

PRAKTIKUM MULTIMEDIA

MODUL 4. HTML – Audio, Video dan Youtube

I. KEMAMPUAN AKHIR YANG DIHARAPKAN

1. Memahami definisi multimedia, bentuk-bentuk multimedia, bentuk video dan audio,
2. Mengujicobakan dan mendiskusikan program HTML audio, video dan youtube pada web
3. Mampu membuat suatu program singkat yang menggunakan audio, video dan youtube
4. Membuat dan menjelaskan tugas yang diberikan

II. DASAR TEORI

Multimedia dalam web adalah suara, musik, video, film, dan animasi.

Multimedia hadir dalam berbagai format. Multimedia bisa berupa apa saja yang bisa didengar atau dilihat.

Contoh: Gambar, musik, suara, video, rekaman, film, animasi, dan banyak lagi.

Halaman web sering mengandung elemen multimedia dari berbagai jenis dan format.

Bentuk (format) Multimedia

Elemen multimedia (seperti audio atau video) disimpan dalam file media. Cara yang paling umum untuk menemukan jenis file, adalah dengan melihat ekstensi file.

File multimedia memiliki format dan ekstensi berbeda seperti: .swf, .wav, .mp3, .mp4, .mpg, .wmv, and .avi.

Bentuk-bentuk video yang umum



MP4 adalah format yang baru dan akan datang untuk penggunaan di video internet.

MP4 direkomendasikan oleh YouTube.

MP4 didukung oleh Pemutar Flash.

MP4 didukung oleh HTML5.

Format	File	Description
MPEG	.mpg .mpeg	MPEG. Dikembangkan oleh Moving Pictures Expert Group. Format video populer yang pertama di web. Dulu didukung oleh semua browser, tetapi tidak didukung dalam HTML5.
AVI	.avi	AVI (Audio Video Interleave). Dikembangkan oleh Microsoft. Biasa digunakan dalam kamera video dan perangkat keras TV. Dimainkan dengan baik di komputer Windows, tetapi tidak di browser web.

WMV	.wmv	WMV (Windows Media Video). Dikembangkan oleh Microsoft. Biasa digunakan dalam kamera video dan perangkat keras TV. Dimainkan dengan baik di komputer Windows, tetapi tidak di browser web.
QuickTime	.mov	QuickTime. Dikembangkan oleh Apple. Biasa digunakan dalam kamera video dan perangkat keras TV. Dimainkan dengan baik di komputer Apple, tetapi tidak di browser.
RealVideo	.rm .ram	RealVideo. Dikembangkan oleh Real Media untuk memungkinkan streaming video dengan bandwidth rendah. Masih digunakan untuk video online dan TV Internet, tetapi tidak diputar di browser web.
Flash	.swf .flv	Flash. Dikembangkan oleh Macromedia. Seringkali membutuhkan komponen tambahan (plug-in) untuk bermain di browser web.
Ogg	.ogg	Theora Ogg. Dikembangkan oleh the Xiph.Org Foundation. Didukung oleh HTML5.
WebM	.webm	WebM. Dikembangkan oleh the web giants, Mozilla, Opera, Adobe, and Google. Didukung oleh HTML5.
MPEG-4 or MP4	.mp4	MP4. Dikembangkan oleh the Moving Pictures Expert Group. Berdasarkan QuickTime. Biasa digunakan pada kamera video baru dan perangkat keras TV. Didukung oleh semua browser HTML5. Direkomendasikan oleh YouTube.

Hanya video MP4, WebM, dan Ogg yang didukung oleh standar HTML5.

Bentuk-bentuk Audio

MP3 adalah format terbaru untuk musik rekaman terkompresi. Istilah MP3 telah menjadi identik dengan musik digital. Jika situs web Anda tentang rekaman musik, MP3 adalah pilihan.

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). Dikembangkan oleh Microsoft. Commonly used in music players. Plays well on Windows computers, but not in web browsers.

AAC	.aac	AAC (Advanced Audio Coding). Dikembangkan oleh Apple as the default format for iTunes. Plays well on Apple computers, but not in web browsers.
WAV	.wav	WAV. Dikembangkan oleh IBM and Microsoft. Plays well on Windows, Macintosh, and Linux operating systems. Supported by HTML5.
Ogg	.ogg	Ogg. Dikembangkan oleh the Xiph.Org Foundation. Supported by HTML5.
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. MP4 video is the upcoming video format on the internet. This leads to automatic support for MP4 audio by all browsers.

Hanya audio MP3, WAV, dan Ogg yang didukung oleh standar HTML5.

Browser yang mendukung Audio and Videos dalam HTML

The numbers in the table specify the first browser version that fully supports the element. Angka-angka dalam tabel menentukan versi browser pertama yang sepenuhnya mendukung elemen-elemen `<video>` dan `<audio>`.

Element					
<code><video></code> dan <code><audio></code>	4.0	9.0	3.5	4.0	10.5

Audio pada HTML5

Audio dalam Web

Sebelum HTML5, file audio hanya dapat diputar di browser menggunakan plug-in (seperti flash). Elemen `<audio>` HTML5 menentukan standar untuk menyematkan audio di halaman web.

The HTML `<audio>` Element

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

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

<audio controls>
  <source src="https://www.w3schools.com/html/horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
  Your browser does not support the audio element.
</audio>

</body>
</html>
```

Penjelasan

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 - Browser Support

In HTML5, there are 3 supported audio formats: MP3, WAV, and OGG. The browser support for the different formats is:

Browser	MP3	WAV	OGG
Internet Explorer	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

HTML5 Audio Tags

Tag	Description
<u><audio></u>	Defines sound content
<u><source></u>	Defines multiple media resources for media elements, such as <video> and <audio>

Video pada HTML5

Playing Videos in HTML

Before HTML5, a video could only be played in a browser with a plug-in (like flash).

The HTML5 `<video>` element specifies a standard way to embed a video in a web page.

The HTML `<video>` Element

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

```
<!DOCTYPE html>
<html>
<body><video width="320" height="240" controls>
  <source src="https://www.w3schools.com/html/movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
```

Your browser does not support the video tag.

```
</video>
</body>
</html>
```

Penjelasan

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:

Contoh

Ganti kode “<body><video width="320" height="240" controls>” dengan kode “<video width="320" height="240" autoplay>”

HTML Video - Browser Support

In HTML5, there are 3 supported video formats: MP4, WebM, and Ogg. The browser support for the different formats is:

Browser	MP4	WebM	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	NO	NO
Opera	YES (from Opera 25)	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

HTML5 defines DOM 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.

Contoh menggunakan JavaScript

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<div style="text-align:center">
```

```
  <button onclick="playPause()">Play/Pause</button>
```

```
  <button onclick="makeBig()">Big</button>
```

```
  <button onclick="makeSmall()">Small</button>
```

```
  <button onclick="makeNormal()">Normal</button>
```

```
  <br><br>
```

```
  <video id="video1" width="420">
```

```
    <source src="mov_bbb.mp4"
```

```
    type="https://download.blender.org/peach/bigbuckbunny_movies/BigBuckBunny_320x180.mp4"
  ">
```

```
    <source src="mov_bbb.ogg" type="video/ogg">
```

```
    Your browser does not support HTML5 video.
```

```
  </video>
```

```
</div>
```

```
<script>
```

```
var myVideo = document.getElementById("video1");
```

```
function playPause() {
```

```
  if (myVideo.paused)
```

```
    myVideo.play();
```

```
  else
```

```
    myVideo.pause();
```

```
}
```

```
function makeBig() {
```

```
  myVideo.width = 560;
```

```
}
```

```
function makeSmall() {
```

```
  myVideo.width = 320;
```

```
}
```



```
function makeNormal() {  
    myVideo.width = 420;  
}  
</script>
```

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

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

HTML5 Video Tags

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

HTML YouTube Videos

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

Struggling with Video Formats?

Earlier in this tutorial, you have seen that you might have to convert your videos to different formats to make them play in all browsers.

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)

Contoh – direkomendasikan untuk menggunakan iFrame

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

YouTube Autoplay

You can have your video start playing automatically when a user visits that page by adding a simple parameter to your YouTube URL.

Note: Take careful consideration when deciding to autoplay your videos. Automatically starting a video can annoy your visitor and end up causing more harm than good.

Value 0 (default): The video will not play automatically when the player loads.

Value 1: The video will play automatically when the player loads.

Ganti bagian kode sumber menjadi

```
src="https://www.youtube.com/embed/tgbNymZ7vqY?autoplay=1">
```

YouTube Loop

Value 0 (default): The video will play only once.

Value 1: The video will loop (forever).

Ganti bagian kode sumber menjadi

```
src="https://www.youtube.com/embed/tgbNymZ7vqY?  
playlist=tgbNymZ7vqY&loop=1">
```

YouTube Controls

Value 0: Player controls does not display.

Value 1 (default): Player controls display.

Ganti bagian kode sumber menjadi

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

YouTube - Using <object> or <embed>

Note: YouTube `<object>` and `<embed>` were deprecated from January 2015. You should migrate your videos to use `<iframe>` instead.

Contoh menggunakan <object>

Ganti bagian kode sumber menjadi

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

Contoh menggunakan <embed>

Ganti bagian kode sumber menjadi

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

III. PROSEDUR PRAKTIKUM :

Ikuti 4 langkah berikut :

1) Membuka Notepad :

a) Untuk Windows 8 keatas:

Buka Start Screen (the window symbol at the bottom left on your screen) – ketik **Notepad**.

b) Untuk Windows 7 kebawah:

Buka **Start > Programs > Accessories > Notepad**

Kemudian buka new document.

2) Uji coba

Ujicobakan program-program yang sudah ada sebelumnya (teori)

3) Simpan halaman HTML

Simpan file dengan dengan ekstensi **.html** atau **.htm** dan atur encoding ke **UTF-8**

4) Tampilkan pada *browser*

Klik ganda pada file yang disimpan atau klik kanan dan pilih “Open with”. Gunakan *web browser* (mozilla firefox, Chrome, IE, Firefox, Safari, dll) untuk membaca dan menampilkan dokumen HTML ini.