

## Core Module-2

### Hyper Text Markup Language (HTML)

#### Introduction to Internet, Browsing, & Emailing

Internet can be defined as an interconnected network of computers.

The concept of Internet originated in year 1969.

A special computer DNS (Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name.

Internet is accessible to every user all over the world.

Example:- DNS Server will resolve a name <http://www.edunetworld.com> to a particular IP address to uniquely identify the computer on which this website is hosted.

Protocol used is TCP/IP.

This protocol connects any two networks that differ in hardware, software and design.

#### Basics of Internet Architecture

- Internet Protocol  
    • Transmission Control Protocol  
    • Application Protocol
- Spiral

## Internet Protocol

The Internet Protocol (IP) is the method or protocol by which data is sent from one computer to another on the Internet.

Internet protocol is of two types:-

1 IPv4

2 IPv6

1 IPv4  $\Rightarrow$  0 - 255 [4 octet]

$2^{3^2}$  - 4 billion people can access it.

2 IPv6  $\Rightarrow$  0 - FFFF [8 octet]

65,535 [1-octet = 16 bit]  
(Alphanumeric.)

$2^{128}$  - 340 Trillion people can access it.

## Transmission Control Protocol

- It provides end to end transmission of data.
- It is a very complex protocol as it supports recovery of lost packets.
- Data transferred in the form of packets or bits.

## Application Protocol

- Third layer in internet architecture is the application layer which has different protocols on which the internet services are built.
- Some of the examples of internet services include email (SMTP), file transfer (FTP) etc.

## Services on Internet

- World Wide Web
- Websites

## World Wide Web

- Web documents can be linked together, and are called "HyperText".
- It is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources.
- Tim Berners Lee invented the www in 1989.
- HTTP and Links are foundation for www.

## Websites

- A collection of associated web pages is called "Website".
- Websites are housed on the web Servers.

## Accessing Web Browser

- A Web browser is a software application which enables a user to display and interact with text, images, videos, music, & other information that could be on a website.
- "World Wide Web" or simple "Web" is the name given to all the resources of internet.
- Installation
- Launching a Web Browser
- Opening a webpage
- Popular Web browsing Software

## Installation

- Download the browser installer. Click on the blue "Download Chrome" button to begin downloading the browser.

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- Run the installer. The downloaded file should then appear in the bottom of your browser.
- Install Google Chrome.
- Finalize the installation.

### Launching a Web Browser

- Web browser is an application that is located on a computer's disk. Once you have an internet connection, you can launch a web browser using the following methods.

Step-1 - Go to "Start Menu"

Step-2 - From the menu opened, click on the web browser Chrome.

- Method 2 - Alternate way is to click the shortcut icon on the Taskbar or desktop.

### Opening a Webpage

- There are several ways to access a web page like using URLs, hyperlinks, using navigating tools, search engine, etc.

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## Popular Web Browsing Software

- Google Chrome
- Mozilla Firefox
- Opera
- Internet Explorer

## Services available on the Internet

- Data Transfer
- Internet banking
- E-commerce
- E-learning
- E-Governance
- Browsing and Chatting
- E-Mail

## Search Engines

- Search Engine is an application that allows you to search for content on the web.

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## Most popular search engines

- Google
- Bing
- Yahoo
- Ask
- AOL

## Advantages of Internet

- Information, knowledge, and learning.
- Connectivity, communication, & sharing.
- Address, mapping, and contact information.
- Banking, bills, and shopping.
- Selling and making money.
- Entertainment

## Structure and Working of E-mail

- Electronic Mail is a method of exchanging messages between people using electronic devices
- Email operates across computer networks, which is primarily called as Internet.
- The structure of the E-mail address is  
*Spiral*      *username@domain name*

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- An example of E-mail address is deishti@gmail.com

deishti@gmail.com  
Username Domain Name

## How Email works on the Internet?

- To send Internet e-mail, requires an Internet connection and access to a mail server. The standard protocol used for sending Internet e-mail is called SMTP (Simple Mail Transfer Protocol)
- The SMTP protocol is used to both send and receive email messages over the Internet.
- When a message is sent, the email client sends the message to the SMTP server. If the recipient of the email is local the message is kept on the server for accessing by the POP, IMAP or other mail services for later retrieval.

## Structure of an Email message

- To
- CC
- BCC
- Subject
- Attachment
- Body
- Signature

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## Advantages

- Reliable
- Speed
- Inexpensive
- Waste Reduction

## Disadvantages

- Overload
- Junk
- Can be hacked
- Lacks the personal touch

## Internet Applications

- Sending and receiving email.
- Searching and browsing information.
- Copying files between computers.
- Conducting financial transactions.
- Navigating.

## Introduction to HTML

### What is HTML?

- HTML stands for Hyper Text Markup language.
- HTML describes the structure of a Web page.
- HTML consists of a series of elements.

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- HTML elements are represented by tags.
- "Hypertext" refers to the hyperlinks that an HTML page may contain.
- "Markup language" refers to the way tags are used to define the page layout and elements within the page.
- HTML page extension always will be .html.

### Structure of an HTML document

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

## Structure

`<!DOCTYPE html>` → Define the document type

`<html>` → Define a html document

`<head>` → Contains meta data / information about the document

`<title> </title>` → Define a title for the document

`</head>`

`<body>` → Define the documents body

`</body>`

`</html>`

`<p>` → Define a paragraph

`<h1> to <h6>` → Define html headings

`<br>` → Insert a Single line break, Empty & non-container Tag

`<hr>` → Horizontal row, Non-container, Empty Tag

`<b>` → Its a container Tag, To Bold the content

<u> → Underline, Container Tag

<i> → Italic, Container Tag

<pre> → Preformatted text (It preserves both spaces & line break, pre element defines pre-formatted text).

<strong> → To make the content bold.

<em> → Emphasize, To make the content Italic.

<mark> → If you want to mark or highlight a text, you should write the content within mark tag.

<strike> → Anything which is written in strike element is displayed with the strike through. It is a thin line which cross the statement.

<Superscript> → <sup> Superscript is used to display half a character's height above the other character.

<Subscript> → <sub> Subscript is used to display half a character's height below the other character.

Insert <ins> → Anything that we put within the inserted Tag is displayed as inserted Tag.

Larger Text <big> → It increase the font size larger than the previous one.

Smaller Text <small> → It decrease the font size smaller than the rest of the text.

### HTML formatting Tags

| Element Name        | Description  |
|---------------------|--|
| <b>                 | This is a physical Tag, which is used to bold the text.                    |
| <strong>            | 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 the text italic.             |
| <em><br>(Emphasize) | This is a logical Tag, which is used to display the content in Italic.     |

<mark>

This is a physical tag.  
Mark tag is used to highlight  
the text or content.

<u>

U Tag is used to underline  
the text or content.

<strike>

Strike tag is used to  
draw a strike through  
or a thin line on the  
text.

<sup>

Sup stands for Superscript.  
It is used to display the  
content slightly above  
the normal text.

<sub>

Sub stands for Subscript.  
It is used to display the  
content slightly below  
the normal text.

<del>

Del stands for deleted.  
Deleted tag is used to  
display the deleted content.

<ins>

Inserted

Inserted tag display the  
content which is added.

<big>

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It is used to increase font size.

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<small>

Small tag is used to decrease the font size of the text.



To add image

<style>

Style attribute is basically used to add styles to the element, like colors.

<p style = "color: red">

Single quote & Double quote

<p title = 'Sajan "kumar" Shauma'>  
Kumar with Double quote </p>

<p title = "Sajan 'kumar' Shauma"> Kumar  
with Single quote </p>

To comment the content ]  
<!-- --> ]

# HTML programs

Date.....

```
<!DOCTYPE html>
<html>
<head>
<title>
```

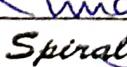
## HTML Align attribute

```
</title>
</head>
<body>
<h1> ALIGN ATTRIBUTE </h1>
<p align = "center"> HSLA <br> Hue Saturation
Lightness Alpha </p>
<p align = "right"> HEX <br> Hexadecimal </p>
<p align = "center"> ![link](link) edunet
foundation </p>
</body>
</html>
```

## href

```
<!DOCTYPE html>
<html>
<head>
<title>
```

## Src Attribute

```
</title>
</head>
<body>
<p><h1> IMAGE Src Attribute </h1></p><br/>
<p>

</body>
</html>
```

Color

```

<!DOCTYPE html>
<html>
<head>
<title>
    HTML color
</title>
</head>
<body>
    <h1> HTML COLOR </h1>
    <p> this is for Background color </p>
    <h1 style = "background-color: red"> RED </h1>
    <h2 style = "background-color: blue"> BLUE </h2>
    <h3 style = "background-color: green"> GREEN </h3>
    <h4 style = "background-color: grey"> GREY </h4>
    <h5 style = "background-color: dodgerblue"> DODGERBLUE </h5>
</body>
</html>

```

HEX Color

```

<html>
<head>
<title>
    HTML HEX COLOR
</title>
</head>
<body>
    <h1> HEX COLOR </h1>
    <p> HEX stands for Hexadecimal Color <br>
Spiral

```

# xxggbb rr(Red) gg(GREEN) BB(BLUE)  
 hexadecimal values between 00 & ff  
 (Same as decimal 0-255) </p>

<h2 style="background-color: #ff0000;">  
 # ff0000 (RED) </h2>

<h2 style="background-color: #00ff00;">  
 # 00ff00 (Green) </h2>

<h2 style="background-color: #0000ff;">  
 # 0000ff (Blue) </h2>

</body>  
</html>

## HSLA Color

<html>  
<head>  
<title>  
 HTML HSLA COLOR  
</title>  
</head>  
<body>  
<h1> HSL COLOR </h1>  
<p> HSLA stands for Hue Saturation Lightness  
 Alpha <br>

The alpha parameter color value is a number  
 between 0 to 1 </p>

<p align="center">  
 Spiral

Date.....

<h3 style="background-color: hsla(0, 100%, 50%, 0.3);>  
HTML TAG </h3>

<h3 style="background-color: hsla(240, 100%, 50%, 0.1);>  
paragraph </h3>

</body>  
</html>

## HSL Color

<html>  
<head>  
<title>

### HTML HSL COLOR

</title>

</head>

<body>

<h1> HSI COLOR </h1>

<p> HSL stands for Hue Saturation Lightness <br> HSL is color wheel from 0 to 360.

0 is red, 120 is green, and 240 is blue. </p>

<h3 style="background-color: hsl(0, 100%, 50%);>  
hsl(0, 100%, 50%) [RED] </h3>

<h3 style="background-color: hsl(240, 100%, 50%);>  
hsl(240, 100%, 50%) [BLUE] </h3>

</body>  
</html>

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RGB

```

<html>
<head>
<title> RGB Color Value </title>
</head>
<body>
<h1> COLOR VALUE [RGB] </h1>
<h4> RGB stands for Red - Green - Blue </h4>
<h3 style="background-color:rgb(255,0,0);">
    rgb(255, 0, 0) </h3>
<h3 style="background-color:rgb(100,200,100);">
    rgb(100, 200, 100) </h3>
</body>
</html>

```

RGBA

```

<html>
<head>
<title> RGBA Color Value </title>
</head>
<body>
<h1> COLOR VALUE [RGBA] </h1>
<h4> RGBA stands for RED - GREEN - BLUE - ALPHA
    range (0 to 1) </h4>
<h3 style="background-color:rgba(255,0,0,0.9);"
    HTML </h3>
<h3 style="background-color:rgba(255,233,71,1);> DCF
    </h3>
</body>
</html>

```

## Audio

Date.....

```
<html>
<head>
<title>
    HTML NEW Element
</title>
</head>
<body>
<h1>HTML NEW ELEMENT</h1>
<h3> Example of Audio Element </h3>
<audio controls><!-- Video Element -->
<source src="#" />
Your browser does not support the audio element
</audio>
</body>
</html>
```

## Block level

```
<html>
<head>
<title>
    HTML Element
</title>
</head>
<body>
<h1> BLOCK LEVEL ELEMENT </h1>
<h2><div style="background-color: yellow">
A <b> Block level element </b> always starts
with a new line & takes the full width of web page
from left to right.
</div>
```

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`<div style = "background-color: red"> OSI Reference Model </div>`

`<div style = "background-color: green"> Apple </div>`

`<div style = "background-color: orange"> Mango </div></h2>`

`<h1> INLINE ELEMENT </h1>`

`<h2> <span style = "background-color: pink"> <b>`

Inline element `</b>` does not start with new-line  
and take width. `</span>`

`<span style = "background-color: red"> Red </span></h2>`

`</body>`

`</html>`

## Downloading Progress

`<html>`

`<head>`

`<title>`

HTML New Element

`</title>`

`</head>`

`<body>`

`<h1> Downloading progress </h1>`

`<h3> Example of Downloading progress </h3>`

`<label> Downloading progress : </label>`

`<progress value = "84" max = "100" > 35% </progress>`

`</body>`

`</html>`

Date.....

## New Element

```
<html>  
<head>  
<title>
```

### HTML New Element

```
</title>  
</head>  
<body>  
<h1>HTML NEW ELEMENT </h1>  
<h3>Example of VIDEO Element </h3>  
<video width="300" height="200" controls autoplay>  
<Source src="#" />
```

Your browser does not support the audio element.

```
<audio>  
<audio controls autoplay>  
<Source src="#" />
```

Your browser does not support the audio element.

```
</audio>  
</body>  
</html>
```

## Placeholder

```
<html>  
<head>  
<title>
```

### HTML New Element

```
</title>  
</head>  
<body>
```

Spiral

```

<h1 style="color: blue"> Place Holder </h1>
<h3 style="font-size: 30px; font-style: italic;">
    Example of Placeholder attribute </h3>
<label style="font-size: 40px; color: red;"> FORM:</label>
<form>
    <input type="text" name="fname" placeholder="First Name">
    <br>
    <input type="text" name="lname" placeholder="Last Name">
    <br>
    <input type="text" name="dob" placeholder="DD-MM-YYYY">
    <br>
    <input type="text" name="email" placeholder="abc@gmail.com">
    <br>
    <input type="Submit" value="Submit">
</form>
</body>
</html>

```

## SVG (Scalable Vector Graphics)

```

<html>
    <head>
        <title>
            HTML New Element
        </title>
    </head>
    <body>
        <h1> HTML NEW ELEMENT </h1>
        <h3> Example of SVG (Scalable Vector Graphics) </h3>
        <svg height="100">

```

Spiral

Date.....

```
<circle cx="50" cy="50" r="50" fill="blue">
</svg>

<svg width="300" height="200">
  <polygon points="100,10,40,198,
<polygon points="100,10 40,198 190,78 10,78 160,198"
  style="fill:none; stroke:purple; stroke-width:5; fill-rule:
  evenodd;" />
</svg>

<svg width="40" height="400">
  <rect width="100" height="100" fill="green"/>
</svg>
<h2>
```

<h1> Example of Nav Element </h1>

```
<nav>
  <a href="/html">HTML </a>
  <a href="/css"> CSS </a>
  <a href="/javascript"> JAVASCRIPT </a>
  <a href="/java"> JQUERY </a>
</nav>
</body>
</html>
```

### Code

```
<html>
  <body>
    <p>Some programming Code </p>
    <code>
      x = 5 ; <br>
      y = 4 ; <br>
      z = x + y
    </code>
```

Spiral

```
x=5; <br>
y=4; <br>
z=x+y
</html>
```

## fieldset

```
<html>
<body><h2> Fieldset Attribute </h2>
<fieldset style = "width:500px; margin: auto; background-
color: lightblue">
    <legend> Student Details </legend>
    <label> Enter your First Name : <input type = "text"
        required> </label> <br> <br>
    <label> Enter your Last Name : <input type = "text"
        required> </label> <br> <br>
    <label> Enter your DOB : <input type = "date" required>
        </label> <br> <br>
    <label> Enter your Email ID : <input type = "email" required>
        </label> <br> <br>
    <button type = "submit" onclick = "alert ('Your Form
        Submitted Successfully')"> Register </button>
    <button type = "reset"> Reset </button>
</fieldset>
</body>
</html>
```

## List

```
<html>
<body>
    <ul style="list-style-type: none;">
        <li> Item 1 </li>
        <li> Item 2 </li>
        <li> Item 3 </li>
    </ul>
</body>
</html>
```

<h1> HTML list </h1>

<h3> There are three types of lists: <br>

1. Unordered list <br>

2. Ordered list <br>

3. Description list

</h3>

<h2> An Unordered HTML list </h2>

<ul type = "square">

<li> list item 1 </li>

<li> list item 2 </li>

</ol>

<h2> A Description HTML list </h2>

<dl>

<dt> Description title (dt) </dt>

<dd> Description Detail (dd) </dd>

<dt> Description title (dt) </dt>

<dd> Description Detail (dd) </dd>

</dl>

</body>

</html>

row & colspan

<html>

<body>

<h1> HTML TABLE </h1>

<h2> COL SPAN </h2>

<table border = "2px">

<tr> colspan = "5px" >

<th colspan = "2" > Table header </th>

Spiral

```
</tr>
<tr>
  <td width="20%"> Table cell 1 </td>
  <td> Table cell 2 </td>
</tr>
<tr>
  <td> table cell 1 </td>
  <td> table cell 2 </td>
</tr>
<tr>
  <td> table cell 1 </td>
  <td> table cell 2 </td>
</tr>
</table>
<hr>
<h1> ROWSPAN </h1>
<table border="2px">
<tr>
  <th rowspan="3" width="20%"> Table header </th>
  <td width="30%"> table cell 1 </td>
</tr>
<tr>
  <td width="30%"> table cell 2 </td>
</tr>
<tr>
  <td width="30%"> table cell 3 </td>
</tr>
</table>
</body>
</html>
```

## Border Color

Date.....

```
<html>
<body>
<h1> HTML BORDER COLOR</h1>
<p> This is for Border Color </p>
<h1 style = "border: 2px solid blue;"> Apple </h1>
<h1 style = "border: 3px solid yellow;"> Mango </h1>
<h1 style = "border: 4px solid green;"> Orange </h1>
<h1 style = "border-style: dotted;"> Hello </h1>
</body>
</html>
```

## Deleted Text

```
<html>
<body>
<h1> DELETED TEXT</h1>
<p> Anything <mark><del> that we put in the
Deleted text </del></mark> is displayed as
deleted text. </p>
</body>
</html>
```

## Image

```
<html>
<body>
<p> <h1> IMAGE Src Attribute </h1> </p> <br>
<p> We are using Src attribute of image tag. </p>
<img src = "address" width = "500" height = "100" alt =
"Edunet" > <br>
```

Spiral

```

```

```
</body>
```

```
</html>
```

## Inserted Text

```
<html>
```

```
<body>
```

```
<h1> Inserted Text </h1>
```

<p> anything that we put within the <mark> <ins>  
 INSERTED TEXT </ins> </mark> is displayed as  
 inserted text. </p>

```
</body>
```

```
</html>
```

## Larger Text

```
<html>
```

```
<body>
```

```
<h1> LARGER TEXT </h1>
```

<p><h3> We are using <mark> <big> LARGER  
 TEXT </big> </mark> element of HTML. </h3>  
</p>

```
</body>
```

```
</html>
```

## Mark Text

<p> HTML stands for <mark> Hyper Text Markup  
 language </mark>. </p>

Special

Strike

Date.....

`<p>` Anything which is written in `<mark>` STRIKE Element `</mark>` is displayed with the strike through. `<strike>` Strike through `</strike>`

Subscript

`<p><mark><h1> H <sub>2</sub> O </h1>`  
`<h1> H <sub>2</sub> S O <sub>4</sub> </h1>`  
`</mark></p>`  
`</h1>`

Superscript

`<h1> a <sup>2</sup> + b <sup>2</sup> + 2ab =`  
`(a+b) <sup>2</sup> </h1>`

frame

`<h1> HTML iframe </h1>`

`<h2>` The `<iframe>` tag specifies an inline frame. An inline frame is used to embed another document within the current HTML document.

`</h2>`

`<frameset cols="25%, 50%, 25%">`  
`</frameset>`

iframe

`<h1> HTML iframe </h1>`

`<iframe src="frame1.html" width="50%" height="200%">`  
`</iframe><br>`

Spiral

Date.....

<iframe src="address" width="50%" height="100%>

</iframe> <br>

<iframe src="address" width="50%" height="400%>

</iframe>

## Mapembed

<h1> Map Embed </h1>

<iframe src="Map address" width="600" height="400">

## Address

<h1> Address Element </h1>

<address>

Yours Truly <br>

Drishti <br>

H. No. 1 Narela <br>

Delhi - 110040

</address>

## BDO (bi-directional override (bdo))

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

<bdo dir="ltr"> Drishti </bdo>

## Cite

The first version of HTML was written by <cite> TIM  
BERNERS LEE </cite>

Shivali

## Different Editors used for Webpage Development

- 1 Notepad
- 2 Notepad++
- 3 Sublime text
- 4 jEdit HTML Editor
- 5 Adobe Brackets
- 6 SynWrite Editor
- 7 Visual Code Editor

### What is Static Website?

- Website is a collection of related web pages that may contain text, images, audio & video.
- A static website contains web pages with fixed content.
- A static site can be built by simply creating a few HTML pages & publishing them to a Web Server.

### What is Dynamic Website?

- Dynamic website is a collection of dynamic web pages whose content changes dynamically.
- It accesses content from a database or Content Management System (CMS).
- Dynamic website uses client-side scripting script

or Server - Side Scripting, or both to generate dynamic content.

### Top 10 uses of HTML

- Web pages development
- Web document creation
- Internet navigation
- Cutting edge features
- Responsive images on web pages
- Client - Side storage
- Offline capabilities usage
- Data Entry Support with HTML
- Game development usage
- Native APIs usage to enrich website

Date.....

## CSS (Cascading Style Sheets)

It is the language for describing the presentation of Web pages, including colours, layout, and fonts, thus making our web page presentable to the users.

CSS was first proposed by Håkon Wium Lie on October 10, 1994.

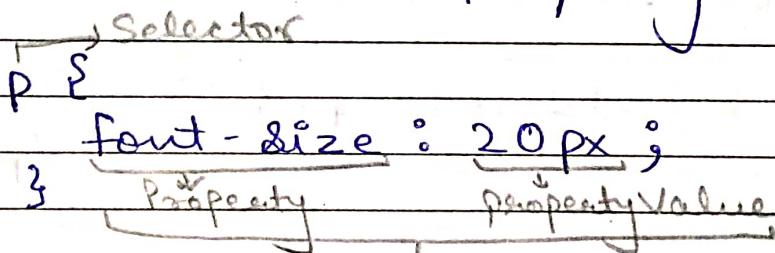
### Why CSS?

- o CSS saves time
- o Easy Maintenance
- o Search Engines
- o Superior Styles to HTML
- o Offline Browsing

### CSS Syntax

3 Elements to a CSS Statement

- o Selector
- o Property
- o Value

  
p { font-size : 20px ;  
} Property propertyValue

Declaration

Spiral

## CSS Comments

- Comments are used to explain the code, and may help when you edit the source code at a later date.
- Comments are ignored by browsers.

`/* ----- */`

## Types of CSS

- Inline Style Sheet
- Internal Style Sheet
- External Style Sheet

### Inline Style (within body Tag)

- Inline styles are placed within an HTML element in the code.
- Inline styles do not have selectors because it's written inside the html element.

`<p style="color:blue; font-size:50px;"> Inline </p>`

### Internal Style (Within Head Tag)

- An Internal CSS is used to define a style for a single HTML page.

- An internal CSS is defined in the `<head>` section of an HTML page, within a `<Style>` element.

```

<head>
<Style>
P { background-color: red;
    font-family: serif;
    font-color: white; }
</Style>
</head>
<body>
<p> Embedded Content </p>
</body>

```

### External Style (External JS File)

- External styles can be reused to apply on more than one page by only linking the style sheet to the web page.

```

<head>
<link rel="stylesheet" type="text/css" href=
"style.css">
</head>

```