# Unit 3

# ELEMENTS OF HTML

What is Multimedia?
Multimedia comes in many different formats. It can be almost anything you can hear or see, like images, music, sound, videos, records, films, animations, and more.
Web pages often contain multimedia elements of different types and formats.

Multimedia Formats

Multimedia elements (like audio or video) are stored in media files.

The most common way to discover the type of a file, is to look at the file extension.

Multimedia files have formats and different extensions like: .wav, .mp3, .mp4, .mpg, .wmv, and .avi.

Common Video Formats

There are many video formats out there.

The MP4, WebM, and Ogg formats are supported by HTML.

The MP4 format is recommended by YouTube.

**Note:** Only MP4, WebM, and Ogg video are supported by the HTML standard.

**Note:** Only MP3, WAV, and Ogg audio are supported by the HTML standard.

| Format | File | Description |
|---|---|---|
| MPEG | .mpg<br>.mpeg | MPEG. Developed by the Moving Pictures Expert Group. The first popular video format on the web. Not supported anymore in HTML. |
| AVI | .avi | AVI (Audio Video Interleave). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers. |
| WMV | .wmv | WMV (Windows Media Video). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers. |
| QuickTime | .mov | QuickTime. Developed by Apple. Commonly used in video cameras and TV hardware. Plays well on Apple computers, but not in web browsers. |
| RealVideo | .rm<br>.ram | RealVideo. Developed by Real Media to allow video streaming with low bandwidths. Does not play in web browsers. |
| Flash | .swf<br>.flv | Flash. Developed by Macromedia. Often requires an extra component (plug-in) to play in web browsers. |
| Ogg | .ogg | Theora Ogg. Developed by the Xiph.Org Foundation. Supported by HTML. |
| WebM | .webm | WebM. Developed by Mozilla, Opera, Adobe, and Google. Supported by HTML. |
| MPEG-4<br>or MP4 | .mp4 | MP4. Developed by the Moving Pictures Expert Group. Commonly used in video cameras and TV hardware. Supported by all browsers and recommended by YouTube |

# Common Audio Formats

MP3 is the best format for compressed recorded music. The term MP3 has become synonymous with digital music.If your website is about recorded music, MP3 is the

| Format | File | Description |
|---|---|---|
| MIDI | .mid .midi | MIDI (Musical Instrument Digital Interface). Main format for all electronic music devices like synthesizers and PC sound cards. MIDI files do not contain sound, but digital notes that can be played by electronics. Plays well on all computers and music hardware, but not in web browsers. |
| RealAudio | .rm .ram | RealAudio. Developed by Real Media to allow streaming of audio with low bandwidths. Does not play in web browsers. |
| WMA | .wma | WMA (Windows Media Audio). Developed by Microsoft. Plays well on Windows computers, but not in web browsers. |
| AAC | .aac | AAC (Advanced Audio Coding). Developed by Apple as the default format for iTunes. Plays well on Apple computers, but not in web browsers. |
| WAV | .wav | WAV. Developed by IBM and Microsoft. Plays well on Windows, Macintosh, and Linux operating systems. Supported by HTML. |
| Ogg | .ogg | Ogg. Developed by the Xiph.Org Foundation. Supported by HTML. |
| MP3 | .mp3 | MP3 files are actually the sound part of MPEG files. MP3 is the most popular format for music players. Combines good compression (small files) with high quality. Supported by all browsers. |

```html
<html>
<title>Working with Multimedia</title>
<head><h1>Multimedia</h1></head>
<body>


<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <!source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
</body>
</html>
```

# How it Works

- The `controls` attribute adds video controls, like play, pause, and volume.
- It is a good idea to always include `width` and `height` attributes. If height and width are not set, the page might flicker while the video loads.
- The `<source>` element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.
- The text between the `<video>` and `</video>` tags will only be displayed in browsers that do not support the `<video>` element.

HTML <video> Autoplay
To start a video automatically, use the `autoplay` attribute:

```
<video width="320" height="240" autoplay>
  <source src="movie.mp4" type="video/mp4"
>
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

**Note: Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.**

Add `muted` after `autoplay` to let your video start playing automatically (but muted):

# Example

```
<video width="320" height="240" autoplay muted>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

## Browser Support

The numbers in the table specify the first browser version that fully supports the `<video>` element.

| Element | | | | | |
|---------|------|-----|-----|-----|------|
| <video> | 4.0 | 9.0 | 3.5 | 4.0 | 10.5 |

# Browser Support

The numbers in the table specify the first browser version that fully supports the `<video>` element.

# HTML Video Formats

There are three supported video formats: MP4, WebM, and Ogg.
The browser support for the different formats is:

| Browser | MP4 | WebM | Ogg |
|---------|-----|------|-----|
| Edge | YES | YES | YES |
| Chrome | YES | YES | YES |
| Firefox | YES | YES | YES |
| Safari | YES | YES | NO |
| Opera | YES | YES | YES |

# HTML Video - Media Types

| File Format | Media Type |
|---|---|
| MP4 | video/mp4 |
| WebM | video/webm |
| Ogg | video/ogg |

The HTML `<audio>` element is used to play an audio file on a web page.

The HTML <audio> Element
To play an audio file in HTML, use the `<audio>` element:

# Example

```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```

# HTML Audio - How It Works

- The `controls` attribute adds audio controls, like play, pause, and volume.
- The `<source>` element allows you to specify alternative audio files which the browser may choose from.
- The browser will use the first recognized format.
- The text between the `<audio>` and `</audio>` tags will only be displayed in browsers that do not support the `<audio>` element.

# HTML <audio> Autoplay

To start an audio file automatically, use the autoplay attribute:

# Example

```
<audio controls autoplay>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```

```html
<html>
<title>Working with Multimedia</title>
<head><h1>Let's Work with Multimedia</h1></head>
<body bgcolor=grey>
<video width="420" height="540" controls>
   <source src="movie2.mp4" type="video/mp4">
Your browser does not support the video tag.
</video>
<video width="420" height="540" controls>
  <source src="video1.mp4" type="video/mp4">
Your browser does not support the video tag.
</video>
<video width="420" height="540" autoplay muted loop>
  <source src="waves.mp4" type="video/mp4">
Your browser does not support the video tag.
</video>
</body>
</html>
```

The <form> Element

The HTML `<form>` element is used to create an HTML form for user input:

```
<form>
.
form elements
.
</form>
```

The `<form>` element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

# The <input> Element

The HTML `<input>` element is the most used form element.
An `<input>` element can be displayed in many ways,
depending on the `type` attribute.

Here are some examples:

| Type | Description |
|------|-------------|
| <input type="text"> | Displays a single-line text input field |
| <input type="radio"> | Displays a radio button (for selecting one of many choices) |
| <input type="checkbox"> | Displays a checkbox (for selecting zero or more of many choices) |
| <input type="submit"> | Displays a submit button (for submitting the form) |
| <input type="button"> | Displays a clickable button |

Text Fields

The `<input type="text">` defines a single-line input field for text input.

# Example

A form with input fields for text:

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname">
</form>
```

This is how the HTML code above will be displayed in a browser:

First name:

Last name:

# Working with HTML Text Formatting

HTML contains several elements for defining text with a special meaning.

## HTML Formatting Elements

Formatting elements were designed to display special types of text:

- `<b>` - Bold text
- `<strong>` - Important text
- `<i>` - Italic text
- `<em>` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Smaller text
- `<del>` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

| Tag | Description |
|-----|-------------|
| <b> | Defines bold text |
| <em> | Defines emphasized text |
| <i> | Defines a part of text in an alternate voice or mood |
| <small> | Defines smaller text |
| <strong> | Defines important text |
| <sub> | Defines subscripted text |
| <sup> | Defines superscripted text |
| <ins> | Defines inserted text |
| <del> | Defines deleted text |
| <mark> | Defines marked/highlighted text |

```html
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>
<strong>This text is important!</strong>
<small>This is some smaller text.</small>
<i> Italic text<i><br>
<em> Emphasized text</em><br>
<mark> Marked text</mark><br>
<small> Smaller text </small><br>
<del> Deleted text </del><br>
<ins> Inserted text</ins><br>
<b>this test is </b><sub> - Subscript text</sub><br>
<b>This text is </b><sup> - Superscript text</sup><br>
</body>
</html>
```

text.html

File | E:/2022-23%20Sem1/22-23%20Term%201%20Sub
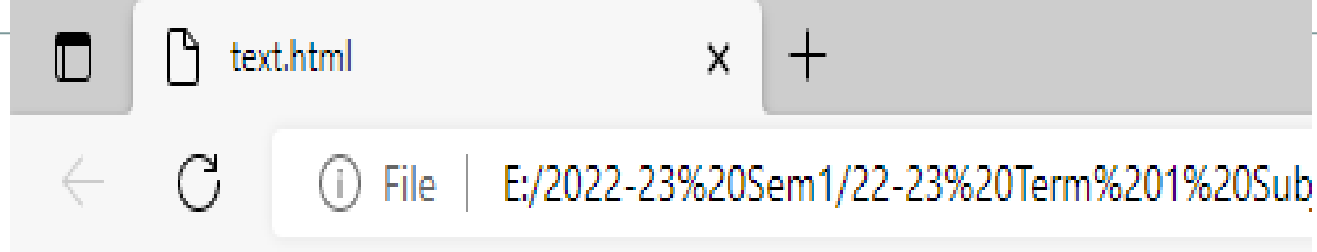
# My First Heading

My first paragraph.

**This text is important!** This is some smaller text. *Italic text*
*Emphasized text*
<mark>*Marked text*</mark>
*Smaller text*
~~*Deleted text*~~
*Inserted text*
*this test is* - *Subscript text*
*This text is* - *Superscript text*

# Working with HTML Tables

HTML tables allow web developers to arrange data into rows and columns.

| Company | Contact | Country |
|---------|---------|---------|
| Alfreds Futterkiste | Maria Anders | Germany |
| Centro comercial Moctezuma | Francisco Chang | Mexico |
| Ernst Handel | Roland Mendel | Austria |
| Island Trading | Helen Bennett | UK |
| Laughing Bacchus Winecellars | Yoshi Tannamuri | Canada |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |

**Define an HTML Table**
**A table in HTML consists of table cells inside**
**rows and columns.**
**Example**
**A simple HTML table:**

```
<table>
 <tr>
  <th>Company</th>
  <th>Contact</th>
  <th>Country</th>
 </tr>
 <tr>
  <td>Alfreds Futterkiste</td>
  <td>Maria Anders</td>
  <td>Germany</td>
 </tr>
 <tr>
  <td>Centro comercial Moctezuma</td>
  <td>Francisco Chang</td>
  <td>Mexico</td>
 </tr>
</table>
```

# Table Cells

Each table cell is defined by a `<td>` and a `</td>` tag.
`td` stands for table data.
Everything between `<td>` and `</td>` are the content of the table cell.

```
Example
<table>
 <tr>
   <td>Emil</td>
   <td>Tobias</td>
   <td>Linus</td>
 </tr>
</table>
```

# Table Rows

Each table row starts with a `<tr>` and ends with a `</tr>` tag.
`tr` stands for table row.

# HTML Table Borders

## How To Add a Border

When you add a border to a table, you also add borders around each table cell:
To add a border, use the CSS `border` property on `table`, `th`, and `td` elements:

Example
table, th, td {
  border: 1px solid black;
}

## Collapsed Table Borders

To avoid having double borders like in the example above, set the CSS `border-collapse` property to `collapse`.
This will make the borders collapse into a single border:

Example
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}

# Working with HTML Lists

HTML lists allow web developers to group a set of related items in lists.

**Example**
**An unordered HTML list:**

Item
Item
Item
Item
**An ordered HTML list:**

1.First item
2.Second item
3.Third item
4.Fourth item

# Unordered HTML List

An unordered list starts with the `<ul>` tag. Each list item starts with the `<li>` tag.
The list items will be marked with bullets (small black circles) by default:

## Example

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

# Ordered HTML List

An ordered list starts with the `<ol>` tag. Each list item starts with the `<li>` tag.
The list items will be marked with numbers by default:

## Example

```
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

# HTML Description Lists

HTML also supports description lists.
A description list is a list of terms, with a description of each term.
The `<dl>` tag defines the description list, the `<dt>` tag defines the term (name), and the `<dd>` tag describes each term:

```
Example
<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>
```

# HTML List Tags

| Tag | Description |
| --- | --- |
| <ul> | Defines an unordered list |
| <ol> | Defines an ordered list |
| <li> | Defines a list item |
| <dl> | Defines a description list |
| <dt> | Defines a term in a description list |
| <dd> | Describes the term in a description list |

THANK YOU