

HTML

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HTML canvas

HTML element `<canvas>` gives you an easy and powerful way to draw graphics using JavaScript . It can also be used to draw graphs , make photo composition or do simple animations .

The `<canvas>` is initially blank and to display something , a script first need to access the rendering context and draw on it .It has a DOM element called **getContext** used to obtain the rendering context and its drawing functions. This function takes one parameter , the type of context2d.

Below is a simple canvas to draw rectangle.

HTML CANVAS

```
<script type = "text/javascript">
  function drawShape() {

    // Get the canvas element using the DOM
    var canvas = document.getElementById('mycanvas');

    // Make sure we don't execute when canvas isn't
    // supported
    if (canvas.getContext) {

      // use getContext to use the canvas for drawing
      var ctx = canvas.getContext('2d');

      // Draw shapes
      ctx.fillRect(25,25,100,100);
      ctx.clearRect(45,45,60,60);
      ctx.strokeRect(50,50,50,50);
    } else {
      alert('You need Safari or Firefox 1.5+ to see
        this demo.');
```

```
    }
  }
</script>
</head>

<body id = "test" onload = "drawShape();">
  <canvas id = "mycanvas"></canvas>
</body>
```

HTML MEDIA

Multimedia elements such as audio or video comes are stored in media files. They have formats and different extensions such as .swf , .wav , .mp3 , .mp4 , .mpg , .avi .

The HTML elements <audio> and <video> tags makes it simple to add media to a website.

Embedding Video

Below is a simple example to embed video ;

```
<video width = "300" height = "200" controls autoplay>  
  <source src = "/html5/foo.ogg" type = "video/ogg" />  
  <source src = "/html5/foo.mp4" type = "video/mp4" />  
</video>
```

HTML <video> tag can also have various attributes to control look and feel and various functionalities of control as illustrated below ;

HTML audio and video attributes

Autoplay	Enable a video to automatically begin to play .
Autobuffer	Video automatically begin buffering even if it's not set to automatically play
Controls	Allows user to control video playback including volume
Loop	Allow video to automatically seek back to the start after reaching at the end
Preload	Specifies that the video will be loaded at page load and ready to run
Poster	It's the URL of an image to show until the users plays
src	The URL of the video to embed

HTML geolocation API is used to locate user's location .The `getCurrentUserLocation()` is the method used to return the user's location. It also returns an object on success. The latitude , longitude and accuracy properties are always returned. Other methods such as `watchPosition()` returns current user location and return updated position as the user moves .

example to illustrate geolocation is as below ;

```
<button onclick="getLocation()">Try It</button>

<p id="demo"></p>

<script>
var x = document.getElementById("demo");

function getLocation() {
    if (navigator.geolocation) {
        navigator.geolocation.getCurrentPosition(showPosition);
    } else {
        x.innerHTML = "Geolocation is not supported by this
browser.";
    }
}

function showPosition(position) {
    x.innerHTML = "Latitude: " + position.coords.latitude +
    "<br>Longitude: " + position.coords.longitude;
}
</script>
```

HTML REVISION EXERCISE

- Create a simple html geolocation API to request users to show their location and display latitude and longitude
- Draw a linear gradient in a rectangle to demonstrate html graphics

HTML RESOURCES

- ❑ <https://www.w3schools.com/graphics/>
- ❑ https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Client-side_web_APIs/Drawing_graphics
- ❑ <https://learn.shayhowe.com/html-css/adding-media/>
- ❑ https://developer.mozilla.org/en-US/docs/Learn/HTML/Multimedia_and_embedding/Video_and_audio_content

General Exercise

Develop a basic web page using the HTML tags you learned in class. Use the diagram below to design html page. Append a html form to input contact person details i.e Name, email, and contact number .Also, include a form to display list of contact persons.

