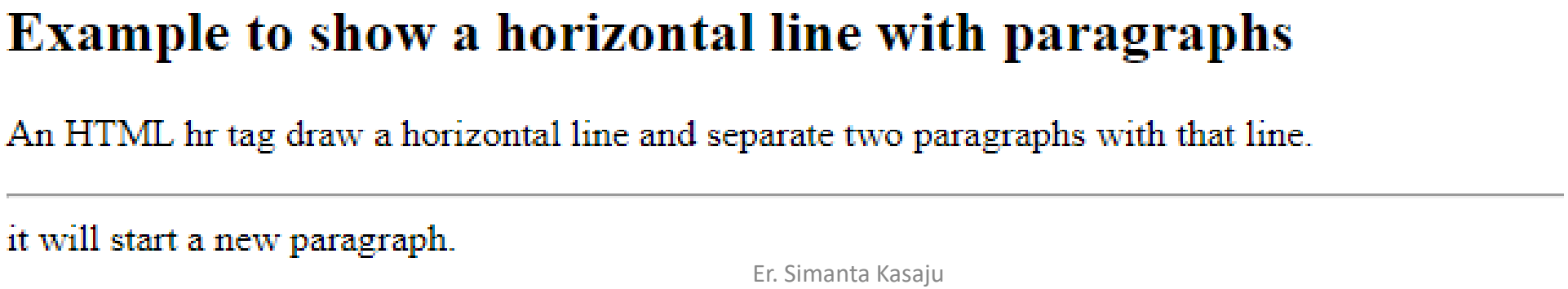
```
<!DOCTYPE html>
<html>
     <head>
        </head>
  <body>
      <h2> Use of line break with pragraph tag</h2>
          <p><br>Papa and mama, and baby and Dot,
         <br>Willie and me?the whole of the lot
               <br>Of us all went over in Bimberlie's sleigh,
                 <br>To grandmama's house on Christmas day.
          </p>
   </body>
</html>
```

Use of line break with pragraph tag

Papa and mama, and baby and Dot,
Willie and me?the whole of the lot
Of us all went over in Bimberlie's sleigh,
To grandmama's house on Christmas day.

An HTML <hr> tag is used to apply a horizontal line between two statements or two paragraphs.

```
<!DOCTYPE html>
<html>
 <head>
        </head>
 <body>
   <h2> Example to show a horizontal line with paragraphs</h2>
     <p> An HTML hr tag draw a horizontal line and separate two paragraphs with
that line.<hr> it will start a new paragraph.
     </p>
  </body>
</html>
```



HTML Phrase tag

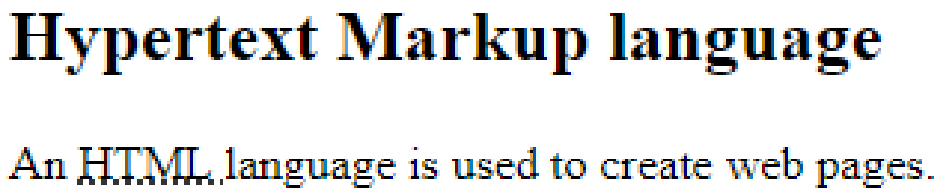
The HTML phrase tags are special purpose tags, which defines the structural meaning of a block of text or semantics of text. Following is the list of phrase tags, some of which we have already discussed in HTML formatting.

•Abbreviation tag : <abbr>
•Acronym tag: <acronym> (not supported in HTML5)
•Marked tag: <mark>
•Strong tag:
•Emphasized tag :
•Definition tag: <dfn>
•Quoting tag: <blockquote>
•Short quote tag : <q>
•Code tag: <code>
•Keyboard tag: <kbd>
•Address tag: <address>

1. Text Abbreviation tag

This tag is used to abbreviate a text. To abbreviate a text, write text between <abbr> and </abbr> tag.

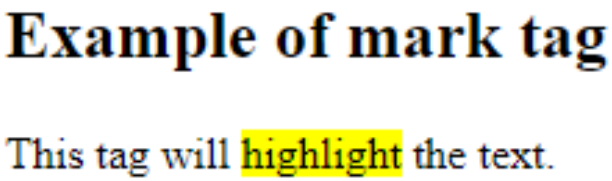
```
<!DOCTYPE html>
<html>
 <head>
            </head>
  <body>
    <h2> Hypertext Markup language </h2>
     <p>An <abbr title = "Hypertext Markup language">HTML
</abbr>language is used to create web pages.
    </p>
  </body>
</html>
```



2. Marked tag:

The content written between <mark> and </mark> tag will show as yellow mark on browser. This tag is used to highlight a particular text.

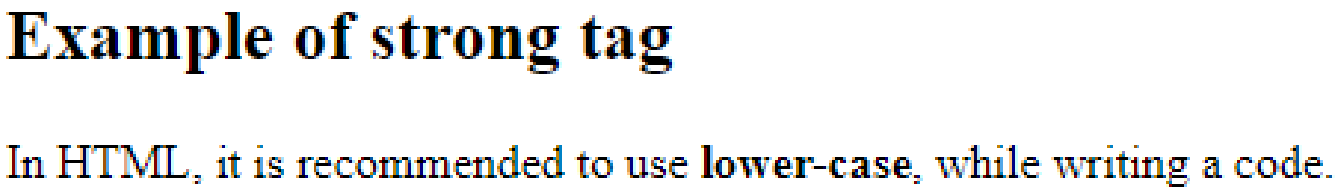
```
<!DOCTYPE html>
<html>
 <head>
            </head>
  <body>
    <h2>Example of mark tag</h2>
     <p>This tag will <mark>highlight</mark> the text.</p>
  </body>
</html>
```



3. Strong text:

This tag is used to display the important text of the content. The text written between and will be displayed as important text.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
  <body>
    <h2>Example of strong tag</h2>
     <p>In HTML, it is recommended to use <strong>lower-
case</strong>, while writing a code.
</p>
  </body>
</html>
```



4. Emphasized text

This tag is used to emphasize the text, and displayed the text in italic form. The text written between and tag will italicized the text.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
  <body>
    <h2>Example of emphasized tag</h2>
     <p>HTML is an <em>easy </em>to learn language.</p>
  </body>
</html>
```

Example of emphasized tag

HTML is an *easy* to learn language.

5. Definition tag:

When you use the <dfn> and </dfn> tags, it allow to specify the keyword of the content. Following is the example to show how to definition element.

```
<!DOCTYPE html>
<html>
 <head>
</head>
  <body>
    <h2>Example of definition element</h2>
     <p><dfn>HTML </dfn> is a markup language. </p>
  </body>
</html>
```

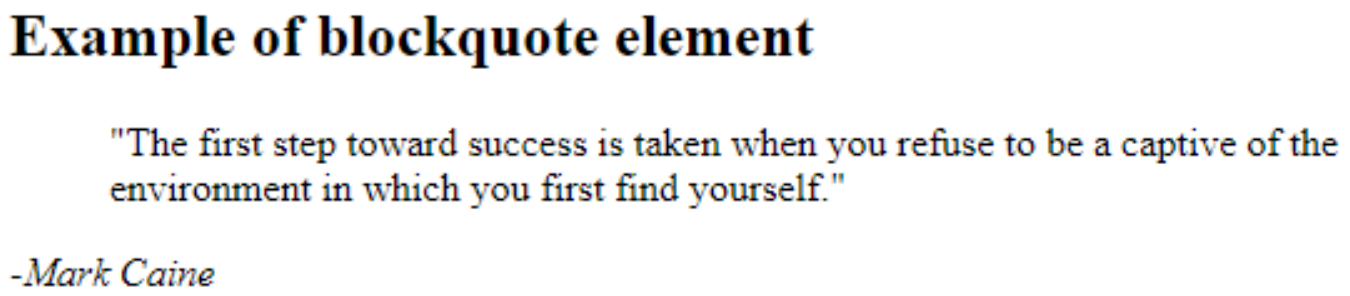
Example of definition element

HTML is a markup language.

6. Quoting text:

The HTML <blockquote> element shows that the enclosed content is quoted from another source. The Source URL can be given using the cite attribute, and text representation of source can display using **<cite> ..... </cite>element**.

```
<!DOCTYPE html>
<html>
 <head>
</head>
  <body>
    <h2>Example of blockquote element</h2>
     <blockquote cite="https://www.keepinspiring.me/famous-
quotes/"><p>"The first step toward success is taken when you
refuse to be a captive of the environment in which you first find
yourself."</p></blockquote>
     <cite>-Mark Caine</cite>
  </body>
</html>
```



7. Short Quotations:

An HTML <q> ..... </q> element defines a short quotation. If you will put any content between <q> ..... </q>, then it will enclose the text in double quotes.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
 <body>
   <p>Great Motivational quote</p>
    <p>Steve Jobs said: <q>If You Are Working On Something
That You Really Care About, You Don?t Have To Be Pushed. The
Vision Pulls You.</q>?</p>

 </body>
</html>
```

Great Motivational quote

Steve Jobs said: "If You Are Working On Something That You Really Care About, You Don?t Have To Be Pushed. The Vision Pulls You."?

8. Code tags

The HTML <code> </code> element is used to display the part of computer code. It will display the content in monospaced font.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
 <body>
   <p>First Java program</p>
    <p><code>class Simple{ public static void main(String
args[]){
     System.out.println("Hello Java"); }} </code>
   </p>

 </body>
</html>
```

First Java program

```
class Simple{ public static void main(String args[]){ System.out.println("Hello Java");
}}
```

9. Keyboard Tag

In HTML the keyboard tag, <kbd>, indicates that a section of content is a user input from keyboard.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
 <body>
   <p>Keyboard input. </p>
  <p>Please press <kbd>Ctrl</kbd> + <kbd>Shift</kbd> +
t<kbd></kbd> to restore page on chrome.</p>

 </body>
</html>
```

Keyboard input.

Please press Ctrl + Shift + t to restore page on chrome.

10. Address tag

An HTML <address> tag defines the contact information about the author of the content. The content written between <address> and </address> tag, then it will be displayed in italic font.

```
<!DOCTYPE html>
<html>
 <head>
            </head>
 <body>
   <p>Address Tag</p>
  <address> You can ask your queries by contact us on <a
href=" ">example123@newdomain.com</a>
  <br> You can also visit at: <br>58 S. Garfield Street. Villa Rica,
GA 30187.
  </address>
 </body>
</html>
```

Address Tag

You can ask your queries by contact us on example123@newdomain.com
You can also visit at:
58 S. Garfield Street. Villa Rica, GA 30187.

HTML <meta> tag

- HTML <meta> tag is used to represent the metadata about the HTML document. It specifies page description, keywords, copyright, language, author of the documents, etc.
- The metadata does not display on the webpage, but it is used by search engines, browsers and other web services which scan the site or webpage to know about the webpage.
- With the help of meta tag, you can experiment and preview that how your webpage will render on the browser.
- The <meta> tag is placed within the <head> tag, and it can be used more than one times in a document.

Following are some specific syntaxes of meta tag which shows the different uses of meta Tag.

1. **<meta** charset="utf-8"**>**
->It defines the character encoding. The value of charset is "utf-8" which means it will support to display any language.

2. **<meta** name="keywords" content="HTML, CSS, JavaScript, Tutorials"**>**
->It specifies the list of keyword which is used by search engines.

3. **<meta** name="description" content= "**Web technology** refers to the means by which computers communicate with each other using markup languages and multimedia packages. It gives us a way to interact with hosted information, like websites."**>**

->It defines the website description which is useful to provide relevant search performed by search engines.

4. **<meta** name="author" content="Authorname"**>**
->It specifies the author of the page. It is useful to extract author information by Content management system automatically.

5. **<meta** http-equiv ="refresh" content="5"**>**
->It specifies to provide instruction to the browser to automatically refresh the content after every 50sec (or any given time).

6. <meta http-equiv="refresh" content="5; url=https://www.Facebook.com">
In the above example we have set a URL with content so it will automatically redirect to the given page after the provided time.

7. <meta name="viewport" content="width=device-width, initial-scale=1.0">
It specifies the viewport to control the page dimension and scaling so that our website looks good on all devices. If this tag is present, it indicates that this page is mobile device supported

HTML Comment Tags

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 start tag, but not in the end tag.
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.

HTML Attribute

- HTML attributes are special words which provide additional information about the elements or attributes are the modifier of the HTML element.
- Each element or tag can have attributes, which defines the behavior of that element.
- Attributes should always be applied with start tag.
- The Attribute should always be applied with its name and value pair.
- The Attributes name and values are case sensitive, and it is recommended by W3C that it should be written in Lowercase only.
- You can add multiple attributes in one HTML element, but need to give space between two attributes.

Syntax

```
<element attribute_name="value">content</element>
```

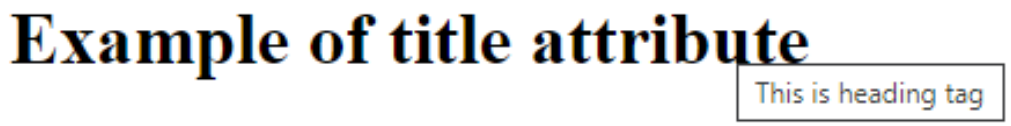
The title attribute in HTML

Description: The title attribute is used as text tooltip in most of the browsers. It display its text when user move the cursor over a link or any text. You can use it with any text or link to show the description about that link or text. In our example, we are taking this with paragraph tag and heading tag.

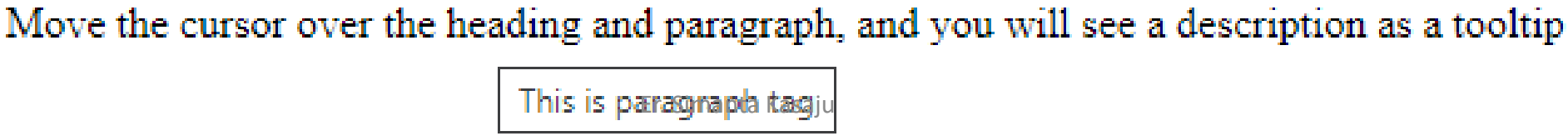
Example

With <h1> tag:

```
<h1 title="This is heading tag">Example of title attribute</h1>
```




```
<p title="This is paragraph tag">Move the cursor over the heading and paragraph, and you will see a description as a tooltip</p>
```



The href attribute in HTML

Description: The href attribute is the main attribute of <a> anchor tag. This attribute gives the link address which is specified in that link. **The href attribute provides the hyperlink, and if it is blank, then it will remain in same page**.

```
<!DOCTYPE html>
<html>
  <head>
 </head>
<body>
  <h1>Display of href attribute</h1>
  <p>Below is the link of anchor tag, click the link and see the
next page</p>
  <a href="https://www.facebook.com">This is a link</a>
</body>
</html>
```

The src Attribute

The **src** attribute is one of the important and required attribute of **<img>** element. It is source for the image which is required to display on browser. This attribute can contain image in same directory or another directory. The image name or source should be correct else browser will not display the image.

```
<!DOCTYPE html>
<html>
  <head>
 </head>
<body>
  <h1>Example of src attribute</h1>
  <p>HTML images can be diplayed with the help of image tag
and its attribute src gives the sourc for that image</p>
  <img src= “img.jpg" height="400" width="600">
</body>
</html>
```

Example of src attribute

HTML images can be diplayed with the help of image tag and its attribute src gives the sourc for that image

HTML Lists

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1.Ordered List or Numbered List (ol) : An ordered list. This will use different schemes of numbers to list your items.
2.Unordered List or Bulleted List (ul) : An unordered list. This will list items using plain bullets.
3.Description List or Definition List (dl) : A definition list. This arranges your items in the same way as they are arranged in a dictionary.

HTML Unordered Lists

An unordered list is a collection of related items that have no special order or sequence. This list is created by using HTML <ul> tag. Each item in the list is marked with a bullet. Each list start with <li> tag.

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Unordered List</title>
</head>
<body>
<ul>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>
</html>
```

This will produce the following result –

- Beetroot
- Ginger
- Potato
- Radish

Example: Following is an example where we used <ul type =
"square">

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Unordered List</title>
</head>
<body>
<ul type = "square">
<li>Computer</li>
<li>Desktop</li>
<li>Labtop</li>
<li>Tablet</li>
</ul>
</body>
</html>
```

This will produce the following result –

- Computer
- Desktop
- Laptop
- Tablet

The type Attribute

- disc
- circle
- square
- none

To represent different ordered lists, there are 4 types of attributes in <ul> tag.

Type	Description
Type "disc"	This is the default style. In this style, the list items are marked with bullets.
Type "circle"	In this style, the list items are marked with circles.
Type "square"	In this style, the list items are marked with squares.
Type "none"	In this style, the list items are not marked .

```
<!DOCTYPE>
<html>
<body>
<ul type="circle">
 <li>Apple</li>
 <li>Banana</li>
 <li>Mango</li>
 <li>Grapes</li>
</ul>
</body>
</html>
```

- Apple
- Banana
- Mango
- Grapes

```
<!DOCTYPE>
<html>
<body>
<ul type="disc">
 <li>Apple</li>
 <li>Banana</li>
 <li>Mango</li>
 <li>Grapes</li>
</ul>
</body>
</html>
```

- Apple
- Banana
- Mango
- Grapes

HTML Ordered Lists

If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used. This list is created by using <ol> tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
<ol>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

This will produce the following result –

1. Beetroot
2. Ginger
3. Potato
4. Radish

- Numeric Number (1, 2, 3)
- Capital Roman Number (I II III)
- Small Roman Number (i ii iii)
- Capital Alphabet (A B C)
- Small Alphabet (a b c)

To represent different ordered lists, there are 5 types of attributes in <ol> tag.

Type	Description
Type "1"	This is the default type. In this type, the list items are numbered with numbers.
Type "I"	In this type, the list items are numbered with upper case roman numbers.
Type "i"	In this type, the list items are numbered with lower case roman numbers.
Type "A"	In this type, the list items are numbered with upper case letters.
Type "a"	In this type, the list items are numbered with lower case letters.

```
<!DOCTYPE html>
<html>
<body>
<ol type="i">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
</body>
</html>
```

i. HTML
ii. Java
iii. JavaScript
iv. SQL

```
<!DOCTYPE html>
<html>
<body>
<ol type="A">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
</body>
</html>
```

A. HTML
B. Java
C. JavaScript
D. SQL

```
<!DOCTYPE html>
<html>
<body>
<ol type="a">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
</body>
</html>
```

a. HTML
b. Java
c. JavaScript
d. SQL

```
<!DOCTYPE html>
<html>
<body>
<ol>
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
</body>
</html>
```

1. HTML
2. Java
3. JavaScript
4. SQL

start attribute

The start attribute is used with ol tag to specify from where to start the list items.
<ol type="1" start="5"> : It will show numeric values starting with "5".
<ol type="A" start="5"> : It will show capital alphabets starting with "E".
<ol type="a" start="5"> : It will show lower case alphabets starting with "e".
<ol type="I" start="5"> : It will show Roman upper case value starting with "V".
<ol type="i" start="5"> : It will show Roman lower case value starting with "v".

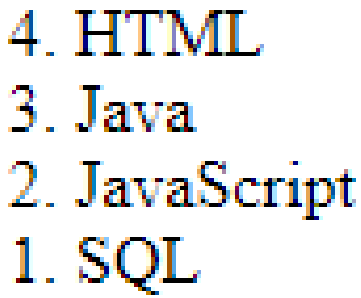
```
<!DOCTYPE html>
<html>
<body>
<ol type="i" start="5">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
</body>
</html>
```

v. HTML
vi. Java
vii. JavaScript
viii. SQL

reversed Attribute:

This is a Boolean attribute of HTML <ol> tag, and it is new in HTML5 version. If you use the reversed attribute with
tag then it will numbered the list in descending order (7, 6, 5, 4.....1).

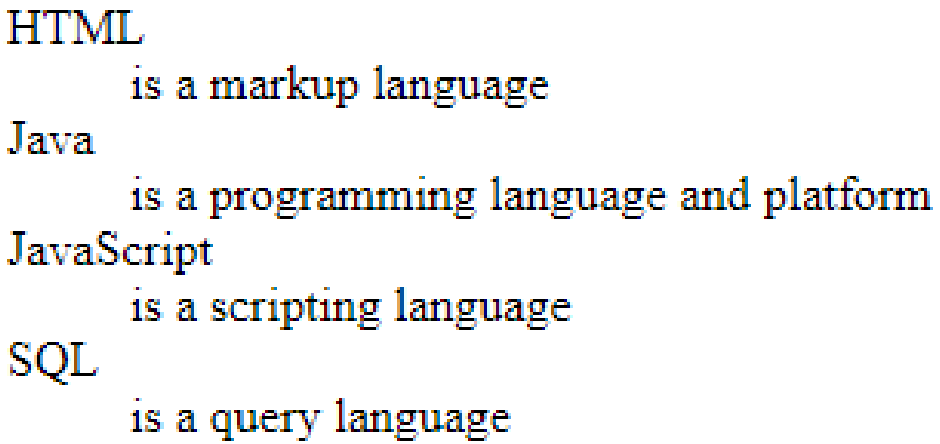
```
<!DOCTYPE html>
<html>
 <head>
  </head>
 <body>
 <ol reversed>
   <li>HTML</li>
    <li>Java</li>
    <li>JavaScript</li>
    <li>SQL</li>
  </ol>
 </body>
</html>
```



HTML Description List | HTML Definition List

HTML Description List or Definition List displays elements in definition form like in dictionary. The <dl>, <dt> and <dd> tags are used to define description list.
The 3 HTML description list tags are given below:
1.<dl> tag defines the description list.
2.<dt> tag defines data term.
3.<dd> tag defines data definition (description).

```
<!DOCTYPE html>
<html>
<body>
<dl>
  <dt>HTML</dt>
  <dd>is a markup language</dd>
  <dt>Java</dt>
  <dd>is a programming language and
platform</dd>
 <dt>JavaScript</dt>
 <dd>is a scripting language</dd>
  <dt>SQL</dt>
  <dd>is a query language</dd>
</dl>
</body>
</html>
```



HTML nested list

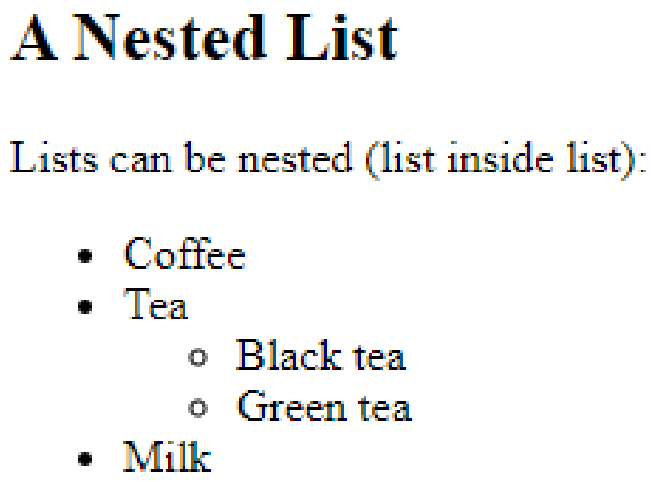
- The list inside another list can be considered as the nested list,
- We can insert ordered list inside unordered list or vice versa.

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

<h2>A Nested List</h2>
<p>Lists can be nested (list inside list):</p>

<ul>
 <li>Coffee</li>
 <li>Tea
  <ul>
   <li>Black tea</li>
   <li>Green tea</li>
  </ul>
 </li>
 <li>Milk</li>
</ul>

</body>
</html>
```



Types of Memory in a Computer

1. **Primary Memory**
   a. RAM
   b. ROM
      i. PROM
      ii. EPROM
         - UVEPROM
         - EEPROM
2. **Secondary Memory**
   a. Magnetic Disk
      - Hard Disk Drive
      - Floppy Disk
   b. Magnetic Tape

FULL FORM

RAM
Random Access memory

ROM
Read only memory

PROM
Programmable read only memory

EPROM
erasable programmable read only memory

EEPROM
electrically erasable programmable read-only memory

- <article>
- <aside>
-
- <cite>
- <s>
- <samp>
- <time>
- <var>
- <wbr>
- <font>
- <meter>
- <pre>
- <progress>

<article>

The `<article>` tag specifies independent, self-contained content.
An article should make sense on its own and it should be possible to distribute it independently from the rest of the site.

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

<h1>The article element</h1>

<article>
  <h2>Google Chrome</h2>
  <p>Google Chrome is a web browser developed by Google, released in 2008. Chrome is the world's most popular web browser today!</p>
</article>

<article>
  <h2>Mozilla Firefox</h2>
  <p>Mozilla Firefox is an open-source web browser developed by Mozilla. Firefox has been the second most popular web browser since January, 2018.</p>
</article>

<article>
  <h2>Microsoft Edge</h2>
  <p>Microsoft Edge is a web browser developed by Microsoft, released in 2015. Microsoft Edge replaced Internet Explorer.</p>
</article>

</body>
</html>
```

The article element

Google Chrome

Google Chrome is a web browser developed by Google, released in 2008. Chrome is the world's most popular web browser today!

Mozilla Firefox

Mozilla Firefox is an open-source web browser developed by Mozilla. Firefox has been the second most popular web browser since January, 2018.

Microsoft Edge

Microsoft Edge is a web browser developed by Microsoft, released in 2015. Microsoft Edge replaced Internet Explorer.

The `<aside>` tag defines some content aside from the content it is placed in.
The aside content should be indirectly related to the surrounding content.

```
<!DOCTYPE html>
<html>
    <head></head>
<body>
    <h1>Web</h1>
    <p>Web technology refers to the means by which computers communicate with each other using markup languages and mult
imedia packages. It gives us a way to interact with hosted information, like websites.
        Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS)</p>
        <h1>Web</h1>
<p>Web technology refers to the means by which computers communicate with each other using markup languages and multim
edia packages. It gives us a way to interact with hosted information, like websites.
        Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS)</p>

<aside style="width: 25%; float:right; background-color: blue; padding: 10px; ">
    <p>Web technology refers to the means by which computers communicate with each other using markup languages and mult
imedia packages. It gives us a way to interact with hosted information, like websites.
        Web technology involves the use of hypertext markup lang
</aside>
</body>
</html>
```

 tag is not supported in HTML5 so used style

```
<!DOCTYPE html>
<html>
<head></head>
<body>
<h1 style="text-align:center;"> This is in center
</h1>
</body>
</html>
```

This is in center

The `<cite>` tag defines the title of a creative work (e.g. a book, a poem, a song, a movie, a painting, a sculpture, etc.).
Note: A person's name is not the title of a work.
The text in the `<cite>` element usually renders in *italic*.

```
<!DOCTYPE html>
<html>
<body>
<h1>The cite element</h1>
 <p><cite>MunaMadan</cite> by Laxmi pd. devkota</p>
</body>
</html>
```

The tag defines a division or a section in an HTML document.

The tag is used as a container for HTML elements - which is then styled with CSS or manipulated with JavaScript.

```
<!DOCTYPE html>
<html>
    <head></head>
<body>
    <div style= "border: 10 px;"><h1>Web</h1><div></div>
    <div style="background-
color: crimson; border: 10 px;"><p>Web technology refers to the means by which computers commun
icate with each other using markup languages and multimedia packages. It gives us a way to inte
ract with hosted information, like websites.
        Web technology involves the use of hypertext markup language (HTML) and cascading style
 sheets (CSS)
    </p>
</div>
        <div style="background-color: brown;border: 10 px;"><h1>Web</h1></div>
<div style="background-
color: aqua;border: 10 px;"><p>Web technology refers to the means by which computers communicat
e with each other using markup languages and multimedia packages. It gives us a way to interact
 with hosted information, like websites.
        Web technology involves the use of hypertext markup language (HTML) and cascading style
 sheets (CSS)
    </div>
    </p>
</body>
</html>
```

Web

Web technology refers to the means by which computers communicate with each other using markup languages and multimedia packages. It gives us a way to interact with hosted information, like websites. Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS)

Web

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Not Supported in HTML5.

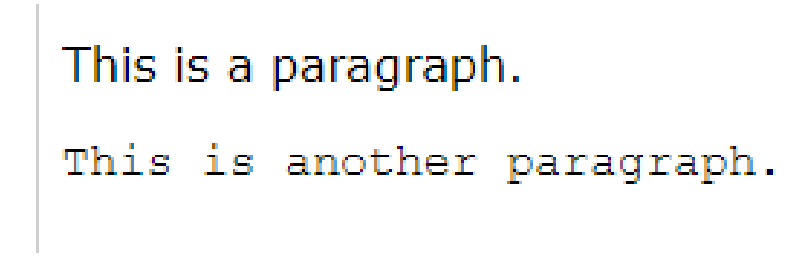
The `<font>` tag was used in HTML 4 to specify the font face, font size, and color of text.

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

<p style="color:red">I have red tshirt.</p>
<p style="color:blue"> I have blue
jeans.</p>

</body>
</html>
```

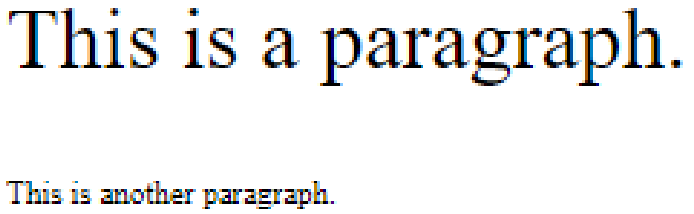
I have red tshirt.

I have blue jeans.

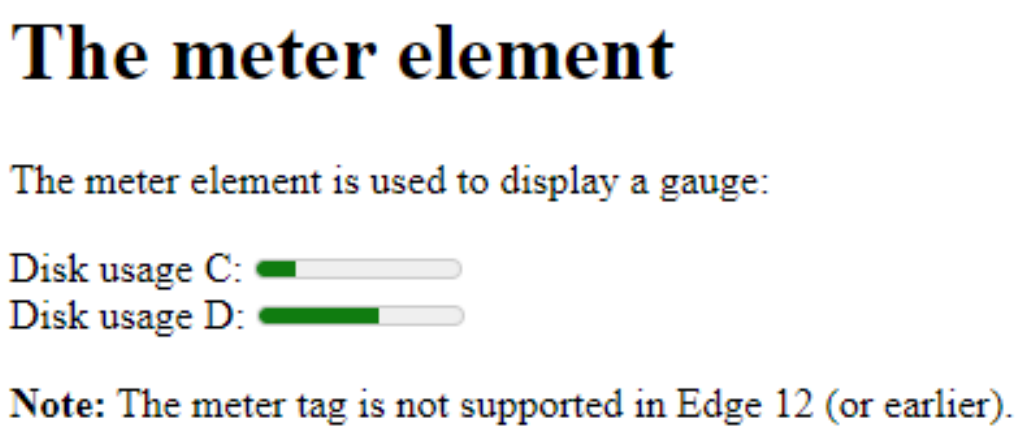
```
<!DOCTYPE html>
<html>
<body>
<p style="font-family:verdana">This is a paragraph.</p>
<p style="font-family:'Courier New'">This is another
paragraph.</p>
</body>
</html>
```




```
<!DOCTYPE html>
<html>
<body>
<p style="font-size:30px">This is a paragraph.</p>
<p style="font-size:11px">This is another
paragraph.</p>
</body>
</html>
```



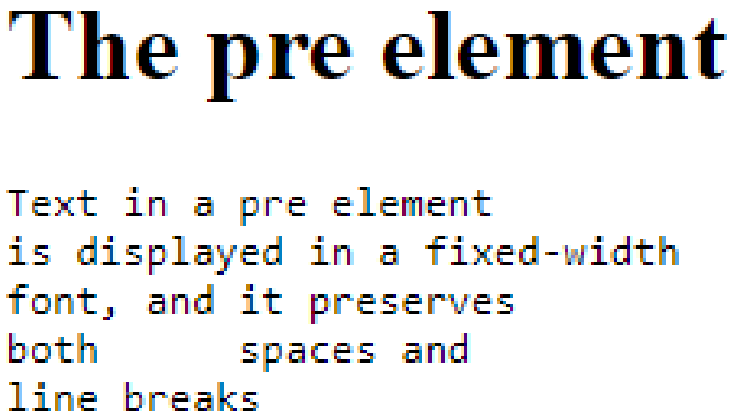
The <meter> tag defines a scalar measurement within a known range, or a fractional value. This is also known as a gauge.
Examples: Disk usage, the relevance of a query result, etc.
Note: The <meter> tag should not be used to indicate progress (as in a progress bar). For progress bars, use the <progress> tag.
Tip: Always add the <label> tag for best accessibility practices!




```
<!DOCTYPE html>
<html>
<body>
<h1>The meter element</h1>
<p>The meter element is used to display a gauge:</p>
<label for="disk_c">Disk usage C:</label>
<meter id="disk_c" value="2" min="0" max="10">2 out of 10</meter><br>
<label for="disk_d">Disk usage D:</label>
<meter id="disk_d" value="0.6">60%</meter>
<p><strong>Note:</strong> The meter tag is not supported in Edge 12 (or
earlier).</p>
</body>
</html>
```

The <pre> tag defines preformatted text.
Text in a <pre> element is displayed in a fixed-width font, and the text preserves both spaces and line breaks. The text will be displayed exactly as written in the HTML source code.

```
<!DOCTYPE html>
<html>
<body>
<h1>The pre element</h1>
<pre>
Text in a pre element
is displayed in a fixed-width
font, and it preserves
both      spaces and
line breaks
</pre>
</body>
</html>
```

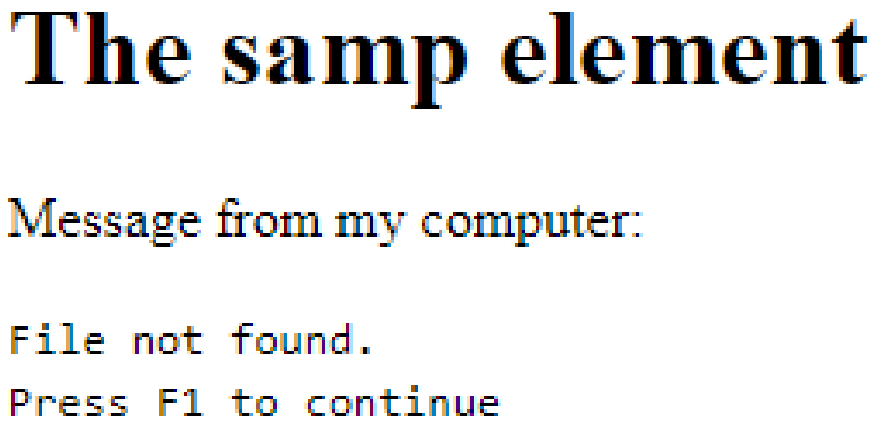


The <progress> tag represents the completion progress of a task.
Tip: Always add the <label> tag for best accessibility practices!

```
<!DOCTYPE html>
<html>
<body>
<h1>The progress element</h1>
<label for="file">Downloading progress:</label>
<progress id="file" value="32" max="100"> 32% </progress>
</body>
</html>
```

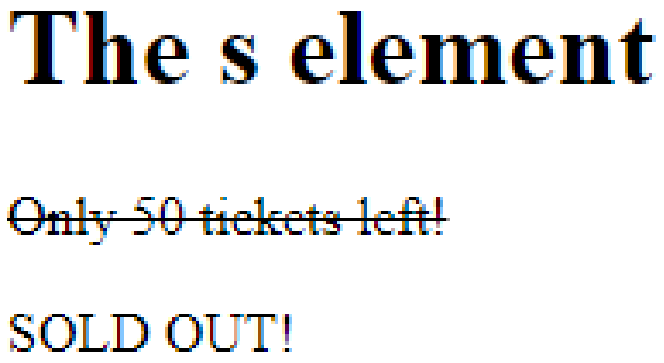
The <samp> tag is used to define sample output from a computer program. The content inside is displayed in the browser's default monospace font.
Tip: This tag is not deprecated. However, it is possible to achieve richer effect by using CSS.

```
<!DOCTYPE html>
<html>
<body>
<h1>The samp element</h1>
<p>Message from my computer:</p>
<p><samp>File not found.<br>Press F1 to
continue</samp></p>
</body>
</html>
```

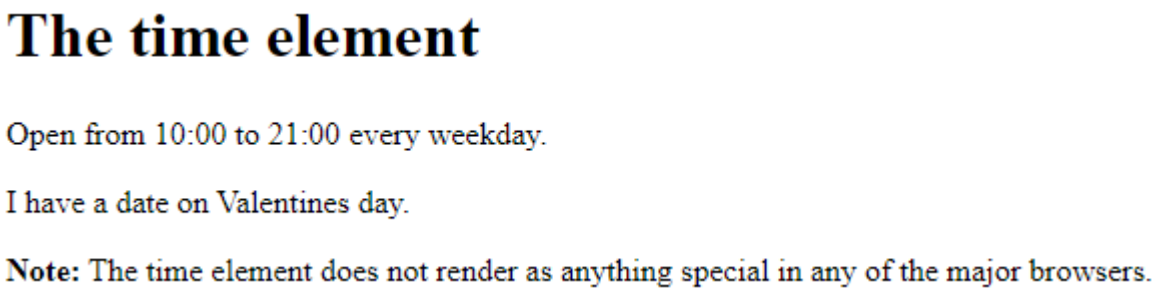


The <s> tag specifies text that is no longer correct, accurate or relevant. The text will be displayed with a line through it.
The <s> tag should not be used to define deleted text in a document, use the <del> tag for that.

```
<!DOCTYPE html>
<html>
<body>
<h1>The s element</h1>
<p><s>Only 50 tickets left!</s></p>
<p>SOLD OUT!</p>
</body>
</html>
```

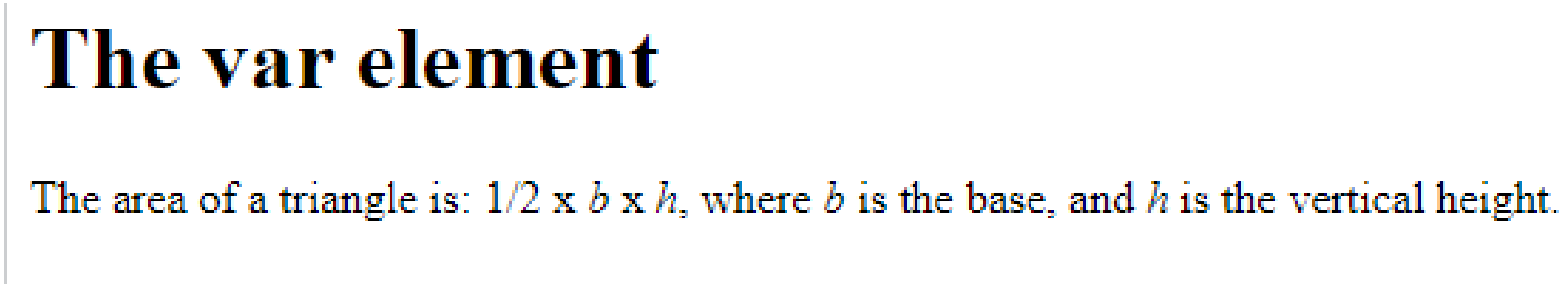


The `<time>` tag defines a specific time (or datetime).
The `datetime` attribute of this element is used translate the time into a machine-readable format so that browsers can offer to add date reminders through the user's calendar, and search engines can produce smarter search results.




```
<!DOCTYPE html>
<html>
<body>
<h1>The time element</h1>
<p>Open from <time>10:00</time> to <time>21:00</time>
every weekday.</p>
<p>I have a date on <time datetime="2008-02-14
20:00">Valentines day</time>.</p>
<p><b>Note:</b> The time element does not render as
anything special in any of the major browsers.</p>
</body>
</html>
```

The <var> tag is used to defines a variable in programming or in a mathematical expression.
The content inside is typically displayed in *italic*.




```
<!DOCTYPE html>
<html>
<body>
<h1>The var element</h1>
<p>The area of a triangle is: 1/2 x <var>b</var> x <var>h</var>,
where <var>b</var> is the base, and <var>h</var> is the
vertical height.</p>
</body>
</html>
```

The `<wbr>` (Word Break Opportunity) tag specifies where in a text it would be ok to add a line-break.
Tip: When a word is too long, the browser might break it at the wrong place. You can use the `<wbr>` element to add word break opportunities.

```
<!DOCTYPE html>
<html>
<body>
<h1>The wbr element</h1>
<p>Try to shrink the browser window, to view how the very long word in
the paragraph below will break:</p>
<p>This is a
veryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryver
yvery<wbr>longwordthatwillbreakatspecific<wbr>placeswhenthebrows
erwindowisresized.</p>
<p><b>Note:</b> The wbr element is not supported in Internet
Explorer 11 (or earlier).</p>
</body>
</html>
```

The wbr element

Try to shrink the browser window, to view how the very long word in the paragraph below will break:

This is a veryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryvery longwordthatwillbreakatspecificplaceswhenthebrowserwindowisresized.

Note: The wbr element is not supported in Internet Explorer 11 (or earlier).