Web Programming

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What is a Network?

The **network** is **two or more connected** computer which can share resource like a printer, an internet connection, application, etc. It is a collection of computer systems and devices which are linked together using a wireless network or via communication devices and transmission media.

The network provides connectivity between computers and devices within a restricted range where only one entity is controlled or authorized to manage the entire system.

The Two Main Types of Computer Networks

There are different computer network types, depending on how large they are and how much geographical area they cover. The most common types are Local Area Network (LAN) and Wireless Local Area Network (WAN).

Local Area Network: This is a group of devices such as computers, servers, switches, and printers that are located in the same building. These are near each other. The most common use of LAN is in houses or offices. A common type of LAN is an Ethernet LAN, where two or more computers are connected to the Internet through switches.

The Two Main Types of Computer Networks

There are different computer network types, depending on how large they are and how much geographical area they cover. The most common types are Local Area Network (LAN) and Wireless Local Area Network (WAN).

Local Area Network: Wireless Local Area Network: This is a local area network that uses wireless communication instead of wired communication. In WLAN, two computers use wireless communication to form a local area network. A wifi router is very common in this case. There are no cables involved in this case.

What is the Internet ?

The **Internet (Interconnected Network)** is a global system which use TCP/IP protocol suite to link various types of electric devices worldwide. The internet is a collection of interconnected devices which are spread across the globe. It is a **network of networks** that consist of public, private, public, sales, finance, academic, business and government networks. The internet is a type of network and called network of networks.

Why do you need Internet?

The network provides connectivity between computers and devices within a restricted range. In this system, only one entity is controlled or authorized to manage the entire system.

- ❑ The Internet is a network of computers at different locations around the world.
- ❑ Allows you to send an email message from every location
- ❑ Helps you to send or receive files between different computers
- ❑ Using the Internet, you can participate in discussion groups, such as mailing lists and newsgroups.

- ❑ It allows all small, medium and large size businesses to sell their products with less investments.
- ❑ It makes information available worldwide. So there's no need to look for a good book in different libraries, as you can search for information over the Internet.
- ❑ It helps you updated with the latest news and technologies.
- ❑ It helps us meet people with the same interests as communities, forums, chats, websites, etc.
- ❑ It eases bills payment by facilitating bill payment online with the credit card and saves us time spent to stand up in the queue

Applications of Internet

- ➢ **E-Commerce** (auction, buying, selling products etc.)
- ➢ **Research** (on-line journals, magazines, information etc.)
- ➢ **Education** (e-learning courses, virtual classroom, distance learning)
- ➢ **E-Governance** (online filing of application (Income Tax), on-line application forms etc.)
- ➢ **On-line ticket booking** (airplane tickets, rail tickets, cinema hall tickets etc.)
- ➢ **On-line payments** (credit card payments etc.)
- ➢ **Video conferencing**
- ➢ **Exchange of** views, music, files, mails, folders, data, information etc.
- ➢ **Outsourcing jobs** (work flow software)
- ➢ **Social networking** (sites like facebook, linkedin, twitter)
- ➢ **E-Telephony** (sites like skype)

What is Electronic Mail?

The Electronic mail (e-mail) is a computer-based application for the exchange of messages between users. A worldwide e-mail network allows people to exchange e-mail messages very quickly. E-mail is the electronic equivalent of a letter, but with advantages in timeliness and flexibility. While a letter will take from one day to a couple of weeks to be delivered, an e-mail is delivered to the intended recipient's mailbox almost instantaneously, usually in the multiple-second to subminute range. This is the case whether the e-mail is exchanged between people on the same floor of a business, or between friends at opposite points on the globe.

Internet and the World Wide Web

- ❑ Gmail
- ❑ Outlook
- ❑ Proton Mail
- ❑ AOL
- ❑ Zoho Mail
- ❑ iCloud Mail
- ❑ Yahoo! Mail
- ❑ GMX
- ❑ Hey (as a bonus - not free, but new)

Internet and the World Wide Web

Comparison Of The Best Email Providers

Email Provider	Mailbox storage	No. of Supported languages	Supports use of own domain	Best For
Gmail	15 GB	71	Yes	It is best as an overall email provider.
HubSpot	--	6	No	Email Marketing
Sendinblue	--	3	Yes	Email Marketing
Aweber	NA	19	Yes	All types of businesses and digital marketing agencies
Outlook	15 GB	106	Yes	Multiple app integrations
Yahoo Mail	1 TB	27	–	Spam Blocking
Zoho mail	Lite: 5GB Standard: 30GB Professional: 100GB	16	Yes	Home Businesses
AOL mail	--	54	–	Unlimited storage

1) Gmail

Price: Free.

There are three plans for G Suite –

Basic ($5 per user/month),

Business ($10 per user/month), and

Enterprise ($25 per user/month).

Depending on the plan you choose, you will get more storage, support, and access to applications.

Gmail

1. Gmail is an email service provided by Google.
2. It is accessible through web and using third-party programs. It can be accessed on iOS and Android mobile devices. It allows you to share up to 25 MB through emails. Files greater than 25 MB can also be shared through Google Drive.
3. Gmail is used for personal as well as business communications.

1) Gmail

Pros:

➤ It is accessible from any device.

➤ Undo Send for emails.

➤ Email forwarding.

➤ Powerful search.

➤ Provides security with two-step verification.

➤ Supports many keyboard shortcuts.

➤ You can use it in offline mode as well.

Video Conferencing

Video conferencing is an online technology that allows users in different locations to hold face-to-face meetings without having to move to a single location together. This technology is particularly convenient for business users in different cities or even different countries because it saves time, expenses, and hassles associated with business travel. Uses for video conferencing include holding routine meetings, negotiating business deals, and interviewing job candidates.

Video Conferencing

Video conferencing is live, visual connection between two or more remote parties over the internet that simulates a face-to-face meeting. Video conferencing is important because it joins people who would not normally be able to form a face-to-face connection.

Internet and the World Wide Web

What are the 20 most popular video conferencing software for 2022?

1. RingCentral MVP
2. BrainCert
3. GoToMeeting
4. GoToWebinar
5. Slack
6. Lifesize
7. Skype
8. RingCentral Video
9. Zoom
10. Cisco Webex
11. Townscript Live
12. Google Meet
13. Ryver
14. HighFive
15. Zoho Cliq
16. Workplace by Facebook
17. LiveWebinar
18. Onstream Media
19. Sendbird Calls
20. Proficonf

Network Protocol

➢ A network protocol is an established set of rules that determine how data is transmitted between different devices in the same network. Essentially, it allows connected devices to communicate with each other, regardless of any differences in their internal processes, structure or design.

List of Network Protocol

There are thousands of different network protocols, but they all perform one of three primary actions:

- Communication

- Network management

- Security

Communication

Communication protocols allow different network devices to communicate with each other. They are used in both analog and digital communications and can be used for important processes, ranging from transferring files between devices to accessing the internet.

Network Management

Network management protocols define and describe the various procedures needed to effectively operate a computer network. These protocols affect various devices on a single network — including computers, routers and servers — to ensure each one, and the network as a whole, perform optimally.

The functions of network management protocols include the following:

Network Management

- **Network Connection:** These protocols establish and maintain stable connections between different devices on the same network.
- **Link aggregation:** Link aggregation protocols allow you to combine multiple network connections into one link between two devices. This works to increase the strength of the connection and helps sustain the connection should one of the links fail.
- **Troubleshooting:** Troubleshooting protocols allow network administrators to identify errors affecting the network, evaluate the quality of the network connection, and determine how administrators can fix any issues.

02

HTML

Hyper Text Markup Language

HTML

HTML stands for **Hyper Text Markup Language**, which is the most widely used language on Web to develop web pages. HTML was created by **Berners-Lee** in late **1991** but "HTML 2.0" was the first standard HTML specification which was published in 1995. HTML 4.01 was a major version of HTML and it was published in late 1999. Though HTML 4.01 version is widely used but currently we are having HTML-5 version which is an extension to HTML 4.01, and this version was published in 2012.

HTML

Hypertext refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.

As its name suggests, HTML is a Markup Language which means you use HTML to simply "mark- up" a text document with tags that tell a Web browser how to structure it to display.

What is HTML5?

HTML5 is an advanced version of HTML. It contains all the features of HTML along with new tags like <video> , <audio> and <canvas>. There are also tags for including semantics, and these tags are <article>, <header>, <footer> etc. HTML5 improves the HTML to support the latest multimedia and new features, including graphics, music, etc.

HTML vs HTML5

HTML is the markup language used for building web pages. HTML5 is the fifth version of HTML. In HTML5, many of the older elements present in the HTML were modified, or new elements having better functionality were added.

HTML vs HTML5

- It runs smoothly on all old browsers. Eg: Google Chrome, Mozilla Firefoxetc.

- It is not mobile friendly.
- External plugins like Adobe flash reader are required to use audio, video etc.
- JavaScript is not allowed to run on the browser directly.
- Cannot get the true location of the user by using a web browser.
- Syntaxes for doc type declaration or the character encoding is too long and complicated.

- It runs smoothly on all new browsers. Eg: Google Chrome version 61 and up, Mozilla Firefox version 4 to 63 etc.
- It is mobile friendly
- Audio and video can easily be used by using tags like
- Allows JavaScript to run on the browser directly by using JS Web worker API.
- Can easily get the location of a user using a browser with the help of JS GeoLocation API.
- Syntaxes are short and simple.

Advantages and Disadvantages of HTML5

Advantages:

- HTML It provides support for audio, video, and other multimedia content by using tags like <audio>,<video>,<canvas> etc.

- There are many page layout options available in HTML5. In HTML, you can only find page layout tags like div, span, etc. But in HTML5, there are many more tag options available like header, footer, article, section, etc.

Advantages and Disadvantages of HTML5

Advantages:

❑ HTML5 supports Search Engine Optimisation(SEO). Search engine optimization helps the websites to know about the popularity of their content and also provides insights on how to improve the content to increase the traffic to the websites.

❑ HTML5 provides more flexible storage options. HTML used the concept of cookies to store temporary data, but HTML5 is capable of using a user-side database like SQL. It also allows the user to view previously visited page data in offline mode.

Advantages and Disadvantages of HTML5

Disadvantages:

- HTML5 Can only be run on modern browsers. Not compatible with older versions of various browsers, e.g., Google Chrome version less than 60, Mozilla version 2 and 3.6, etc.
- There is no standard video format available. For example, H.264 video format is supported by all the web browsers but not by Firefox; similarly, Ogg Theory video format is supported by all the web browsers but not by Explorer.

Advantages and Disadvantages of HTML5

Disadvantages:

- The multi-platform support provided by HTML5 sometimes leads to more complex code. Also, it becomes necessary to run all web applications in all formats to check the credibility of the code.
- HTML5 is still in the development phase; therefore, it might appear that a few features that worked before are not working now. Thus developers need to stay updated while using HTML5.

HTML Tags:

HTML tags are the hidden keywords and used to create web pages in different format. Most of the tags contain two parts, opening tags and closing tags. The text of opening and closing tags are the same but the closing tags contains forward slash (/) character. There are some tags which do not require closing tags.

<!DOCTYPE>

Hypertext <!DOCTYPE...>This tag defines the document type and HTML version. All HTML documents must start with a <!DOCTYPE> declaration. The declaration is not an HTML tag. It is an "information" to the browser about what document type to expect.

Browser Support

Element					
<!DOCTYPE>	Yes	Yes	Yes	Yes	Yes

<html>

This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.

<head>

The <head> tag in HTML is used to define the head portion of the document which contains information related to the document.

The <head> tag contains other head elements such as <title>, <meta>, <link>, <style> <link> etc.

<title>

The <title> tag defines the title of the document. The title must be text-only, and it is shown in the browser's title bar or in the page's tab.

The <title> tag is required in HTML documents!

The contents of a page title is very important for search engine optimization (SEO)! The page title is used by search engine algorithms to decide the order when listing pages in search results.

<title>

Here are some tips for creating good titles:

- Go for a longer, descriptive title (avoid one- or two-word titles)

- Search engines will display about 50-60 characters of the title, so try not to have titles longer than that

- Do not use just a list of words as the title (this may reduce the page's position in search results)

1. So, try to make the title as accurate and meaningful as possible!

<body>

The <body> tag in HTML is used to define the main content present inside an HTML page. It is always enclosed within <html>tag. The <body> tag is the last child of <html> tag. A body tag contains starting as well as an ending tag.

<body> Tag

Attributes: There are many attributes in the <body> tag which are depreciated from HTML5 are listed below:

- **background:** It contains the URL of the background image. It is used to set the background image.
- **bgcolor:** It is used to specify the background color of an image.
- **alink:** It is used to specify the color of the active link.
- **link:** It is used to specify the color of visited links.
- **text:** It specifies the color of the text in a document.
- **vlink:** It specifies the color of visited links.

Unclosed HTML Tags

Some HTML tags are not closed, for example br and hr.

**
 Tag:** br stands for break line, it breaks the line of the code.

<hr> Tag: hr stands for Horizontal Rule. This tag is used to put a line across the webpage.

Paragraph Tags

The **\<p\>** HTML element represents a paragraph. Paragraphs are usually represented in visual media as blocks of text separated from adjacent blocks by blank lines and/or first-line indentation, but HTML paragraphs can be any structural grouping of related content, such as images or form fields

\<p\>PPTech Computer And Education Center.

This is the first paragraph of text. **\</p\>**

\<p\>PPTech Computer And Education Center.

This is the Second paragraph of text. **\</p\>**

Complete Example

```
<!DOCTYPE html>
<html>
<head>
          <title>HTML Elements Reference</title>
</head>
<body>
PPTech Computer & Education Center

</body>
</html>
```

HTML 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.

<h1>Heading no. 1</h1>

<h2>Heading no. 2</h2>

<h3>Heading no. 3</h3>

<h4>Heading no. 4</h4>

<h5>Heading no. 5</h5>

<h6>Heading no. 6</h6>

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.

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.

1) **Bold Text (<b>):** This is a physical tag, which is used to bold the text written between it. To bold text, use the **<b>**or**<strong>** tags

2) **Italic Text (<i>):** This is a physical tag which is used to make text italic.

3) **Underline Text(<u>):** This tag is used to underline text written between it.

4) **Superscript and Subscript:** To offset text either **upward** or **downward** you can use the **<sup>**tags and **<sub>.**

Highlighting

The **<mark>** element is new in HTML5 and is used to mark or highlight text in a document "due to its relevance in another context".

Output:

Here is some content from an article that contains the <mark>searched query</mark> that we are looking for. Highlighting he text will make it easier for the user to find what they are looking for.

Lists

HTML offers three ways for specifying lists:

❑ Ordered lists,

❑ Unordered lists,

❑ Description lists.

Ordered List: Ordered lists use ordinal sequences to indicate the order of list elements.

An ordered list can be created with the tag and each list item can be created with the tag as in the example below:

```
<ol>
        <li> Html   </li>
        <li> Python  </li>
        <li> Java </li>
</ol>
```

1. Html
2. Python
3. Java

Manually changing the numbers

```
<ol start="3">
<li value ="7">
<ol type = "1|a|A| i|I </ol">
```

Unordered List

Unordered List : An unordered list can be created with the tag and each list item can be created with the tag as shown by the example below

```
<ul>
        <li>JAVA</li>
        <li>C++</li>
        <li>PYTHON</li>
</ul>
```

HTML Formatting

Nested lists: The nested list has to be a child of the li element.

```
<ul>
        <li>  java    </li>
        <li>  Python
                <ul>
                        <li> C    </li>
                        <li> C++</li>
                </ul>
        </li>
</ul>
```

Description List

A description list (or definition list, as it was called before HTML5) can be created with the dl element. It consists of name-value groups, where the name is given in the dt element, and the value is given in the dd element.

```
<dl>
        <dt>name 1</dt>
        <dd>value for 1</dd>
        <dt>name 2</dt>
        <dd>value for 2</dd>
</dl>
```

HTML Formatting

Comments

Similar to other programming, markup, and markdown languages, comments in HTML provide other developers with development-specific information without affecting the user interface. Unlike other languages however, HTML Comments can be used to specify HTML elements for Internet Explorer only.

Creating comments:

```
<!--    I'm an HTML comment! -->
```

Anchors and Hyperlinks

Link to another site

This is the basic use of the <a> (anchor element) element:

Link to mcstm.in**

Link that dials a number

If the value of the href-attribute begins with tel:, your device will dial the number when you click it. This works on mobile devices or on computers/tablets running software – like Skype or FaceTime – that can make phone calls.

<a href="tel:9068704856"**>**Call us****

Most devices and programs will prompt the user in some way to confirm the number they are about to dial.

Anchors and Hyperlinks

Open link in new tab/window

The target attribute specifies where to open the link. By setting it to _blank, you tell the browser to open it in a new tab or window (per user preference).

<a href="mcstm.in" target="_blank"**>**Text Here****

Link that runs email client

If the value of the href-attribute begins with mailto: it will try to open an email client on click:

****Send email****

Anchors and Hyperlinks

Anchors

The anchor element is used to create hyperlinks between a source anchor and a destination anchor. The source is the text, image, or button that links to another resource and the destination is the resource that the source anchor links to.

CSS

Cascading Style Sheets

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Introduction

CSS stands for **Cascading Style Sheets**. It is a **style sheet** language which is used to describe the look and formatting of a document written in markup language. It provides an additional feature to HTML. It is generally used with HTML **to change the style of web pages and user interfaces.**

CSS handles the look and feel part of a web page. Using CSS, we can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and layout, what background images or colors are used, as well as a variety of other effects.

CSS is easy to learn and understand but it provides a powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

Advantages of CSS

❑ **CSS saves time :**- You can write CSS once and then reuse the same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many web pages as you want.

❑ **Pages load faster :** If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So, less code means faster download times.

❑ **Easy maintenance -** To make a global change, simply change the style, and all the elements in all the web pages will be updated automatically.

Advantages of CSS

❑ **Superior styles to HTML :** CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.

❑ **Multiple Device Compatibility :** Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cellphones or for printing.

❑ **Global web standards :** Now HTML attributes are being deprecated and it is being recommended to use CSS. So it's a good idea to start using CSS in all the HTML pages to make them compatible with future browsers.

Types of CSS

There are three types of CSS which are given below:

- ❑ Inline CSS
- ❑ Internal or Embedded CSS
- ❑ External CSS
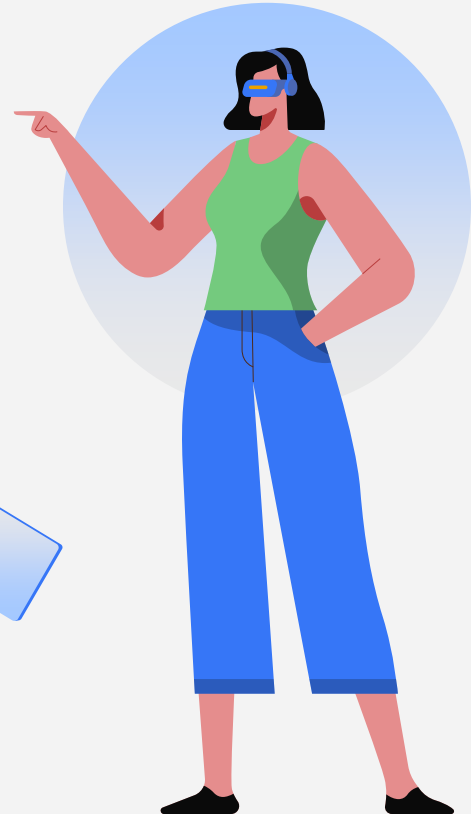
Inline CSS Style Tag

The <style> tag in HTML helps us to modify our text, viewed in the page. This modification includes changing font size, font family, font color etc. Not only the texts but also we can change the style of a body ar part of a page. Now let's look at various attributes of style and what else the tag supports.

Syntax:

<tagname style="property:value;">
<h1 style="color: green; text-decoration: underline;">Hello world!</h1>
<p style="font-size: 25px; font-family: 'Trebuchet MS';"> CSS</p>

Advantages of CSS

❑ **Inline CSS :** Inline CSS is the technique to define the single element with the insert style sheets in an <u>HTML</u> document.

❑ **Disadvantages of Inline CSS**

❖ These styles cannot be reused anywhere else.
❖ These styles are tough to be edited because they are not stored at a single place.
❖ It is not possible to style pseudo-codes and pseudo-classes with inline CSS.
❖ Inline CSS does not provide browser cache advantages.

Inline CSS

```
<!DOCTYPE html>
<html>
<head>
<title>Playing with Inline Styles</title>
</head>
<body>
<p style="color:blue;font-size:46px;">
I'm a big, blue, <strong>strong</strong> paragraph
</p>
</body>
</html>
```

Internal CSS

❑ **Internal CSS :** The internal style sheet is used to add a unique style for a single document. It is defined in <head> section of the HTML page inside the <style> tag.

Internal CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
    color: red;
    margin-left: 80px;
}
</style>  </head>
<body>
<h1>The internal style sheet is applied on this heading.</h1>
</body>
</html>
```

External CSS

External CSS : The external style sheet is generally used when you want to make changes on multiple pages. It is ideal for this condition because it facilitates you to change the look of the entire web site by changing just one file.

It uses the <link> tag on every pages and the <link> tag should be put inside the head section.

External CSS

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css"
href="mystyle.css">
</head>
<body>
hello
</body>
</html>
```

```
body {
    background-color: lightblue;
}
h1 {
    color: navy;
    margin-left: 20px;
}
```

CSS Syntax

A CSS comprises of style rules that are interpreted by the browser and then applied to the corresponding elements in your document. A style rule is made of three parts –

❑ **Selector** – A selector is an HTML tag at which a style will be applied. This could be any tag like <h1> or <table> etc.

❑ **Property** – A property is a type of attribute of HTML tag. Put simply, all the HTML attributes are converted into CSS properties. They could be color, border etc.

❑ **Value** – Values are assigned to properties. For example, color property can have value either red or #F1F1F1 etc.

```
selector { property: value }
h1{ text-align: center}
```

CSS Selectors

CSS Element Selector : The element selector selects HTML elements based on the element name.

```
h1 {
    color: #36CFFF;
    text-align: center;

    }

  h2 {
    color: red;
    }
```

CSS ID Selector :

The id selector selects the id attribute of an HTML element to select a specific element. An id is always unique within the page so it is chosen to select a single, unique element.

It is written with the hash character (#), followed by the id of the element.

```
<style>
#para1 {
    text-align: center;
    color: blue;
}
</style>
```

3) CSS Class Selector

The class selector selects HTML elements with a specific class attribute.

To select elements with a specific class, write a period (.) character, followed by the class name.

.center {

          text-align: center;

          color: red;

}

Difference between id and class attribute:
The only difference between them is that "id" is unique in a page and can only apply to at most one element, while "class" selector can apply to multiple elements.

HTML Table

The HTML <table> element allows web authors to display tabular data (such as text, images, links, other tables,etc.) in a two dimensional table with rows and columns of cells.

```
<table style="width:100%>
        <tr>
                <th>  Heading 1/Column 1 </th>
                <th> Heading 2/Column 2 </th>
        </tr>
        <tr>

                <td> Row 1 Data Column 1 </td>
                <td> Row 1 Data Column 2 </td>
        </tr>
</table>
```

HTML Table

td stands for table data.
tr stands for table row.

Spanning columns or rows

Table cells can span multiple columns or rows using the colspan and rowspan attributes. These attributes can be applied to **<th>** and **<td>** elements.

<table>
<tr>

        <td>row 1 col 1**</td>**
        <td>row 1 col 2**</td>**

</tr>
<tr>

        <td colspan="2"**>**This second row spans all two columns**</td>**

</tr>
<tr>

        <td rowspan="2"**>**This cell spans two rows**</td>**
        <td>row 3 col 2**</td>**

</tr>
<tr>

        <td>row **</td>**
        <td>row **</td>**

</tr>
</table>

border: 1px solid black;
 border-collapse: collapse;

Comments

```
/* This is a CSS comment */
h1 {
color: red; /* This is a CSS comment */
}

/*
This
is a
CSScomment
*/
```

Background

Background plays an important role in the visual presentation of a web page.

CSS provide several properties for styling the background of an element, including coloring the background, placing images in the background and managing their positioning, etc.

background-color property is used to set the background color of an element.

background-color: Green;

Background

Color values in CSS are most often specified in the following formats:

- ❖ a color name - like "red"
- ❖ a HEX value - like "#ff0000"
- ❖ an RGB value - like "rgb(255, 0, 0)"

Background Image
background-image: url("images/tile.png");

Properties

border : 1px solid black;
border-collapse: collapse;
padding: 15px;
border-spacing: 10px;
width: 100%;
height: 40px;
caption-side: bottom;
text-decoration: none;
font-size: 18px;
font-weight: normal;

font-style: normal;
font-style: italic;
font-style: oblique;
font-size: 24px;
font-weight: bold;

Video

```
<video controls="controls">
    <source src="/video/pptech.mp4" type="video/mp4">
    <source src="/video/pptech.ogv" type="video/ogg">
  </video>
```

autoplay, controls,

```
<audio controls="controls">
    <source src="/audio/pptech.mp3" type="audio/mpeg">
    <source src="/audio/pptech.ogg" type="audio/ogg">
  </audio>
```

autoplay, controls, height

Controlling the Table Layout

A table expands and contracts to accommodate the data contained inside it. This is the default behavior. As data fills inside the table, it continues to expand as long as there is space. Sometimes, however, it is necessary to set a fixed width for the table in order to manage the layout.

We can do this with the help of CSS table-layout property. This property defines the algorithm to be used to layout the table cells, rows, and columns. This property takes one of two values:

Controlling the Table Layout

- **auto —** Uses an automatic table layout algorithm. With this algorithm, the widths of the table and its cells are adjusted to fit the content. This is the default value.
- **fixed —** Uses the fixed table layout algorithm. With this algorithm, the horizontal layout of the table does not depend on the contents of the cells; it only depends on the table's width, the width of the columns, and borders or cell spacing. It is normally faster than auto.
- **table-layout: fixed;**
  table-layout: fixed;

Div Tag

The div tag is known as Division tag. The div tag is used in HTML to make divisions of content in the web page like (text, images, header, footer, navigation bar, etc). Div tag has both open(<div>) and closing (</div>) tag and it is mandatory to close the tag. The Div is the most usable tag in web development because it helps us to separate out data in the web page and we can create a particular section for particular data or function in the web pages.

Div Tag

- Div tag is Block level tag
- It is a generic container tag
- It is used to the group of various tags of HTML so that sections can be created and style can be applied to them.

Span Tag

The HTML span element is a generic inline container for inline elements and content. It is used to group elements for styling purposes (by using the class or id attributes), A better way to use it when no other semantic element is available.

The span tag is a paired tag means it has both open(<) and closing (>) tags, and it is mandatory to close the tag. The span tag is used for the grouping of inline elements & this tag does not make any visual change by itself. span is very similar to the div tag, but div is a block-level tag and span is an inline tag.

Div vs Span

- The <div> tag is a block level element.
- It is best to attach it to a section of a web page.

- It accepts align attribute.

- This tag should be used to wrap a section, for highlighting that section.

- The <span> tag is an inline element.
- It is best to attach a CSS to a small section of a line in a web page.

- It does not accept align attribute.
- This tag should be used to wrap any specific word that you want to highlight in your webpage.

Semantic Element

Semantic HTML elements are those that clearly describe their meaning in a human- and machine-readable way.

Semantic Element

They make it easier to develop because they come with some free functionality, and is generally easier to understand.

Better on mobile — semantic HTML is easier to make responsive for different screen sizes. Its file are generally lighter than non-semantic spaghetti code.

Good for SEO — your web page will have a higher chance of being found by customers because search engines prioritize keywords inside headings, links, and so on over those in non-semantic <div>s etc.

- **Header element** – The <header> element defines content that should be considered the introductory information of a page or section.

<header>

LOGO

<nav>

PRODUCTS   SHOPS   BLOG

★ ★ ★ ★ ★

555 32 16 12

<main>

ALL ABOUT OUR PRODUCTS   Summary

Client recommendations about the product   About our industry

USE 1 FOR OUR PRODUCTS
Description

USE 2 FOR OUR PRODUCTS
Description

Summary of independent journalist evaluation of the product (LINK)

USE 3 FOR OUR PRODUCTS
Description

<footer>   JOBS   CONTACT   LEGAL   FOLLOW US: C©PYRIGHT

❑ **Nav element –** Main navigation menu links would all be placed in a <nav> tag. But sub-navigation menus elsewhere on the page could also get one.

❑ **Main tag –** The body of a page should go in the <main> tag – not sidebars and main navigation. There should be only one per page.

Semantic Element

- **Article element** – The <article> element defines self-contained content that could stand independently of the page or site it's on. For example, a blog post.

- **Section element** – Using <section> is a way of grouping together nearby content of a similar theme. A section tag differs to an article tag because it isn't necessarily self-contained.

LOGO

`<nav>`

PRODUCTS SHOPS BLOG

★ ★ ★ ★ ★

555 32 16 12

`<main>`

ALL ABOUT OUR PRODUCTS Summary `<article>`

`<section>`

USE 1 FOR OUR PRODUCTS

Description

`<section>`

USE 2 FOR OUR PRODUCTS

Description

`<section>`

USE 3 FOR OUR PRODUCTS

Description

`<footer>` JOBS CONTACT LEGAL `<nav>` FOLLOW US: `<nav>` ©PYRIGHT

- **Aside element –** An <aside> element defines content that's less important. It's often used for sidebars – areas that add complementary but not vital information.
- An aside does not have to be a sidebar beside the main content. It can also be used for blocks below the main content containing a title, text, and link to another page

- **Footer element –** You would use <footer> at the base of a page or section. It might include contact information and some site navigation.

<header>

LOGO

<nav>

PRODUCTS   SHOPS   BLOG

★ ★ ★ ★ ★

555 32 16 12

<main>

ALL ABOUT OUR PRODUCTS   Summary

<article>

<section>

USE 1 FOR OUR PRODUCTS

Description

Client recommendations about the product

<aside>

<section>

USE 2 FOR OUR PRODUCTS

Description

<aside>

Summary of independent journalist evaluation of the product (LINK)

<section>

USE 3 FOR OUR PRODUCTS

Description

<footer>

JOBS   CONTACT   LEGAL   <nav>

FOLLOW US: <nav>   ©PYRIGHT