

Audio

by Sophia



WHAT'S COVERED

In this lesson, you will learn about digital audio files, particularly those used on the web. You will learn about the audio tag and will learn about the different digital file formats used for storing audio data.

Specifically, this lesson will cover the following:

1. [Introduction to Audio Files](#)
2. [Audio and Source Tag](#)
3. [Audio File Formats](#)

1. Introduction to Audio Files

Audio files are a type of data files that only contain audio or sound. Much like the `<video>` tag for embedding videos into a webpage, the `<audio>` tag can be used in the same manner. Although not as common as video, audio can be useful in websites. Audio files could be a verbal transcript of a video for accessibility purposes, a music file, or just captured audio from wildlife. Let's take a look at the audio tag and its attributes and settings.



TERM TO KNOW

Audio Tag `<audio>`

An HTML tag used to embed an audio file within a webpage.

2. Audio and Source Tag

The `<audio>` tag works in the same way as the `<video>` tag, but it does not contain any height or width attributes.

🔗 EXAMPLE

The `<audio>` tag does use the same `<source>` tag to provide a path to the audio file and fallback format options in case the audio file format is not supported.

```
<audio>
  <source src="birdsong.ogg" type="audio/ogg">
  <source src="birdsong.mp3" type="audio/mp3">
  <source src="birdsong.mpeg" type="audio/mpeg">
  Your browser does not support audio playback.
</audio>
```

Just like in the <video> tag setup, the browser will attempt to play the first source file that is compatible. If none are compatible, the browser will simply display the text below the source tags.



View the following video for more on adding <audio> tags in HTML.

3. Audio File Formats

Similar to video files, there are a lot of audio file formats available today. However, the most compatible and common audio file formats include the following:

File Type	Description
mp3	The mp3 file format was a pioneer file format for audio files and is still supported today. However, the era of mp3 is over and is being phased out. mp3 files use a lossy compression technique that has little impact on the quality.
mp4	The mp4 file format is designed as a multimedia container that can include audio, video, text, and metadata. This means that mp4 files work just fine for audio. mp4 is a lossy format but retains more data than other lossy formats.
aac	Advanced Audio Coding (aac) files are the successor to the mp3 format and provide better quality at the same lossy compression rate. NOTE: Firefox only partially supports the aac format.
ogg	Since the ogg format is a multimedia container, it can easily support audio files. NOTE: Safari partially supports ogg, and Internet Explorer does not support the ogg format. ogg is a lossy format but retains more data than other formats such as mp3.
wav	wav was originally a Windows-based, uncompressed format as it was developed by IBM and Microsoft. The wav file format provides higher quality overall at the expense of being an uncompressed format, thus leading to much larger files.
flac	The flac audio file format also provides better quality with the added benefit of utilizing a lossless compress algorithm, allowing for smaller files while retaining the original audio data. The flac format is compatible with all modern browsers with the exception of Internet Explorer.

When choosing an audio file format, the trade-off, again, is quality for file size. The audio file format that provides the best balance of both is the flac format as it uses lossless compression that makes the file smaller without impacting quality. Considering that the flac format provides compression without impacting quality, flac should be used in place of the wav format because they are the same except for the compression.

If file size is more important, any of the other formats would work well, except for aac and ogg, which are the only formats with any compatibility concerns, albeit very few.

While mp3 is still around and works fine, it should be used with caution because its development and support have reached its **end of life**.

IN CONTEXT

While it is not common for these audio types to be incompatible with today's web browsers, it is possible in cases of high security. A site visitor might be using a company computer within a company network that places restrictions on what files and resources can be run or executed on the workstation. In these cases, there is nothing the developer can do and the visitor just needs to visit the site on a personal computer.



MAKE THE CONNECTION

In Touchstone Task 2.1: Creating HTML Pages, you will add media to your web pages. Recall that you must use the images provided by your selected client in your website designs, including their logo and gallery images.



TERM TO KNOW

End of Life

The point in time when an organization terminates the development life cycle of a software product. This can make the website and applications that continue to use it susceptible to bugs and security attacks.



SUMMARY

In this lesson, you were **introduced to audio files** used for storing audio or sound data. You learned about the **<audio> tag** and how it works just like the **<video> tag**. You saw how the **<source> tag** behaves the same whether audio or video files are being embedded. You also learned about various **audio file formats** available for storing audio data.

Source: This Tutorial has been adapted from "The Missing Link: An Introduction to Web Development and Programming " by Michael Mendez. Access for free at <https://open.umn.edu/opentextbooks/textbooks/the-missing-link-an-introduction-to-web-development-and-programming>. License: **Creative Commons attribution: CC BY-NC-SA**.



TERMS TO KNOW

Audio Tag <audio>

An HTML tag used to embed an audio file within a webpage.

End of Life

The point in time when an organization terminates the development life cycle of a software product. This can make the website and applications that continue to use it susceptible to bugs and security attacks.