DAY 6: HTML Graphics, HTML Media

**HTML Canvas Graphics**

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.

*Syntax:*

*<canvas id="myCanvas" width="200" height="100"></canvas>*

*Example:*

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Canvas Example</title>*  *</head>*  *<body>*  *<canvas id="canvas-1" width="200" height="100" style="border: solid 1px;">*  *</canvas>*  *</body>*  *</html>* | |  | | --- | |  | |

***Draw a Line:***

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<html lang="en">*  *<head>*  *<title>Canvas Line</title>*  *</head>*  *<body>*  *<canvas id="canvas-1" width="200" height="100" style="border: solid 1px;">*  *</canvas>*  *<script>*  *var c = document.getElementById("canvas-1");*  *var ctx = c.getContext("2d");*  *ctx.moveTo(0,0);*  *ctx.lineTo(200,100);*  *ctx.stroke();*  *</script>*  *</body>*  *</html>* | |  | | --- | |  | |

***Draw a Circle:***

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<html lang="en">*  *<head>*  *<title>Canvas Circle</title>*  *</head>*  *<body>*  *<canvas id="canvas-1" width="200" height="100" style="border: solid 1px;">*  *</canvas>*  *<script>*  *var c = document.getElementById("canvas-1");*  *var ctx = c.getContext("2d");*  *ctx.beginPath();*  *ctx.arc(98, 50, 48, 0, 2\*Math.PI);*  *ctx.stroke();*  *</script>*  *</body>*  *</html>* | |  | | --- | |  | |

***Draw a Text:***

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Canvas Text</title>*  *</head>*  *<body>*  *<canvas id="canvas-1" width="200" height="100" style="border: solid 1px;">*  *</canvas>*  *<script>*  *var c = document.getElementById("canvas-1");*  *var ctx = c.getContext("2d");*  *ctx.font = "30px Arial";*  *ctx.fillText("Canvas Text", 17, 62);*  *</script>*  *</body>*  *</html>* | |  | | --- | | Canvas Text | |

**HTML SVG Graphics**

SVG stands for Scalable Vector Graphics it defines vector-based graphics in XML format. The <**svg**> element is a container for SVG graphics. SVG has several methods for drawing paths, boxes, circles, text, and graphic images.

***SVG Circle:***

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Svg-Circle</title>*  *</head>*  *<body>*  *<svg width="100" height="100">*  *<circle cx="50" cy="50" r="30" stroke="red" stroke-width="2" fill="green" />*  *</svg>*  *</body>*  *</html>* |  |

***SVG Rectangle:***

|  |  |
| --- | --- |
| *HTML Code* | *Output* |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Svg-Rectangle</title>*  *</head>*  *<body>*  *<svg width="100" height="100">*  *<rect width="100" height="100" stroke="red" stroke-width="10" fill="green" />*  *</svg>*  *</body>*  *</html>* |  |

***SVG Rounded Rectangle:***

|  |
| --- |
| *<svg width="400" height="400">*  *<rect x="25" y="25" rx="25" ry="25" width="100" height="100" stroke="red" stroke-width="4" fill="green" />*  *</svg>* |

**HTML Multimedia**

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

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 files have formats and different extensions like: .wav, .mp3, .mp4, .mpg, .wmv, and .avi.

**HTML Video:**

The <**video**> element is used to show a video on a web page.

*Example:*

|  |
| --- |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Video</title>*  *</head>*  *<body>*  *<video width="600" height="300" controls>*  *<source src="movie.mp4" type="video/mp4">*  *Your browser does not support the video tag.*  *</video>*  *</body>*  *</html>* |

The **controls** attribute adds video controls, like play, pause, and volume.

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.

The various attributes are:

* controls
* autoplay
* muted

To start a video automatically, use the autoplay attribute.

Add muted after autoplay to let your video start playing automatically (but muted).

**HTML Audio:**

The HTML <**audio**> element is used to play an audio file on a web page.

*Example:*

|  |
| --- |
| *<!DOCTYPE html>*  *<html lang="en">*  *<head>*  *<title>Audio</title>*  *</head>*  *<body>*  *<audio controls>*  *<source src="movie.mp3" type="audio/mpeg">*  *Your Browser does not support playing audio files!*  *</audio>*  *</body>*  *</html>* |

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.

The various attributes are:

* controls
* autoplay
* muted

To start audio automatically, use the autoplay attribute.

Add muted after autoplay to let your audio start playing automatically (but muted).

**HTML Plug-ins**

Plug-ins are computer programs that extend the standard functionality of the browser.

Plug-ins were designed to be used for many different purposes:

* To run Java applets
* To run Microsoft ActiveX controls
* To display Flash movies
* To display maps
* To scan for viruses
* To verify a bank id

**The <object> Element:**

The <**object**> element is supported by all browsers. The <**object**> element defines an embedded object within an HTML document.

It was designed to embed plug-ins (like Java applets, PDF readers, and Flash Players) in web pages, but can also be used to include HTML in HTML.

*Example:*

|  |
| --- |
| *<object data="audi.jpeg"></object>* |

**The <embed> Element:**

The <embed> element is supported in all major browsers. The <embed> element also defines an embedded object within an HTML document.

Web browsers have supported the <embed> element for a long time. However, it has not been a part of the HTML specification before HTML5.

*Example:*

|  |
| --- |
| *<embed src="audi.jpeg">* |

**HTML YouTube Videos**

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

**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)

*Example:*

|  |
| --- |
| *<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.

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>* |

**YouTube Controls:**

Add **controls**=0 to not display controls in the video player.

Value 0: Player controls does not display.

Value 1 (default): Player controls display.

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