Unit 6 Web Technology I

The Internet is a global network of computers that connects millions of people and organizations around the world. It consists of millions of smaller networks that are connected to each other to enable people to communicate, share information and access a wide variety of services. It is a network of networks, and is used for a variety of services, such as email, file sharing, streaming media, and Internet commerce. It is also a platform for researchers, academics, and businesses to collaborate and share information. The Internet has revolutionized the way people communicate, share data and access information.

Advantages and Disadvantages of the Internet:

Advantages

1. Access to Information: The internet provides access to a vast array of information. People can find nearly any kind of information they need through the internet.

2. Communication: The internet allows people to communicate with each other from all around the world. People can communicate through email, instant messaging, social media, and video chat.

3. Shopping: The internet allows people to shop for products and services from the comfort of their own homes.

4. Entertainment: The internet provides access to an array of entertainment options, such as streaming services, online gaming, and websites dedicated to providing news and other information.

5. Education: The internet provides access to educational resources, such as online courses, tutorials, and research materials.

Disadvantages

1. Security: The internet can be a dangerous place, as users are vulnerable to cybercrime and scams.
2. Addiction: People may become addicted to using the internet, which can lead to a decrease in productivity and focus.

3. Privacy: People may not be aware of how much of their personal data is available on the internet, which can lead to a lack of privacy.

4. Social Isolation: People may become socially isolated if they rely too heavily on the internet for communication.

5. Misinformation: The internet can be a source of misinformation, as anyone can post false information online.

History of Internet:

1. The internet began as a research project in the late 1960s funded by the U.S. Department of Defense's Advanced Research Projects Agency (ARPA).

2. ARPANET, an ancestor to the modern Internet, was created in 1969 and connected four computers in California, Utah, Santa Barbara, and the University of California, Los Angeles.

3. The Internet Protocol Suite (TCP/IP) was developed in the 1970s and 1980s, allowing computers to communicate over long distances.

4. The first commercial Internet service provider, The World, went online in 1989.

5. The first web browser, Mosaic, was released in 1993.

6. The World Wide Web became popular in the mid-1990s, and by 2000, the Internet had become an essential part of everyday life.

WWW:
The World Wide Web (WWW) is a global system of interconnected computer networks that use the internet protocol suite (TCP/IP) to link billions of devices across the world. It enables users to access resources, such as websites, documents, images, videos, and other media, using web browsers such as Google Chrome, Safari, and Firefox. The WWW allows users to access and share information in a variety of ways, including through social media, blogs, emails, and other forms of digital communication. The WWW is a platform for social interaction, commerce, education, entertainment, and much more.

Applications of WWW:

Online Shopping: A user can browse through an online store to view and purchase items.
Social Media: A user can use social media platforms to interact with other users and post content.
Online Banking: A user can view account information, transfer money, and pay bills online.
Online Video Streaming: A user can stream videos from services like Netflix, Hulu, and YouTube.
Online Gaming: A user can play games online with friends or against computer-controlled opponents.
Collaborative Working: A user can collaborate with colleagues on projects via shared documents, video conferencing, and instant messaging.

Differences between Web and Web 2.0:

1. Web 1.0 is primarily focused on providing content while Web 2.0 is more focused on interaction and collaboration.

2. Web 1.0 has static websites while Web 2.0 offers dynamic content and applications.

3. Web 1.0 sites are typically viewed as one-way communication while Web 2.0 sites provide two-way communication.

4. Web 1.0 sites are more difficult to update while Web 2.0 sites are easier to update.

5. Web 1.0 sites are mostly text-based while Web 2.0 sites use multimedia content.

6. Web 1.0 sites have limited user interaction while Web 2.0 sites have extensive user interaction.

7. Web 1.0 sites are mostly closed systems while Web 2.0 sites are open systems.

8. Web 1.0 sites are mostly used for informational purposes while Web 2.0 sites are used for both informational and entertainment purposes.

9. Web 1.0 sites are typically designed by web developers while Web 2.0 sites are designed by users.

10. Web 1.0 sites have a limited amount of user-generated content while Web 2.0 sites have a large amount of user-generated content.

Web Standards

Web standards are a set of guidelines and standards that are used by web developers and designers to ensure that websites are compatible across multiple platforms and devices. They provide a common language for web developers, allowing them to create websites that are accessible and easy to use regardless of the user's device or web browser. Web standards help to ensure that all users have a consistent experience when accessing websites and web applications. Popular web standards include HTML, CSS, and JavaScript.

Web protocols and application of web protocols

Protocol is a set of rules which are used in digital communication to connect network devices and exchange information between them.

Web protocols are the rules and standards that govern how data is transferred over the internet. The most common web protocol is the Hypertext Transfer Protocol (HTTP), which is used to transfer web pages from a web server to a browser. Other common web protocols include File Transfer Protocol (FTP) for transferring files, Simple Mail Transfer Protocol (SMTP) for sending and receiving emails, and Secure Sockets Layer (SSL) and Transport Layer Security (TLS) for providing secure communication.

Web browser and usage of web browser:

A web browser is a software application that allows users to access, view, and navigate the Internet. Common examples of web browsers are Google Chrome, Mozilla Firefox, Safari, Internet Explorer, and Microsoft Edge.

Usage of Web Browser:

- Web browsers provide the ability to navigate the Internet by typing in a URL or clicking on a link to any website.
- You can use a web browser to download files such as documents, images, videos, and software from the Internet.
- Web browsers allow you to search the web for any type of information.
- Web browsers can be used to watch videos from streaming services such as YouTube, Netflix, and Hulu.
- Web browsers can be used to shop online, compare prices, and find deals.
- Many web browsers allow you to play online games directly in the browser.

- Web browsers can be used to access and use social networking websites such as Facebook, Twitter, and Instagram.
- Web browsers can be used to access and use email services such as Gmail, Yahoo, and Outlook.

Search engine and applications of search engine:

A search engine is a software system designed to search and locate information on the World Wide Web or a computer network. Popular search engines include Google, Bing, Yahoo!, and Baidu.

Applications of search engine:

1. Knowledge Discovery: Search engines are used to locate and extract useful data and information from large databases.

2. Online Shopping: Search engines help people to find and compare different products, prices, and stores.

3. Research: Search engines are used to locate and access scientific, legal, and scholarly articles for research purposes.

4. Advertising: Search engines can be used to target potential customers and advertise products.

5. Online Maps: Search engines can be used to locate places, routes, and directions on a map.

Concept of Client and Server computer:

A client computer is a computer that accesses services, resources, or data provided by another computer or server. It typically runs software applications that connect to servers to request data or services, such as accessing a website, retrieving emails from a mail server, or connecting to a database server.

A server computer, on the other hand, is a computer that provides services or resources to other computers, known as clients. Servers can provide a variety of services such as file sharing, web hosting, email, database management, and more.

Examples of client computers:

- A laptop that accesses a website hosted on a web server.
- A smartphone that connects to an email server to receive emails.
- A gaming console that connects to a game server to play online games.

Examples of server computers:

- A web server that hosts a website or web application.
- A mail server that stores and manages email messages.
- A file server that stores and shares files.

Web domain and web hosting:

Web domain and web hosting are two important components of having a website.

A web domain is the address of a website, such as www.example.com. It is registered with a domain name registrar, and it is unique to a particular website. Once registered, the domain name cannot be used by another website.

Web hosting is the service of providing physical storage space for a website. It is a server that stores the website files and makes them available online. The web hosting company is responsible for providing the technical infrastructure for the website to be viewable on the Internet.

Introduction to HTML
HTML stands for Hypertext Markup Language. It is the standard markup language used to create and structure content on the web. HTML consists of a series of tags and attributes that define how web browsers should display content such as text, images, videos, and other multimedia on a web page. HTML is an essential building block of the World Wide Web and is used by web developers to create websites and web applications.

HTML Document:
An HTML document, also known as a web page, is a file written in HTML markup language that contains content such as text, images, videos, and other multimedia elements. An HTML document is structured using a set of tags and attributes that define the layout, formatting, and content of the page.

HTML Tag:

In HTML, a tag is a markup element that defines the structure and content of a web page. HTML tags are used to format and style text, images, and other multimedia elements, and to provide structure to the content of a web page.

HTML tags are enclosed in angle brackets < >, and may have attributes that provide additional information about the element. The most commonly used HTML tags include <head>, <body>, , <p>, <h1> to <h6>, <img>, <a>, and many others.

Types of Tag:

Container tags or paired tags: These are tags that require both an opening and closing tag to define the content that goes inside. The content is placed between the opening and closing tags. Examples of container tags include , <p>, , and <ul>. Here's an example of a container tag:
This is some content inside a container tag.

Empty or Self-closing tags or standalone tags: These are tags that don't require a closing tag because they don't have any content that goes inside them. They are also known as self-closing tags or void elements. Examples of empty tags include <img>, <br>, and <input>. Here's an example of an empty tag:
<img src="image.jpg">

Basic Structure of HTML document:

The basic structure of an HTML document consists of the following elements:

```
<!DOCTYPE html>

<html>

  <head>

    <title>Page Title</title>

  </head>

  <body>

    <!– Page content goes here –>

  </body>

</html>
```

<!DOCTYPE html> – This declaration specifies the version of HTML that the document is using. In this case, it is HTML5.

<html> – This tag defines the root of the HTML document.

<head> – This tag contains metadata about the document, such as the document's title, author, and links to external stylesheets or scripts.

<title> – This tag specifies the title of the document, which is displayed in the browser's title bar.

<body> – This tag contains the main content of the document, such as text, images, and other multimedia elements.

All HTML code is placed between the opening and closing <html> tags. The <head> and <body> tags are child elements of the <html> tag. The <title> tag is a child element of the <head> tag.

The content of the HTML document is placed between the opening and closing <body> tags. This is where you add text, images, links, and other elements that you want to display on the web page.

HTML Element:

In HTML, an element is a building block of a web page that defines a particular piece of content or functionality. HTML elements consist of a start tag, some content, and an end tag.

Here is an example of an HTML element:

This is a paragraph element.

In this example, the element is a paragraph ( ) that contains the content This is a paragraph element. The start tag is and the end tag is . When the page is rendered in a web browser, the content between the start and end tags is displayed as a paragraph of text.

Inline and Block Level Elements:

- Inline and block-level elements are two types of HTML elements that are used to structure and style content on a webpage.

- A block-level element is an HTML element that takes up the entire width of its parent container and creates a new line after it. Examples of block-level elements include , <h1> to <h6>, , <ul>, <ol>, <li>, <table>, and <form>. Block-level elements are often used to create the overall layout of a webpage.

- An inline element, on the other hand, is an HTML element that only takes up as much width as necessary and does not create a new line after it. Examples of inline elements include <a>, , <img>, <input>, <button>, and <label>. Inline elements are often used to add small amounts of content and style within a block-level element.

- It is important to note that some elements, such as <img> and <input>, can be both block-level and inline, depending on how they are used and styled.

HTML Attribute:

In HTML, attributes are used to provide additional information about an HTML element. Attributes are added to the opening tag of an HTML element and are used to modify the default behavior or appearance of an element.

HTML attributes consist of two parts: a **name and a value.** The name is the attribute's identifier, and the value provides additional information about the attribute. The value is enclosed in quotation marks, either double or single quotes.

For example, the following HTML code uses the href attribute to specify the URL of a link:

Click here to visit Example.com

In this example, the href attribute is added to the opening <a> tag to specify the URL that the link should point to.

Some common HTML attributes include:

id – Used to uniquely identify an element on the page.

class – Used to define a class of elements that can be styled together using CSS.

src – Used to specify the URL of an image or other multimedia element.

alt – Used to provide alternative text for an image, which is displayed if the image cannot be loaded.

title – Used to provide additional information about an element, which is displayed when the user hovers their cursor over the element.

HTML Comment:

HTML comments are used to add notes or remarks to an HTML code that will not be displayed in the web browser. Comments are useful for adding documentation or reminders to yourself or other developers who may be working on the code.

HTML comments are created using the following syntax:

<!– This is a comment –>

HTML Headings:
HTML headings are used to create headings or titles on a web page. They are used to give structure and hierarchy to the content on a web page, making it easier for users to understand the content and navigate the page. HTML has six different levels of headings, from <h1> to <h6>, with <h1> being the most important and <h6> being the least important.

Here's an example of how HTML headings can be used:

```
<!DOCTYPE html>

<html>

<head>

    <title>My Webpage</title>

</head>

<body>

    <h1>This is the Main Heading</h1>

    <h2>This is a Subheading</h2>

    <h3>This is a Sub-Subheading</h3>

    <p>This is some text.</p>

    <h2>This is Another Subheading</h2>

    <p>This is some more text.</p>
```

```
</body>

</html>
```

In this example, we have used three different levels of headings to create a hierarchy of content. The <h1> tag is used for the main heading, while the <h2> tags are used for the subheadings. The <p> tag is used for paragraphs of text that come after the headings.

HTML Paragraphs:
HTML paragraphs are used to group together related text content on a web page. They are denoted using the <p> tag and allow developers to create blocks of text with consistent formatting, such as font size and line spacing.

Here's an example of how HTML paragraphs can be used:

```
<!DOCTYPE html>

<html>

<head>

    <title>My Webpage</title>

</head>

<body>

    <h1>This is the Main Heading</h1>

    <p>This is a paragraph of text. It can be used to provide additional information about the main heading or to introduce a new topic.</p>

    <p>Another paragraph of text can follow, which may contain more detailed information on the topic introduced in the previous paragraph.</p>

</body>

</html>
```

In this example, we have used two <p> tags to create two separate paragraphs of text. The content of each paragraph is related to the main heading, but provides more detailed information on the topic.

Line Breaking:
In HTML, line breaks can be created using the <br> tag. The <br> tag is an empty tag, which means that it doesn't require a closing tag.

Here's an example of how the <br> tag can be used:

```
<!DOCTYPE html>
```

```
<html>

<head>

    <title>My Webpage</title>

</head>

<body>

    <h1>This is the Main Heading</h1>

    <p>This is a paragraph of text.<br>It has a line break in the middle of the sentence.</p>

    <p>Another paragraph of text can follow, which may contain more detailed information on the topic introduced in the previous paragraph.</p>

</body>

</html>
```

In this example, we have used the <br> tag to create a line break within the first paragraph of text. The line break is inserted after the word "text" and creates a new line of text within the same paragraph.

Horizontal Line:
In HTML, a horizontal line can be created using the <hr> tag. The <hr> tag is an empty tag, which means that it doesn't require a closing tag.

Here's an example of how the <hr> tag can be used:

```
<!DOCTYPE html>

<html>

<head>

    <title>My Webpage</title>

</head>

<body>

    <h1>This is the Main Heading</h1>

    <p>This is a paragraph of text.</p>

    <hr>

    <p>Another paragraph of text can follow, which may contain more detailed information on the topic introduced in the previous paragraph.</p>
```

```
</body>

</html>
```

In this example, we have used the <hr> tag to create a horizontal line between two paragraphs of text. The line spans the entire width of the container element and provides a clear visual break between the two paragraphs.

Text formatting tags:
HTML provides several tags that can be used to format text in different ways. Here are some of the most commonly used text formatting tags:

Bold text: To make text bold, use the or <b> tag. Both tags will make the text bold, but the tag is preferred as it is used to indicate important or emphasized text.
```
<strong>This text will be bold.</strong>
```

Italic text: To make text italicized, use the or <i> tag. Both tags will make the text italicized, but the tag is preferred as it is used to indicate emphasis or importance.
```
<em>This text will be italicized.</em>
```

Underlined text: To make the text underlined, use the <u> or <ins> tag.
```
<u>This text will be underlined.</u>
```

Strikethrough text: To create text with a strikethrough effect, use the <s> or <strike> tag.
```
<s>This text will have a strikethrough effect.</s>
```

Subscript and Superscript text: To create text that is either subscripted or superscripted, use the <sub> or <sup> tag.
```
H<sub>2</sub>O

CO<sup>2</sup>
```

Some other Text formatting tags:

a. **<abbr> or <acronym>**

```
<p>

  The <acronym title=”World Wide Web”>WWW</acronym> is only a component of the

  Internet.

</p>
```

- **<big> and <small>**

```
<p>

  This is the first sentence.

  <big>This whole sentence is in bigger letters.</big>

</p>
```

- ** **

```
<center>

  This text will be centered.

  <p>So will this paragraph.</p>

</center>
```

- **<del>**

```
<del>I am a deleted text.</del>
```

- **<dfn>**

```
<p>A <dfn> validator </dfn> is a program that checks for syntax errors in code or documents.</p>
```

- **<pre>**

```
<pre>Hello

Hi</pre>
```

- **<mark>**

```
<mark> Hello</mark>
```

HTML Lists:
HTML provides three types of lists: ordered lists, unordered lists, and definition lists. Each type of list is created using a different set of HTML tags and is used for a different purpose.

Ordered Lists:
Ordered lists are used when a list of items needs to be numbered or ordered. To create an ordered list, use the <ol> tag. Each item in the list is created using the <li> tag. By default, ordered lists are numbered with Arabic numerals.

```
<ol>

    <li>Item 1</li>

    <li>Item 2</li>

    <li>Item 3</li>

</ol>
```

Note: *To change the list item marker, you can use the* 'type' attribute in <ol> tag. For example, if you want the list to start from A, just add type=" A" in your <ol> tag. Similarly, the value of the 'type' attribute will be a, i, I if you want lowercase alphabet, lowercase Roman, and uppercase Roman *respectively. In addition to this, if you want to start a list from 4 just add '**start=4'** in your <ol> tag as an attribute.*
Ordered List Exercise:

Write a html code to display the following lists:

a.

List of Programming Language:

a. C Programming
b. Python
c. C++
d. Java
e. Php

b.

List of Protocols:

I. Hyper Text Transfer Protocol
II. File Transfer Protocol
III. Post Office Protocol
IV. Simple Mail Transfer Protocol

c.

List of Phones:

f. Samsung
g. Lenovo
h. Iphone
i. Redmi

d.

Some Important Formula:

x. $a^2-b^2=(a+b)(a-b)$

xii. H_2SO_4 (*Sulphuric Acid)*

e.

List of Books:
j. Website Design
i. Electro System
h. C Programming
Hint: <ol reversed>

.

f.

I. Background Skill
   a. Unix Commands
   b. VS Code Editors
II. HTML
   i. Landing Page Design
   ii. Typography

g.

A. Lists
   x. Ordered List
      i. Nested List
   y. Unordered List
      a. Nested List
   z. Definition List
B. Links

h.

V. CSS
   A. Inline CSS
   B. Internal CSS
      a. Class Selector
      b. Id Selector
      c. Element Selector
   C. External CSS
VI. JavaScript

i.

1. **Front End**
   i. HTML
   ii. CSS
      v. Internal Design
      vi. CMS Design
      vii. Wireframe Conversion
   iii. JavaScript
      A. jQuery
      B. Angular JS
2. **Library/ Framework**
   a. React JS
      C. Hosted

Unordered Lists:
Unordered lists are used when a list of items needs to be displayed with bullet points or other markers. To create an unordered list, use the <ul> tag. Each item in the list is created using the <li> tag.

```
<ul>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
</ul>
```

Note: *There are some values of* ***type*** *attribute in <ul> tag which are disc for bullet, circle for circle, and square for black color filled square as list item marker.*

Unordered List Exercise

Write a html code to display the following lists:

a.

List of Programming Language:

- C Programming
- Python
- C++
- Java
- Php

b.

List of Protocols:

- Hyper Text Transfer Protocol
- File Transfer Protocol
- Post Office Protocol
- Simple Mail Transfer Protocol

c.

List of Phones:

- Samsung
- Lenovo
- Iphone
- Redmi

d.

Some Important Formula:

- $a^2-b^2=(a+b)(a-b)$
- H_2SO_4 (*Sulphuric Acid)*

e.

List of Books:

- Website Design
  - HTML
- Electro System
- C Programming

.

f.

- Background Skill
  - Unix Commands
  - VS Code Editors
- HTML
  - Landing Page Design
  - Typography

g.

- Lists
  - Ordered List
- Nested List
  - Unordered List
  - Nested List
  - Definition List
- Links

h.

- CSS
  - Inline CSS
  - Internal CSS
    - Class Selector
    - Id Selector
    - Element Selector
  - External CSS
- JavaScript

i.

- **Front End**
  - HTML
  - CSS
    - Internal Design
    - CMS Design
    - Wireframe Conversion
  - JavaScript
    - jQuery
    - Angular JS
- **Library/ Framework**
  - React JS
  - Hosted

Definition Lists:
Definition lists are used when a list of terms and their definitions need to be displayed. To create a definition list, use the <dl> tag. Each term in the list is created using the <dt> tag, and each definition is created using the <dd> tag.

```
<dl>

    <dt>Term 1</dt>

    <dd>Definition of Term 1</dd>

    <dt>Term 2</dt>

    <dd>Definition of Term 2</dd>

    <dt>Term 3</dt>

    <dd>Definition of Term 3</dd>

</dl>
```

Nested List:
In HTML, a nested list is a list that contains one or more sub-lists. This means that each item in the parent list can contain its own list of items. Nested lists are created by placing a list within another list using the appropriate HTML tags.

Here's an example of a nested list:

```
<ol>

    <li>Item 1</li>

    <li>Item 2

        <ul>
```

```
            <li>Sub-item 1</li>

            <li>Sub-item 2</li>

            <li>Sub-item 3</li>

        </ul>

    </li>

    <li>Item 3</li>

</ol>
```

In this example, we have an ordered list with three items. The second item in the list contains an unordered sub-list with three sub-items. To create a nested list, we simply place the sub-list within the list item that contains it.

Nested List Exercise

Write a html code to display the following lists:

a.

Vehicles List:

1. Car
2. Bike
   - Petrol Bike
   - Electric Bike
3. Truck
   - 10-Wheeler

b.

1. Linux
   - Ubuntu
     i. Ubuntu 1.0
     ii. Ubuntu 2.0
2. Windows
   - Windows 7,8,10

c.

List of Foods:

1. Drinks
   d. Cold Drinks
      - Coke
      - Fanta

   e. Hot Drinks
      - Tea
      - Coffee
2. Food
   100. Samosa
   101. Noodles

d.

p. Data Structure and Algorithms
- Array
  - i. Static
  - ii. Dynamic
    - Malloc
    - Calloc
- Linked List
  - iii. Single Linked List
  - iv. Double Linked List

e.

1. Fruits
   a. Mango
      - Green Mango
      - Red Mango
        x. Nepalese Mango
        y. Indian Mango
2. Vegetables
   i. Cabbage
   ii. Capsicum
      - Green
      - Yellow
      - Red

f.

- Item 1
- Item 2
  - Sub Item 2.1
  - Sub Item 2.2
  - Sub Item 2.3
- Item 3
- Item 4
  - Sub Item 4.1
  - Sub Item 4.2
    - Sub Item 4.2.1
    - Sub Item 4.2.2
  - Sub Item 4.3
- Item 5

HTML Table:
HTML tables are used to display data in rows and columns. They consist of a series of rows and columns, where each cell contains text, images, or other HTML elements. Tables are created using a combination of HTML tags, including the <table>, <tr>, <th>, and <td> tags.

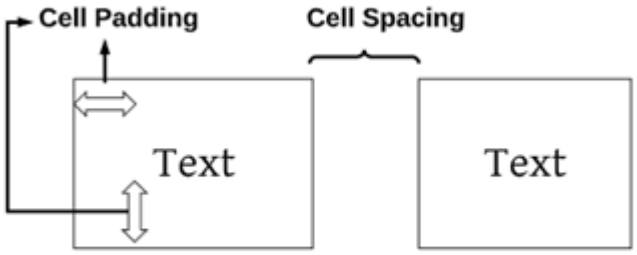
Here's an example of a basic HTML table:

```
<table>
    <tr>
        <th>Column 1</th>
        <th>Column 2</th>
        <th>Column 3</th>
    </tr>
    <tr>
        <td>Row 1, Column 1</td>
        <td>Row 1, Column 2</td>
        <td>Row 1, Column 3</td>
    </tr>
    <tr>
        <td>Row 2, Column 1</td>
        <td>Row 2, Column 2</td>
        <td>Row 2, Column 3</td>
    </tr>
    <tr>
        <td>Row 3, Column 1</td>
        <td>Row 3, Column 2</td>
        <td>Row 3, Column 3</td>
    </tr>
</table>
```

In this example, we have a table with three columns and four rows. The first row of the table is used to define the column headers using the <th> tag. The remaining rows of the table contain the data, with each cell containing text or other HTML elements enclosed in the <td> tag.

Tables can be customized using a variety of attributes, including cellpadding, cellspacing, height, width and border.

border: This attribute specifies the width of the border around the table and its cells. The value is specified in pixels or can be set to 0 to remove the border. For example, border="1″ will create a 1-pixel wide border around the table.
height: This attribute sets the height of the table. It can be specified in pixels or as a percentage of the available space. For example, height="200″ sets the table height to 200 pixels.
width: This attribute sets the width of the table. Like the height attribute, it can be specified in pixels or as a percentage. For example, width="50%" sets the table width to 50% of the available space.
cellspacing: This attribute controls the spacing between cells. It specifies the amount of space (in pixels) to be added between adjacent cells. For example, cellspacing="5″ will add a 5-pixel gap between cells.
cellpadding: This attribute controls the padding within cells. It specifies the amount of space (in pixels) to be added between the content of a cell and its borders. For example, cellpadding="10″ will add a 10-pixel padding within each cell.



Differences between <th> and <td> tag:
The <th> and <td> tags are both used in HTML tables, but they serve different purposes.

The <th> tag is used to define table headers, while the <td> tag is used to define table data.

Here are some of the key differences between the two tags:
Purpose: The <th> tag is used to define the header cells of a table, which typically contain column or row headings. The <td> tag is used to define the data cells of a table, which contain the actual content.
Styling: By default, <th> cells are displayed in bold and centered, while <td> cells are displayed with normal font weight and left-aligned. However, both types of cells can be styled using CSS.
rowspan and colspan attribute:
rowspan: This attribute defines the number of rows a cell should span vertically. It is applied to a <td> (table cell) or <th> (table header) element. By using rowspan, you can make a cell extend vertically and occupy multiple rows. The value of rowspan indicates the number of rows the cell should span.
colspan: This attribute defines the number of columns a cell should span horizontally. Similar to rowspan, it is applied to a <td> or <th> element. By using colspan, you can make a cell extend horizontally and occupy multiple columns. The value of colspan indicates the number of columns the cell should span.

Exercise:

Write a html code to display the following tables:

a.

Roll	Name	Address
1	Chris Evans	New York
2	Tom Cruise	California

b.

Id	Class	Age	Gender	Height
101	9	13	Male	1.5
102	9	13	Female	1.6

c.

Tag	Effect	Description
B tag	**Bold Text**	Used to bold text.
U tag	Underlined Text	Used to underline text.
I tag	*Italic Text*	Used to make text italic.
Mark tag	Highlight Text	Used to highlight text.
Sup tag	A^2+B^2	Used to give power.
Sub tag	H_2O	Used to give base.

d.

Roll	Name	Address
1	Chris Evans	New York
2	Tom Cruise	California

e.

Name	Subjects	
Ram	English	Math

f.

Name	Ram
Subject	English
	Math

g.

Name	Subject	Marks
Mark Smith	English	67
	Maths	82
	Science	91

h.

Columu 1	Columu 2	Columu 3
Row 1 Cell 1	Row 1 Cell 2	Row 1 Cell 3
	Row 2 Cell 2	Row 2 Cell 3
Row 3 Cell 1		

i.

Gender/Average	Average		Red Eyes
	Height	Weight	
Males	1.9	0.003	40%
Females	1.5	0.002	43%

j.

Station	Temperature		Humidity	Weather
	Max	Min		
USA	24	19	60%	cloudy
Germany	5	-1	70%	Rainy

k.

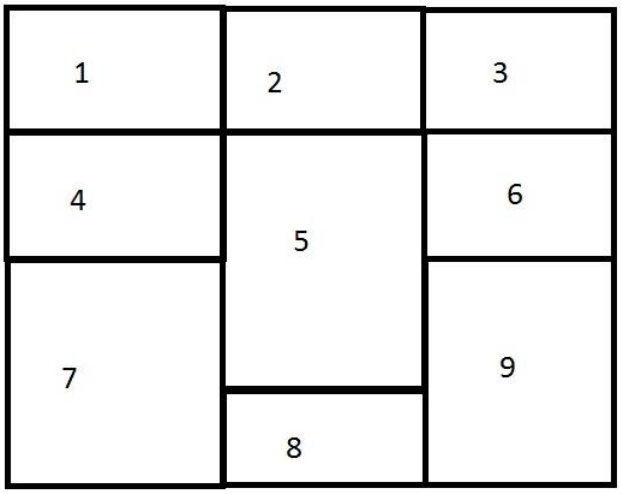
1		2
3	4	5
6	7	8

l.

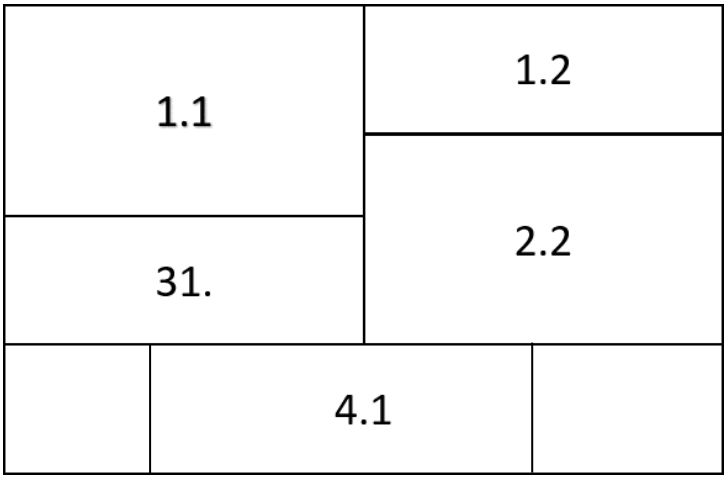
<table>
<tr><td>(0,0)</td><td>(0,1)</td><td>(0,2)</td><td>(0,3)</td></tr>
<tr><td>(1,0)</td><td colspan="2">(1,1) (1,2)</td><td rowspan="2">(1,3)
(2,3)</td></tr>
<tr><td>(2,0)</td><td>(2,1)</td><td>(2,2)</td></tr>
<tr><td>(3,0)</td><td>(3,1)</td><td>(3,2)</td><td>(3,3)</td></tr>
</table>

m.

n.



o.

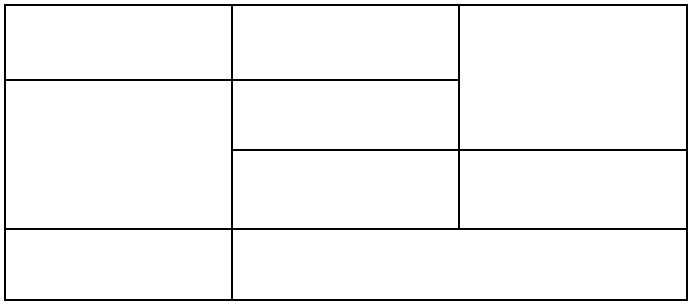


Hint: For Blank cell, use   code.

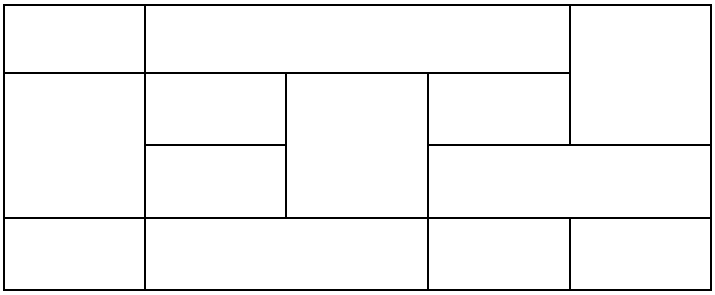
p.

Header	Header	Header	Header
You can span down.	You can span across.		
	It's like a puzzle.		Over here.
	This way.	That way.	
		Where am I?	

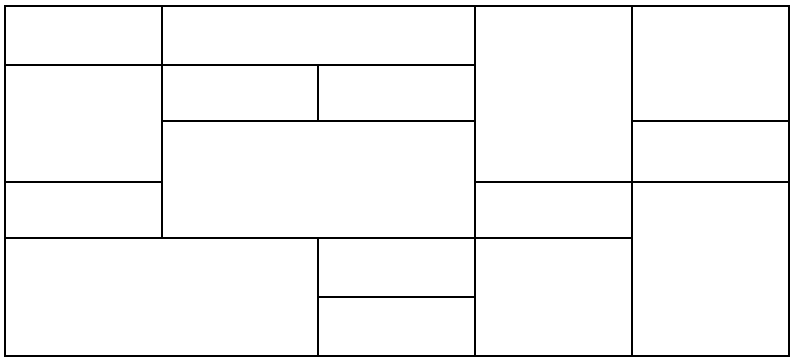
q.



r.



s.



HTML Hyperlinks

HTML hyperlinks, also known as links, allow users to navigate between web pages by clicking on a clickable text or image. Links are created using the HTML <a> (anchor) tag, which defines the clickable area and the destination URL of the link.

Here's an example of an HTML hyperlink:

Click here to visit Example.com

In this example, the <a> tag is used to define the clickable area of the hyperlink and the “href” attribute is used to specify the URL of the destination page. The text “Click here to visit Example.com” is the visible text of the hyperlink, and will be underlined and displayed in a different color than regular text in most browsers.

Links can also be used to navigate to specific sections of a page using anchor tags. For example:

Go to Section 1

In this example, the # symbol followed by “section1” indicates that the link should navigate to the section of the page with an ID of “section1”.

HTML Multimedia

HTML provides several tags that can be used to embed multimedia content such as audio, video, and images in a web page.

Audio: The <audio> tag is used to embed audio content in a web page. Here’s an example:

```
<audio controls>

  <source src=”example.mp3″ type=”audio/mpeg”>

  Your browser does not support the audio tag.

</audio>
```

In this example, the “src” attribute specifies the URL of the audio file, and the “type” attribute specifies the MIME type of the audio file. The “controls” attribute adds basic audio controls to the player, such as a play button, pause button, and volume slider.

Video: The <video> tag is used to embed video content in a web page. Here’s an example:

```
<video controls width=”320″ height=”240″>

  <source src=”example.mp4″ type=”video/mp4″>

  Your browser does not support the video tag.

</video>
```

In this example, the “src” attribute specifies the URL of the video file, and the “type” attribute specifies the MIME type of the video file. The “controls” attribute adds basic video controls to the player, such as a play button, pause button, and volume slider. The “width” and “height” attributes can be used to specify the dimensions of the video player.

Image: The <img> tag is used to embed images in a web page. Here’s an example:

```
<img src=”example.jpg” alt=”Example Image” width=”300″ height=”200″>
```

In this example, the “src” attribute specifies the URL of the image file, and the “alt” attribute provides a text description of the image for accessibility purposes. The “width” and “height” attributes can be used to specify the dimensions of the image.

Overall, these multimedia tags allow web developers to embed various types of media content in their web pages, enhancing the user experience and engagement of the website.

HTML Form:

HTML forms provide a way for users to input data and interact with a website. Forms are created using the <form> tag and can contain various types of form elements such as text fields, radio buttons, checkboxes, dropdown menus, and more.

Some frequently used form elements are:

1. **<form>** – This tag is used to create a form on a web page.
2. **<input>** – This tag is used to create an input field, such as a text box, radio button, or checkbox.
3. **<label>** – This tag is used to add a label to an input field to provide a description of the field.
4. **<textarea>** – This tag is used to create a multi-line text input field.
5. **<select>** – This tag is used to create a drop-down list of options for the user to choose from.
6. **<option> –** This tag is used to define the options in a drop-down list created with the <select> tag.
7. **<button>** – This tag is used to create a clickable button.
8. **<fieldset>** – This tag is used to group related form elements together.
9. **<legend>** – This tag is used to add a title or caption to a <fieldset> element.
10. **<form action=””> –** This attribute is used to specify the URL that the form data should be submitted to.
11. **<form method=”POST”>** – This attribute is used to specify the HTTP method used to submit the form data to the server.
12. **<input type=”text”>** – This attribute is used to create a single-line text input field.
13. **<input type=”checkbox”>** – This attribute is used to create a checkbox input field.
14. **<input type=”radio”>** – This attribute is used to create a radio button input field.
15. **<input type=”submit”>** – This attribute is used to create a submit button that submits the form data to the server.
16. **<input type=”reset”>** – This attribute is used to create a reset button that resets the form data to its initial values.
17. **<input type=”password”>** – This attribute is used to create a password input field that obscures the user’s input.
18. **<input type=”file”>** – This attribute is used to create a file upload input field.
19. **<input type=”hidden”>** – This attribute is used to create a hidden input field that is not displayed on the web page.
20. **<input type=”email”>** – This attribute is used to create an email input field that checks if the entered value is a valid email address.