Media Tags

What is multimedia?

✓ 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 & Browser Support

✛ The first web browsers had support for text only, limited to a single font in a single color.

✛ Later came browsers with support for colors, fonts, images, and multimedia!

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.

✛ Only MP4, WebM, and Ogg **video** are supported by the HTML standard. There are many video formats out there.

✛ The MP4, WebM, and Ogg formats are supported by HTML. The MP4 format is recommended by YouTube

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

HTML video

```
<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>
```

- 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.
-

Video Autoplay

```
html>
<body>

<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>

<p><b>Note:</b> The autoplay attribute does not work on some mobile devices.</p>

</body>
</html>
```


Note: The autoplay attribute does not work on some mobile devices

```html
<html>
<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>
```

output

HTML Audio

- 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.

```
<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>
```

Example

CODE

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

<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>

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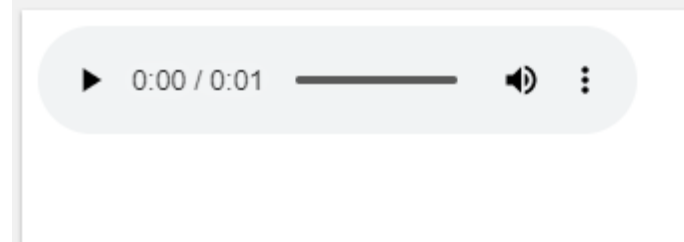
OUTPUT

What is HTML Canvas?

- The HTML <canvas> element is used to draw graphics, on the fly, via JavaScript.
- The <canvas> element is only a container for graphics. You must use JavaScript to actually draw the graphics.
- Canvas has several methods for drawing paths, boxes, circles, text, and adding images.
- Canvas Examples
- A canvas is a rectangular area on an HTML page. By default, a canvas has no border and no content.
- The markup looks like this:
- <canvas id="myCanvas" width="200" height="100"></canvas>
- **Note:** Always specify an id attribute (to be referred to in a script), and a width and height attribute to define the size of the canvas. To add a border, use the style attribute.
- Here is an example of a basic, empty canvas:
-

HTML Canvas

Code   **output**

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

<canvas id="myCanvas"
width="200" height="100"
style="border:1px solid
#000000;">
Your browser does not support
the HTML canvas tag.
</canvas>

</body>
</html>
```

(Canvas and SVG)

Both have their own unique features and can be used combined.

Canvas	SVG
Low level	High Level
Immediate mode	Retained mode
Fixed size	Scalable
Best for keyboard-based apps	Best for mouse-based apps
Animation (no object storage)	Medium animation
Pixels	XML object model
No interaction	User interaction (hit detection, events on the tree)

Canvas

<canvas> element as "a resolution-dependent bitmap canvas which can be used for rendering graphs, game graphics, or other visual images on the fly." A canvas is a rectangle in your page where you can use JavaScript to draw anything you want and CSS for styling. In 2D context and 3D context (Web GL).
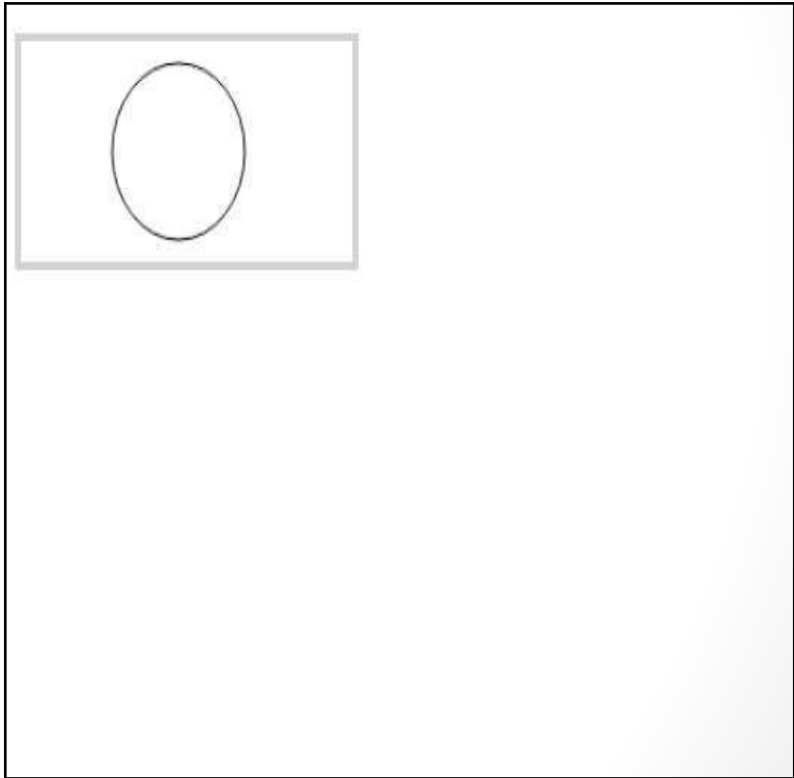
Eg.:

```html
<canvas id="myCanvas" width="200"
height="100"  style="border:4px solid
#d3d3d3;">
Your browser does not support the HTML5
canvas
tag.</canvas>

<script>
var c =
document.getElementById("myCanvas")
;  var ctx = c.getContext("2d");
ctx.beginPath();
ctx.arc(95,50,40,0,2*
Math.PI);
ctx.stroke();
</script>
```

SVG – Scalable Vector Graphics

<svg> element Modularized, XML-based language for describing 2D vector and mixed vector/raster

graphics. You can zoom SVG graphics to any level.

Eg.:

```
<svg width="100" height="100">
  <circle cx="50" cy="50" r="40"
  stroke="blue" stroke-width="4" fill="orange"
  />
Sorry, your browser does not support inline
SVG.
</svg> <br>

<svg width="300" height="200">
  <polygon points="100,10 40,198 190,78 10,78
160,198"
  style="fill:red;stroke:black;stroke-
width:5;fill-  rule:evenodd;" />
Sorry, your browser does not support inline
SVG.
</svg>
```
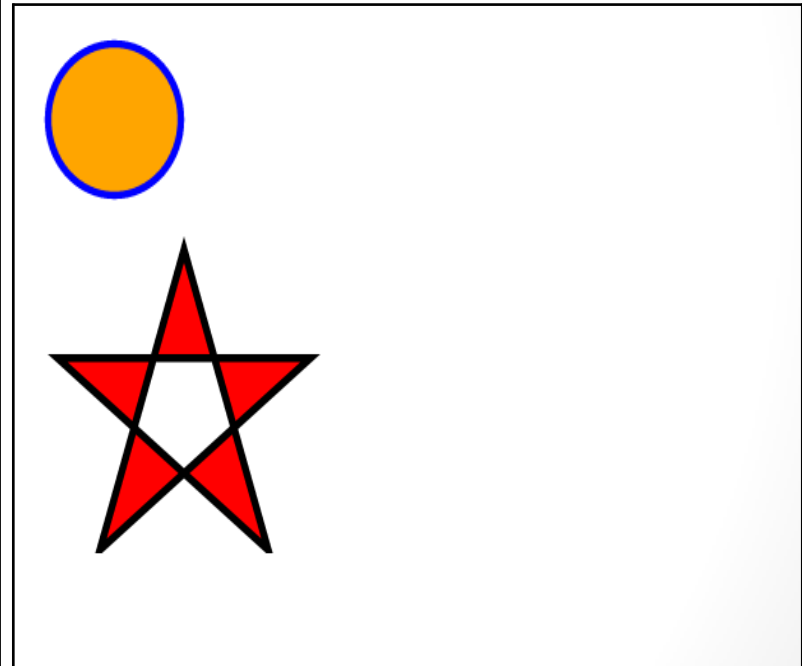
HTML media attribute

Definition and Usage:

- The media attribute specifies what media/device the linked document is optimized for.

- This attribute is used to specify that the target URL is designed for special devices (like iPhone) , speech or print media.

- This attribute can accept several values.

- **Applicable:**

<a>

<link>

<style media="value">

<source>

Devices

Value	Description
all	Default. Suitable for all devices
aural	Speech synthesizers
braille	Braille feedback devices
handheld	Handheld devices (small screen, limited bandwidth)
projection	Projectors
print	Print preview mode/printed pages
screen	Computer screens
tty	Teletypes and similar media using a fixed-pitch character grid
tv	Television type devices (low resolution, limited scroll ability)

Values

Value	Description
width	Specifies the width of the targeted display area. "min-" and "max-" prefixes can be used. Example: media="screen and (min-width:500px)"
height	Specifies the height of the targeted display area. "min-" and "max-" prefixes can be used. Example: media="screen and (max-height:700px)"
device-width	Specifies the width of the target display/paper. "min-" and "max-" prefixes can be used. Example: media="screen and (device-width:500px)"
device-height	Specifies the height of the target display/paper. "min-" and "max-" prefixes can be used. Example: media="screen and (device-height:500px)"
orientation	Specifies the orientation of the target display/paper. Possible values: "portrait" or "landscape" Example: media="all and (orientation: landscape)"
aspect-ratio	Specifies the width/height ratio of the targeted display area. "min-" and "max-" prefixes can be used. Example: media="screen and (aspect-ratio:16/9)"

Value	Description
device-aspect-ratio	Specifies the device-width/device-height ratio of the target display/paper. "min-" and "max-" prefixes can be used. Example: media="screen and (aspect-ratio:16/9)"
color	Specifies the bits per color of target display. "min-" and "max-" prefixes can be used. Example: media="screen and (color:3)"
color-index	Specifies the number of colors the target display can handle. "min-" and "max-" prefixes can be used. Example: media="screen and (min-color-index:256)"
monochrome	Specifies the bits per pixel in a monochrome frame buffer. "min-" and "max-" prefixes can be used. Example: media="screen and (monochrome:2)"
resolution	Specifies the pixel density (dpi or dpcm) of the target display/paper. "min-" and "max-" prefixes can be used. Example: media="print and (resolution:300dpi)"
scan	Specifies scanning method of a tv display. Possible values are "progressive" and "interlace". Example: media="tv and (scan:interlace)"
grid	Specifies if the output device is grid or bitmap. Possible values are "1" for grid, and "0" otherwise. Example: media="handheld and (grid:1)"

- **Supported Browsers:** The browsers supported by **HTML media attribute** are listed below:
- Google Chrome
- Internet Explorer
- Firefox
- Apple Safari
- Opera

- Note: source media attribute not supported by chrome, opera, IE etc.

Link example:

- **Link example:**

- Open media attribute page for print.

- **Area example**:

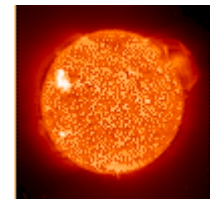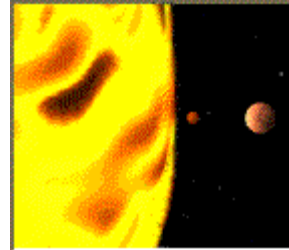<img src="planets.gif" width="145" height="126" alt="Planets" usemap="#planetmap">

<map name="planetmap">

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

</map>

The area media attribute

- Click on the sun to watch it closer:

- **Link example:**
- <head>
  <link rel="stylesheet" type="text/css" href="theme.css">
  <link rel="stylesheet" type="text/css" href="print.css" media= "print">
  </head>
- **Source example**
- <source src="movie.ogg" type="video/ogg" media="screen and (min-width:320px)">

The source media attribute

```
<h1>The source media attribute</h1>

<picture>
  <source media="(min-width: 650px)" srcset="img_pink_flowers.jpg">
  <source media="(min-width: 465px)" srcset="img_white_flower.jpg">
  <img src="img_orange_flowers.jpg" alt="Flowers" style="width:auto;">
</picture>
```

What is Responsive Web Design?

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):

Setting The Viewport
To create a responsive website, add the following <meta> tag to all your web pages:
Example
  <meta name="viewport" content="width=device-width, initial-scale=1.0">

Responsive images are images that scale nicely to fit any browser size.

- Using the width Property

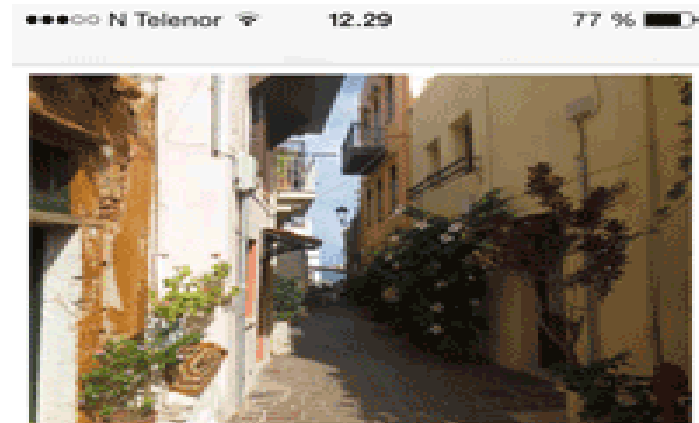 If the CSS width property is set to 100%, the image will be responsive and scale up and down:

  <img src="img_girl.jpg" style="**max-width:100%;**height:auto;">

HTML -responsive

- Without meta tag

With meta tag

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HTML –responsive –Cont.

```
<!DOCTYPE html>
<html>
 <head>
  <meta name="viewport"
    content="width=device-width, initial-scale=1.0">
</head>
 <body>
   <picture>
   <source media="(min-width: 600px)"
        srcset=
"https://media.geeksforgeeks.org/wp-content/uploads/20190328185307/gfg28.png">
      <source media="(min-width: 400px)"
        srcset= "https://media.geeksforgeeks.org/wp-
content/uploads/20190809013546/gfg_350X350.png">
      <img src= "https://media.geeksforgeeks.org/wp-
content/uploads/20190521140445/gfglogo2.png"
                style="width:auto;">
  </picture>
 </body> </html>
```