

New Features of HTML5 in Web Development

Mrs. Jyoti Anil Mahatme

Department of Computer Science

K.R.T. Arts, B.H. Commerce and A.M. Science College, Nashik, India

Abstract— HTML5 is the latest version of HTML which come up with some impressive and attractive new features that made available for developing web applications. HTML5 is everywhere these days. It is particularly designed to improve the language with much better support for multimedia and server communication, making a web developer’s job much easier. HTML5 is not a new version of HTML4 in comparison to when new software versions are released. It comprises an entire set of small additions to the existing web standard; currently each browser implements some but not all of these features. The new power of HTML5 supplies the user everything from animation to graphics, music to movies, and can also be used to build complicated web applications and also supports cross-platform. HTML5 standard initiates the development of real-time collaborations in web browsers, which leads to less work for web developers.

Keywords: HTML5, HTML5 features, canvas, video, audio

I. INTRODUCTION

HTML5 is W3C’s next major revision to HTML. This is the 5th revision of the HTML standard. HTML5 is introduced with new features. This version was released in October of 2014. It describes the contents and appearance of web pages. It makes the web pages more dynamic and interactive. HTML5 has improved features such as introduction of new attributes, messaging enhancements, new parsing rules for enhanced flexibility, elimination of redundant attributes etc. It was mainly developed to solve the compatibility problems of HTML4. Another improvement in HTML5 is the support for multimedia in mobile devices.

With HTML5, browser plugins have come to an end. Rich multimedia aspects that were once handled by plugins are now built-in and simplified by the introduction of new media tags. HTML5 is important now that it has the support of all major browser vendors like Apple, Google, Microsoft, Opera, Firefox including those in the mobile space. Another important reason for the use of HTML5 is that it reduces development time. Another really important feature of HTML5 is that it is mobile friendly. A web application in HTML5 can be deployed on both desktop and mobile devices.

II. HTML FEATURES

With invent of features in HTML5 it is not only possible to create better static website but we can also create dynamic and more interactive website. Features such as audio, video, animation etc. can be added to the webpage now without the use of JS. Along with this it is possible to make our website responsive without the use of third-party plugs. It is need of an hour as equal number of users are accessing the website from desktop as that are from the smartphones.

New features of HTML5

A. Video and Audio

HTML5 features include native audio and video support without the need for Flash which allow to embed a video or audio in the website. To play and pause the media by the user, it is need to set src attribute to identify the media source and include a controls attribute.

The current HTML5 draft specification does not specify which video formats browsers should support in the video tag. But most commonly used video formats are –

- Ogg – Ogg files with Theodora video codec and Vorbis audio codec.
- mpeg4 – MPEG4 files with H.264 video codec and AAC audio codec.

The <source> tag used to specify media along with media type and many other attributes.

```
<video width="1000" height="700" controls>
```

```
<source
src="C:\Users\ADMIN\Desktop\JAM\Nature.mp4"
type="video/mp4">
</video>
```



Fig. 1: Output of Video Tag

```
<audio controls>
<source
src="C:\Users\HP\Desktop\Research\HTML5\NisargRaja.m
p3" type="audio/mpeg">
</audio>
```



Fig. 2: Output of Audio Tag

B. Nav

The nav element stands for Navigation. The *nav* element is used for the part of a website that links to other pages on the site. The links can be organized a number of ways. This section of a page whose purpose is to provide navigation links, either within the current document or to other documents.

```
<nav>
<p><a href="login.html">Log In</a></p>
<p><a href="signup.html">Sign Up</a></p>
```

```
<p><a href="contact.html">Contact Us</a></p>
</nav>
```

C. Header

The header element can be used to institution collectively introductory factor on a website such as a business enterprise brand, navigation objects and occasionally a search form. It may contain some heading elements but also a logo, a search form, an author name, and other elements.

D. Footer

Footer is a tag used to define the footer of a document or a section. Usually it contains the information about author and copyright etc. Address tag may be used to mark up the contact information in the footer. A document or section can have more than one footer.

```
<header>
  <h1>Cute Puppies Express! </h1>
  
</header>
<body>
This section Represent Body part of website<br><br>
</body>
<footer>
  <p>Author: Jyoti Mahatme<br>
  <a
href="mailto:jyotimahatme@example.com">jyotimahatme
@example.com</a></p>
</footer>
```



Fig. 3: Output of Header and Footer Tag

E. Canvas

Canvas is a tag in HTML which is newly introduced in HTML5. It is used used to draw graphics on a web page. It can be used for visual images, rendering graphs, game graphics. This 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.

```
<h1>The canvas element</h1>
<canvas id="myCanvas" width="200" height="100"
style="border:1px solid #000000;">
</canvas>
<script>
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.fillStyle = "#FF0000";
ctx.fillRect(0, 0, 80, 100);
```

```
</script>
```

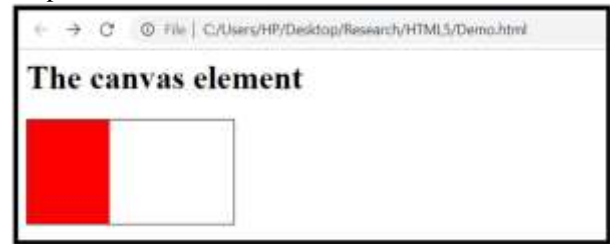


Fig. 4: Output of Canvas element

F. New types for input tag

Input is an attribute which is an old attribute but in HTML5, it is reintroduced with new values link email, month, number, range, search, tel, color, week, url, time, date, datetime-local etc. These are the new values which can be contain by the input tag.

- contentEditable: It is an attribute which is used to permit the user to edit the contents. It creates What You See What You Get so easy. Content will be editable by clicking on it.
- Progress: This tag is used to check the progress of a task during execution of that. Progress tag can used with the conjunction of JavaScript. It is like progress bar.
- Section: Section tag is used to divide a document or in parts or sections. For example: An article can have many sections like header, footer, latest news and section for main content etc.
- Main: main is a tag which is used to contain the main content of the page. More than one main tag is not accepted in the document and this tag cannot be inside in article, aside, footer, header tags. It does not include the navigation bar, header and footer.

G. Figure and Figcaption

Earlier there was no way to add figure as well as give caption to that figure. But, with the introduction of figure as well as figcaption, it has become semantically possible to insert an image in a page with its caption.

```
<figure>
  
  <figcaption>A cheeky macaque, Lower Kintanganban River,
Borneo. Original by Richard Clark</figcaption>
</figure>
```



Fig. 5: Output of figure and figcaption tag

H. Placeholders

This feature in html5 has provided the assistance to many new users. It gives the hint to what is to be inserted in a particular field of the form. It is there when the user has not started writing something in the input field. It is sometime also called dummy text. It is present temporarily.

```
<h1>The input placeholder attribute</h1>
<form action="/action_page.php">
  <label for="phone">Enter a phone
number:</label><br><br>
  <input type="tel" id="phone" name="phone"
placeholder="123-45-678" pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}"><br><br>
  <small>Format: 123-45-678</small><br><br>
  <input type="submit">
</form>
```



Fig. 6: Output of Placeholder attribute

I. Required Attribute

It is another important feature that is there in the form tag. Forms allow for a new required attribute, which specifies, naturally, whether a particular input is required. It helps in gathering of all the mandatory information that is there in the form. Without this it will not be possible to submit the form. It is Boolean attribute. The form will all the required fields being filled will be allowed to submit. It works with text, url, email, password, date, numbers, checkbox, file etc.

```
<input type="text" name="someInput" required>
OR
<input type="text" name="someInput" required="required">
```

J. Preload Videos

It is an amazing feature for uploading the videos. It specifies the way to upload the video along with the loading of the page. This helps the browser in knowing about the improvisation of the user experience of the webpage. Though this is not a too mandatory features that is too be added. It helps in better representation of the page.

K. Display Control

Display attribute helps in specifying the behaviour of the elements. When this property is not specified, then the default values are taken.

L. Regular Expressions

With the help of regular expression, we can add the particular pattern as an input. Such as the most common pattern that is used is [A-Za-z]{5,11}. It accepts the uppercase as well as lowercase letters. Along with this it states that the minimum length of characters is 5 and the maximum length of characters that is acceptable is 11.

```
<form action="" method="post">
  <label for="username">Create a Username: </label>
  <input type="text"
name="username"
id="username"
placeholder="4 <> 10"
pattern="[A-Za-z]{4,10}"
autofocus
required>
  <button type="submit">Go </button>
</form>
```

M. Accessibility

With invent of HTML5 it has played a great role in providing the best of the accessibility features to a website. This has made the use of website simplified. the people of almost an kind of disability such as visually impaired, colour blind, low vision, blind etc. can have access to the websites that have been designed with the accessibility features of HTML5.

Such as in forms the validation is the best example of providing accessibility. Labels should be properly marked.

Inline elements

To keep code up to mark, semantically these inline elements help a lot:

- <abbr>: This tag is used to place abbreviations of the text it's like HTML, WWW, ASAP, PFA, etc
- : Defines text in bold format.
- <big>: This is one of the inline tag used to define the bigger text.

There are more than 20 inline tags will be used in HTML5 like <audio>, <bdi>, <bdo>,
, <code>, <data>, <embed>, <i> etc.

N. Email attribute

When in a form we write the type as email, then browser by itself gets the instruction from the code to write an email with the proper as well as valid format of writing an email. This was not possible in the earlier browsers.

O. Cryptographic nonce

In this newer version of HTML, we can add cryptographic nonce to all the styles as well as scripts. Here, we usually use nonce attribute inside script and style tag. This nonce tag basically generates a random number which is for one time use only.

So, it is regenerated each time the page refreshes. It is great features as it can be used to increase the security of the content of the page. This helps in stating and providing the authority to the webpage to specify a particular script or style.

P. Reverse Links

The rev attribute is back in action again with the use of HTML 5.1. It basically allows the web users to again use the link and a or anchor tag elements. It explains the relationship between

the current document as well as the linked document but in the opposite direction.

Q. Zero width images

Now the web developers can make the width of the images as zero. This feature is of great help when there is no need to show them to the users such as while tracking the image files as otherwise it would take more space. It is advisable to use the zero width images with the alt tag that is empty.

REFERENCES

- [1] HTML5 Web Application Development by Example, J M Gustafson
- [2] Murach's HTML5 and CSS3 by Zak Ruvalcaba and Anne Boehm
- [3] W3Schools.com, HTML5Rocks.com, tutorialspoint.com, admecindia.co.in

