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Full Stack Software Development

Course: Introduction to Web Development

Lecture On: Introduction to Front-End Technologies and Getting Started with HTML

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Today's Agenda

- What is Front-End Web Development?

- How to Create Websites and Web Applications?

- What are the Three Ingredients of a Website?

- Introduction to the World of HTML

The World of Front-End Web Development

Parts of a Website

Visuals

For example, Posts, Buttons, Sidebar, and Photos on Facebook

Front-End

Behind-the-Scenes

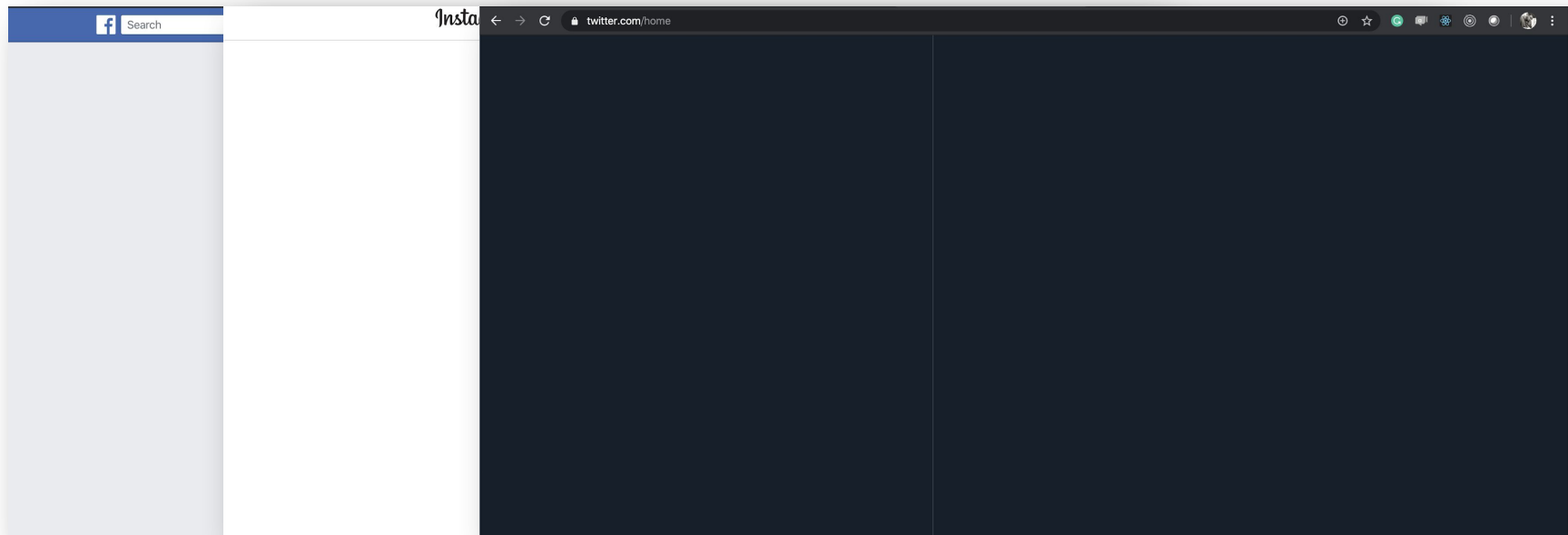For example, clicking on a profile shows details about that profile only

Back-End

Data

For example, photos of your friends, your personal data and suggestions

Database

A World Without Front-End Development

Role of a Front-End Web Developer

1. Creating the user interface for the web application

2. Bringing the application alive

3. Helping the user 'use' the application

4. Converting the back-end and the data set to meaningful visuals

Three Ingredients of a Website

Foundation

(HTML)

Style

(CSS)

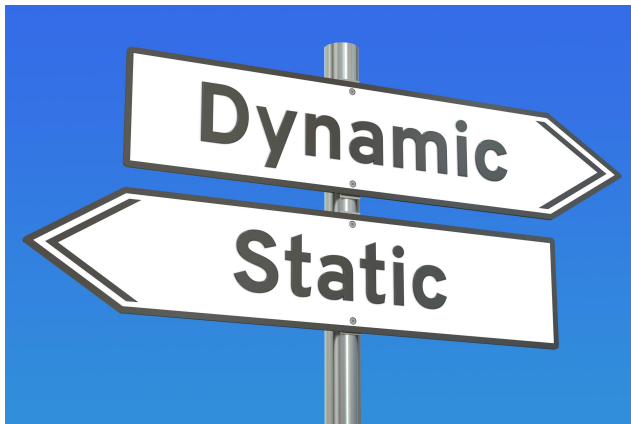

Functionality

(JS)

Three Ingredients of a Website

HTML

Foundation

CSS

Style

JS

Functionality

Static Websites vs Dynamic Websites

Static Website	Dynamic Website
The content present on the web page cannot be modified at runtime.	The content present on the web page can be modified at runtime.
There is no interaction with the database.	The website can interact with the database.
It is cheaper to develop a static website as compared to a dynamic website.	A dynamic website requires more cost of development than a static website.
The same content gets loaded every time.	The content that gets loaded may vary as per requirements.

Note: The term 'static websites' does not mean they will not respond to user actions. They are called 'static' because they cannot interact with the server or database.

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Poll 1 (15 Sec)

Which of the following statements about static websites is true?

1. The content present on the static websites can be modified at runtime.

2. Static websites can be manipulated using server-side communication.

3. It is possible to interact with static websites database.

4. The content present on the static websites cannot be modified at runtime.

Poll 1 (Answer)

Which of the following statements about static websites is true?

1. The content present on the static websites can be modified at runtime.

2. Static websites can be manipulated using server-side communication.

3. It is possible to interact with static websites database.

4. **The content present on the static websites cannot be modified at runtime.**

Poll 2 (15 Sec)

Which of the following statements about dynamic websites is/are true?
Note: More than one option can be correct.

1. Dynamic websites can be manipulated using server-side communication.

2. The content present on the dynamic websites cannot be modified at runtime.

3. The content present on the dynamic websites can be modified at runtime.

4. Dynamic websites are less versatile as compared with static websites.

Poll 2 (Answer)

Which of the following statements about dynamic websites is/are true?
Note: More than one option can be correct.

1. **Dynamic websites can be manipulated using server-side communication.**

2. The content present on the dynamic websites cannot be modified at runtime.

3. **The content present on the dynamic websites can be modified at runtime.**

4. Dynamic websites are less versatile as compared with static websites.

Course Overview

1. Along the course, you will learn about the following technologies:
- HTML
- CSS
- JavaScript
- JSON
- AJAX

2. The project that we will be building along the course using the technologies mentioned above is the **Food Recipes Website**.

Introduction to HTML

- **HTML:** HyperText Markup Language

  - **Hypertext:** Text which contains hyperlinks (or references) to other text.

  - **Markup Language:** It is a way in which the documents are annotated such that it can be systematically distinguished from the normal text.

- **HTML** is a set of **markup** symbols intended for displaying content on the Internet.

- **Markup** tells browsers how to display the content of a webpage, that is, the words and images. Markups are commonly known as **tags**.

- The HTML file is broken into small parsing elements called Tokens, which are read by the browser.

HTML Structure

HTML Container

- A container that holds the content and the information about the content

Head

- Information about the content

Body

- Content

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HTML Structure
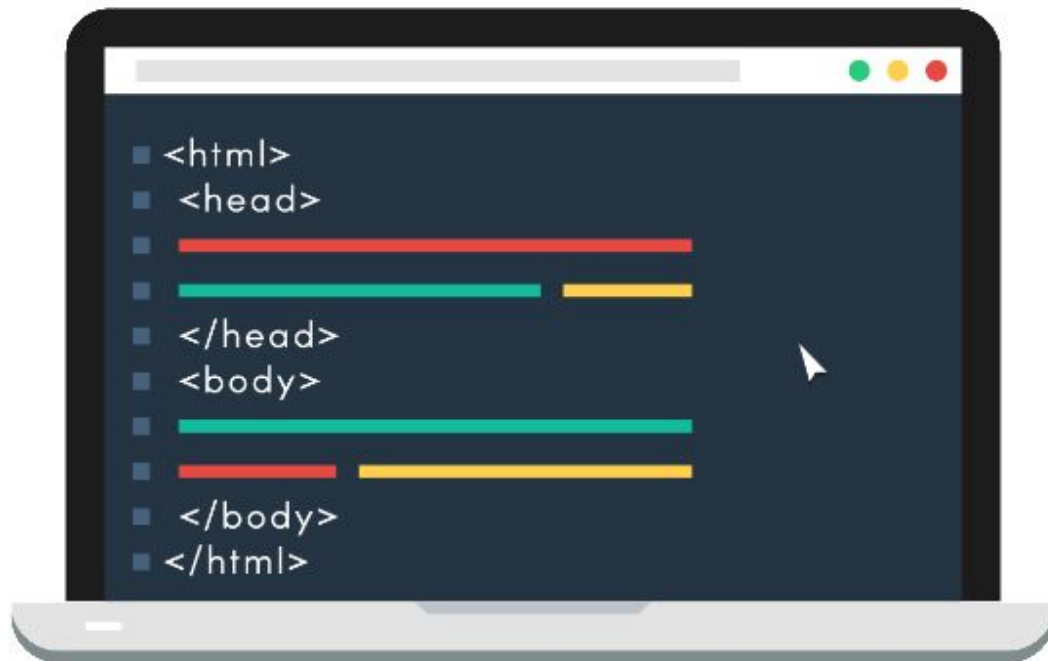
Poll 3 (15 Sec)

What is the full form of HTML?

1. High Text Markup Language

2. Hyper Test Markup Language

3. Hyperlink Text Markup Language

4. HyperText Markup Language

Poll 3 (Answer)

What is the full form of HTML?

1. High Text Markup Language

2. Hyper Test Markup Language

3. Hyperlink Text Markup Language

4. **HyperText Markup Language**

HTML Tags

</>

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HTML Tags

Tag
Name

↓

<h1>This is a header</h1>

Content

Opening Tag
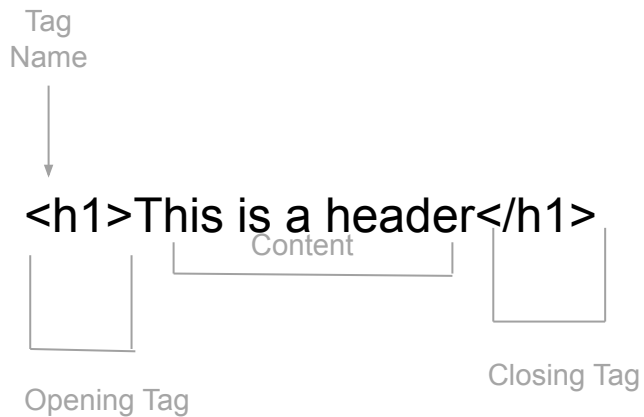
Closing Tag

HTML Element

Some of the common HTML tags
...
<a>

<select></select>
<table></table>

Self -Closing HTML Tags

Tag
Name

↓

↑   ↑

Opening Tag   Closing Tag
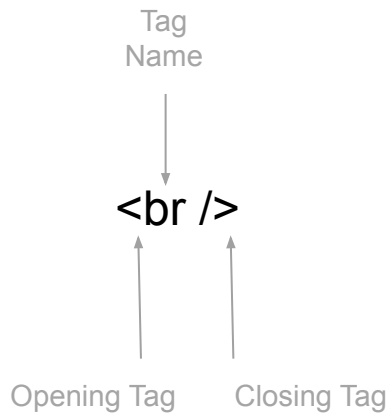
HTML Element

Some of the self-closing tags
<img />
<input />
<hr />

HTML Tags with Attributes

Tag
Name

Attribute
Name

Attribute
Value

<h1 class="heading">This is a header</h1>

Attribute

Content

Opening Tag

Closing Tag
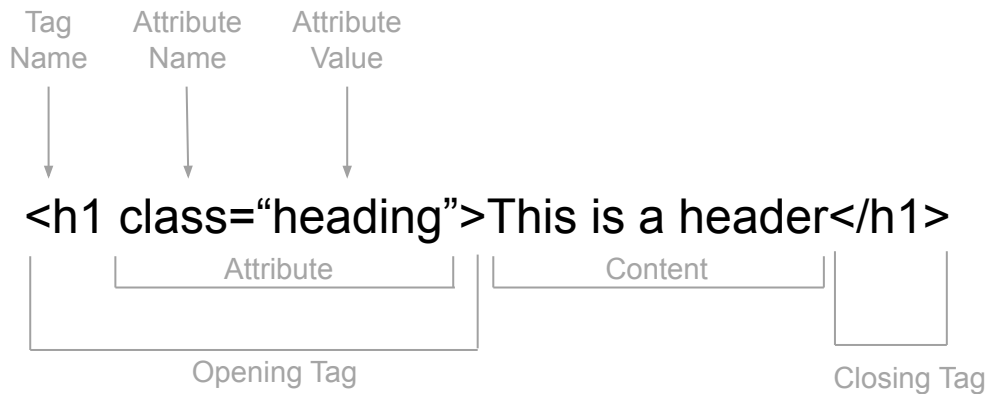
HTML Element

Poll 4 (15 Sec)

How is an element declared in HTML?
(More than one option may be correct.)

1. <tag></tag>Content

2. <tag> content

3. <tag> content </tag>

4. <tag> Content <tag>

Poll 4 (Answer)

How is an element declared in HTML?
(More than one option may be correct.)

1. <tag></tag>Content

2. <tag> content

3. <tag> content </tag>

4. <tag> Content <tag>

Poll 5(15 Sec)

How is an element's attribute declared in HTML?
(More than one option may be correct.)

1. <tag name="value"></tag>Content

2. <tag name="value"> content </tag>

3. <tag name='value'> content </tag>

4. <tag> Content <tag>

Poll 5(Answer)

How is an element's attribute declared in HTML?
(More than one option may be correct.)

1. <tag name="value"></tag>Content

2. **<tag name="value"> content </tag>**

3. **<tag name='value'> content </tag>**

4. <tag> Content <tag>

HTML Elements and Attributes

HTML Elements and Attributes
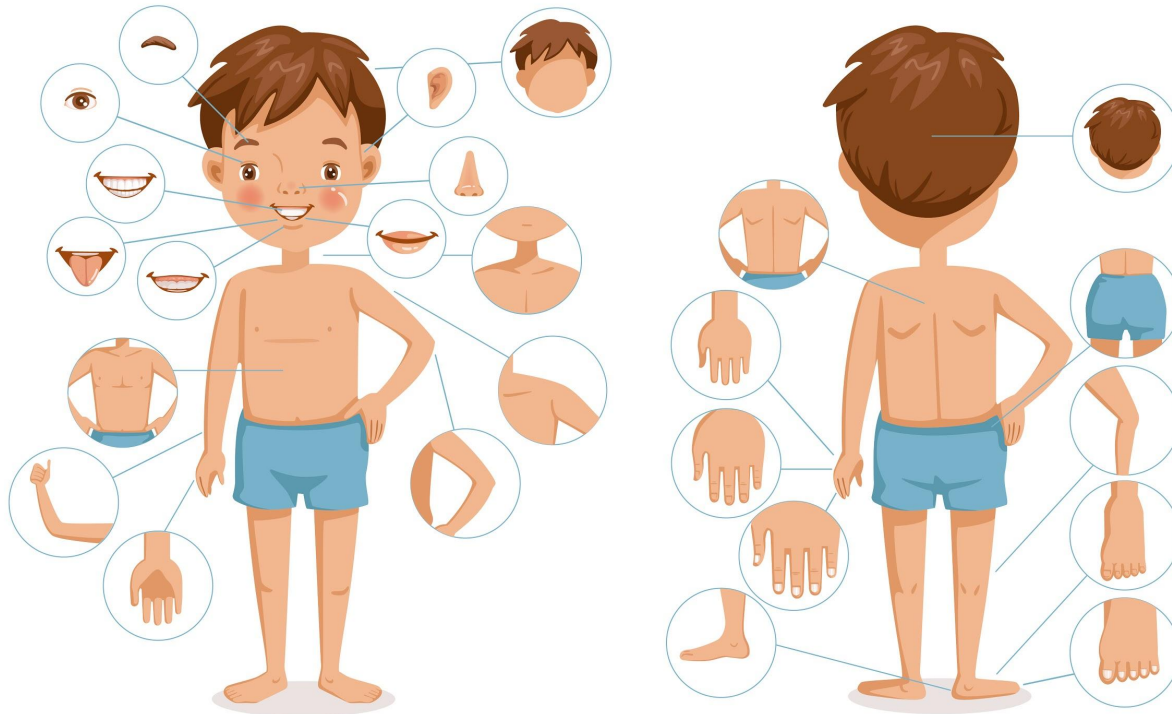
Poll 6 (15 Sec)

Which of the following statements about **attributes** is true?
(More than one option may be correct.)

1. They contain the content of the HTML elements.

2. They provide additional information about the HTML elements.

3. They are always declared in the end tag.

4. They always come in name-value pairs.

Poll 6 (Answer)

Which of the following statements about **attributes** is true?
(More than one option may be correct.)

1. They contain the content of the HTML elements.

2. **They provide additional information about the HTML elements.**

3. They are always declared in the end tag.

4. They always come in name-value pairs.

Poll 7 (15 Sec)

Which of the following statements about the ID attribute of an element is true?
(More than one option may be correct.)

1. It is unique for an element.

2. It is not unique for an element.

3. It is an attribute of an element.

4. It is an element.

Poll 7(Answer)

Which of the following statements about the ID attribute of an element is true?
(More than one option may be correct.)

1. **It is unique for an element.**

2. It is not unique for an element.

3. **It is an attribute of an element.**

4. It is an element.

Poll 8(15 Sec)

Which of the following statements about the class of an element is true?
(More than one option may be correct.)

1. It is unique for an element.

2. It is not unique for an element.

3. It is an attribute of an element.

4. It is an element.

Poll 8(Answer)

Which of the following statements about the class of an element is true?
(More than one option may be correct.)

1. It is unique for an element.

2. **It is not unique for an element.**

3. **It is an attribute of an element.**

4. It is an element.

Character Entities

Character Entities

An HTMl entity is basically a text that starts with an ampersand(&) and ends with a semicolon(;).

This entities are often used to display the reserved characters. i.e. the characters which otherwise would be interpreted as simple HTM: code.

Some commonly used characters and their entities are:

Character	Entity	Description
&	&	It symbolizes the beginning of an character entity.
<	<	It is used to represent the opening tag.
>	>	It is used to represent the closing tag.
"	"	It is used to represent the start and end of attribute value.

You can find the documentation link for reference [here](#)

Inline and Block Elements

Inline Elements

Inline Elements

<span> is an example of inline element.

```
<html>
    <head>
      <title>Session 1</title>
    </head>
    <body>
        <!-- Inline Elements -->
      <span>This is a &lt;span&gt; element.</span>
      <span>This is an inline element.</span>
      <span> If you inspect this element, </span>
      <span>you will notice it occupies only the width of its content.</span>
      </span>
    </body>
</html>
```

You can find the documentation link for reference here

Block Elements

Block Elements

<div> and <p> are examples of block elements

```html
<html>
    <head>
        <title>Session 1</title>
    </head>
    <body>
        <!-- Block Elements -->
        <div class="container">
            &lt;div&gt; is a block element. If you
inspect this element using Dev Console, you will
see it occupies an entire line of the window.
        </div>
        <p id="para">This is a &lt;p&gt; element.
This is also a block element. If you inspect this
element using Dev Console, you will see it occupies
an entire line of the window.
        </p>
    </body>
</html>
```


You can find the documentation link for <div> here
You can find the documentation link for <p> here

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Inline and Block Elements

Inline Elements	Block Elements
<span>	<div>
<b>	<p>
<strong>	<h1> …. <h6>
<i>	<hr>
<em>	<table>
<a>	
<img>	
<button> …	<form>
You can see the entire list here.	You can see the entire list here.

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Poll 9(15 Sec)

Which of the following statements about inline elements is true?
(More than one option may be correct.)

1. They appear on the next line by default.

2. They appear on the same line by default.

3. <span> is an inline element.

4. <div> is an inline element.

Poll 9(Answer)

Which of the following statements about inline elements is true?
(More than one option may be correct.)

1. They appear on the next line by default.

2. **They appear on the same line by default.**

3. **<span> is an inline element.**

4. <div> is an inline element.

Poll 10(15 Sec)

Which of the following statements about block elements is true?
(More than one option may be correct.)

1. They appear on the next line by default.

2. They appear on the same line by default.

3. <span> is a block element.

4. <div> is a block element.

Poll 10(Answer)

Which of the following statements about block elements is true?
(More than one option may be correct.)

1. **They appear on the next line by default.**

2. They appear on the same line by default.

3. <span> is a block element.

4. **<div> is a block element.**

Commonly-Used HTML Elements

Poll 11(15 Sec)

Which of the following is the correct way of writing comments in HTML?

1. // This is a comment

2. /* This is a comment */

3. <!-- This is a comment -- >

4. <!-- This is a comment

Poll 11(Answer)

Which of the following is the correct way of writing comments in HTML?

1. // This is a comment

2. /* This is a comment */

3. **<!-- This is a comment -- >**

4. <!-- This is a comment

Commonly Used HTML Elements

1. **<h1>…<h6>:** They create headers of different sizes.

```html
<html>
    <head>
        <title>First HTML Page </title>
    </head>
    <body>
        <!-- HTML headings -->
        <h1>Welcome to upGrad</h1>
        <h2>Welcome to upGrad</h2>
        <h3>Welcome to upGrad</h3>
        <h4>Welcome to upGrad</h4>
        <h5>Welcome to upGrad</h5>
        <h6>Welcome to upGrad</h6>
    </body>
</html>
```

You can find the documentation link for reference here

Poll 12(15 Sec)

Which of the following is the correct tag for the largest heading in HTML?

1. <h6>

2. <h4>

3. <h3>

4. <h1>

Poll 12(Answer)

Which of the following is the correct tag for the largest heading in HTML?

1. <h6>

2. <h4>

3. <h3>

4. **<h1>**

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Commonly Used HTML Elements

1. <u><p></u>: It creates a paragraph text.
2. <u><b></u>, <u><i></u>, <u><strong></u>, <u><em></u>: They give certain styling to the text.

```html
<html>
    <head>
        <title>Bold and Italicized</title>
    </head>
    <body>
        <!-- HTML paragraph -->
        <p>This is a normal paragraph.</p>
        <p><b>This paragraph is emboldened using the &lt;b&gt; tag.</b></p>
        <p><strong>This paragraph is emboldened using the &lt;strong&gt; tag.</strong></p>
        <p>The difference between &lt;strong&gt; and &lt;b&gt; is that strong is a semantic
element.</p>
        <p><i>This paragraph is italicized using the &lt;i&gt; tag.</i></p>
        <p><em>This paragraph is italicized using the &lt;em&gt; tag.</em></p>
        <p>The difference between &lt;em&gt; and &lt;i&gt; is that em is a semantic element.</p>
    </body>
</html>
```

Poll 13(15 Sec)

Which of the following is/are a semantic element(s)?
(More than one option can be correct.)

1. <p>

2.

3. <strong>

4. <em>

Poll 13(Answer)

Which of the following is/are a semantic element(s)?
(More than one option can be correct.)

1. \<p\>

2. \<br\>

3. **\<strong\>**

4. **\<em\>**

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Commonly Used HTML Elements

**
:** It creates a new line.

```html
<html>
    <head>
        <title>Break Tag</title>
    </head>
    <body>
        <div id="container1">
            <p>With &lt;br&gt; :</p>
            <span>First line</span>
            <br />
            <span>Second line</span>
        </div>
    </body>
</html>
```

You can find the documentation link for reference [here](#)

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Poll 14(15 Sec)

State yes or no.

Is the <br /> tag an empty element?

1. Yes

2. No

Poll 14(Answer)

State yes or no.

Is the <br /> tag an empty element?

1. **Yes**
2. No

Commonly Used HTML Elements

<img />: It creates an image element.

```html
<html>
    <head>
        <title>Images</title>
    </head>
    <body>
        <!-- HTML Image -->
        <img src="https://wallpaperplay.com/walls/full/9/e/0/43067.jpg" alt="An
image of car" height="450" width="600" />
    </body>
</html>
```

You can find the documentation link for reference here

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Commonly Used HTML Elements

<a>: It creates an anchor tag, which is an element used to open different pages or go to different locations.

```html
<html>
    <head>
        <title>Anchor Tag</title>
    </head>
    <body>
        <!-- HTML anchor tag -->
        <a href="https://google.com">This link has no target mentioned. It will by default open Google
on this tab.</a>
        <br/>
        <a href="https://google.com" target="_self">This link has <kbd>target="_self"</kbd>. It will
open Google on this tab.</a>
        <br />
        <a href="https://google.com" target="_blank">This link has <kbd>target="_blank"</kbd>. It will
open Google in a new tab.</a>
    </body>
</html>
```

You can find the documentation link for reference here

Poll 15(15 Sec)

State yes or no.

Does a hyperlink apply only to text?

1. Yes

2. No

Poll 15(Answer)

State yes or no.

Does a hyperlink apply only to text?

1. Yes

2. No

Poll 16(15 Sec)

How can you open a link in a new tab?

1. <a href="https://www.upgrad.com/" target="blank">

2. <a href="https://www.upgrad.com/" target="_self">

3. <a href="https://www.upgrad.com/" target="_blank">

4. <a href="https://www.upgrad.com/" target="self">

Poll 16(Answer)

How can you open a link in a new tab?

1. <a href="https://www.upgrad.com/" target="blank">

2. <a href="https://www.upgrad.com/" target="_self">

3. **<a href="https://www.upgrad.com/" target="_blank">**

4. <a href="https://www.upgrad.com/" target="self">

Hands-On Exercise (3 min)

Write an HTML program which outputs as shown in the image:

The elements of the HTML program are as follows:
- The heading should be the largest.
- The source of the image is as follows: https://wallpaperplay.com/walls/full/c/8/f/12935.jpg#.Xs6BGNp_478.link
- The height of the image should be 450 and the width should be 600.
- The image, when clicked, should redirect you to the following website: https://www.upgrad.com/
- The paragraph tag should have id as 'paragraph' and the text should be as shown in this image.

For the stub code, click here.

For the solution, click here.

127.0.0.1:5500/session1.html

Welcome to the course on Web Technologies

HTML is used to create structure of web page

Key Takeaways

- Front-end web development involves the creation of the most important aspect of a website: the visual part.

- A website or any web application comprises three important constituents: foundation, style and functionality.

- HTML is a language that is used to create the foundation and structure of a website, while CSS and JS focus on the style and functionality of a website, respectively.

- Using HTML, you can create various elements, such as headers, texts and images.

Doubt Clearance (5 min)

Tasks to Complete After Today's Session

MCQs
Coding Questions
Project: Checkpoint 1

Full Stack Software Development

In the next class, you will learn...

- How to create tables in HTML?

- How to create lists in HTML?

- How to create a dropdown list in HTML?

- How to show YouTube videos on your website?

- Begin the development of the Recipes Website

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Thank You!