

HTML 5 Embedded Contents

HTML



Bok, Jong Soon
javaexpert@nate.com
<https://github.com/swacademy/HTML5>

- Defines an image in an HTML page.
- Has two required attributes: **src** and **alt**.
- Differences Between HTML 4.01 and HTML5
 - **align**, **border**, **hspace**, **longdesc**, and **vspace** is not supported in HTML5.

 (Cont.)

■ Attributes

- **alt**

- Specifies an alternate text for an image.

- **height**

- Specifies the height of an image.

- **width**

- Specifies the width of an image.

- **src**

- Specifies the URL of an image.

```
1 
```



 (Cont.)

■ Attributes

- **ismap**

- Specifies an image as a server-side image-map

```
1 <a href="form_action.asp">
2 
3 </a>
4 <p>Click the image, and the click coordinates will be sent to the server as a
URL query string.</p>
```



Click the image, and the click coordinates will be sent to the server as a URL query string.

 (Cont.)

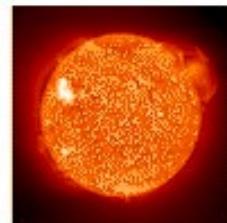
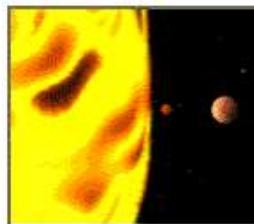
■ Attributes

● **usemap**

- Specifies an image as a client-side image-map.

```
1  <p>Click on the sun or on one of the planets to watch it closer:</p>
2
3  
4
5  <map name="planetmap">
6    <area shape="rect" coords="0,0,82,126" alt="Sun" href="sun.htm">
7    <area shape="circle" coords="90,58,3" alt="Mercury" href="mercur.htm">
8    <area shape="circle" coords="124,58,8" alt="Venus" href="venus.htm">
9  </map>
```

Click on the sun or on one of the planets to watch it closer:



Lab1 : Image Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

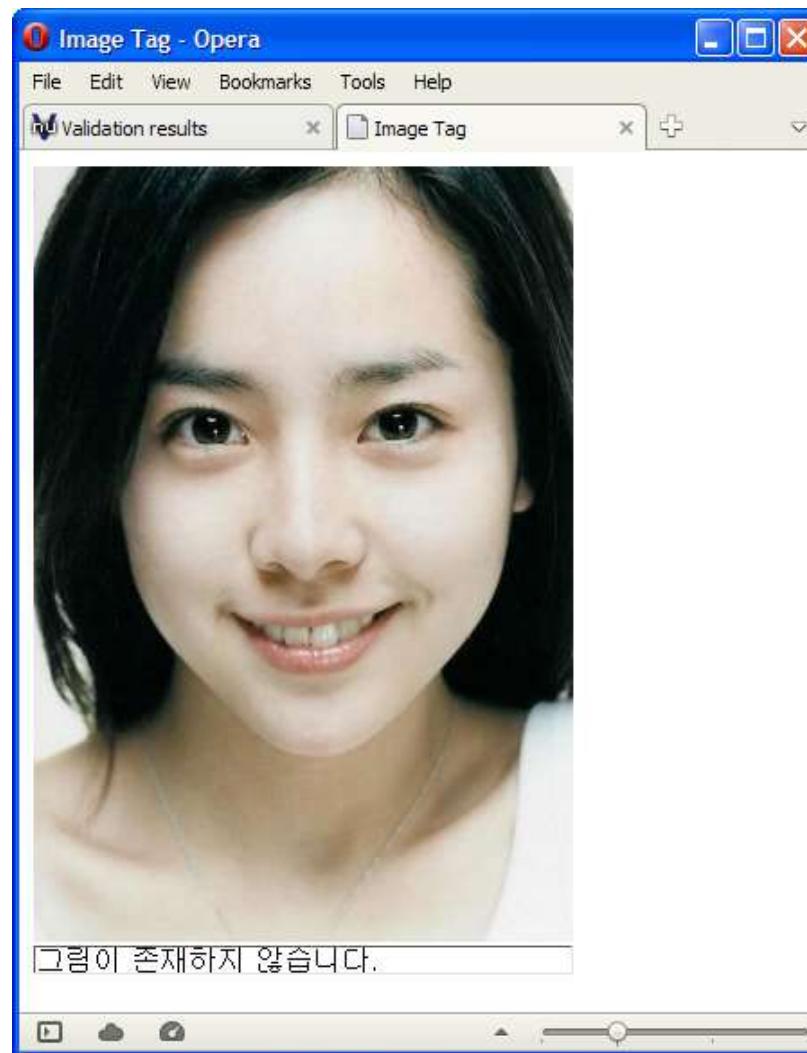
■ Files

- image.html
- images/jimin.jpg

Lab1 : image.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Image Tag</title>
5  </head>
6  <body>
7      
8      
9  </body>
10 </html>
```

Lab1 : Result



<iframe>

- Specifies an inline frame.
- An inline frame is used to embed another document within the current HTML document.
- Attributes

- **src**



- Specifies the address of the document to embed in the <iframe>.

```
1 <iframe src="http://www.w3schools.com">
2   <p>Your browser does not support iframes.</p>
3 </iframe>
```



<iframe> (Cont.)

■ Attributes

- **height**

- Specifies the height of an <iframe>

- **width**

- Specifies the width of an <iframe>

```
1  <iframe src="/default.asp" width="200" height="200">
2  <p>Your browser does not support iframes.</p>
3  </iframe>
```



<iframe> (Cont.)

■ Attributes

- **name**

- Specifies the name of an <iframe>

```
1  <iframe src="demo_iframe.htm" name="iframe_a">
2  <p>Your browser does not support iframes.</p>
3  </iframe>
4
5  <a href="http://www.w3schools.com" target="iframe_a">W3Schools.com</a>
6
7  <p><b>Note:</b> Because the target of the link matches the name of the
   iframe, the link will open in the iframe.</p>
```

This is a paragraph inside an iframe.

[W3Schools.com](http://www.w3schools.com)

Note: Because the target of the link matches the name of the iframe, the link will open in the iframe.

<iframe> (Cont.)

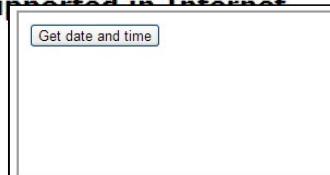
■ Attributes

● **sandbox**



- Enables a set of extra restrictions for the content in the <iframe>
- "" | **allow-forms** | **allow-same-origin** | **allow-scripts** | **allow-top-navigation**

```
1  <iframe src="demo_iframe_sandbox.htm" sandbox="">
2    <p>Your browser does not support iframes.</p>
3  </iframe>
4
5  <p>The "Get date and time" button will run a script in the inline frame.</p>
6  <p>Since the sandbox attribute is set to an empty string (""), the content of
the inline frame is not allowed to run scripts.</p>
7  <p>Add "allow-scripts" to the sandbox attribute, to allow the JavaScript to
run.</p>
8
9  <p><strong>Note:</strong> The sandbox attribute is not supported in Internet
Explorer 9 and earlier versions, or in Opera.</p>
```



The "Get date and time" button will run a script in the inline frame.

Since the sandbox attribute is set to an empty string (""), the content of the inline frame is not allowed to run scripts.

Add "allow-scripts" to the sandbox attribute, to allow the JavaScript to run.

Note: The sandbox attribute is not supported in Internet Explorer 9 and earlier versions, or in Opera.

<iframe> (Cont.)

■ Attributes

- **seamless**



- Specifies that the <iframe> should look like it is a part of the containing document.

```
1  <p>This is a paragraph.</p>
2
3  <iframe src="demo_iframe.htm" seamless></iframe>
4
5  <p><strong>Note:</strong> The seamless attribute of the iframe tag is
   supported only in Chrome and Safari 6.</p>
```

This is a paragraph.

This is a paragraph inside an iframe.

Note: The seamless attribute of the iframe tag is supported only in Chrome and Safari 6.

<iframe> (Cont.)

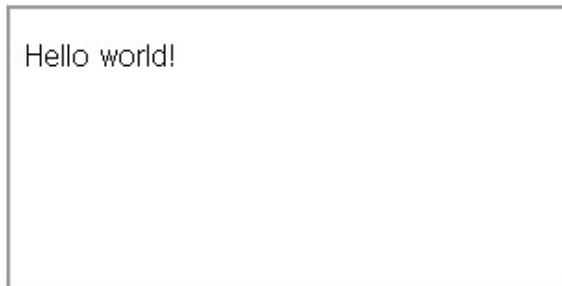
■ Attributes

- **srcdoc**



- Specifies the HTML content of the page to show in the <iframe>.

```
1  <iframe srcdoc="<p>Hello world!</p>" src="demo_iframe_srcdoc.htm">
2    <p>Your browser does not support iframes.</p>
3  </iframe>
4
5  <p><strong>Note:</strong> The srcdoc attribute of the iframe tag is supported
6    only in Chrome and Safari 6.</p>
```



Hello world!

Note: The srcdoc attribute of the iframe tag is supported only in Chrome and Safari 6.

Lab2 : Inline Frame Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

■ Files

- iframe.html
- iframe-in.html
- images/title.gif

Lab2 : iframe-in.html

```
1  <!DOCTYPE html>
2  <html>
3      <body style="background-color:#efefef">
4          - width : iframe의 넓이를 나타냅니다. <br />
5          <br />
6          - height : iframe의 높이를 나타냅니다. <br />
7          <br />
8          - scrolling : iframe의 스크롤바를 설정합니다.
9          </body>
10     </html>
```

Lab2 : iframe.html

```
1  <!DOCTYPE html>
2  <html>
3  |<head>
4  ||<title>Inline Frame Tag </title>
5  ||<meta charset="utf-8">
6  |</head>
7  <body>
8  |<h1>Inline Frame Tag</h1>
9  |<div style="text-align:center">
10 |<br>
11 |<iframe src="iframe-in.html" width="400" height="150" scrolling="yes">
12 |    이 브라우저는 iframe을 지원하지 않습니다.</iframe>
13 |</div>
14 </body>
15 </html>
```

Lab2 : Result



<embed>



- Defines a container for an external application or interactive content (a plug-in).
- Attributes

- **src**



- Specifies the address of the external file to embed.

```
1  ↴<embed src="helloworld.swf">
```



<embed> (Cont.)

■ Attributes

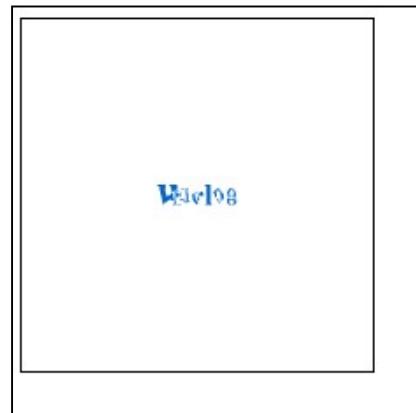
- **height**

- Specifies the height of the embedded content.

- **width**

- Specifies the width of the embedded content.

```
1 <embed src="helloworld.swf" width="200" height="200" style="border:1px solid">
```



<embed> (Cont.)

■ Attributes

- **type**

- Specifies the MIME type of the embedded content.

```
1 ↴<embed src="helloworld.swf" type="application/x-shockwave-flash">
```

Lab3 : Embed Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

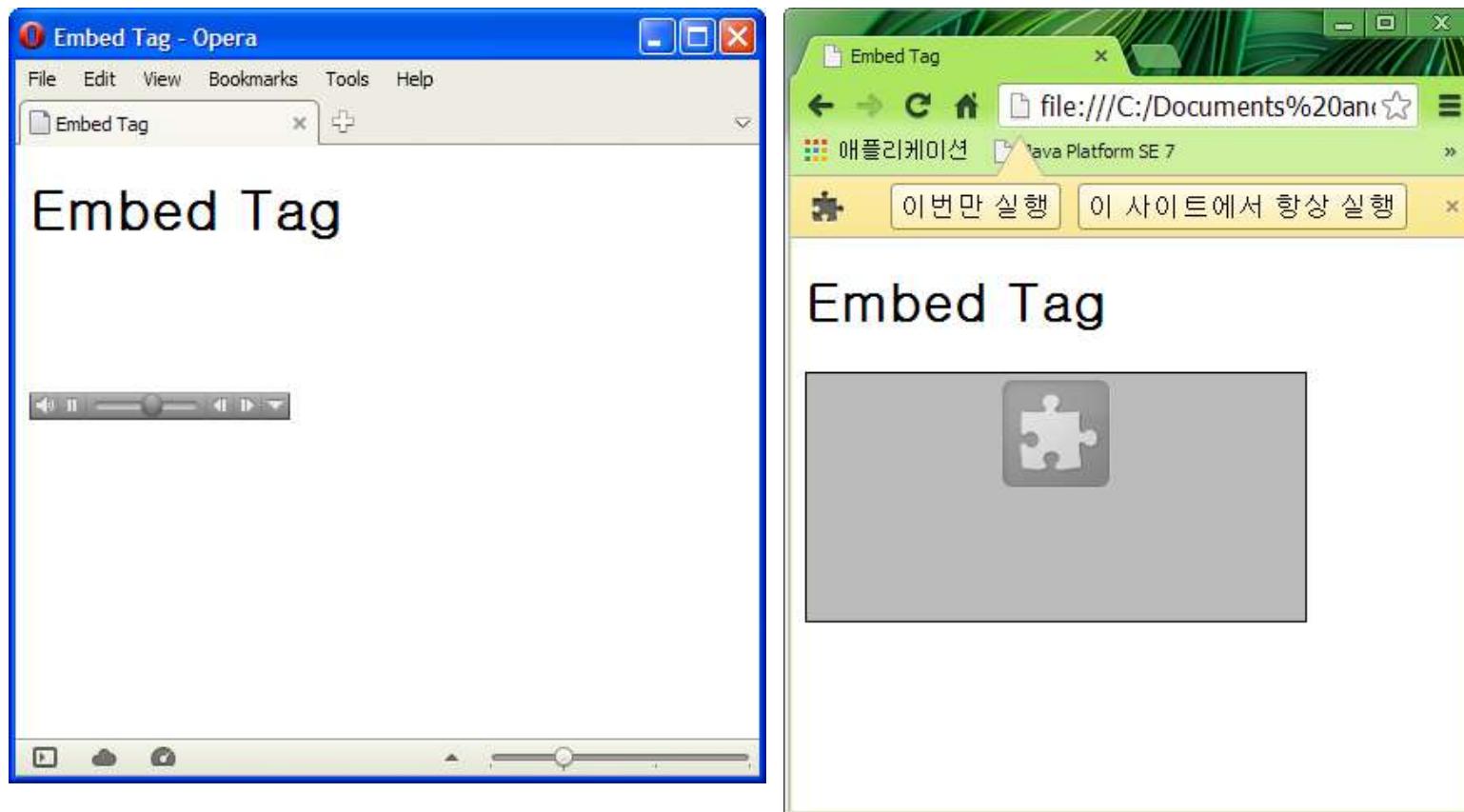
■ Files

- embed.html
- audio/whenidream.mid

Lab3 : embed.html

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Embed Tag </title>
5      <meta charset="utf-8">
6    </head>
7    <body>
8      <h1>Embed Tag</h1>
9      <embed src="audio/whenidream.mid"></embed>
10     <!--
11     <embed src="audio/haru-kbs.ra"></embed>
12     -->
13   </body>
14 </html>
```

Lab3 : Result



Lab4 : Embed Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

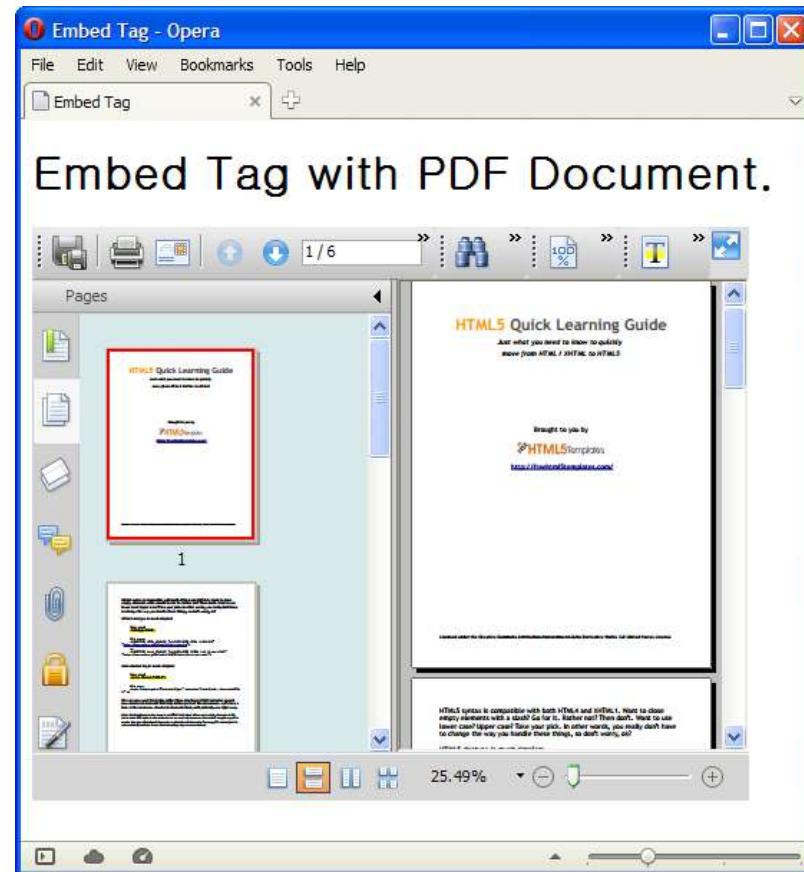
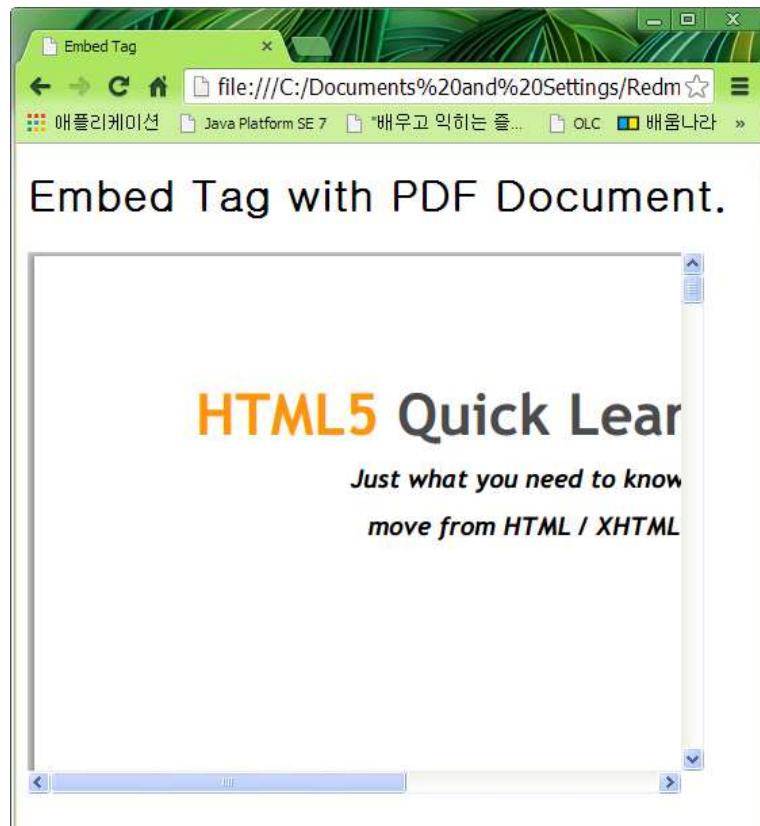
■ Files

- embed1.html
- HTML5Guide.pdf

Lab4 : embed1.html

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Embed Tag </title>
5      <meta charset="utf-8">
6    </head>
7    <body>
8      <h1>Embed Tag with PDF Document.</h1>
9      <embed src="HTML5Guide.pdf"
10        type="application/pdf" width="500" height="400" />
11    </body>
12  </html>
```

Lab4 : Result



<object>

- Defines an embedded object within an HTML document.
- Use this element to embed multimedia (like audio, video, Java applets, ActiveX, PDF, and Flash) in your web pages.

<object> (Cont.)

■ Attributes

- **data**

- Specifies the URL of the resource to be used by the object.

- **height**

- **width**

```
1 <object width="400" height="400" data="helloworld.swf">
2 </object>
```



<object> (Cont.)

■ Attributes

- **form**



- Specifies one or more forms the object belongs to.

```
1  <form action="demo_form.asp" id="form1">
2  First name: <input type="text" name="fname"><br>
3  <input type="submit" value="Submit">
4  </form>
5
6  <object data="helloworld.swf" width="400" height="400" name="obj1" form="form1"></object>
7
8  <p><b>Note:</b> The form attribute is not supported in all browsers.</p>
```



<object> (Cont.)

■ Attributes

- **name**

- Specifies a name for the object.

```
1 <object data="helloworld.swf" width="400" height="400"  
2 name="obj1"></object>
```

- **type**

- Specifies the MIME type of data specified in the data attribute.

```
1 <object width="400" height="400" data="helloworld.swf" type=  
"application/x-shockwave-flash"></object>
```

<object> (Cont.)

■ Attributes

- **usemap**

- Specifies the name of a client-side image map to be used with the object.

```
1 <object data="planets.gif" width="145" height="126" usemap="#planetmap"></object>
2
3 <map name="planetmap">
4   <area shape="rect" coords="0,0,82,126" alt="Sun" href="sun.htm">
5   <area shape="circle" coords="90,58,3" alt="Mercury" href="mercur.htm">
6   <area shape="circle" coords="124,58,8" alt="Venus" href="venus.htm">
7 </map>
8
9 <p><b>Note:</b> The usemap attribute of the object element is not
  supported in Chrome and Safari.</p>
```

Lab5 : Object Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

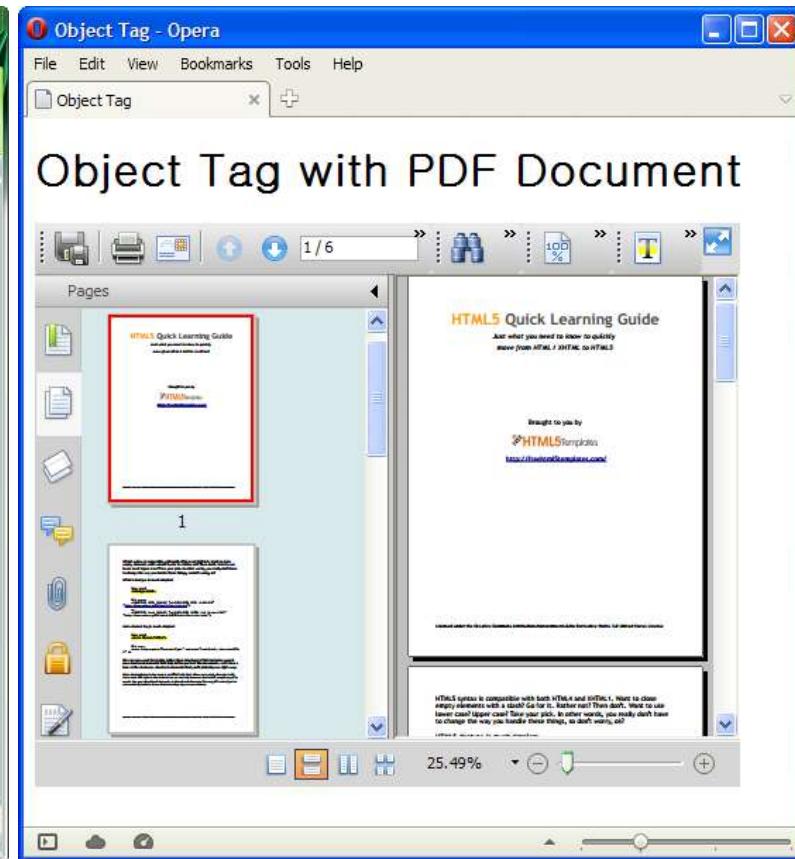
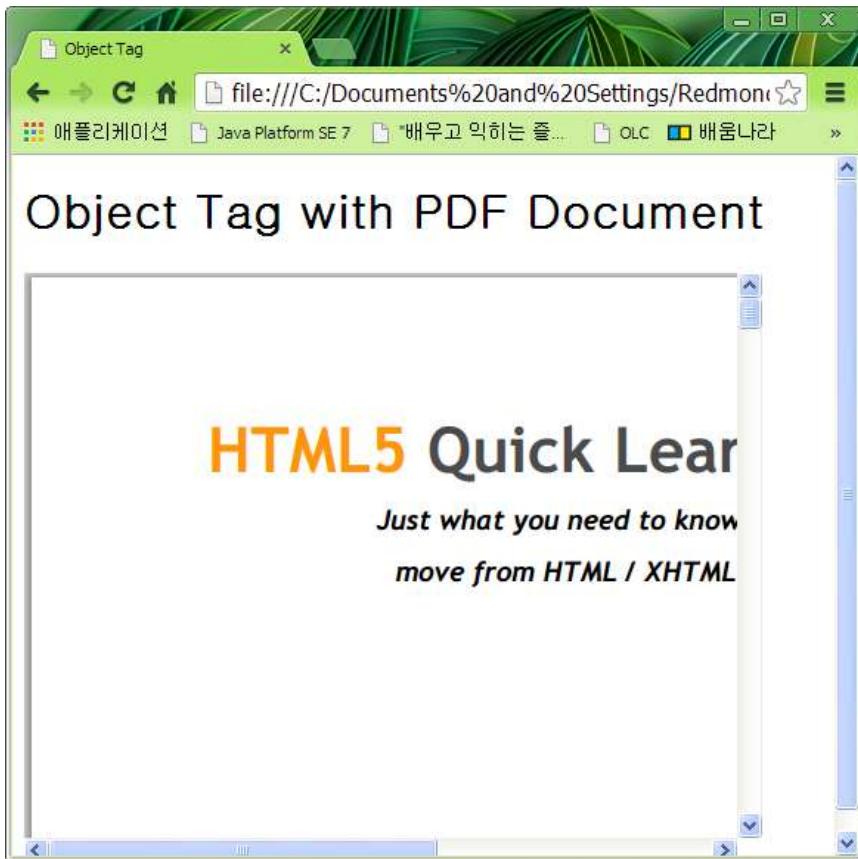
■ Files

- object.html
- HTML5Guide.pdf

Lab5 : object.html

```
1  <!DOCTYPE html>
2  <html>
3  | <head>
4  | | <title>Object Tag </title>
5  | | <meta charset="utf-8">
6  | </head>
7  <body>
8  | <h1>Object Tag with PDF Document</h1>
9  | <object data="HTML5Guide.pdf"
10 | | type="application/pdf" width="500" height="400" />
11 </body>
```

Lab5 : Result



<param>

- Is used to define parameters for plugins embedded with a n <object> element.
- Differences Between HTML 4.01 and HTML5
 - **type** and **valuetype**, are not supported in HTML5.

```
1  <p><b>Note:</b> Internet Explorer 8, and earlier versions, does not support  
2  .wav files. Try to rename the file to "horse.mp3" to test the example in these  
3  versions of IE.</p>  
4  <object data="horse.wav">  
5  <param name="autoplay" value="true">  
6  </object>
```

Note: Internet Explorer 8, and earlier versions, doe example in these versions of IE.



<video>



- Specifies video, such as a movie clip or other video streams.
- Currently, there are 3 supported video formats for the <video> element:
 - MP4 : video/mp4
 - WebM : video/webm
 - Ogg : video/ogg

<video> (Cont.)

Browser	MP4	WebM	Ogg
IE	YES	NO	NO
Google Chrome	YES	YES	YES
Firefox	NO Firefox 21 running on Windows 7, Windows 8, Windows Vista, and Android now supports MP4	YES	YES
Safari	YES	NO	NO
Opera	NO	YES	YES

- MP4 = MPEG 4 files with H264 video codec and AAC audio codec
- WebM = WebM files with VP8 video codec and Vorbis audio codec
- Ogg = Ogg files with Theora video codec and Vorbis audio codec

<video> (Cont.)

```
1 <video width="320" height="240" controls>
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```



<video> (Cont.)

■ Attributes

- **autoplay**



- Specifies that the video will start playing as soon as it is ready.

- **controls**



- Specifies that video controls should be displayed (such as a play/pause button etc).

```
1 <video controls autoplay>
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```

<video> (Cont.)

■ Attributes

- **height**



- Sets the height of the video player.

- **width**



- Sets the width of the video player.

```
1 <video width="320" height="240" controls>
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```

<video> (Cont.)

■ Attributes

- **loop**



- Specifies that the video will start over again, every time it is finished.

```
1 <video controls loop>
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```

- **muted**



- Specifies that the audio output of the video should be muted.

```
1 <video controls muted>
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```

<video> (Cont.)

■ Attributes

- **preload**



- Specifies if and how the author thinks the video should be loaded when the page loads.

- **auto | metadata | none**

```
1 <video controls preload="none">
2   <source src="movie.mp4" type="video/mp4">
3   <source src="movie.ogg" type="video/ogg">
4   Your browser does not support the video tag.
5 </video>
```

<video> (Cont.)

■ Attributes

- **src**



- Specifies the URL of the video file.

```
1 <video width="320" height="240" controls src="movie.ogg">
2   Your browser does not support the video tag.
3 </video>
4
5 <p><b>Note:</b> The .ogg fileformat is not supported in IE and Safari.</p>
```



A screenshot of a video player interface. At the top, there is a video frame showing a brown bear standing in shallow water, looking towards the right. A white bird is standing on a rock to the right of the bear. Below the video frame is a control bar with a play button, a volume icon, a progress bar showing '0:12', and other standard video controls. Below the control bar is a text box containing the note: "Note: The .ogg fileformat is not supported in IE and Safari.".

Lab6 : Video Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

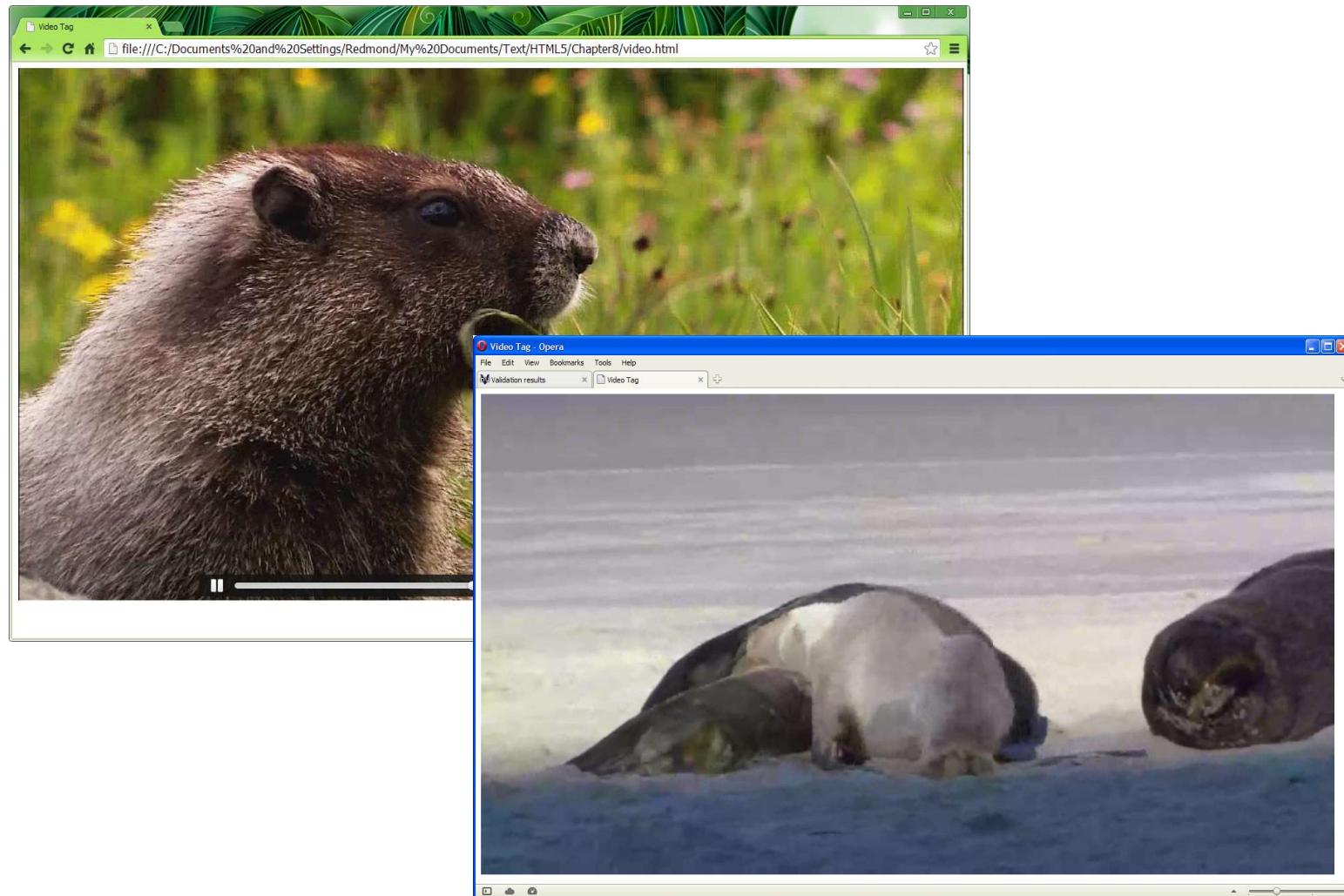
■ Files

- video.html
- video/Wildlife.mp4
- video/Wildlife.webm

Lab6 : video.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Video Tag</title>
5  </head>
6  <body>
7      <video controls="controls">
8          <source src="video/Wildlife.mp4" type="video/mp4" />
9          <source src="video/Wildlife.webm" type="video/webm" />
10     </video>
11 </body>
12 </html>
```

Lab6 : Result



Lab7 : Video Tag with Video.js

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

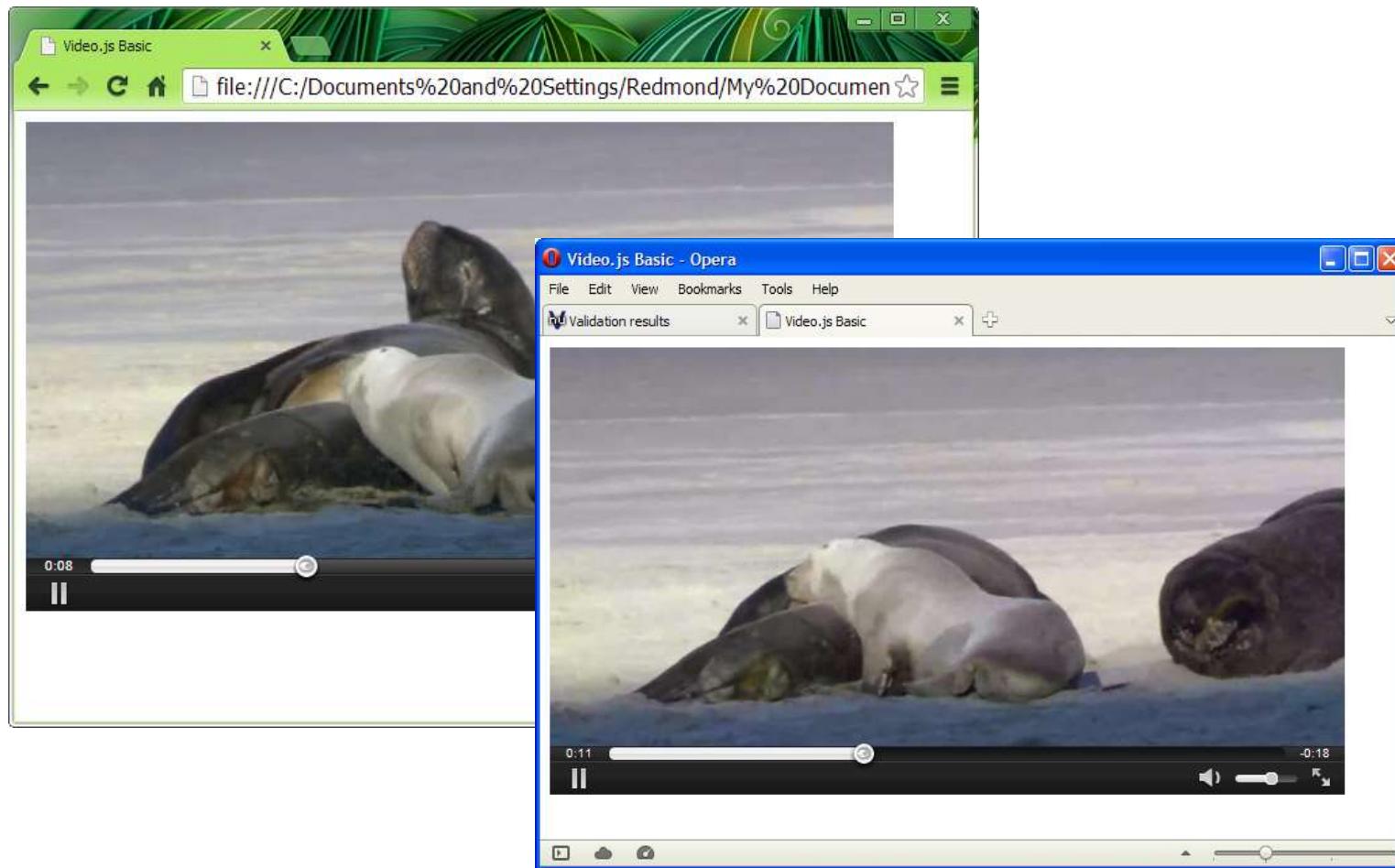
■ Files

- video1.html
- video/Wildlife.mp4
- video/Wildlife.webm

Lab7 : video1.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Video.js Basic</title>
5      <link href="http://vjs.zencdn.net/c/video-js.css" rel="stylesheet">
6      <script src="http://vjs.zencdn.net/c/video.js"></script>
7  </head>
8  <body>
9      <video controls="controls" width="640" height="360"
10         class="video-js vjs-default-skin" data-setup="{}">
11         <source src="video/Wildlife.mp4" type="video/mp4" />
12         <source src="video/Wildlife.webm" type="video/webm" />
13     </video>
14 </body>
15 </html>
```

Lab7 : Result



Lab8 : Mouseover Video

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

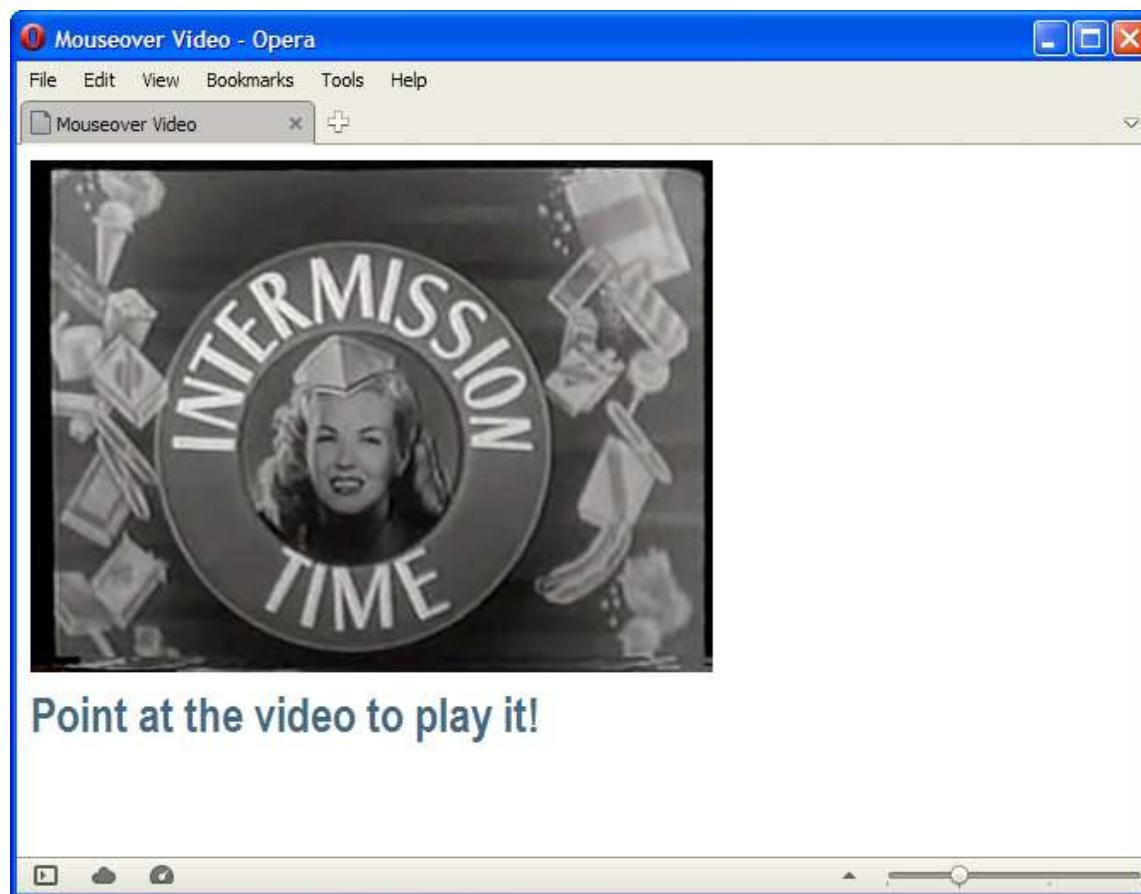
■ Files

- mouseoverVideo.html
- video/Intermission-Walk-in.ogv
- video/Intermission-Walk-in_512kb.mp4
- css/styles.css

Lab8 : mouseoverVideo.html

```
1  <!DOCTYPE html>
2  <html>
3  |<head>
4  ||<link rel="stylesheet" href="css/styles.css">
5  ||<title>Mouseover Video</title>
6  |</head>
7  <body>
8  |<video id="movies" onmouseover="this.play()" onmouseout="this.pause()"
9  ||autobuffer="true" width="400px" height="300px">
10 |<source src="video/Intermission-Walk-in.ogv" type='video/ogg'>
11 |<source src="video/Intermission-Walk-in_512kb.mp4" type='video/mp4'>
12 |</video>
13 |<h1>Point at the video to play it!</h1>
14 |</body>
15 |</html>
```

Lab8 : Result



<audio>



- Defines sound, such as music or other audio streams.
- Currently, there are 3 supported file formats for the <audio> element:
 - MP3 : audio/mpeg
 - Wav : audio/wav
 - Ogg : audio/ogg

<audio> (Cont.)

Browser	MP3	Wav	Ogg
IE	YES	NO	NO
Google Chrome	YES	YES	YES
Firefox	NO Firefox 21 running on Windows 7, Windows 8, Windows Vista, and Android now supports MP3	YES	YES
Safari	YES	YES	NO
Opera	NO	YES	YES

<audio> (Cont.)

■ Attributes

- **autoplay**

 new

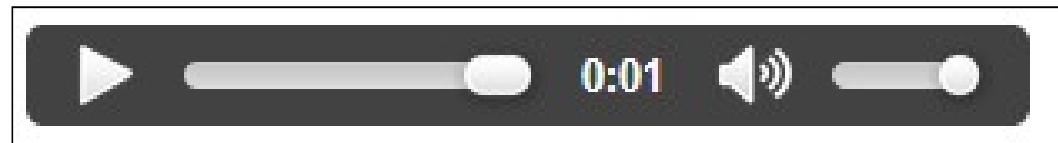
- Specifies that the audio will start playing as soon as it is ready.

- **controls**

 new

- Specifies that audio controls should be displayed (such as a play/pause button etc).

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



<audio> (Cont.)

■ Attributes

- **loop**

 new

- Specifies that the audio will start over again, every time it is finished.

```
1  <audio controls loop>
2  <source src="horse.ogg" type="audio/ogg">
3  <source src="horse.mp3" type="audio/mpeg">
4  Your browser does not support the audio element.
5  </audio>
```

- **muted**

- Specifies that the audio output should be muted.

```
1  <audio controls muted>
2  <source src="horse.ogg" type="audio/ogg">
3  <source src="horse.mp3" type="audio/mpeg">
4  Your browser does not support the audio tag.
5  </audio>
```

<audio> (Cont.)

■ Attributes

- **preload**



- Specifies if and how the author thinks the audio should be loaded when the page loads.

- **auto | metadata | none**

```
1  <audio controls preload="none">
2    <source src="horse.ogg" type="audio/ogg">
3    <source src="horse.mp3" type="audio/mpeg">
4    Your browser does not support the audio element.
5  </audio>
```

<audio> (Cont.)

■ Attributes

- **src**



- Specifies the URL of the audio file.

```
1  <audio src="horse.ogg" controls>
2  Your browser does not support the audio element.
3  </audio>
4
5  <p><b>Note:</b> The .ogg fileformat is not supported in IE and Safari.</p>
```



Note: The .ogg fileformat is not supported in IE and Safari.

Lab9 : Audio Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

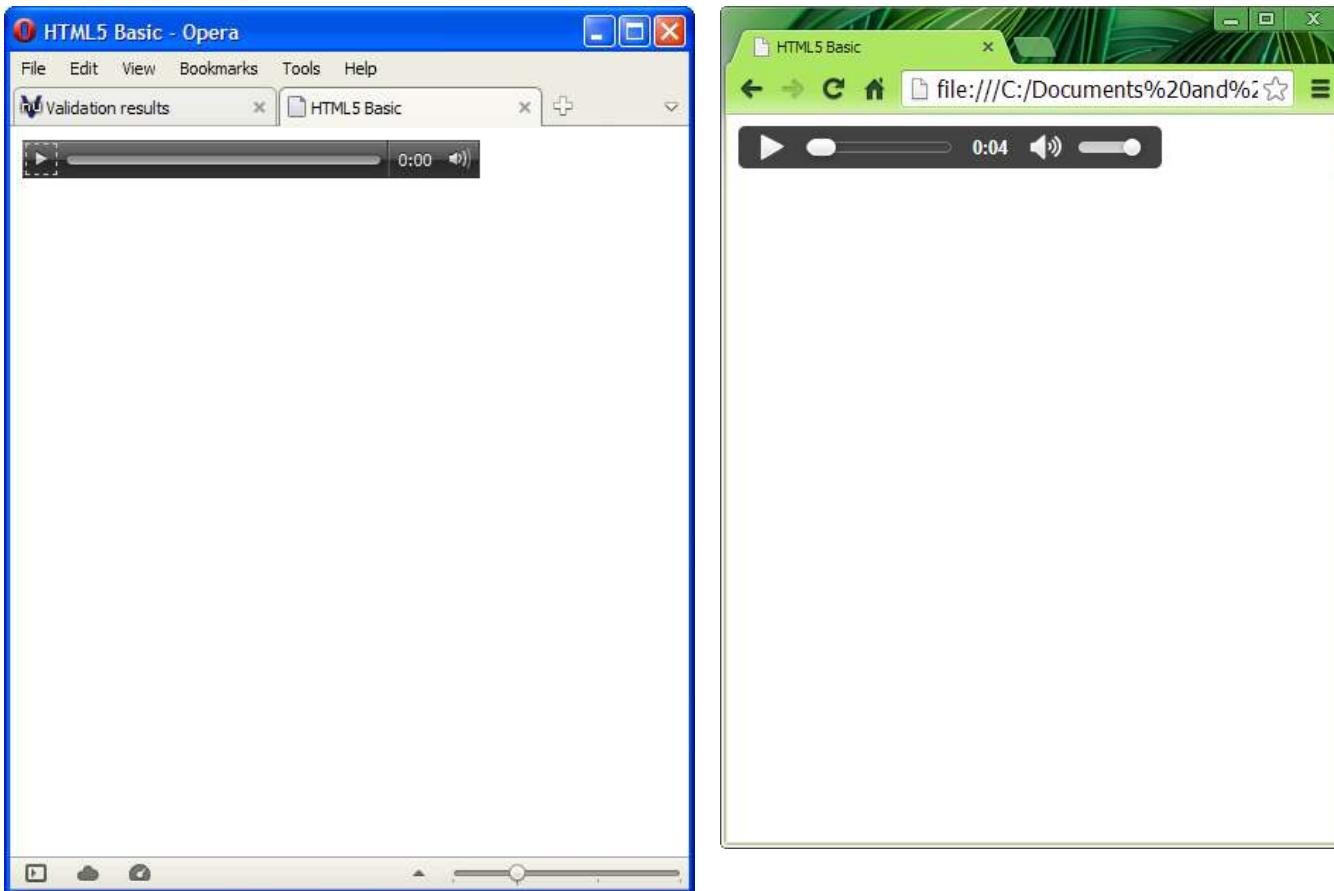
■ Files

- audio.html
- audio/Kalimba.mp3

Lab9 : audio.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Audio Tag</title>
5  </head>
6  <body>
7      <audio src="audio/Kalimba.mp3" controls="controls"></audio>
8  </body>
9  </html>
```

Lab9 : Result



Lab10 : Audio Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

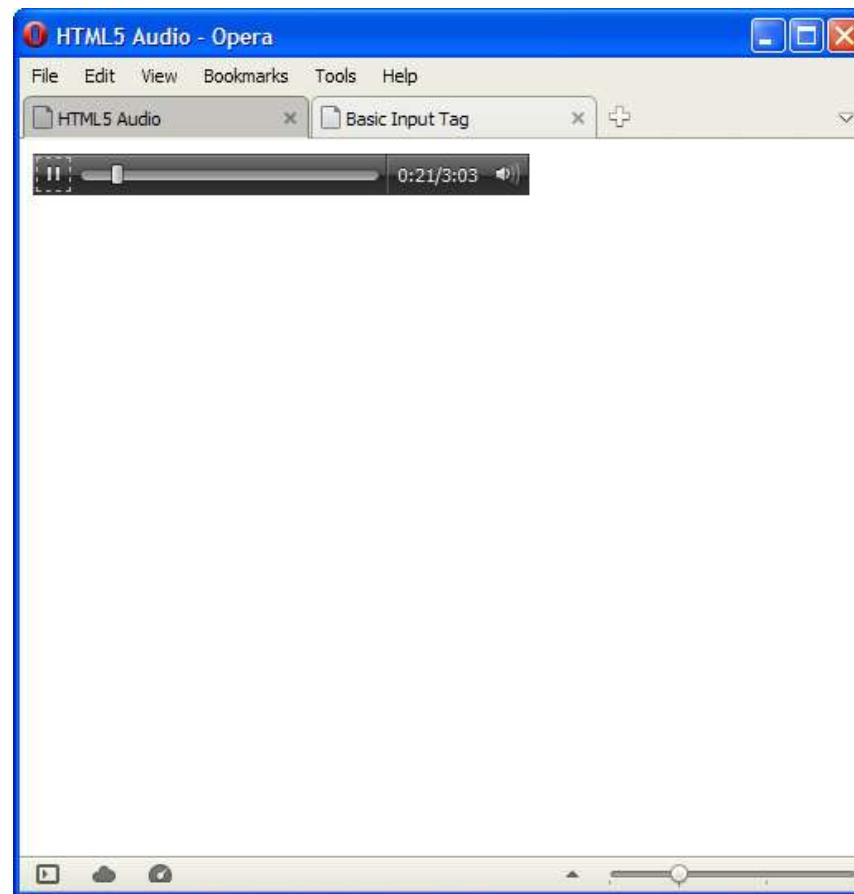
■ Files

- audio1.html
- audio/johann_sebastian_bach_air.ogg
- css/styles.css

Lab10 : audio1.html

```
1  <!DOCTYPE html>
2  <html>
3  <link rel="stylesheet" href="css/styles.css">
4  <title>HTML5 Audio </title>
5  <audio controls src="audio/johann_sebastian_bach_air.ogg">
6  An audio clip from Johann Sebastian Bach.
7  </audio>
8  </html>
```

Lab10 : Result



Lab11 : Audio Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

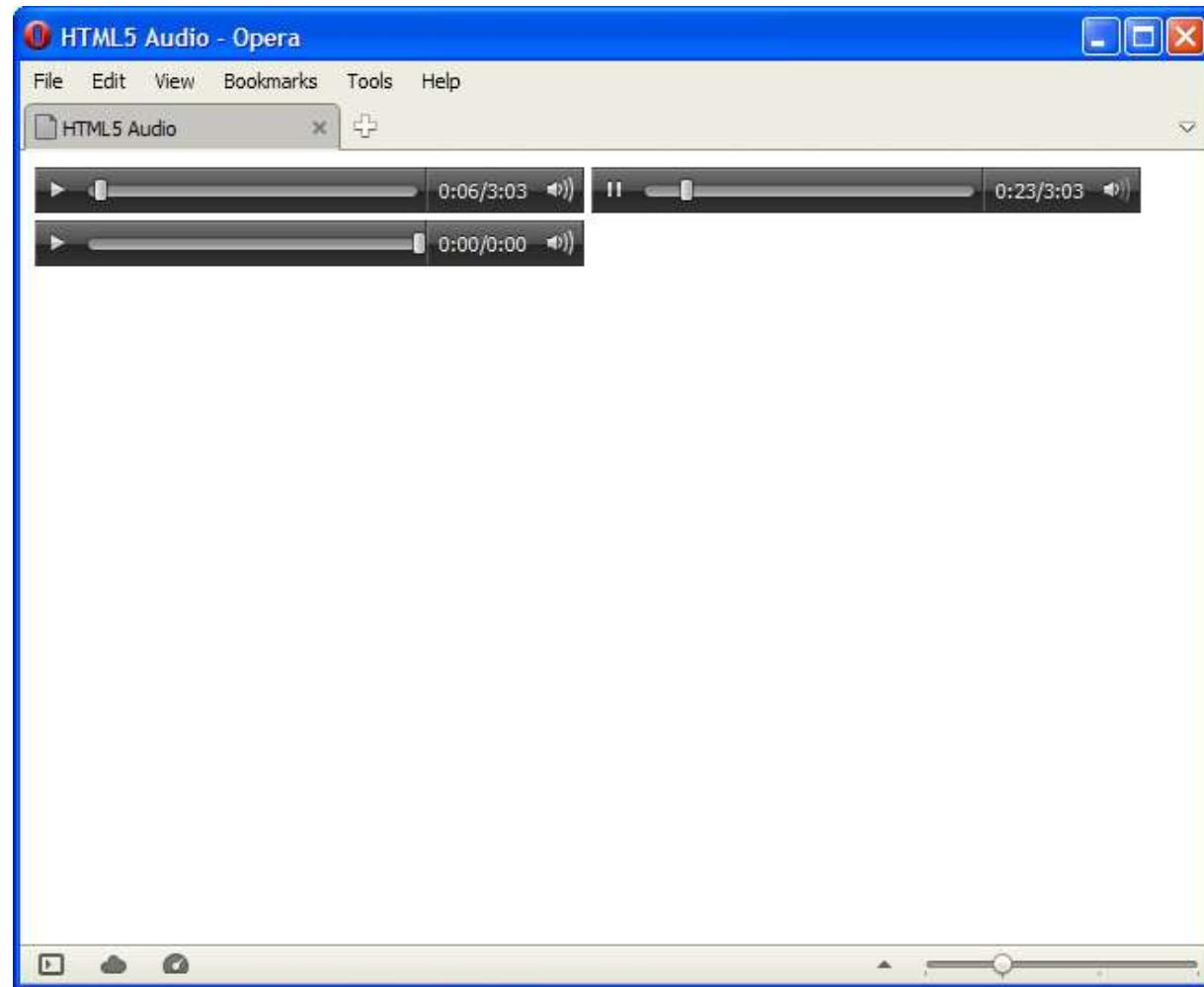
■ Files

- audio2.html
- audio/johann_sebastian_bach_air.ogg
- audio/johann_sebastian_bach_air.mp3
- audio/arrp.wav
- css/styles.css

Lab11 : audio2.html

```
1  <!DOCTYPE html>
2  <html>
3      <link rel="stylesheet" href="css/styles.css">
4      <title>HTML5 Audio </title>
5
6      <audio controls src="audio/johann_sebastian_bach_air.ogg">
7          </audio>
8
9      <audio controls>
10         <source src="audio/johann_sebastian_bach_air.ogg">
11         <source src="audio/johann_sebastian_bach_air.mp3">
12     </audio>
13
14     <audio controls>
15         <source src="audio/arrp.wav">
16     </audio>
17
18 </html>
```

Lab11 : Result



Lab12 : Audio Tag with JavaScript

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

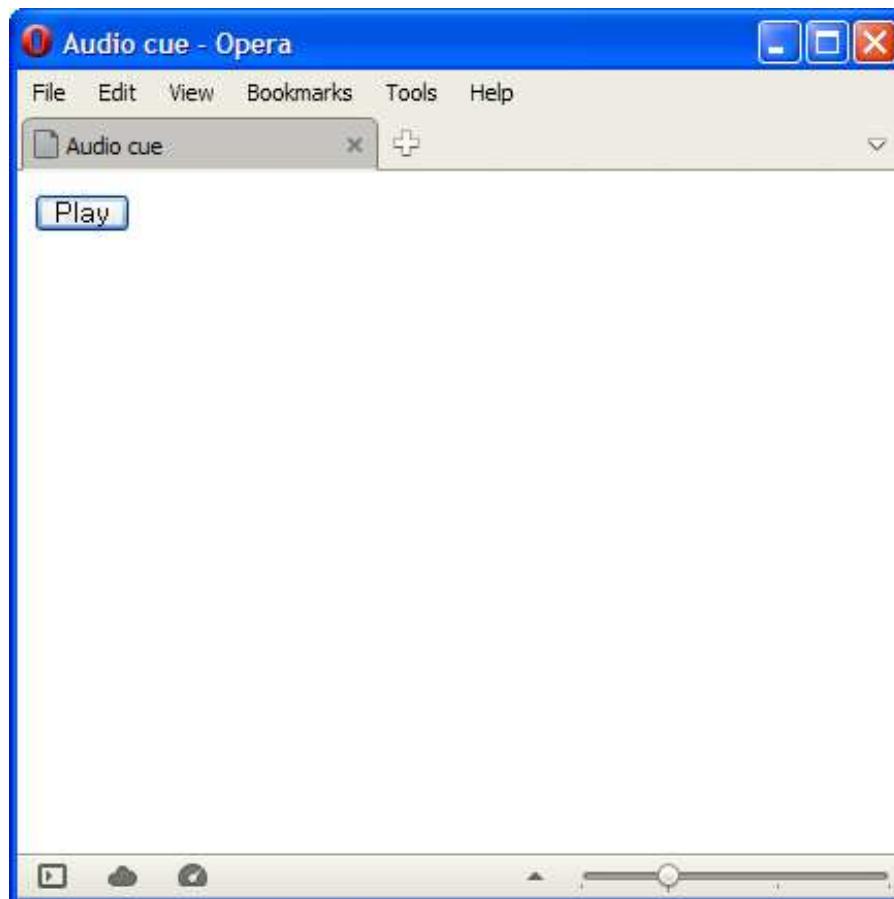
■ Files

- audio3.html
- audio/johann_sebastian_bach_air.ogg
- audio/johann_sebastian_bach_air.mp3
- css/styles.css

Lab12 : audio3.html

```
1  <!DOCTYPE html>
2  <html>
3  <link rel="stylesheet" href="css/styles.css">
4  <title>Audio cue</title>
5  <script type="text/javascript">
6      function toggleSound() {
7          var music = document.getElementById("clickSound");
8          var toggle = document.getElementById("toggle");
9
10         if (music.paused) {
11             music.play();
12             toggle.innerHTML = "Pause";
13         }
14         else {
15             music.pause();
16             toggle.innerHTML = "Play";
17         }
18     }
19 </script>
20
21 <body>
22 <audio id="clickSound">
23 <source src="audio/johann_sebastian_bach_air.ogg">
24 <source src="audio/johann_sebastian_bach_air.mp3">
25 </audio>
26
27 <button id="toggle" onclick="toggleSound()">Play</button>
28 </body>
29 </html>
```

Lab12 : Result



<source>



- Is used to specify multiple media resources for media elements, such as <video> and <audio>.
- Attributes
 - **media**
 - Specifies the type of media resource.

```
1 <video width="320" height="240" controls>
2   <source src="movie.mp4" type="video/mp4" media="screen and (min-width:320px)">
3   <source src="movie.ogg" type="video/ogg" media="screen and (min-width:320px)">
4   Your browser does not support the video tag.
5 </video>
6
7 <p><b>Note:</b> The media attribute is currently not supported in any of the
 major browsers.</p>
```

<source> (Cont.)

■ Attributes

- **src**



- Specifies the URL of the media file

- **type**



- Specifies the MIME type of the media resource.

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

Lab13 : Source Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

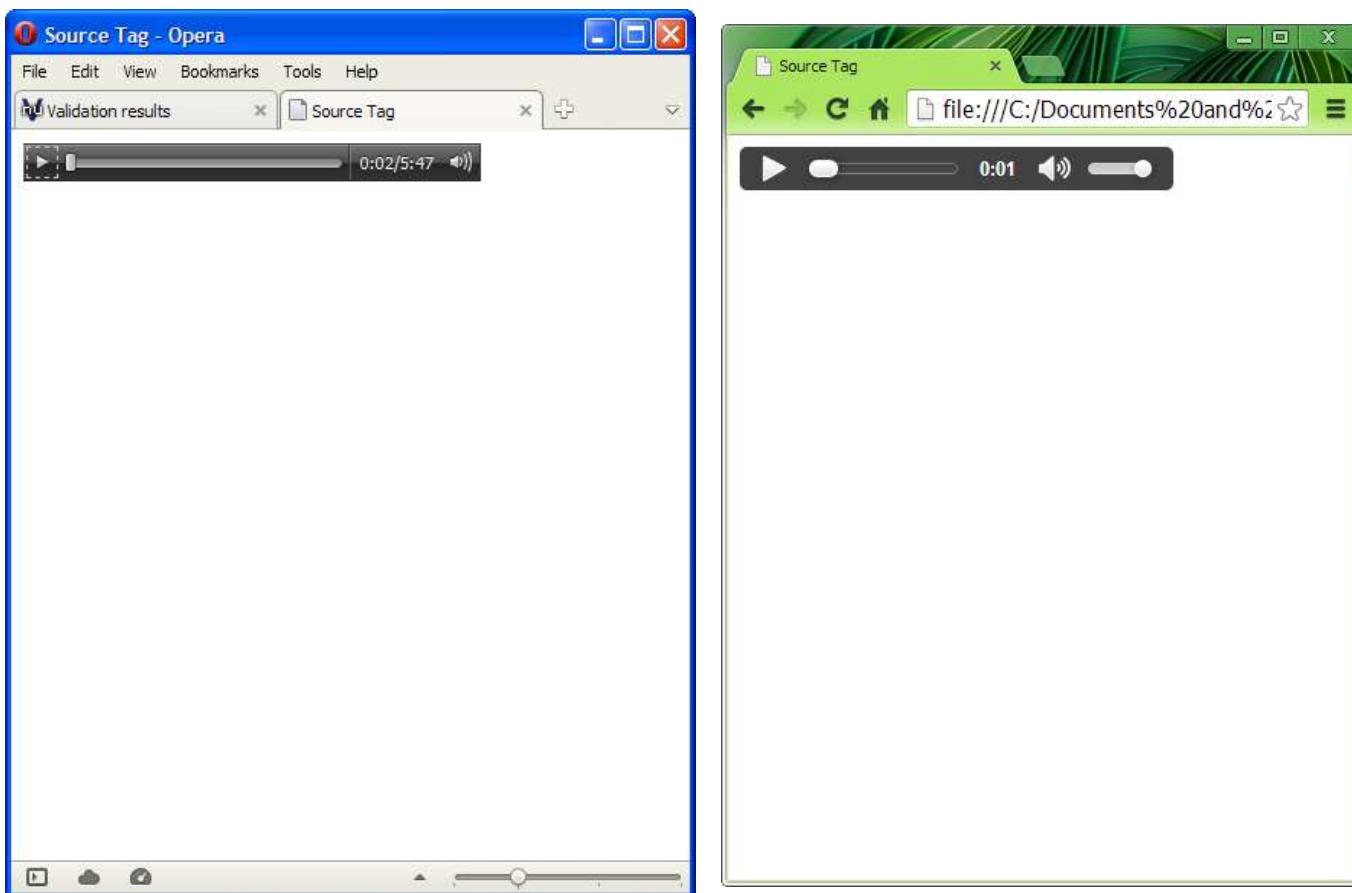
■ Files

- source.html
- audio/Kalimba.mp3
- audio/Kalimba.ogg

Lab13 : source.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Source Tag</title>
5  </head>
6  <body>
7      <audio controls="controls">
8          <source src="audio/Kalimba.mp3" type="audio/mp3" />
9          <source src="audio/Kalimba.ogg" type="audio/ogg" />
10     </audio>
11 </body>
12 </html>
```

Lab13 : Result



<track>



- Specifies text tracks for media elements (**<audio>** and **<video>**).
- Is used to specify subtitles, caption files or other files containing text, that should be visible when the media is playing.

```
1  <video width="320" height="240" controls>
2    <source src="forrest_gump.mp4" type="video/mp4">
3    <source src="forrest_gump.ogv" type="video/ogg">
4    <track src="subtitles_en.vtt" kind="subtitles" srclang="en"
5      label="English">
6    <track src="subtitles_no.vtt" kind="subtitles" srclang="no"
7      label="Norwegian">
8  </video>
```

<track> (Cont.)

■ Attributes

- **default**



- Specifies that the track is to be enabled if the user's preferences do not indicate that another track would be more appropriate.

```
1   <track src="subtitles_en.vtt" default>
```

- **src**

- Required.
- Specifies the URL of the track file.

<track> (Cont.)

■ Attributes

- **kind**

- Specifies the kind of text track.
- **captions | chapters | descriptions | metadata | subtitles**

```
1 ↴<track src="subtitles_en.vtt" kind="subtitles" srclang="en">
```

- **label**

- Specifies the title of the text track.

- **srclang**

- Specifies the language of the track text data.

```
1 ↴<track src="subtitles_en.vtt" kind="subtitles" srclang="en" label="English">
```

Lab14 : Track Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

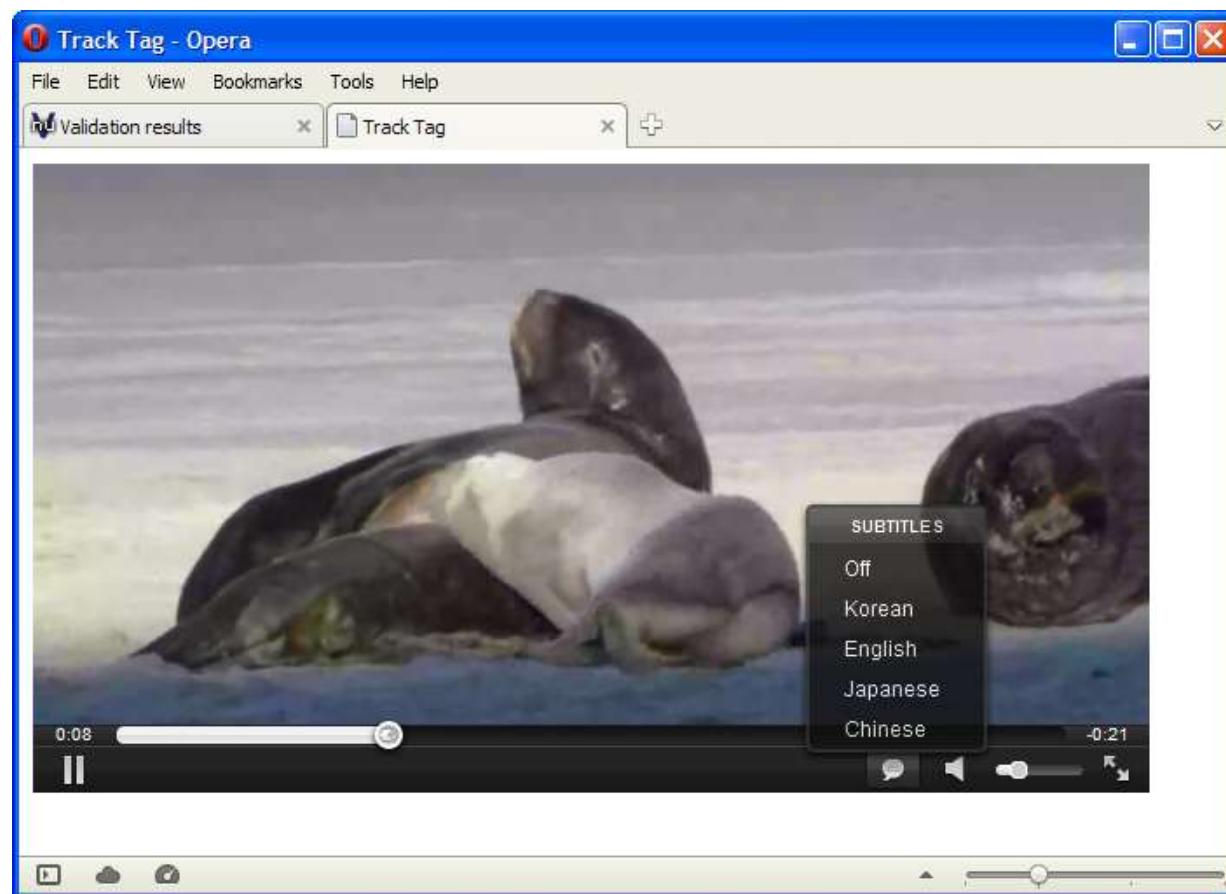
■ Files

- track.html
- track.srt
- video/Wildlife.mp4
- video/Wildlife.webm

Lab14 : track.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Track Tag</title>
5      <link href="http://vjs.zencdn.net/c/video-js.css" rel="stylesheet">
6      <script src="http://vjs.zencdn.net/c/video.js"></script>
7  </head>
8  <body>
9      <!-- 현재 어느 브라우저도 track tag를 지원하지 않음.
10     <video width="640" height="360" controls="controls">
11     -->
12     <video controls="controls" width="640" height="360"
13         class="video-js vjs-default-skin" data-setup="{}">
14         <source src="video/Wildlife.mp4" type="video/mp4" />
15         <source src="video/Wildlife.webm" type="video/webm" />
16         <track kind="subtitles" src="track.srt" srclang="ko" label="Korean" />
17         <track kind="subtitles" src="track.srt" srclang="en" label="English" />
18         <track kind="subtitles" src="track.srt" srclang="jp" label="Japanese" />
19         <track kind="subtitles" src="track.srt" srclang="ch" label="Chinese" />
20     </video>
21 </body>
22 </html>
```

Lab14 : Result

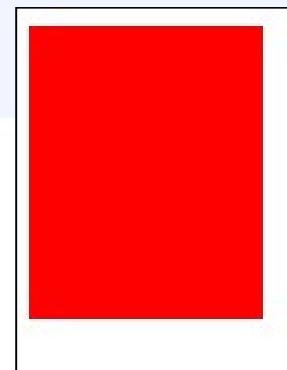


<canvas>



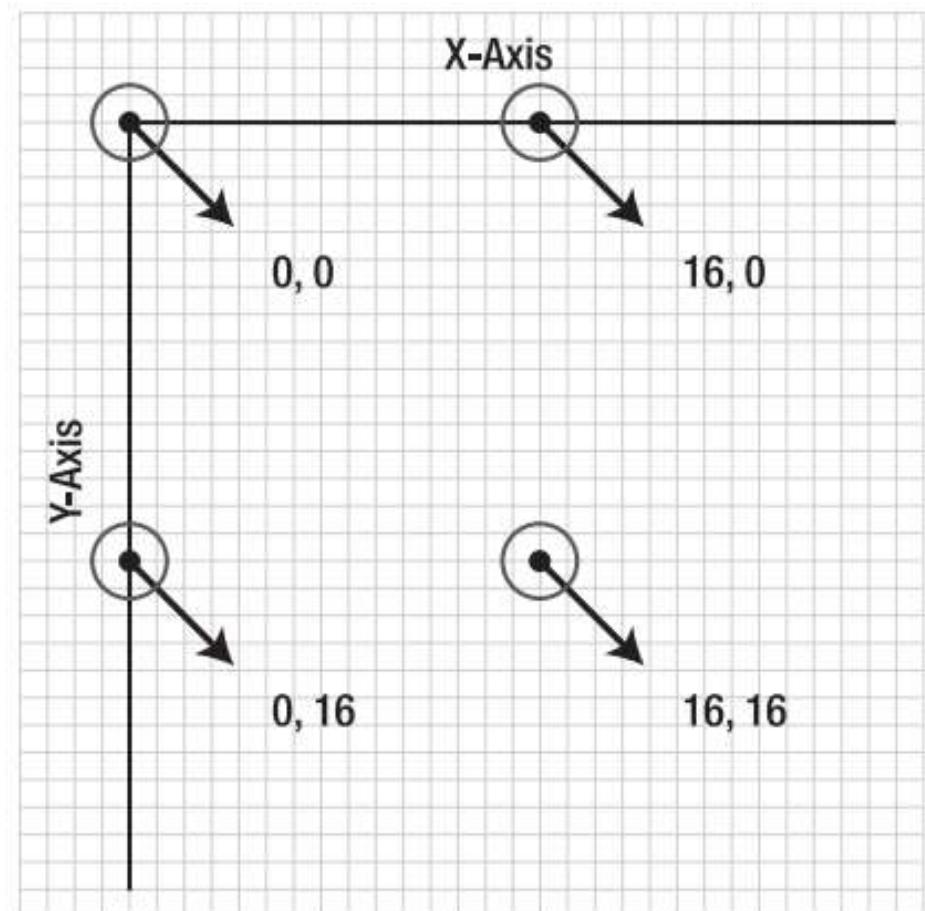
- Is used to draw graphics, on the fly, via scripting (usually JavaScript).
- Is only a container for graphics, you must use a script to actually draw the graphics.

```
1 <canvas id="myCanvas">Your browser does not support the HTML5 canvas tag.  
2 </canvas>  
3 <script>  
4   var c=document.getElementById('myCanvas');  
5   var ctx=c.getContext('2d');  
6   ctx.fillStyle="#FF0000";  
7   ctx.fillRect(0,0,80,100);  
8 </script>
```



<canvas> (Cont.)

- Coordinates in a canvas start at $x=0, y=0$ in the upper-left corner ; which we will refer to as the *origin*.
- Increase (in pixel) horizontally over the x-axis and vertically over the y-axis.



<canvas> (Cont.)

■ Attributes

- **height**

• new

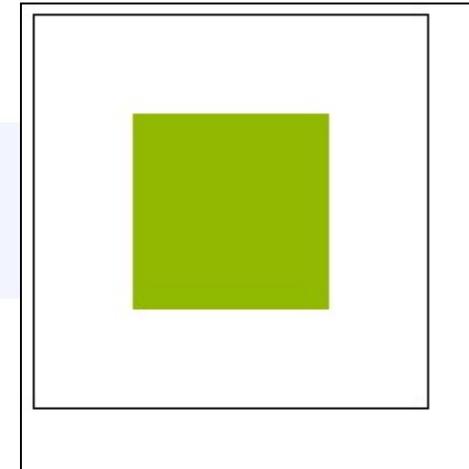
- Specifies the height of the canvas.

- **width**

• new

- Specifies the width of the canvas.

```
1 <canvas id="myCanvas" width="200" height="200" style="border:1px solid">
2 Your browser does not support the HTML5 canvas tag.
3 </canvas>
4
5 <script>
6 var c=document.getElementById("myCanvas");
7 var ctx=c.getContext("2d");
8 ctx.fillStyle="#92B901";
9 ctx.fillRect(50,50,100,100);
10 </script>
```



Lab15 : Canvas Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

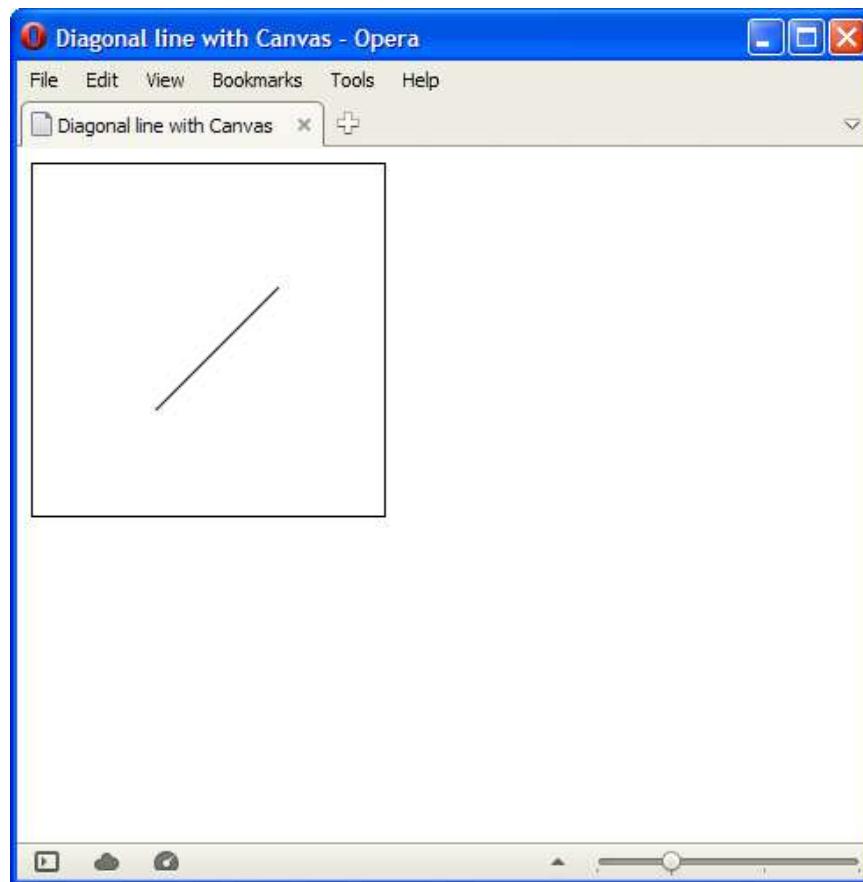
■ Files

- canvas.html

Lab15 : canvas.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Diagonal line with Canvas</title>
5      <script>
6          function drawDiagonal() {
7              // Get the canvas element and its drawing context
8              var canvas = document.getElementById('diagonal');
9              var context = canvas.getContext('2d');
10
11             // Create a path in absolute coordinates
12             context.beginPath();
13             context.moveTo(70, 140);
14             context.lineTo(140, 70);
15
16             // Stroke the line onto the canvas
17             context.stroke();
18         }
19         window.addEventListener("load", drawDiagonal, true);
20     </script>
21 </head>
22 <body>
23     <canvas id="diagonal" style="border: 1px solid;" width="200" height="200"> </canvas>
24 </body>
25 </html>
```

Lab15 : Result



Lab16 : Canvas Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

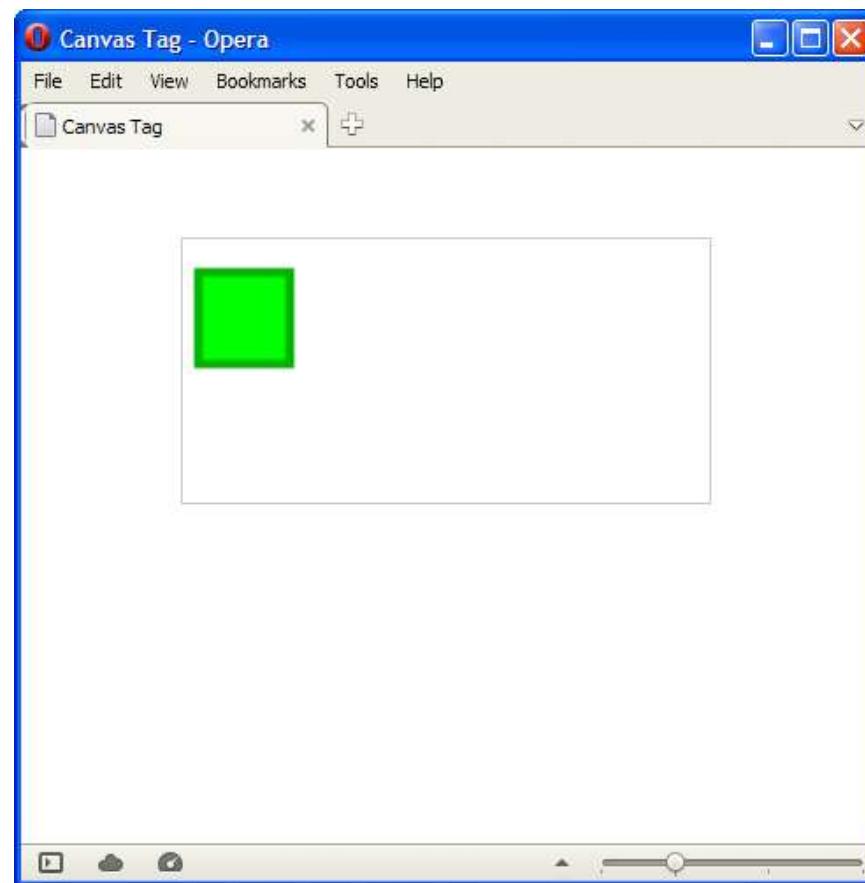
■ Files

- canvas1.html

Lab16 : canvas1.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Canvas Tag</title>
5      <style>
6          canvas { margin: 50px auto; display: block; border: 1px solid #ccc; }
7      </style>
8  </head>
9  <body>
10 <canvas></canvas>
11 <script>
12     var ctx = document.querySelector('canvas').getContext('2d');
13     ctx.fillStyle = 'rgb(0, 255, 0)';
14     ctx.fillRect(10, 20, 50, 50);
15
16     ctx.strokeStyle = 'rgb(0, 182, 0)';
17     ctx.lineWidth = 5;
18     ctx.strokeRect(9, 19, 52, 52);
19 </script>
20 </html>
```

Lab16 : Result



Lab17 : Canvas Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

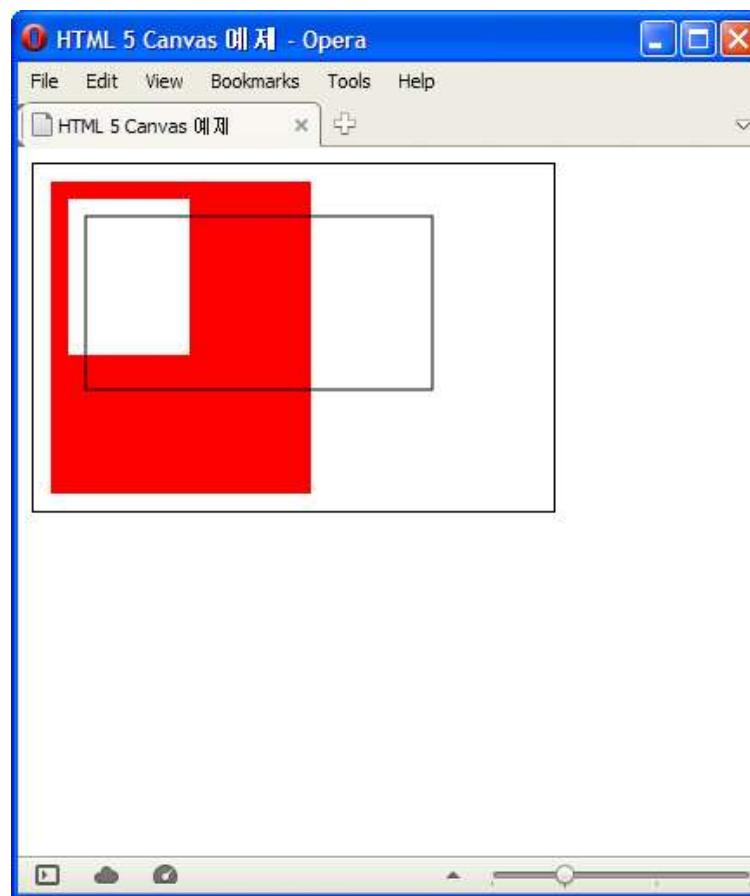
■ Files

- canvas2.html

Lab17 : canvas2.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3      <head>
4          <meta charset="UTF-8">
5          <title>Canvas Tag</title>
6          <style type="text/css">
7              #mycanvas { border:1px solid #000000; }
8          </style>
9      </head>
10     <body>
11         <canvas id="mycanvas" width="300" height="200"></canvas>
12         <script type="text/javascript">
13             var canvas=document.getElementById('mycanvas');
14             var cvas=canvas.getContext('2d');
15             cvas.fillStyle='#FF0000';
16             //cvas.fillStyle="rgba(255,0,0,0.3)";
17             cvas.fillRect(10,10,150,180);
18             cvas.clearRect(20,20,70,90);
19             cvas.strokeRect(30,30,200,100);
20         </script>
21     </body>
22 </html>
```

Lab17 : Result



Lab18 : Canvas Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

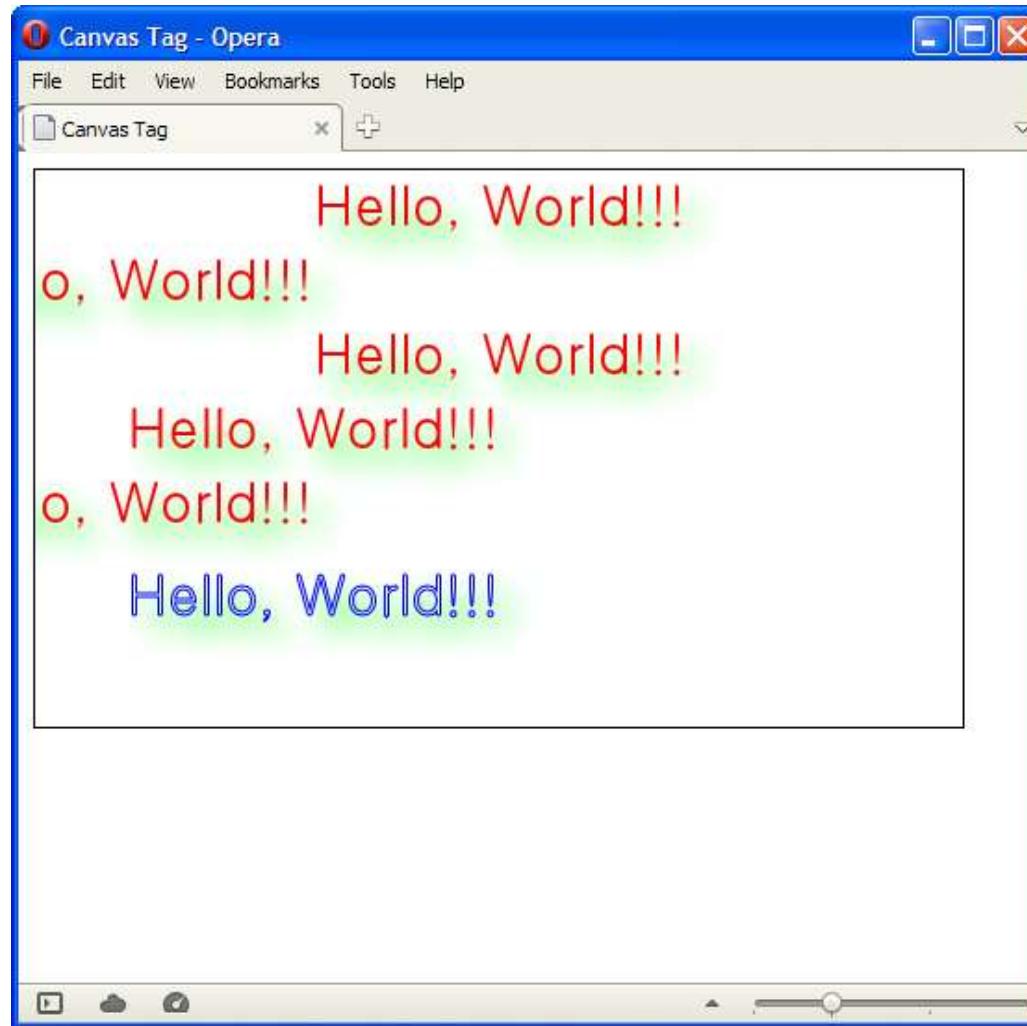
■ Files

- canvas3.html

Lab18 : canvas3.html

```
1  <!DOCTYPE html>
2  <html lang="ko">
3  <head>
4      <meta charset="UTF-8">
5      <title>Canvas Tag</title>
6      <style type="text/css">
7          #mycanvas { border:1px solid #000000; }
8      </style>
9  </head>
10 <body>
11     <canvas id="mycanvas" width="500" height="300">
12     </canvas>
13     <script type="text/javascript">
14         var canvas=document.getElementById('mycanvas');
15         var cvas=canvas.getContext('2d');
16
17         cvas.font = "30px Gothic";
18         cvas.fillStyle = "rgba(255,0,0,1)";
19         cvas.shadowColor = "rgba(0,255,0,0.9)";
20         cvas.shadowOffsetX="10";
21         cvas.shadowOffsetY= "10";
22         cvas.shadowBlur="15";
23
24         cvas.textAlign = "start";
25         cvas.fillText("Hello, World!!!", 150, 30);
26
27         cvas.textAlign = "end";
28         cvas.fillText("Hello, World!!!", 150, 70);
29
30         cvas.textAlign = "left";
31         cvas.fillText("Hello, World!!!", 150, 110);
32
33         cvas.textAlign = "center";
34         cvas.fillText("Hello, World!!!", 150, 150);
35
36         cvas.textAlign = "right";
37         cvas.fillText("Hello, World!!!", 150, 190);
38
39         cvas.textAlign = "center";
40         cvas.strokeStyle = "#0000FF";
41
42         cvas.strokeText("Hello, World!!!", 150, 240);
43     </script>
44 </body>
45 </html>
```

Lab18 : Result



Lab19 : Canvas Tag

■ Web Browsers

- Edge, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Visual Studio Code, Notepad++, Editplus, etc...

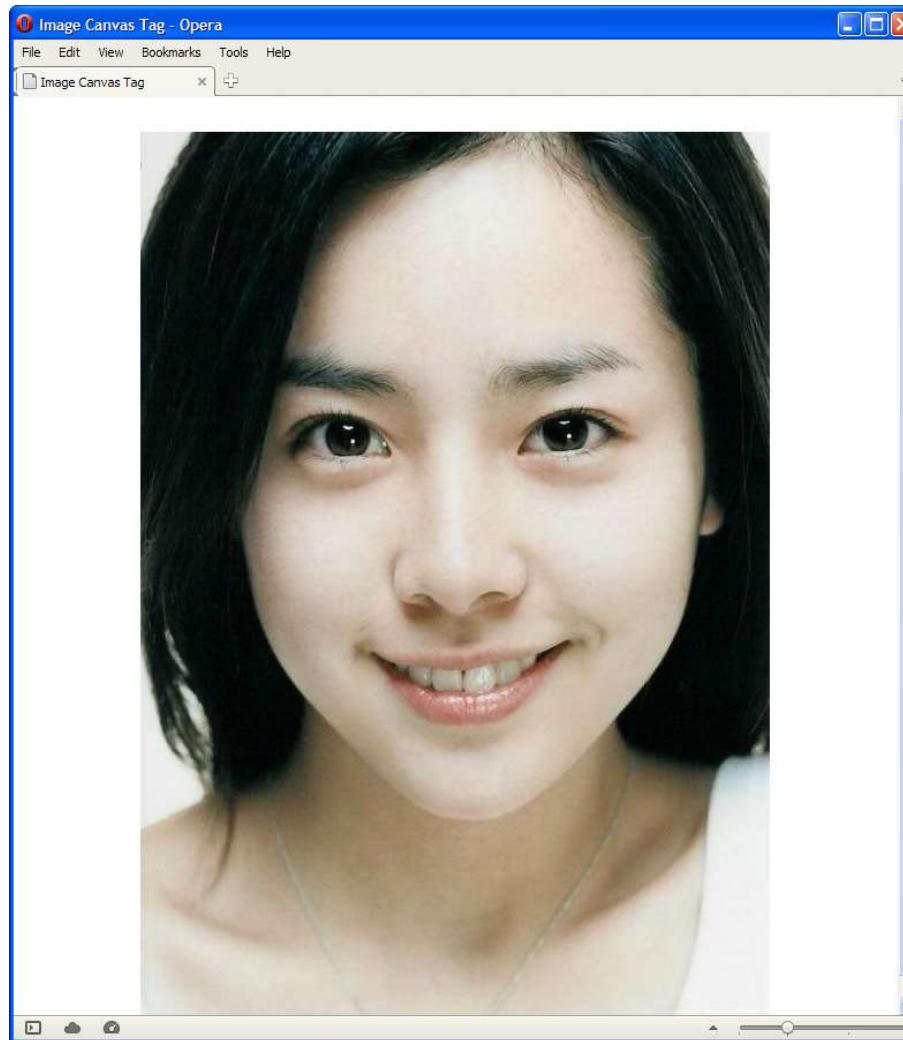
■ Files

- canvasimage.html
- images/jimin.jpg

Lab19 : canvasimage.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Image Canvas Tag</title>
5      <style>
6          body { margin: 0; body: 0; }
7          canvas { margin: 30px auto 0; display: block; }
8      </style>
9  </head>
10 <body>
11     <canvas></canvas>
12     <script>
13         var ctx = document.querySelector('canvas').getContext('2d'),
14         img = document.createElement('img');
15         // wait until the image has loaded
16         img.onload = function () {
17             ctx.canvas.width = img.width;
18             ctx.canvas.height = img.height;
19             ctx.drawImage(img, 0, 0);
20             var pixels = ctx.getImageData(0, 0, img.width, img.height);
21             ctx.putImageData(pixels, 0, 0);
22         };
23         img.src = 'images/jimin.jpg';
24     </script>
25 </body>
26 </html>
```

Lab19 : Result



<map>

- Is used to define a client-side image-map.
- An image-map is an image with clickable areas.
- Attributes

- **name**

- Required.
- Specifies the name of an image-map

```
1 <p>Click on the sun or on one of the planets to watch it closer:</p>
2
3 
4
5 <map name="planetmap">
6   <area shape="rect" coords="0,0,82,126" alt="Sun" href="sun.htm">
7   <area shape="circle" coords="90,58,3" alt="Mercury" href="mercur.htm">
8   <area shape="circle" coords="124,58,8" alt="Venus" href="venus.htm">
9 </map>
```

<area>

- Defines an area inside an image-map.
- Is always nested inside a <map> tag.
- Attributes
 - **alt**
 - Specifies an alternate text for the area.
 - Required if the **href** attribute is present.
 - **href**
 - Specifies the hyperlink target for the area.
 - **shape**
 - Specifies the shape of the area.
 - **default | rect | circle | poly**

<area> (Cont.)

■ Attributes

- **coords**

- Specifies the coordinates of the area.

- **download**



- Specifies the hyperlink target to be downloaded.

```
1 <area shape="rect" coords="0,0,82,126" alt="Sun" href="information_about_the_sun.htm" download="sun">
```

- **hreflang**



- Specifies the language of the target URL.

```
1 <area shape="rect" coords="0,0,82,126" alt="Sun"
2 href="sun.htm" hreflang="en">
```

<area> (Cont.)

■ Attributes

- **media**

 new

- Specifies what media/device the target URL is optimized for.

```
1 <area shape="rect" coords="0,0,82,126" alt="Sun"
2 href="sun.htm" media="screen and (min-color-index:256)">
```

- **target**

- Specifies where to open the target URL.
- **_blank, _parent, _self, _top, framename**

```
1 <area shape="rect" coords="0,0,82,126" href="sun.htm" alt="Sun"
2 target="_blank">
```

<area> (Cont.)

■ Attributes

- **rel**

 new

- Specifies the relationship between the current document and the target URL.

```
1 <area shape="rect" coords="0,0,82,126" alt="Sun"
2 href="sun.htm" rel="alternate">
```

- **type**

 new

- Specifies the MIME type of the target URL.

```
1 <area shape="rect" coords="0,0,82,126" alt="Sun"
2 href="/images/sun.gif" type="image/gif">
```