

Short Introduction of Unit

In this chapter, the fundamentals of web development, **Hyper Text Markup Language (HTML)**, **Java Script** and **Cascading Style Sheet (CSS)** will be explained. By the end of this chapter, you will be able to understand Java Script syntax and data types, work with variables, operators and functions, handle events and user inputs, create simple programs and develop static web pages using HTML and CSS.

Q.1 Describe the concept of web development and why it is important?

09508001

Ans. Process of creating websites and web applications is called Web development. It means using various programming languages and tools to design, build, and maintain websites.

Why Learn Web Development?

Web development is a valuable skill for several reasons:

- **Digital Literacy:** When you learn web development, you find out how websites are made. You learn about HTML, which is like the skeleton of a web page, CSS, which makes the web page look nice, and JavaScript, which makes the web page interactive. This helps you understand how the internet works.
- **Career Opportunities:** Opens up a wide range of job prospects in the growing IT industry. Web developers can get many different kinds of jobs. You can become a web developer, web designer, and more. Many companies need web developers to create and maintain their websites. This means you can find good jobs in many places.
- **Problem-Solving:** When you build a website, you solve many problems. For example, if a website is slow, you figure out why and fix it. This helps you think logically and solve problems better.

Creativity: Allows you to create visually appealing and interactive websites. Web development lets you be creative. You can design websites with cool layouts, colors, and interactive features. (For example, you can create a personal blog or a portfolio to show your artwork, making your own unique website.)

- **Entrepreneurship:** With web development skills, you can start your own online business. For example, if you make crafts, you can build a website to sell them. Or, you can create a new web service, like a fun app, and share it with the world.

Q.2 What are the main components of Web Development?

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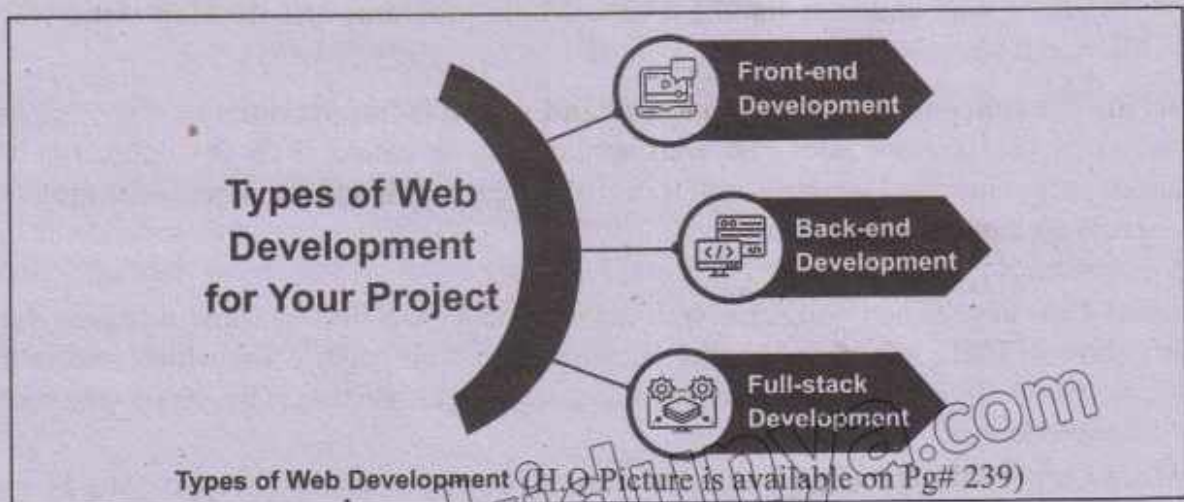
Ans. Web development involves creating websites and web applications. It has three main components:

1. **Front-End Development**
2. **Back-End Development**
3. **Full-Stack Development**

1. Front-End Development: This focuses on what users see and interact with on a website. The following fundamentals are used to design interactive Front-ends:

- **HTML** structures the content on web pages, like headings, paragraphs, Images, and links.

- **CSS** styles the content on web pages, changing colors, fonts, and layout to enhance the appearance.
- **JavaScript** adds interactivity to web pages, making them dynamic and engaging. It allows features such as forms, animations, and games.
- 2. **Back-End Development:** This manages the behind-the-scenes functionality of a website, including servers, databases, and application logic. Key back-end technologies are:
 - **Web Servers** are computers that store and deliver web pages to users when they enter a URL.
 - **Databases** store and manage data, like user information, product details, and website content.
 - **Back-end Programming Languages** like PHP, Python, and Ruby handle tasks such as processing forms, and managing user logins.

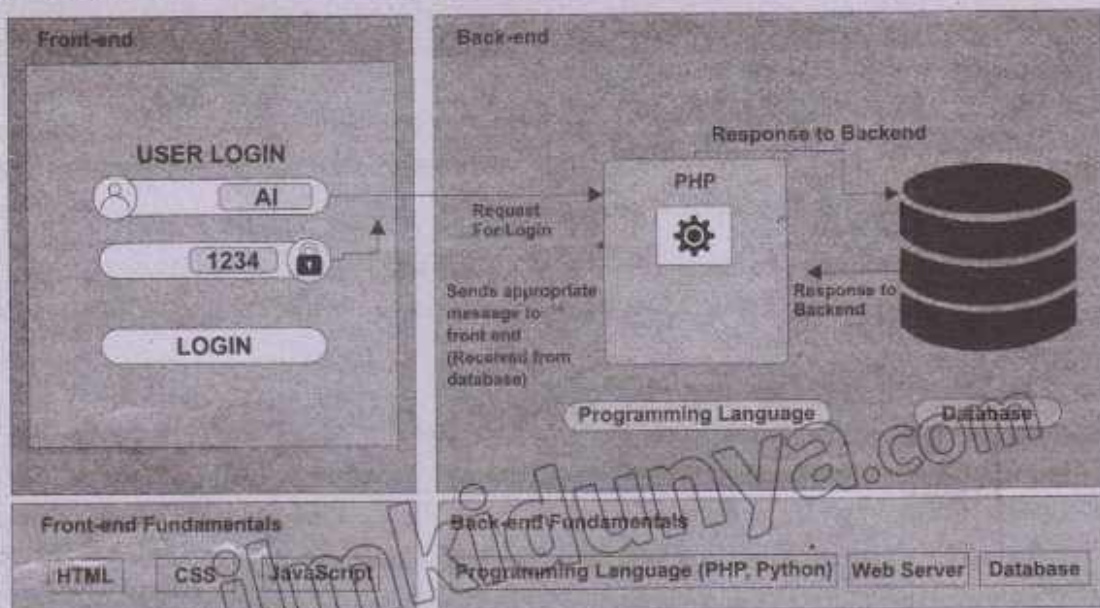


Example: Login System

A login system is a common feature in web development, allowing users to access their accounts on a website. This example will illustrate the roles of front-end and back-end development, as well as the concept of full-stack development.

3. Full-Stack Development

In the case of login system, a full-stack developer will create the User Interface (UI) for front-end and handle user authentication and database interaction for back-end.



Graphical abstract of login system

Q.3 Describe the history of HTML.

Ans: HTML is the standard language used to create web pages. Think of HTML as the building blocks of a website. Just like LEGO pieces come together to build a structure, HTML tags come together to build a web page.

History of HTML

HTML was created by **Tim Berners-Lee in 1991**. It was designed to make sharing of information on the internet easy. Over the years, HTML has gone through many changes and improvements to make it more powerful and easier to use.



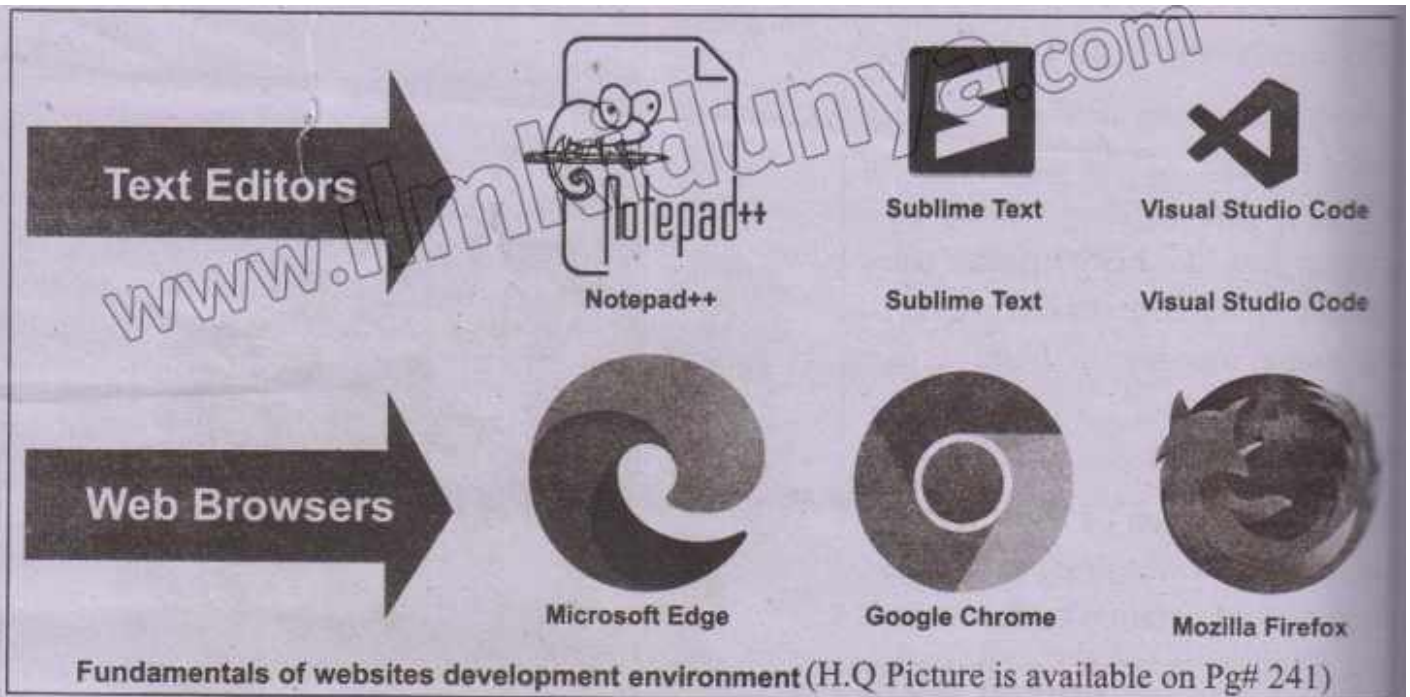
LEGO Pieces
(H.Q Picture is available on Pg# 239)

- **HTML 1.0 (1991):** The very first version of HTML. It was simple and had basic features to create text and links.
- **HTML 2.0 (1995):** Introduced more tags and features, allowing for creating more complex web pages.
- **HTML 3.2 (1997):** Added new tags for creating tables, scripts, and applets.
- **HTML 4.0 (1997):** Brought major improvements, including support for multimedia elements like images and videos.
- **HTML 4.01 (1999):** Minor improvements in version 4.0
- **HTML 5 (2014):** The latest version of HTML. It includes new elements for better multimedia support, graphics, and more interactive web pages.

Q.4 Explain the process of setting up a development environment for web development. By discussing the necessary software's and tools.

Ans. To start creating websites, you need a few basic tools and environments:

1. **Text Editor:** This is where you write your HTML code. Popular text editors include Notepad++, Sublime Text, and Visual Studio Code.
 2. **Web Browser:** You will use this to view and test your HTML files. Common web browsers are Google Chrome, Mozilla Firefox, and Microsoft Edge.
- Start with a simple text editor and a web browser. Once you are comfortable with HTML, you can explore more advanced tools.



Q.5 How to create "Hello, World!" by using HTML Application?

09508905

Ans: To create a basic HTML application that displays "a message" on a web page, follow these simple steps:

1. **Open your text editor,** You can use Notepad, Notepad++, Sublime Text, or any other text editor.

2. **Write the following HTML code** into your text editor.

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>My First Web Page</title>
```

```
</head>
```

```
<body>
```

```
<h1>Welcome to My Website</h1>
```

```
<p>This is my first web page. I am learning HTML in the 9th class! </p>
```

```
</body>
```

```
</html>
```

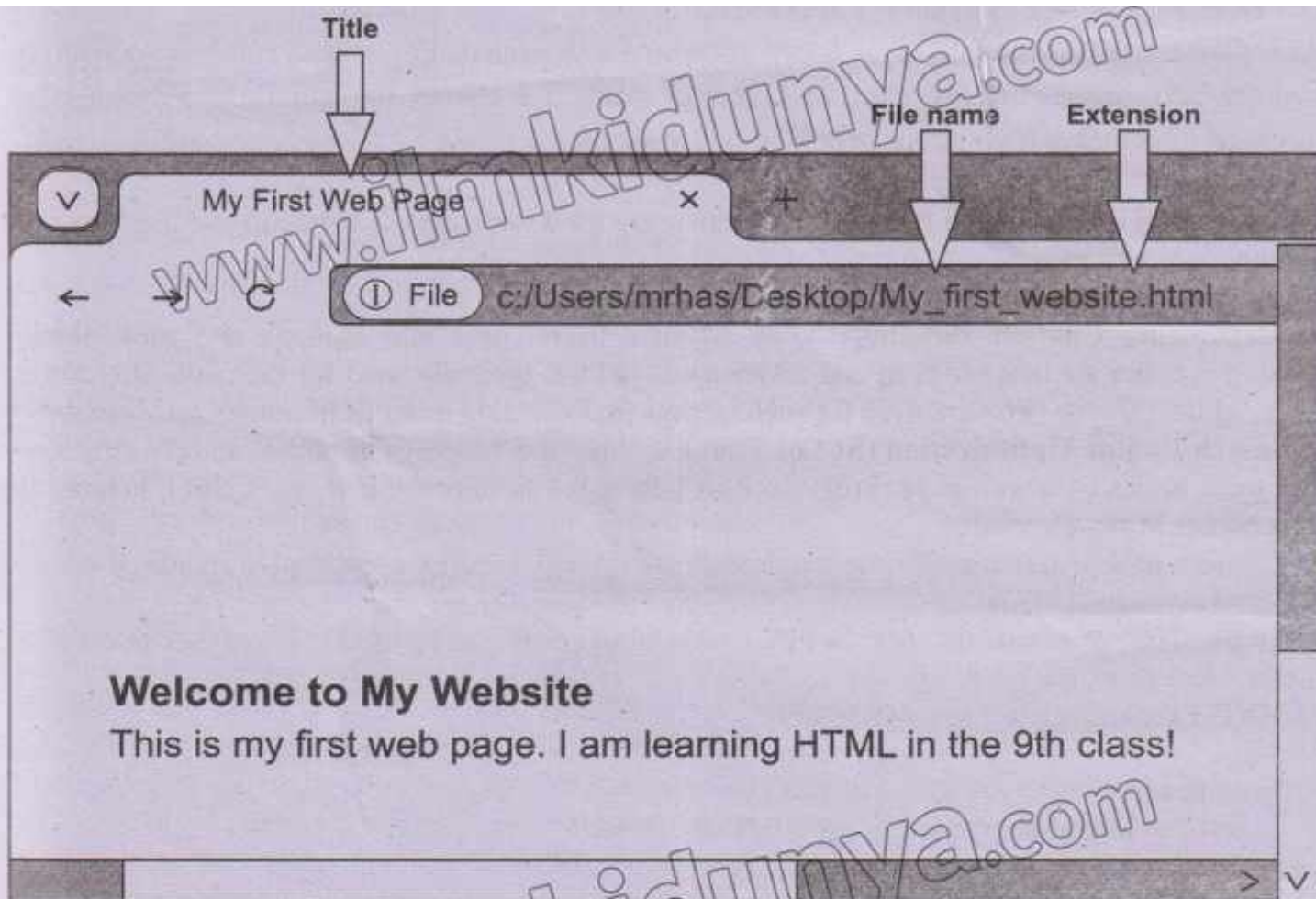
3. **Save your file** with a html extension, for example, My_first_website.html.

Viewing the HTML File

1. Open Your Web browser (Google Chrome, Mozilla Firefox, and others)

2. Double-click on your file named My_first_website.html.

3. You should see the text welcome to my website displayed on the web page as shown in figure.



HTML in Web Browser

Q.6 Explain the basic structure of HTML.

09508006

Ans. A structured HTML document is easier to read and understand. Properly nested and well-organized elements help developers and browsers interpret the content correctly. This organization ensures that the web page displays as intended.

Every HTML document has a basic structure where:

- **<!DOCTYPE html>:** This line tells the browser that this is an HTML5 document.
- **<html>:** This is the root element of an HTML page.
- **<head>:** This section contains meta-information about the HTML document like the title.
- **<title>:** This sets the title of the web page, which appears in the browser tab.
- **<body>:** This section contains the content of the web page that you see in the browser.
- **<h1>:** This defines a large heading.
- **<p>:** This defines a paragraph.

HTML Tags

Elements that make up an HTML document are called tags. A web page's structure and content are defined by them. On the basis of structure, HTML tags are categorized into two types:

1. **Paired tags:** Comes in pairs an opening Tag and closing Tag i.e. `<p>...</p>`.
2. **Unpaired Tags:** Do not need closing Tags. They are also known as self-closing Tags i.e., `<img>`, `<br>`.

Q.7 Describe the role of headings in HTML.

Ans: Content in HTML is the main information on a web page that users read and interact with. It includes text, images, videos, links, and other elements that convey the purpose and message of the page. This makes it easier for people to find your site.

Headings

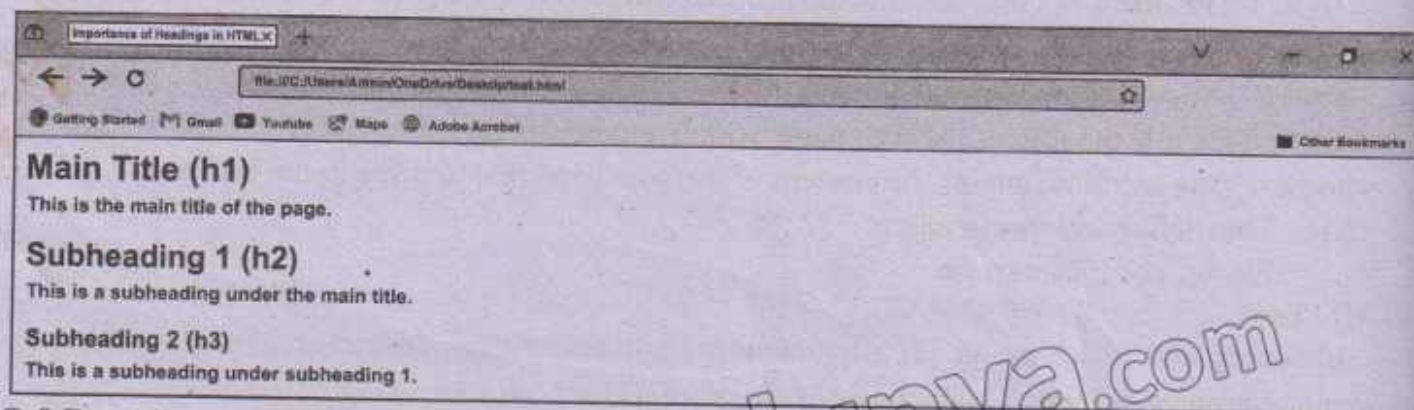
Headings in HTML, ranging from `<h1>` to `<h6>`, are used to define the structure and hierarchy of content on a web page.

Importance of Headings

- 1. Organizing Content** Headings helps organize the content into sections and subsections, making it easier for users to read and understand. `<h1>` is typically used for the main title of the page, while `<h2>` to `<h6>` are used for subheadings in decreasing order of importance.
- 2. Search Engine Optimization (SEO):** Search engines use headings to understand the structure and main topics of a web page. Proper use of headings can improve the page's SEO, helping it rank higher in search results.
- 3. Consistent Formatting:** Using standard heading tags ensures consistent formatting across different browsers and devices.

Example: Here is an example of how different heading levels can be used to organize content in a hierarchical structure:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Importance of Headings in HTML</title>
  </head>
  <body>
    <h1>Main Title (h1)</h1>
    <p>This is the main title of the page.</p>
    <h2>Subheading 1 (h2)</h2>
    <p>This is a subheading under the main title.</p>
    <h3>Subheading 2 (h3)</h3>
    <p>This is a subheading under Subheading 1.</p>
  </body>
</html>
```



Q.8 Describe the following terms:

- Paragraphs
- Links
- Images

- Lists
- Unordered List
- Ordered List

Ans.

1. Paragraphs

Paragraphs in HTML are used to organize and separate text into readable sections. Each paragraph creates a block of text with space above and below it, making the content easier to read. Paragraphs start with the `<p>` tag and it ends with `</p>`

2. Links

Links in HTML are used to connect one web page to another. They allow you to click on words or images to go to different parts of the same web page or to other web pages on the internet.

Links are created using the `<a>` tag.

```
<a href="https://www.example.com"> Visit Example.com</a>
```

```
<a href="mailto: example@example.com">Send Email</a>
```

3. Images

Images are important in HTML because they make web pages more attractive and engaging. Additionally, using images helps with branding, as logos and specific visuals make it easier for users to recognize a brand. Images are added using the `<img>` tag.

```

```

4. Lists

Lists improve readability by breaking complex ideas into simpler parts, allowing users to scan for details easily. Overall, lists make the content more organized and accessible for everyone. You can create ordered (numbered) and unordered (bulleted) lists.

5. Unordered List

An unordered list is the list of items that are not numbered in a specific order and are typically represented by bullets.

```
<ul>
```

```
<li>Item 1</li>
```

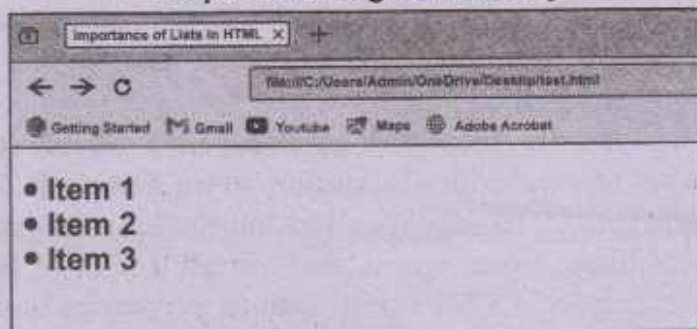
```
<li>Item 2</li>
```

```
<li>Item 3</li>
```

```
</ul>
```

Result

Output can be given side by



6. Ordered List

An ordered list is the list of items that are numbered in a specific order.

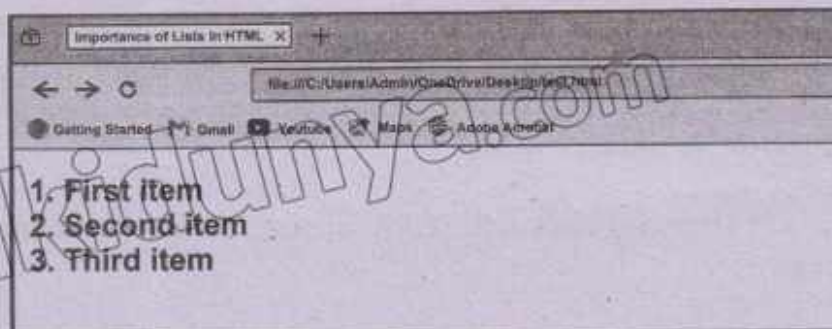
```
<ol>
```

```
<li>First item</li>
```

```
<li>Second item</li>
```

```
<li>Third item</li>
```

```
</ol>
```



Q.9 How to create tables in HTML? Also describe comments in HTML.

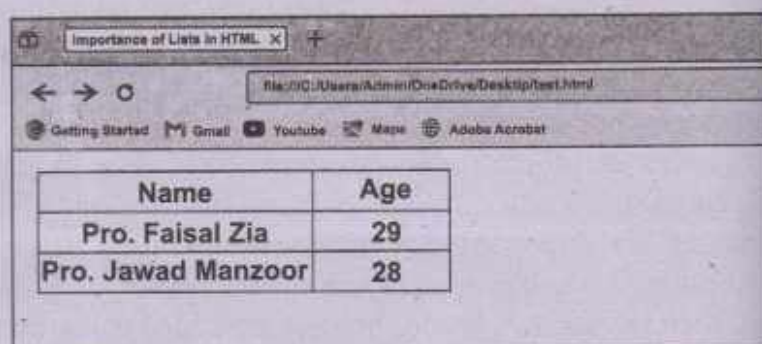
09508009

Ans. Tables in HTML are used to display data in a structured format, allowing for easy comparison and organization of information. A table is created using the `<table>` tag, which contains rows defined by `<tr>` (table row) tags, and each row consists of cells represented by `<td>` (table data) tags. Additionally, headings for the table can be added using `<th>` (table header) tags to provide context for the data.

Example:

```
<table>
</tr>
<th>Name</th>
<th>Age</th>
</tr>
<tr>
<td>Pro. Faisal Zia</td>
<td>29</td>
</tr>
<tr>
<td>Pro. Jawad Manzoor</td>
<td>28</td>
</tr>
</table>
```

Output



The screenshot shows a web browser window with the title 'Importance of Lists in HTML'. The address bar shows the file path 'file:///C:/Users/Admin/OneDrive/Desktop/test.html'. The browser's toolbar includes links for 'Getting Started', 'Gmail', 'YouTube', 'Maps', and 'Adobe Acrobat'. The main content area displays a table with two columns: 'Name' and 'Age'. The table contains two data rows: one for 'Pro. Faisal Zia' with age '29', and another for 'Pro. Jawad Manzoor' with age '28'.

Name	Age
Pro. Faisal Zia	29
Pro. Jawad Manzoor	28

HTML Comments

In HTML, comments can be extremely useful for:

- Explaining the purpose of a specific section of code
- Leaving reminders for future edits
- Temporarily disabling code for testing purposes

Syntax of HTML Comments

HTML comments begin with `<!--` and end with `-->`. Any text placed within these markers will be treated as a comment and will not be rendered by the browser.

```
<!-- This is a comment -->
```

Q.10 Briefly describe Cascading Style Sheets (CSS) with its basic structure.

09508010

Ans. Styling with **Cascading Style Sheets (CSS)** is very important for improving the visual appearance of webpages and improving user experience. CSS allows web developers to control the colors, fonts, layout, and overall design of HTML elements, separating the content from the presentation.) CSS offers various properties and selectors to apply styles to specific elements, enabling responsive design that automatically adjusts to different screen sizes and devices.

Basic Structure of CSS

The basic structure of CSS is essential for applying styles to HTML elements effectively. CSS is composed of rules that consist of selectors and declarations. Selectors specify which HTML elements the styles will apply to, while declarations define the specific styles to be applied, including properties and their corresponding values. A typical CSS rule follows this format:

```
selector {property: value;
}
```

For example, a simple CSS rule can change the color and size of all headings on a web page:

```
h1 {
```

color: red;
font-size: 24px;
}

In this example, the CSS rule targets all `<h1>` elements, setting their text color to red and font size to 24 pixels.

Q.11 Discuss the methods of integrating CSS in HTML.

09508011

Ans. Integrating CSS with HTML is essential for styling web pages and it can be done in three primary ways: inline, internal, and external styles.

1. Inline Styles: This method involves adding CSS directly to individual HTML elements using the style attribute. For example, `<h1 style="color: blue;">Hello World</h1>` changes the color of the heading to blue. While easy for quick changes, inline styles can make the code cluttered and less maintainable.

2. Internal Styles: CSS can also be included in the `<head>` section of an HTML document using the `<style>` tag. This method allows you to define styles for the entire page without affecting others.

For instance:

```
<style>h1 {  
color: yellow;  
}
```

```
</style>
```

3. External Styles: The most efficient method for larger project is to use an external CSS file which is linked to the HTML document with the `<link>` tag in the `<head>` section. This keeps the HTML clean and allows for easy updates across multiple pages.

For Example: `<link rel="stylesheet" href="styles.css">`

Q.12 What are the different ways to apply Backgrounds while using CSS?

09508012

Ans. CSS is a language used to style web pages. One of the fun that you can do with CSS is to change the background of a web page or elements on it. Here are a few ways you can style backgrounds of a web page with CSS:

- **Background Color:** You can change the background color of a web page or any HTML element using the background-color property. For example, if you want a blue background, you can write:
body
{background-color: blue;
}
- **Background Image:** You can set an image as the background of a web page using the background-image property. For example, to set an image as the background, you can write:
body {
background-image: url("your-image.jpg");
}
- **Background Repeat:** Sometimes, the background image is small, and you want it to repeat across the page. You can use the background-repeat property to do this. For example: body {
background-image: url("your-image.jpg"); background-repeat: repeat;
}
- **Background Position:** You can position the background image exactly where you want it using the background-position property. For example, to center the image, you can write:
body {background-image: url("your-image.jpg"); background-position: center;

- **Background Size:** You can control the size of the background image using the background-size property. For example, to cover the entire page with the background image, you can write:

```
body{
background-image:url("your-image.jpg"); background-size: cover;
}
```

Using these properties, you can create colorful and appealing background for web pages.

Q.13 How to create layouts and organize its content with the help of CSS?

09508013

Ans. Creating layouts and organizing content on a web page is an important part of web design. CSS helps you arrange different parts of your web page in an organized way. Here are some basic methods to create layouts and organize content:

- **Divs and Sections:** HTML elements like <div> and <section> are used to group content together. You can then use CSS to style and position them.

For example:

```
<div class = "container">
<section class = "header"> This is the header</section>
<section class = "footer"> This is the footer</section>
</div>
```

- **CSS Grid:** The CSS Grid Layout is a powerful tool for creating complex layouts. It allows you to arrange items into rows and columns. For example:

```
container{
Display:grid;
Grid-template-columns: auto auto;
grid-gap: 10px;
}
.item
{Padding: 20px;
Background-color:lightgrey;
}
```
- **CSS Flexbox:** Flexbox is another layout tool that helps in arranging items in a flexible and responsive way. It is useful for aligning items in a row or column.

For Example

```
.container
{ display:flex;
Justify-content: space-between;
}
.item
{ padding: 20px;
background-color:lightgrey;
}
```

- **Positioning:** CSS positioning properties like position, top, left, right, and bottom allow you to place elements exactly where you want them on the webpage.

For example

```
.box
{ position:absolute;
```

Top:50px;
Left:100px;
Width:200px;
Height:100px;
Background-color:lightblue;

- **Margins and Padding:** Margins and padding are used to create space around and inside elements. Margins create space outside the element, while padding creates space inside the element.

For example

```
.box {  
  margin:20px;  
  padding:10px;  
  background-color:lightgrey;  
}
```

Q.14 How Animations can make your page more attractive? Discuss.

09508014

Ans. CSS animations and transitions can make your web pages more engaging by adding movement and effects.

Adding Animations

CSS allows you to add animations to your web page to make it more interactive. Animations can change the way elements look or move over a period of time. Here are some basic steps to create animations with CSS:

- **Define Keyframes**

Key frames are used to specify the start and end points of an animation, as well as any intermediate steps.

For example

@keyframes example {

From {background-color:red;} to {background-color: yellow;}

}

This keyframe animation changes the background color from red to yellow.

- **Apply the Animation:** To apply the animation to an element, use the animation property.

For example

.animated-box

```
{  
  width: 100px;  
  height: 100px  
  background-color: red;  
  animation-name: example;  
  animation-duration:4s;  
}
```

This will change the background color of the box change from red to yellow for four seconds.

- **Loop and timing:** You can also set how many times the animation should repeat and its timing function.

For example

Animated-box {

Animation-iteration-count: infinite; /*Animation will repeat*/-animation-timing-function:linear;

/*Animation will progress at a constant speed*/

Q.15 Discuss the term "Adding Transitions".

09508015

Ans. CSS allows you to add transitions to a web page to make changes between styles smooth and visually appealing. Transitions can change properties like color, size, or position gradually. Here are some basic steps to create transitions with CSS:

- **Set the initial style:** First, define the initial style for the element you want to animate.

For example

```
.box{  
width: 100px;  
height: 100px;  
background-color: red;  
transition: background-color 2s, width 2s;  
}
```

This sets the initial size and color of the box, and specifies that changes to the background color and width should transition over 2 seconds.

- **Define the Hover State:** Next, define the styles for the element when it is hovered over.

For example

```
.box:hover{  
background-color: yellow; width: 200px;  
}
```

This will change the background color to yellow and double the width of the box when the mouse hovers over it.

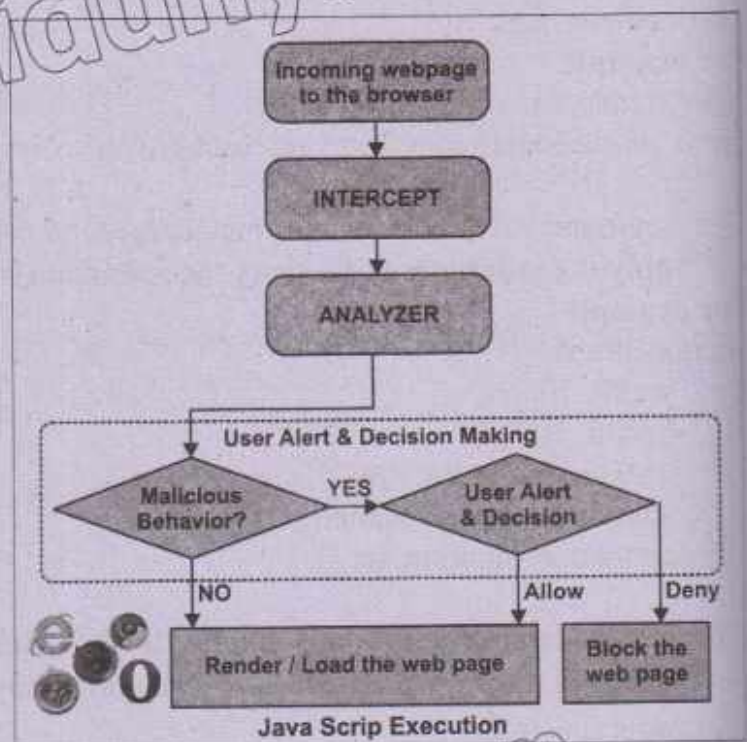
Q.16 Introduce Java Script with its basic syntax and examples.

09508016

Ans. Java-Script is a programming language that is used to make websites interactive and engaging. It allows developers to create things like animations, games, and responsive features that react when you click buttons or move your mouse. For example, when you see a pop-up message on a web page or when an image changes when you hover over it, that's JavaScript at work. Execution of JavaScript in a flowchart.

Basic Syntax and Examples

```
<!DOCTYPE html>  
<html>  
<head>  
<title>JavaScript Example</title>  
</head>  
<body>  
<h1>Welcome to JavaScript</h1>  
<script>  
alert("Hello, 9th Class Students!");  
</script>  
</body>  
</html>
```





Alert Message Example

09508017

Q.17 What are the variables and data types?

Ans. In JavaScript, you can store data using variables. A variable is like a container that holds information which can be using and manipulated in your code.

Declaring Variable

To declare a variable in JavaScript, you use the var, let, or const keyword. Here's an example using var:

```
<script>
var name = "Pro. Faisal Zia";
var age = 29;
alert("Name:" + name + , "Age:" + age);
</script>
```

Dry Run Example

Let's dry-run the above script to understand how it works step-by-step:

1. Declare variables: name = "Pro. Faisal Zia"; and age = 29;
 2. Display alert: alert("Name:" + name + , "Age:" + age);
- This will result in an alert box showing: Name: Athar, Age: 15,

Data Types

Variables can store different types of data. Here are some common data types in JavaScript

1. String

A sequence of characters used for text.

```
var name = "Pro. Faisal Zia"; //String
```

2. Number

Represents both integer and floating-point number.

```
var age = 29; //Number
```

3. Boolean

Represents true or false values.

```
var is Student = true; // Boolean
```

4. Array

A collection of values stored in a single variable. var scores = [90, 85, 88]; //Array

Q.18 What is function? Describe its types.

09508018

Ans. Functions allow you to reuse code and perform specific tasks. They are like mini-programs that you can run whenever you need them. Let's learn how to create and use functions in JavaScript.

Simple Function

Here's an example of a simple function that displays a greeting message:

```
<script>
function greet() {
alert("Hello, Student!");
}
greet(); //This calls the function to execute
</script>
```

In this example

- The function `greet()` declares a function named `greet`.
- `alert("Hello, Student!");` is the code that runs when the function is called.
- `greet();` calls the function, displaying the alert message.

Function with Parameters

Sometimes, you want your function to do something with input values. You can achieve this using parameters.

Function with Multiple Parameters

You can also create functions that take multiple parameters. Here's an example:

```
<script>
function addNumbers (a,b) {
var sum = a + b;
alert("The sum is:" + sum);
}
addNumbers(5, 3); // This calls the function with the parameters 5 and 3
</script>
```

In this example:

- The function `addNumbers(a, b)` declares a function that takes two parameters, `a` and `b`.
- `var sum = a + b;` calculates the sum of `a` and `b`.
- `alert("The sum is:" + sum);` displays the result of the addition.
- `addNumbers(5, 3);` calls the function with the arguments `5` and `3`, resulting in the alert message "The sum is: 8".

Q.19 Describe the role of events In HTML.

09508019

Ans. JavaScript allows you to make your web page interactive by handling events and user input. An event is an action that occurs when a user interacts with a webpage, like clicking a button or pressing a key.

HTML Events

HTML events are actions that occur in the browser, often triggered by user interactions. Events can be used to make web pages interactive by executing JavaScript code when a specific event occurs.

Common HTML Events

Here are some common events you might encounter:

- **OnClick:** Triggered when an element is clicked.
- **Onload:** Triggered when a page or an image has finished loading.
- **Onmouseover:** Triggered when the mouse pointer moves over an element.
- **Onmouseout:** Triggered when the mouse pointer moves out of an element.
- **Onkeyup:** Triggered when a key is released on the keyboard.

Managing Events and User Interactions with JavaScript

Let us learn how to manage events and user interactions step-by-step.

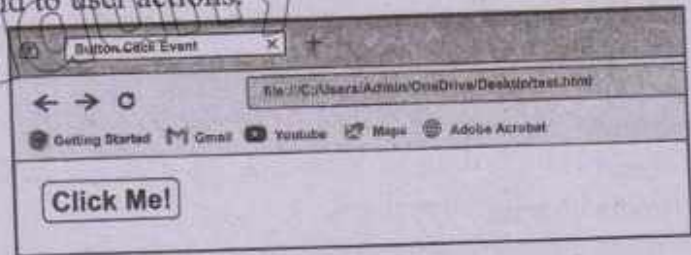
Event Handlers

An event handler is a function that runs when a specific event occurs. You can attach event handlers to HTML elements to make them respond to user actions.

Example: Button Click Event

Here's an example of how to handle a button click event:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Button Click Event</title>
    <script>
      function showMessage() {
        alert("Button was clicked!");
      }
    </script>
  </head>
  <body>
    <button onclick = "showMessage()">Click Me!</button>
  </body>
</html>
```



09508020

Q.20 What are the Interactive elements in HTML?

Ans. In this section, we will learn how to make web pages interactive by developing simple programs and forms. We will also learn how to integrate JavaScript with HTML to add interactive functionality.

Developing Simple Programs and Form

Forms allow users to input data, which can be processed using JavaScript. Here is an example of a simple form that takes user's name and displays a greeting message.

Example: Simple Form

Create an "index.html" file with the following content:

```
<!DOCTYPE html>
<html>
  <head>
    <title>interactive Form </title>
    <script>
      Function greetUser() {
        var name = document.getElementById('name').value;
        alert("Hello," + name + "!");
      }
    </script>
  </head>
  <body>
    <h1> Welcome!</h1>
    <form>
      <label for= "name">Enter
        Your name:</label>
      <input type = "text" id=
        "name" name= "name">
      <button type= "button" onclick= "greetUser()" >Submit</button>
```



```
</form>
</body>
</html>
```

Q.21 Give an example of changing background colors.

Ans. Add the following content to your index.html file:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Change Background Color</title>
<script src="script.js"></script>
</head>
<body>
<h1>Welcome to the Color Changer!</h1>
<button onclick="changeColor()"> Change Background Color</button>
</body>
</html>
```

Add the following content to your script.js file:

```
function changeColor() {
document.body.style.backgroundColor = "lightblue";
}
```

Q.22 What are the developing and debugging techniques in HTML?

Ans. Testing and debugging are important steps in web development. They help you find and fix errors in your code to ensure your web pages work correctly.

Debugging Techniques

Debugging is the process of finding and fixing issues in your code. Here are some common debugging techniques.

1. Using Browser Developer Tools

Most web browsers have built-in developer tools that help you debug your code. For example, you can use the console to see error messages and set break points to pause your code and examine its behaviour.

```
<script>
console.log("This is a debug message");
var x = 10;
console.log("The value of x is: " + x);
```

2. Reading Error Messages

When something goes wrong, your browser will usually display an error message. Reading these messages carefully can help you understand what went wrong and how to fix it.

3. Checking Your Code

Go through your code line by line to check for common issues like missing semi colons, unmatched braces, or incorrect variable names.

Identifying and Fix in Common issues:

Here are some common issues in web development and how to fix them:

1. Broken Links: Make sure all your links point to the correct URLs. Double-check the paths to your files.

2. Incorrect HTML Structure: Ensure your HTML tags are properly nested and closed.

3. CSS Issues: Verify that your CSS selectors are correct and that there are no typos in your styles.

Deploying and Testing

After developing your web page, it's important to test it across different browsers and devices to make sure it works for all users.

Strategies for Testing Web Pages:

1. Cross-Browser Testing:

Web pages can look different in different browsers. Test your web page in multiple browsers like Chrome, Firefox, and Edge to ensure consistency.

2. Responsive Design Testing: Make sure your web page looks good on all devices, including desktops, tablets, and smartphones. Use tools like the browser's responsive design mode to test how your page looks on different screen sizes.

3. User Testing: Ask your friends or family members to use your web page and provide feedback. They may find issues that you missed.

Q.23 Discuss the fundamental differences between HTML, CSS, and JavaScript in the context of web development.

09508023

Ans.

HTML	CSS	JavaScript
HTML is the standard language used to create web pages.	CSS allows web developers to control the colours, fonts, layout, and overall design of HTML elements, separating the content from the presentation.	JavaScript is a programming language that is used to make websites interactive and engaging. It allows developers to create things like animations, games, and responsive features that react when you click buttons or move your mouse.
To create a basic HTML application that displays "a message" on a web page, follow these simple steps: 1. Open your text editor, You can use Notepad, Notepad++, Sublime Text, or any other text editor. 2. Write the following HTML code into your text editor. 3. Save your file with a html extension, for example, My first website.html.	Styling Ways Inline Styles Internal Styles External Styles	Example when you see a pop-up message on a web page or when an image changes when you hover over it, that's JavaScript at work. Execution of JavaScript in a flowchart.
Example <pre> <!DOCTYPE html> <html> <head> <title>My First </pre>	<pre> selector {property: value; } </pre> For example, a simple CSS rule can change the color and size of all headings on a web page.	Syntax: <pre> <!DOCTYPE html> <html> <head> <title>JavaScript Example</title> </pre>

<pre> Web Page</title> </head> <body> <h1>Welcome to My Website</h1> <p>This is my first web page. I am learning HTML in the 9th class! </p> </body> </html> </pre>	<pre> h1 { color: red; font-size: 24px; } </pre> In this example, the CSS rule targets all <h1>' elements, setting their text color to red and font size to 24 pixels.	<pre> </head> <body> <h1>Welcome to JavaScript</h1> <script> alert("Hello,9th Class Students!"); </script> </body> </html> </pre>
--	---	--

Q.24 Create a basic HTML page that includes a header, a paragraph, an image, and a hyperlink.

09508024

Ans. <!DOCTYPE html>

```

<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Basic HTML Page</title>
</head>
<body>
    <!-- Header Section -->
    <h1>UNIQUE GROUP OF INSTITUTIONS</h1>
    <!-- Paragraph Section -->
    <p>This is a basic HTML page that includes a header, a paragraph, an image, and a
hyperlink.</p>
    <!-- Image Section -->
    
    <!-- Hyperlink Section -->
    <a href="https://www.example.com" target="_blank"> UNIQUE GROUP OF
INSTITUTIONS </a>
</body>
</html>

```

Q.25 How do you style a table using CSS? Create a sample table and apply styles to it.

09508025

Ans.

<pre> <!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <meta name="viewport" content="width=device-width, initial- scale=1.0"> <title>Styled Table</title> <style> </pre>	<pre> table { width: 80%; margin: 20px auto; border-collapse: collapse; border: 2px solid #ddd; } tr { background-color: #4CAF50; color: white; </pre>
---	--

```
padding: 12px;
text-align: left;
}
```

```
td {
padding: 12px;
text-align: left;
border: 1px solid #ddd;
}
```

```
tr:hover {
background-color: #f1f1f1;
}
```

```
caption {
font-size: 24px;
font-weight: bold;
margin-bottom: 10px;
}
```

```
</style>
</head>
<body>
<h2>Sample Styled Table</h2>
<!-- Table structure -->
<table>
<caption>Employee Information</caption>
<thead>
```

```
<tr>
<th>Name</th>
<th>Position</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Faisal Zia</td>
<td>Manager</td>
<td>HR</td>
</tr>
<tr>
<td>Prof. Jawad Manzoor</td>
<td>Developer</td>
<td>IT</td>
</tr>
<tr>
<td>Prof. Sajid Muhammad</td>
<td>Designer</td>
<td>Marketing</td>
</tr>
</tbody>
</table>
</body>
</html>
```

Topic Wise Short Questions (Additional)

Web Development & Its Components

Q.1 What is web development? 09508026

Ans. Web development is the process of creating websites and web applications. It involves using various programming languages and tools to design, build, and maintain websites.

Q.2 Differentiate between Front-end & Back-end development. 09508027

Ans. Front-end Development focuses on what users see and interact with on a website.

Back-end Development manages the behind-the-scenes part of a website, like servers, databases, and application logic.

Q.3 Define HTML. 09508028

Ans. HTML stands for **Hyper Text Markup Language**. It is the standard language used to create web pages. Think of HTML as the building blocks of a website.

Q.4 Define HTML Content. 09508029

Ans. Content in HTML is the main information on a web page that users read and interact with.

Q.5 What are the headings in HTML? 09508030

Ans. Headings in HTML, ranging from <h1> to <h6>, are used to define the structure and hierarchy of content on a web page.

Q.6 Describe the use of Paragraphs and Links in HTML. 09508031

Ans. Paragraphs in HTML are used to organize and separate text into readable

sections. **Links** in HTML are used to connect one web page to another. They allow you click on words or images to go to different parts of the same page or to other pages on the internet.

Q.7 Why comments are used in HTML?

09508032

Ans. In HTML, comments are used to insert notes or explanations within the code.

CSS & JavaScript

Q.8 Define CSS.

09508033

Ans. Styling with CSS (Cascading Style Sheets) is essential for enhancing the visual appearance of web pages and improving user experience.

Q.9 What do you know about JavaScript?

09508034

Ans. JavaScript is a programming language that is used to make websites interactive and engaging.

Q.10 Define Debugging.

09508035

Ans. Debugging is the process of finding and fixing issues in your code.

HTML

Q.11 Differentiate between ordered and unordered list.

09508036

Ans. Ordered List: In an ordered list all the items of the list start with a number and the numbers are in ascending order. The `<ol></ol>` tags are used for creating an ordered list and each item of the list is surrounded with `<li></li>` tags.

Unordered List

In an unordered list each item of the list generally starts with a bullet. Unordered means the list items are not having a number. The `<ul></ul>` tags are used for creating an unordered lists and each item of the list is surrounded with `<li></li>` tags.

Q.12 Define Hyperlink.

09508037

Ans. Hyperlink is such an icon, graphic, or text in a webpage, when clicked takes you to some other webpage. Hyperlink allow you to go from one page to another page.

Q.13 What are two important terms that you need to understand in the name

HTML?

Ans. There are two important terms that you need to understand in the name HTML.

- Hypertext
- Markup Language

Q.14 What do you mean by Markup Language?

Ans. Markup is what HTML tags do to the text inside them. A webpage consists of a series of elements which are represented by tags.

Example: `<p> I am 9th class student </p>`

Here `<p>` shows marking of paragraph opening tag and `</p>` means marking of paragraph closing tag.

Q.15 Define hypertext.

Ans. The term *Hypertext* is used due to the special text in a webpage called *hyperlinks*. By clicking on these links you can move from one webpage to another. Hyperlinks are used to navigate on the World Wide Web (WWW).

Q.16 What are HTML tags?

Ans: HTML tags are commands or codes that specifies how a Web page is formatted.

Q.17 What is the role of HTML?

Ans. HTML tells the browser how the contents are structured inside a webpage. When you send request to a web server through a web browser to access a webpage, you get HTML as a response from there. The web browser understands the HTML and displays contents of the webpage.

Q.18 Name the types of Lists in HTML.

Ans. These are the following types of lists in HTML:

1: Unordered list

2: Ordered list

Q.19 What is the use of hyperlinks?

Ans: Hyperlinks are used to navigate on the World Wide Web (WWW). Hyperlink is such an icon, graphic, or text in a webpage that when clicked takes you to some other webpage. The term Hypertext is used due to the special text in a webpage called hyperlinks.

Q.20 Describe HTML Elements and Element content.

09508045

Ans. HTML elements: HTML documents consist of text files that contain HTML elements. HTML elements are defined using HTML tags. HTML tags are surrounded by the two characters < and > and generally they come in pairs, such as <head> </head>. Some HTML have no content are called empty elements. Empty element do not have an end tag, such as
 element.

Element content: The text between these two tags is known as element content.

Q.21 How we create Webpage using HTML?

09508046

Ans. To create a webpage, you need a text editor, a software to edit text in a file. you can use Notepad and in Mac you use Text Edit. You can follow these four steps to create your first webpage.

1. Open text editor like Notepad or WordPad
2. Write some HTML content.
3. Save the HTML Page with extension .htm or .html
4. In order to view your first webpage, just double click the HTML file web browser is automatically opened to show your webpage.

HTML Tags

Q.22 How many types of tags are in an HTML?

09508047

Ans. There are two types of tags in an HTML document.

1. Paired Tags
2. Unpaired Tags

Q.23 What is the difference between paired tags and unpaired tags.

09508048

Ans. Paired Tags

Most of the tags in HTML are paired tags. They consist of a start tag, an end tag and contents between them.

Syntax: <tagname> Contents </tagname>

Example: For example, tag <p> to create a paragraph in HTML document is a paired tag.

Unpaired Tags

Some tags do not have closing tags and they are called unpaired tags or empty tags. They are simply written as <tagname>.

Example: For example,
 for line break, <hr> to insert a horizontal line.

HTML & Different Attributes

Q.24 What are attributes in HTML?

09508049

Ans. Attributes are the properties associated with tags. They provide some information with respect to a specific tag. Each attribute is given a value.

Generally, a tag with attributes is written as:

<tagname attribute1="value" attribute2="value" attributeN="value">

Example: For example, <p align = "center"> Content </p> shows the content of a paragraph at center with respect to left and right margins.

Q.25 Define HTML and body tags.

09508050

Ans: HTML: The first tag in the html document is <html> that indicates the start of the HTML document. The last tag is </html> indicates that is the end of the HTML document.

Syntax: <html> </html>

Body Section Anything typed inside the body tags will be displayed in the browser window. The visible part of the HTML document is between <body> and </body>.

Syntax: <body> </body>

Q.26 What do you know about Head section of HTML document?

09508051

Ans. Head section typically defines the document title, styles and other information about the whole document. Head section starts with <head> tag and ends with </head>

Syntax: <head> </head>

Q.27 How do we specify a Page Title?

09508052

Ans: To specify title of the webpage, you use <title> tag inside <head> </head> tags. The text between these tags is used to set the

title to the page. It is displayed on the title bar of the Web browser.

Syntax: <title> </title>

Example: <title>First HTML Document</title> will display First HTML Document, on the title bar of the Web browser.

Q.28 How we create paragraph and Inserting Line breaks by using HTML?

09508053

Ans. Creating a Paragraph: The <p> tag marks starting of a paragraph, and </p> tag marks closing of the paragraph. The text inside <p> </p> tags is actual contents of the paragraph.

Syntax: <p> </p>

Inserting Line Breaks: The
 element inserts a line break without starting a new paragraph.

Syntax:

Example: <p> This is
 a paragraph</p> displays text in two lines, as following:

This is
a paragraph

Q.29 How we insert spaces and add headings/sub-headings by using HTML?

09508054

Ans. Inserting Spaces: If the user wants to have many spaces in a HTML document then the character entity must be used.

Syntax:

Example: For example, <p> I study in 9th class. </p> generates the following output.

I study in 9th class.

Add Headings/Sub-headings: There are six headings tags, <h1></h1> to <h6></h6>. The <h1></h1> tags are used to specify the largest heading and <h6></h6> tags specify the smallest.

Q.30 What is Text formatting? And how we bold the text.

09508055

Ans. Text formatting tags are used to format the text in HTML document. Some commonly used text formatting tags are

described below.

Bold the text: These tags will make the text bold that is within the tags.

Syntax:

Example: I LOVE PAKISTAN

Q.31 How can you underline and Italic text by using HTML tags?

09508054

Ans: Underline the text: These tags will underline the text that is within the tags.

Syntax: <u></u>

Example: <u> I LOVE PAKISTAN </u>

Italic the text These tags are used to make the text italic that is within the tags.

Syntax: <i></i>

Example: <i> I LOVE PAKISTAN </i>

Q.32 Describe font size and font color and font face tags in HTML.

09508057

Ans. Font Size: tags are used to change the font size. Replace the ? symbol with a number in the range 1 to 7. 1 is the smallest and 7 is the largest font size.

Example: WORLD WIDE WEB

Font Color: tags are used to change the color of text that is within the tags. Replace the ? symbol with color such as black, blue, brown, gray, green, maroon, orange, pink, red, white, yellow, etc.

Example: WORLD WIDE WEB

Font Face: tags are used to change the font face of text that is within the tags. Replace the ? symbol with font face such as arial, courier, calibri, Times new times roman, etc.

Example: WORLD WIDE WEB

Q.33 What is the purpose of alt attribute?

09508058

Ans. If for some reason the browser cannot display an image, the user can insert the alt attribute in the tag to tell the reader what image is missing in the page. The value of the alt attribute provides alternative text in place of image in the Web page.

Q.34 How do we apply background image in a webpage? 09508059

Ans. An image can be set as background of a page using the background attribute in the <body> tag.

Example: <body background="image.jpg">

Q.35 How do we set background and foreground colors of the web page? 09508060

Ans: The bgcolor attribute of <body> tag specifies the background color of a document and text attribute specifies the foreground

text color of the webpage.

Example: <body bgcolor="#E6E6FA" text="red">
<h1>Hello world!</h1>
</body>

Q.36 Which tag is used for table? 09508061

Ans. <table></table> tags are used for table.

Q.37 What is metadata? 09508062

Ans: Metadata is data(information) about data. Metadata will not be displayed on the page, but will be machine parsable.

Topic Wise Multiple Choice Questions (Additional)

Choose the correct option.

HTML

1. What does HTML stands for? 09508063

- (a) Hyper Text & Markup Language
- (b) Hyper Text & Markup Level
- (c) Hyper Text & Making Language
- (d) None of these

2. Which is refer to the skeleton of a web page? 09508064

- (a) Career Opportunities
- (b) Problem Solving
- (c) Digital Literacy
- (d) Creativity

3. Hotmail was created by? 09508065

- (a) Sabeer Bhatia
- (b) Jack Smith
- (c) Both a,b
- (d) None of these

4. Which one is not the component of Front-end development? 09508066

- (a) HTML (b) CSS
- (c) JavaScript (d) Web Server

5. HTML 5 was created in _____?

- (a) 2013 (b) 2014
- (c) 2015 (d) 2016

6. HTML 2.0 was created in _____? 09508067

- (a) 1995 (b) 1996
- (c) 1997 (d) 1998

7. Notepad++ is a _____? 09508068

- (a) Audio Editor (b) Text Editor
- (c) Video Editor (d) None of these

8. Google Chrome is a _____? 09508069

- (a) Audio Editor (b) Web Browser
- (c) Search Engine (d) Both b,c

9. Who is the founder of HTML? 09508070

- (a) Jack
- (b) Charles Babbage
- (c) Jeff Bezos
- (d) Tim Berners Lee

10. HTML is not a _____ language. 09508071

- (a) Programming (b) Markup
- (c) Both a and b (d) None of above

11. Webpages can be created and modified by using _____. 09508072

- (a) Notepad ++ (b) Notepad
- (c) Text Edit (d) All of these

12. An HTML element usually consists of a _____ tags. 09508073

- (a) Start (b) End
- (c) Start and End (d) None of above

13. The _____ elements is a container for metadata (data about data). 09508074

- (a) <body> (b) <head>
- (c) <Title> (d) <html>

14. To save the HTML page, you can use _____ as file extension. 09508075

- (a) .htm (b) .html
- (c) xhtml (d) both a and b

15. There are _____ of heading in HTML document. 09508076

- (a) 4 (b) 5
- (c) 6 (d) 1

16. _____ tag is used to display data in tabular form. 09508077
 (a) td (b) table
 (c) tr (d) th
17. In "body" tag _____ is used to make a picture of background image of a webpage? 09508078
 (a) bag (b) background
 (c) bgimage (d) Both a and b
18. HTML is a computer language which is used to create: 09508079
 (a) Browser (b) A web page
 (c) Explorer (d) programming
19. Which tag makes the enclosed text bold? 09508080
 (a) (b) <h>
 (c) <i> (d) <m>
20. Tags and text that are not directly displayed on the page and written in _____ section. 09508081
 (a) <body> (b) <head>
 (c) <Title> (d) <center>
21. Which tag is used for inserting a line break. 09508082
 (a)
 (b) <h>
 (c) <i> (d) <m>
22. Which attribute is used with *img* tag to display the text if image could not load in browser. 09508083
 (a) number (b) row
 (c) col (d) alt
23. Which language is used to create a webpage? 09508084
 (a) XTML (b) TML
 (c) ML (d) HTML
24. A website consist of: 09508085
 (a) pages (b) web pages
 (c) web alt (d) web
25. The head element is a container for: 09508086
 (a) number (b) metadata
 (c) col (d) text
26. The visible part of the HTML document is between: 09508087
 (a) <body> and </body>
 (b) <head>
 (c) <Title>
- (d) <center>
27. _____ tells the browser how the contents are structured inside a webpage. 09508088
 (a) link (b) HTML
 (c) linkage (d) body
28. The term Hypertext is used due to the special text in a webpage called: 09508089
 (a) link (b) hyperlink
 (c) linkage (d) body
29. How many types of tags in an HTML document? 09508090
 (a) 1 (b) 2
 (c) 3 (d) 4
30. Most of the tags in HTML are _____ tags. 09508091
 (a) paired (b) unpaired
 (c) double (d) italic
31. Which are contain start tag, an end tag and contents between them. 09508092
 (a) paired tags (b) unpaired
 (c) double (d) triple
32. Some tags do not have closing tags and they are called: 09508093
 (a) paired tags
 (b) unpaired tags or empty tags
 (c) empty
 (d) triple
33. Which of the following tags is used to creating paragraph? 09508094
 (a) <tr></tr> (b) <p> </p>
 (c) (d)
34. Which of the following tags is used to insert space? 09508095
 (a) <tr></tr> (b) <p> </p>
 (c) (d)
35. Headings are defined with the tags: 09508096
 (a) <tr> (b)

 (c) <h1> to <h6> (d)
36. The _____ tag specifies the font styles, font size, and colour of text. 09508097
 (a) <bold> (b)
 (c) <italic> (d) <size>
37. Which tag is used for largest heading: 09508098
 (a) <h6></h6> (b) <h1></h1>
 (c) <h2></h2> (d) <h3></h3>

38. Which tags will make the text underline that is within the tags?

- (a) (b) <u></u>
(c) <n></n> (d) <z></z>

39. Unordered list each item of the list generally starts with a:

- (a) number (b) character
(c) bullet (d) colon

40. Which tags will make the text italic that is within the tags?

- (a) (b) <u></u>
(c) <i></i> (d) <z></z>

41. An _____ list is created inside the tags. Each list item is added with

- (a) unordered (b) ordered
(c) list (d) table

42. Ordered list each item of the list generally starts with a:

- (a) number (b) character
(c) bullet (d) colon

43. An ordered list starts with and ends tag. Each list item starts with:

- (a) (b) <u></u>
(c) <i></i> (d) <z></z>

44. Which tag is used for smallest heading?

- (a) <h6></h6> (b) <h1></h1>

- (c) <h2></h2> (d) <h3></h3>

CSS

45. Which one is not the component of Back-end Development?

- (a) Databases (b) CSS
(c) Back-end (d) Web Server

46. How many primary components of CSS are available?

- (a) 4 (b) 5
(c) 3 (d) 2

47. Which is used to improve the visual appearance of webpages?

- (a) HTML 2.0 (b) HTML
(c) HTML 3.2 (d) CSS

Java-Script

48. Java is a _____ language?

- (a) Programming (b) Machine
(c) Both a,b (d) None

49. Which one is the function of Java-Script?

- (a) Simple
(b) Function with Multiple Parameters
(c) Function with parameters
(d) All

50. _____ is the process of find and removing error?

- (a) Bug (b) CSS
(c) Bugging (d) Debugging

Answer Key

1	a	2	c	3	c	4	d	5	b	6	a	7	b	8	d	9	d	10	a
11	d	12	c	13	b	14	d	15	c	16	b	17	b	18	b	19	a	20	b
21	a	22	d	23	d	24	b	25	b	26	a	27	b	28	b	29	b	30	a
31	a	32	b	33	b	34	d	35	c	36	b	37	a	38	b	39	c	40	c
41	a	42	a	43	a	44	a	45	b	46	c	47	d	48	a	49	d	50	d

Solved Exercise

Choose the correction option.

1. Which of the following tag is not a correct HTML tag?

- (a) <div> (b)
(c) <head> (d) <footer>

2. What does CSS stand for?

- (a) Cascading Style Sheets
(b) Computer Style Sheets
(c) Creative Style Sheets
(d) Colorful Style Sheets

3. Which of the following tag is used to create a hyperlink in HTML? 09508114
 (a) <link> (b) <a>
 (c) <href> (d) <nav>
4. Which property is used to change the background color in CSS? 09508115
 (a) color (b) background-color
 (c) bgecolor (d) background
5. Which HTML attribute is used to define inline styles? 09508116
 (a) class (b) style
 (c) font (d) styles
6. Which of the following is the correct syntax for a CSS rule? 09508117
 (a) selector {property: value;}
 (b) selector {property=value;}
 (c) selector: {property: value;}
 (d) selector {property value;}

7. In JavaScript, which mark-up is used for comments? 09508118
 (a) /** (b) //
 (c) < (d) ZV
8. How do you include JavaScript in an HTML document? 09508119
 (a) <script src="script.js"></script>
 (b) <java src="script.js"></java>
 (c) <js src="script.js"></js>
 (d) <code src="script.js"></code>
9. Which HTML tag is used to create an unordered list? 09508120
 (a) (b)
 (c) (d) <list>
10. Which tag is used to display a horizontal line in HTML? 09508121
 (a)
 (b) <hr>
 (c) <line> (d) <hline>

Answer Key

1	d	2	a	3	b	4	b	5	b	6	a	7	b	8	a	9	b	10	b
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	---

Short Questions

Q.1. What is the purpose of the <head> tag in HTML? 09508122

Ans. <head> This section contains meta information about the HTML document like the title.

Q.2. Explain the difference between an ordered list and an unordered list in HTML. 09508123

Ans.

Ordered List	Unordered List
First item	Item 1
Second item	Item 2
3rd item	Item 3

Q.3 How do you add a comment in CSS? 09508124

Ans. To add comments in CSS follow the method:

HTML comments begin with <!-- and end with -->. Any text placed within these markers will be treated as a comment and

will not be rendered by the browser. <!-- This is a comment -->

Q.4 What are the different ways to apply CSS to an HTML document? 09508125

Ans. Applying CSS can be done in three primary ways:

- Inline Styles
- Internal Styles
- External Styles

Q.5 How can you include JavaScript in an HTML file? 09508126

Ans. There are various ways to include JavaScript in an HTML file. One option is to use inline JavaScript, which embeds JavaScript directly into the event properties of an HTML element, such as onclick or onload.

Q.6. Describe the syntax for creating a hyperlink in HTML. 09508127

Ans.

Anchor: The <a> tag is known as an anchor. It is used to create a hyperlink which

may be text or image, with the **href** attribute. The **href** attribute is used to specify the URL of the linked webpage.

Syntax: `<a href="url">text to be displayed</a>`

Examples: `<a href="http://www.google.com"> Visit`

`www.google.com </a>`

Makes the text "Visit www.google.com" a hyperlink. If you click on this text in the webpage, it takes you to the website www.google.com.

- `<a href="http://www.ilmkidunya.com"> Ilmki Dunya</a>`
- `<a href="http://www.nation.com.pk"> The Nation </a>`

Q.7. What is the function of the <div> tag in HTML?

09508128

Ans. HTML elements like `<div>` and `<section>` are used to group content together. You can then use CSS to style and position them. **For example:**

`<div class = *container*>`

`<section class = *header*> This is the header</section>`

`<section class = *footer*> This is the footer</section>`

Q.8. How do you link an external CSS file to an HTML document?

09508129

Ans. The most efficient method for larger project is to use an external CSS file which is linked to the HTML document with the `<link>` tag in the `<head>` section. This keeps the HTML clean and allows for easy updates across multiple pages.

For Example:

`<link rel="stylesheet" href="styles.css">`

Q.9. What is the use of the <table> tag in HTML?

09508130

Ans. Short Question No. 36

Q.10. Explain the box model in CSS.

09508131

Ans. The CSS box model is used to design that outlines how contents on a webpage are organized and their sizes are determined. Every HTML element can be thought of as a rectangular box, with the box model defining the space around its content.

Long Questions

1. Discuss the fundamental differences between HTML, CSS, and JavaScript in the context of web development.

09508132

Ans. See Long Question No. 23

2. Explain the process of setting up a development environment for web development. By discussing the necessary software's and tools.

09508133

Ans. See Long Question No. 4

3. Create a basic HTML page that includes a header, a paragraph, an image, and a hyperlink.

09508134

Ans. See Long Question No. 24

4. How do you style a table using CSS? Create a sample table and apply styles to it.

09508135

Ans. See Long Question No. 25

5. Describe the different CSS selectors and provide examples of each.

09508136

Ans. Styling HTML Elements with Fonts, Colors, Backgrounds Styling Fonts
Changing the font family size, weight, and style.

Example of Styling Fonts

Here is how you can style the font of a paragraph:

`P{`

`Font-family: Arial, sans-serif;`

`font-size: 16px;`

font-weight: bold;
font-style: italic;

}

In this example:

font-family: Arial, sans-serif, sets the font to Arial. If Arial is not available, it will use a generic sans-serif font.

- **font-size:** 16px; sets the font size to 16 pixels.
- **font-weight:** bold; makes the text bold.
- **font-style:** italic; makes the text italic.

6. Explain the process of creating a responsive web page using CSS with the help of examples and explanations.

09508137

Ans. CSS Flexbox: Flexbox is another layout tool that helps in arranging items in a flexible and responsive way. It is useful for aligning items in a row or column.

For Example

```
.container
{
  display: flex;
  justify-content: space-between;
}
.item
{
  padding: 20px;
  background-color: lightgrey;
}
```

Positioning: CSS positioning properties like position, top, left, right, and bottom allow you to place elements exactly where you want them on the webpage. **For example:**

```
.box
{
  position: absolute;
  top: 50px;
  left: 100px;
  width: 200px;
  height: 100px;
  background-color: lightblue;
}
```

7. Write a JavaScript function that changes the background colour of a web page when a button is clicked. Provide the complete code and explain how it works.

09508138

Ans. See Long Question No. 21

8. How do you add animations and transitions using CSS? Provide examples and explain the properties involved.

09508139

Ans. See Long Question No. 14,15

Activities

Activity 1

09508140

In this activity, you will practice creating a basic web page layout using HTML and CSS. Follow these steps:

1. Create a new HTML file and name it "index.html".
2. Add the basic structure of an HTML document.
3. Inside the <body> tag, create a <div> with the class name "container".

4. Inside the <div>, add three sections with class names "header", "content", and "footer".
5. Link the CSS file to your HTML file using the <link> tag in the <head> section.
6. Use CSS to style the Container class with a grid layout, and apply background colours to the Header, content, and footer sections.
7. Test your web page in a browser to see your layout.

Ans. Class Work/ Lab Work/ Practical Work

Hint: Follow long question # 5

Activity 2

09508141

Create your own variables with different data types. For example, create a variable for your favourite colour, your current grade or whether you like coding.

Ans. Class Work/ Lab Work/ Practical Work

Activity 3

09508142

Creating a function

1. Write a function that takes a name as a parameter and displays a personalized greeting. Call the function with your name to see the greeting.
2. Write a function that calculates the area of a rectangle given its length and width.

Ans. Class Work/ Lab Work/ Practical Work

Activity 4

09508143

Create a button that hides an element on the page when clicked. Experiment with different JavaScript functions and HTML elements.

Ans. Class Work/ Lab Work/ Practical Work