

FUTURE OF HTML

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Abstract - The native language for developing web applications is HTML. Additional languages such as JavaScript, CSS, and others were utilized to expand the features and functions of web applications, but the HTML program remains the basic component of a web application. HTML5 (the fifth version of HTML) was released in 2007. HTML5 is a new, elegant HTML standard that gives web users and developers more capabilities. It was developed to deliver rich content without the use of third-party plug-ins or proprietary technologies. HTML5's enhanced capabilities provide users with everything from animation to graphics, music to movies, and it can also be utilized to create complex web applications that are cross-platform compatible. The HTML5 standard kicks off the development of real-time collaborations in web browsers, which means web developers will have less work to do.

Keywords: HTML, HTML5 features, www, Graphics, API's, Media.

1. INTRODUCTION

HTML is the indigenous language for developing a website. Different website features can't be visualized without HTML. However, for adding more functionalities to the website, JavaScript, CSS, etc. are used. All Real-life problem solutions are optimizing, different algorithms are optimizing and the same goes for website development too. For optimizing it, HTML 5 was released in Jan 2008 which was developed by two separate groups: the **World Wide Web Consortium (W3C)** and the Web Hypertext Application Technology Working Group (WHATWG).

HTML 5 is approximately a mixture of HTML (Hypertext Markup Language), CSS (Cascading Style Sheets) and JS (JavaScript). After the development of HTML5, the entire atmosphere of web development changed. Many HTML tags were introduced, many static websites got updated as per HTML5. Developers were able to add more graphic features, animations, geo-locations as well as client-side databases. HTML5 supports cross-platform, therefore websites or web pages can be viewed on a mobile, tablet, PC, or smart TV.



Fig-1: cross platform

1.1 Basic Code For HTML

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph. </p>
</body>
</html>
```

1.2 Browser Support for HTML

Browsers are the application software that is used to interpret the HTML or works as a compiler for HTML. Without browsers, it would be pointless to talk about HTML5. Latest versions of all main browsers like Google Chrome, Apple Safari, Opera, Mozilla Firefox, Microsoft Edge, etc. all support HTML5. But the working expertly totally depends on the browser because every browser is modeled in a different language.

2. HTML 5 FEATURES:

There are numerous new features developed in HTML5 which were not there in previous HTML versions. Some of the supreme features are-

- HTML Graphics
- HTML Media
- HTML API's
- New Input Types

2.1 HTML Graphics:

HTML graphic is subdivided into following:

2.1.1 Canvas:

In HTML5 <canvas> tag is used to design graphics via JavaScript on web pages that comprises animations and

videos. It is only a container element for graphics and the script is to be used to render 2D/3D graphics. Canvas element supports several methods that include:

- Shape drawings
- Creating gradients and patterns
- Color filling
- Text rendering
- Manipulations of images, video frames, pixels, and other canvases

Code of canvas for drawing a rectangle-

```
<html>
<head>
<title>Audio</title>
</head>
<body>
<canvas id="myCanvas" width="200" height="100"
style="border:10px solid yellow;">
</canvas>
</body>
</html>
```

Result:



Fig-2: Rectangle using canvas

2.1.2 SVG (Scalable Vector Graphics):

Scalable Vector Graphic is employed to define vector-based graphics on the Web. The clarity and quality of the SVG object don't get affected, even if we enlarge or compress the picture the quality of the image is not lost.

SVG images can be compressed, indexed, searched, scripted, and scalable. SVG images will be printed with the highest quality at any resolution and even they are zoomable.

any resolution and even they are zoomable.

Code of SVG for drawing a star-

```
<html>
<head>
<title>Audio</title>
</head>
<body>
<svg width="300" height="200">
<polygon points="100,10 40,198 190,78 10,78 160,198"
style="fill:black;stroke:green;stroke-width:5;fill-
rule:evenodd;" />
</svg>
</body>
</html>
```

Result:



Fig-3: Star using SVG

2.2 HTML Media:

HTML media is divided into following:

2.2.1 Audio & Video:

Before the evolution of HTML5, there was no standard for playing video and audio files on web pages. We had to rely on a third-party plug-in to deliver multimedia content. HTML5 now provides a standard way to embed video files and audio files which includes non-proprietary formats in the web page.

The <audio>, <video>, and <source> tags instruct the browser to treat the related data as HTML5 compatible streams. Users will be able to display and listen to the audio and video embedded on the website without the need for specific players.

Code for <audio>

```
<html>
<head>
<title>Audio</title>
</head>
<body>
<audio controls>
<source src="file.mp3" type="audio/mp3">
</audio>
</body>
</html>
```

Result:

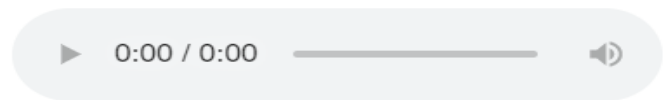


Fig-4: Audio Tag display

Code for <video>

```
<html>
<head>
<title>Audio</title>
</head>
<body>
<video width="800" height="500" controls>
<source src="video.mp4" type="video/mp4">
</video>
</body>
</html>
```

Result:

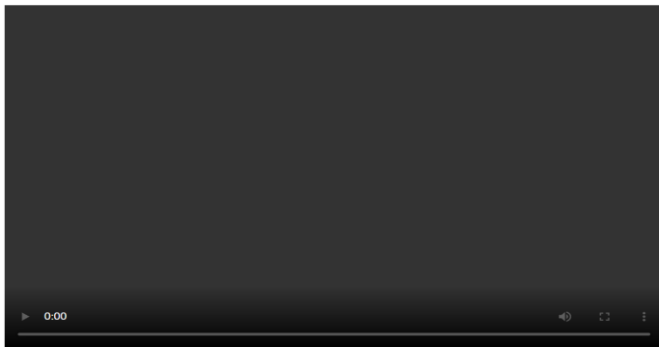


Fig-5: Video tag display

2.3 HTML API's:

HTML API's is divided into following:

2.3.1 Geolocation API:

The Geolocation API is a high-level interface that is used to find information about the user's location. It allows a Web application to access information about a mobile device's geographic location. This data contains the device's latitude, longitude, and, in some cases, altitude. Methods like `getCurrentPosition()`, `watchPosition()`, and `clearWatch()` and others are available in the Geolocation API ().It offers support for mobile browsers and Location-based applications by enabling interaction with GPS and JavaScript extensions. If the user agrees, this HTML5 API will identify the user's location when visiting any website.

Example:

```

<!DOCTYPE html>
<html>
<body>

<p>Click the button to get your coordinates.</p>

<button onclick="getLocation()">Find
Coordinates</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>

</body>
</html>

```

Result:

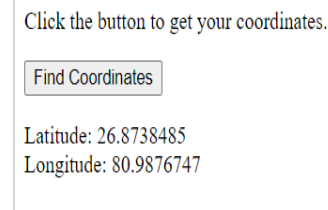


Fig-6: Finding coordinates of location

2.3.2 Working Offline:

HTML5 as a standard also introduces new methods for allowing a website or web application to run even if it is not connected to the internet. HTML5's cache interface offers your application the benefits of using cache for offline browsing, increased performance, and reduced server load, among other things.

AppCache (Application Cache) enables applications to locally store data and programming code, allowing web applications to function like desktop applications.

2.3.3 Web Storage:

HTML5 includes a feature called Web Storage, which allows users to save data in their browser rather than using cookies. These features provide support for SQL databases on the client-side as well as offline applications. Web storage is safer and quicker than traditional storage. Significant quantities of data can be stored without impacting the website's offline results. The data is stored in name/value pairs, and a web page can only access data that it has stored.

2.3.4 Web Workers:

When scripts are being executed on an HTML document, the page becomes unresponsive until the script is finished. Web Workers are basically an API specification that enables users to run JavaScript threads in the background to perform CPU-intensive tasks. Other scripts or user experiences cannot interrupt these. In most browsers, a single thread is generated to manage all JavaScript code, and that thread is used to run all of it. It speeds up background activities, whether you're doing a calculation or upgrading page items.

2.3.5 Drag & Drop:

HTML5 has a Drag and Drop API, which adds native drag and drop functionality to the browser, making it much easier to support on mobile devices. Drag and drop content and files from outside the browser, for example, to upload files or

images. Drag and drop is a basic feature of HTML5, and any element can be dragged. Many web applications support this.

Example:

Code:

```

<!DOCTYPE HTML>
<html>
<head>
<style>
#div1 {
width: 250px;
height: 250px;
padding: 10px;
border: 1px solid #aaaaaa;
}
</style>
<script>
function allowDrop(ev) {
ev.preventDefault();
}

function drag(ev) {
ev.dataTransfer.setData("text", ev.target.id);
}

function drop(ev) {
ev.preventDefault();
var data = ev.dataTransfer.getData("text");
ev.target.appendChild(document.getElementById(data));
}
</script>
</head>
<body>

<p>Drag the image into the box:</p>

<div id="div1" ondrop="drop(event)"
ondragover="allowDrop(event)"></div>
<br>


</body>
</html>

```

Result:

Drag the image into the box:



Fig-7: Drag and drop example

2.4 NEW INPUT TYPES:

HTML5 introduced new input types to make web page design easier, and they also have built-in CSS and JS support. As a result, these new input types provide improved input control and validation.

The new input types, as well as their HTML syntax, are listed below.

2.4.1 Color:

This is used for input fields that should contain a color. A colour picker can appear in the input field depending on browser support.

Syntax: <input type="color" name="newcolor">

2.4.2 Date:

This is used for input fields that should contain a date. A date picker can appear in the input field depending on browser support.

Syntax: <input type="date" name="dob">

2.4.3 Email:

This is used for input fields that should contain an e-mail address. The email address may be automatically checked when sent, depending on browser support. Some smartphones identify the email type and add ".com" to the keyboard to accommodate email input.

Syntax: <input type="email" name="Email">

2.4.5 Number:

This defines a numeric input field. You may also limit the types of numbers that are accepted.

Syntax: <input type="number" name="hours" min="1" max="24">

2.4.6 Range:

This defines a control for entering a number whose exact value is not important (like a slider control). 0 to 100 is the default range. And you'll also set restrictions on what numbers are accepted with the min, max, and step attributes.

Syntax: `<input type="range" name="marks" min="0" max="100">`

2.4.7 Tel:

This is used for input fields that should contain a telephone number.

Syntax: `<input type="tel" name="usertel">`

2.4.8 Time:

This allows the user to select a time (no time zone). A time picker can appear in the input field depending on browser support.

Syntax: `<input type="time" name="user_time">`

Example:

```

<html><!DOCTYPE html>
<html>
<head>
  <title>HTML5</title>
  <style>
    form{
      width:500px;
      background: silver;
      padding: 20px;
      border:2px solid black;
      margin: auto;
    }

    input[type='text'],input[type='password'], select{
      width:380px;
      height:25px;
      border:1px solid blue

    }

    textarea{
      resize: none;
      border:1px solid black;
    }

    input[type='submit']{
      background-color:gray;
      border:1px solid black;
      width:380px;
      height:25px;
      color: white;
    }
  </style>
</head>
<body>
<h1> <ins>Research paper</ins> </h1><hr>
<h3 title="just for fun"><i><mark>Hello
Everyone!</mark></i></h3>
<br>
<form>
  <h2>Car Pre-Booking Form</h2><hr>
  <table>
  <tr>
  <td><label for="user">Name:</label></td>

```

```

<td><input type="text" name="user"
id="user"></td>
</tr>
<tr>
  <td><label for="email">Enter your
email:</label></td>
  <td><input type="email" id="email"
name="email"></td>
</tr>
<tr>
  <td><label for="phone">Enter your phone
number:</label></td>
  <td><input type="tel" id="phone" name="phone"
placeholder="123-45-678" pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}" required></td>
</tr>
<tr>
  <td> <label for="favcolor">Select
color:</label></td>
  <td><input type="color" id="favcolor"
name="favcolor"></td>
</tr>
<tr>
  <td><label for="quantity">Model No.(1 to
5):</label></td>
  <td><input type="number" id="quantity"
name="quantity" min="1" max="5"></td>
</tr>
<tr>
  <td><label for="pay"> Advance Payment(between
40 to 100):</label></td>
  <td><input type="range" id="pay" name="pay"
min="40" max="100"></td>
</tr>
<tr>
  <td><label for="DOD">Select date of
Delivery</label></td>
  <td><input type="date" id="DOD"
name="DOD"></td>
</tr>
<tr>
  <td> <label for="TOD">Select time of
Delivery:</label> </td>
  <td><input type="time" id="TOD"
name="TOD"></td>
</tr>
<tr>
  <td>
  <input type="submit" value="click to submit"
name="submit_form">
</td>
</tr>
</form>
</body>
</html>

```

Result:

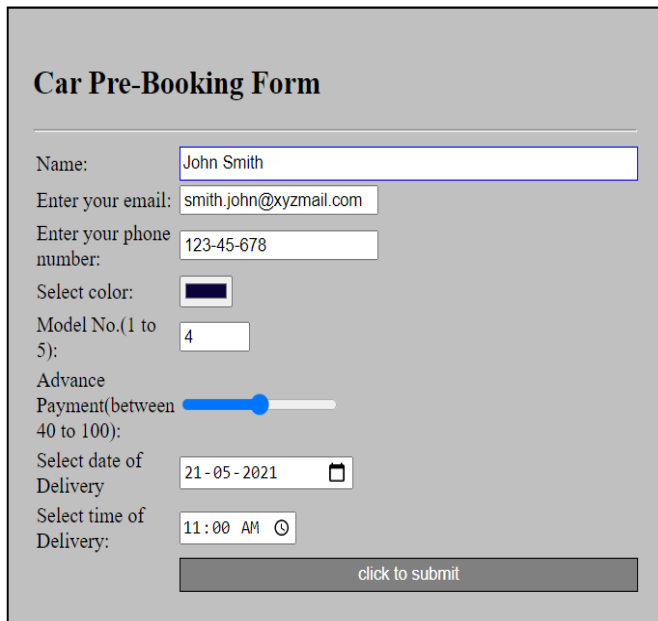


Fig-8: Form using new input tags

What can be next?

As all, we know that after the Introduction of the <footer> tag in HTML5 beginners in web development also started using it. And, the footer without social media or connection links is just like an ocean without water.

There are many types of websites like business websites, resume websites, NGO websites, etc. but the owners of all the websites want that their customers should follow them on social media websites like Twitter, Linked In, Instagram, etc. Therefore, everyone is adding social media links to their websites. So, to optimize their work, social media tags can be developed by combining the anchor tag(<a>) and image tag ().

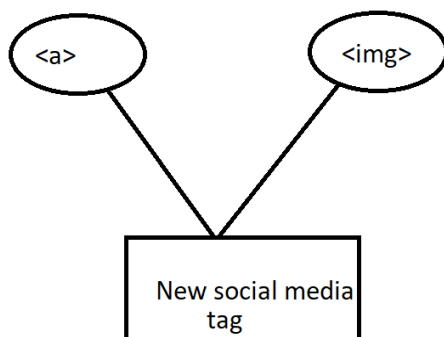


Fig-9: Mixing two tags

For LinkedIn-

Code-

<!DOCTYPE html>

```
<html lang="en" dir="ltr">
<head>
  <meta charset="utf-8">
  <title></title>
</head>
<body>
  <footer style="background-color: black;">
    <a href="https://www.linkedin.com/"></a>
  </footer>
</body>
</html>
```

Result-



Fig-10: Output of new social tag

In the above code in place of a LinkedIn link, one can add its own social media link. Same as LinkedIn one can form other social media links too.

CONCLUSION

HTML 5 introduced so many latest tags which are helpful for web developers. As you can add up your videos, audios and even you can attach your geographical locations without using any back-end technologies like node.js. Apart from these multimedia benefits, another benefit is that now you can bloom your graphics using <svg> and <canvas> tags. HTML 5 has filled the gap between desktops and online applications. The problem HTML5 may suffer in the coming days is that an opportunity will be available for the malware writers which may make today's common hacks.

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