

HTML Media

- Multimedia on the web is sound, music, videos, movies, and animations

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.

Format	File	Description
MPEG	.mpg .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 .ram	RealVideo. Developed by Real Media to allow video streaming with low bandwidths. Does not play in web browsers.
Flash	.swf .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 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.

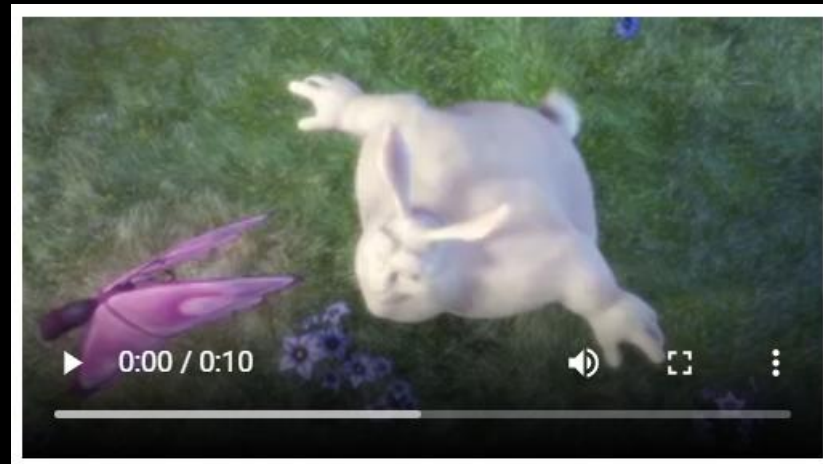
Common Audio Formats

- 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 choice.

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.
MP4	.mp4	MP4 is a video format, but can also be used for audio. Supported by all browsers.

HTML Video

- The HTML `<video>` element is used to show a video on a web page.



The HTML <video> Element

- To show a video in HTML, use the <video> element:

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

<video width="400" controls>
  <source src="mov_bbb.mp4" type="video/mp4">
  <source src="mov_bbb.ogg" type="video/ogg">
  Your browser does not support HTML video.
</video>

<p>
Video courtesy of
<a href="https://www.bigbuckbunny.org/" target="_blank">Big Buck Bunny</a>.
</p>

</body>
</html>
```



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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.
- The autoplay attribute does not work in mobile devices like iPad and iPhone.

```
<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>
```

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HTML Video Formats

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

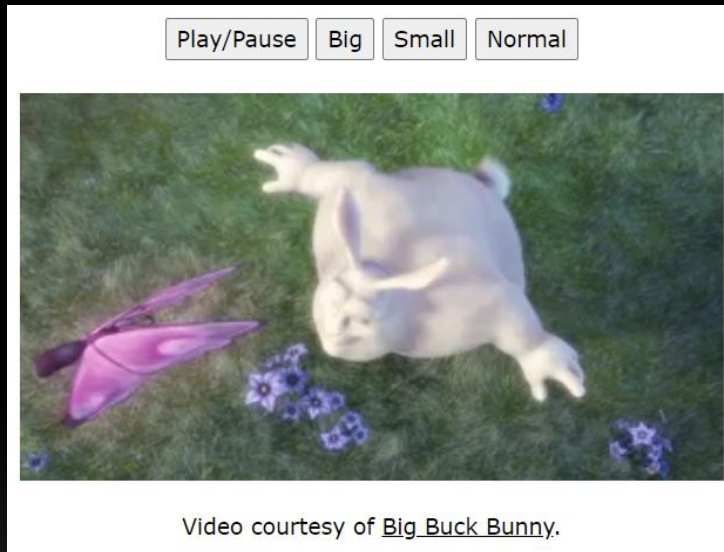
Browser	MP4	WebM	Ogg
Edge	YES	YES	YES
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	YES	YES	YES

HTML Video - Media Types

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

HTML Video - Methods, Properties, and Events

- The HTML DOM defines methods, properties, and events for the <video> element.
- This allows you to load, play, and pause videos, as well as setting duration and volume.
- There are also DOM events that can notify you when a video begins to play, is paused, etc.



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HTML Video Tags

Tag	Description
<u><video></u>	Defines a video or movie
<u><source></u>	Defines multiple media resources for media elements, such as <video> and <audio>
<u><track></u>	Defines text tracks in media players

HTML Audio

- 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.

```
<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 Formats

- There are three supported audio formats: MP3, WAV, and OGG. The browser support for the different formats is:

Browser	MP3	WAV	OGG
Edge/IE	YES	NO	NO
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	YES	YES	YES

HTML Audio - Media Types

File Format	Media Type
MP3	audio/mpeg
OGG	audio/ogg
WAV	audio/wav

HTML YouTube Videos

- The easiest way to play videos in HTML, is to use YouTube.

Struggling with Video Formats?

- Converting videos to different formats can be difficult and time-consuming.
- An easier solution is to let YouTube play the videos in your web page.

YouTube Video Id

- YouTube will display an **id (like tgbNymZ7vqY)**, when you save (or play) a video.
- You can use this id, and refer to your video in the HTML code.

Playing a YouTube Video in HTML

- To play your video on a web page, do the following:
 - Upload the video to YouTube
 - Take a note of the video id
 - Define an <iframe> element in your web page
 - Let the src attribute point to the video URL
 - Use the width and height attributes to specify the dimension of the player
 - Add any other parameters to the URL (see below)

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```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY">  
</iframe>
```

YouTube Autoplay + Mute

- You can let your video start playing automatically when a user visits the page, by adding **autoplay=1** to the YouTube URL.
- Chrome added stricter autoplay policies in 2018. Chromium browsers do not allow autoplay in all cases. However, muted autoplay is always allowed.
- Add **mute=1** after autoplay=1 to let your video start playing automatically (but muted).

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?autoplay=1&mute=1">  
</iframe>
```

YouTube Loop

- Add **loop=1** to let your video loop forever.
- Value 0 (default): The video will play only once.
- Value 1: The video will loop (forever).

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?playlist=tgbNymZ7vqY&loop=1">  
</iframe>
```

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YouTube Controls

- Add **controls=0** to display controls in the video player.
- Value 0: Player controls does not display.
- Value 1 (default): Player controls display.

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```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?controls=0">  
</iframe>
```

Exercise 10

- <https://reurl.cc/GpQz0y>

Just show that you are all correct!

Web Programming Exercise 03

總分 3/3 ?

Name

Jenny

Student ID

9900990

✓ 1. Choose the correct HTML element for the largest heading: 1/1

☐ <head>

☐ <h6>

☒ <h1> ✓

☐ <heading>