

Survey on HTML 5 New Features

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Abstract: *HTML5 is a new revolution in web technologies. It introduces lots of new features in web programming. Before HTML 5 programmer have to create its own logic to design a particular type on page. It introduces client side database, canvas API, geolocationAPI and lots of new input element. In this paper we give introduction of some of them.*

Keywords: HTML5, HTML5 features, Canvas, geolocation, client side database.

1. Introduction

HTML- Hyper Text Markup Language is the standard markup language used to create web pages. It's tag based markup language. Each html element is enclosed in angular bracket say (<html>). Berners-Lee specified HTML and wrote the browser and server software in late 1990. First HTML 2.0 is published in 1995 and then in 1997 HTML 3.2 is published as W3C recommendation, then HTML4.0, 4.01 comes [1]. Now the current version of HTML 5 is working. It gives lots of new features which ease the task of web page design.

2. Features of HTML 5

HTML 5 introduces some new features which are mostly liked by programmer.

2.1 New Input Element

HTML 5 introduces some new input elements which are commonly required by programmer. Before HTML 5 programmer had to depend on some other programming language like Javascript for doing it [2].

2.1.1 color

This input type is used to choose color by color picker.
<input type="color">

2.1.2 date

This input element is used to choose date by date picker. By this there is no chance of getting wrong date.
<input type="date">

2.1.3 datetime

This input element is used to choose date as well as time also by tool. By this there is no chance of getting wrong date and time.
<input type="datetime">

2.1.4 email

This input element is used to get e-mail address from user. It will do all the checks of what is should be in email format. Otherwise we have to check email whether it is in correct format or not.
<input type="email">

2.1.5 number

By this input element we can get only numbers from user. It has two attribute min and max for specifying range of number.

<input type="number" min="1" max="10">

2.1.6 week

By this input element we can get only week number and year from user for example **week 15, 2015**

<input type="week">

HTML 5 also introduces some new attributes. For example

- Disabled : Specifies that an input field should be disabled.
- Readonly : Specifies that an input field is read only (cannot be changed)
- Required: Specifies that an input field is required (must be filled out)
- Pattern : Specifies a regular expression to check the input value against
- Placeholder: Specifies the text which is to shown on input element (Hint Value for input element)

2.2 Canvas API

HTML 5 introduces a very good API for programmer. By this canvas API programmer can create lots of 2D graphics and 3D graphics by JavaScript. Even they can create games also. This api has lots of functions for creating graphics like line, lineWidth, lineColor, arc, Bezier curves, rect etc [3]. For example we can create a line by following HTML code.

```
<!DOCTYPE HTML>
<html>
<head>
<style>
body {
margin: 0px;
padding: 0px;
}
</style>
</head>
<body>
<canvas id="c1" width="600" height="200">
</canvas>
<script>
var canvas = document.getElementById('c1');
var context = canvas.getContext('2d');

context.beginPath();
```

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```
context.moveTo(150, 150);
context.lineTo(450, 50);
context.stroke();
</script>
</body>
</html>
```

HTML 5 also provide SVG(Scalable Vector Graphics) for creating graphics in web page apart from canvas api.

2.3 Client Side Database

A very good feature which is used for maintaining small size database in client side. Now the database is stored on client side and they can be easily retrieved and updated. There are WebSQL and IndexedDB are available for storing data. Both have their own advantages and disadvantages. Good thing is that, data is only accessible by only that web site which created it. Sample code for creating client side database is as follows [4].

```
<!DOCTYPE HTML>
<html>
<head>
<script type="text/javascript">
var db = openDatabase('mydb', '1.0', 'Test DB', 2 * 1024
* 1024);
var msg;
db.transaction(function (tx) {
tx.executeSql('CREATE TABLE IF NOT EXISTS
LOGS (id unique, log)');
tx.executeSql('INSERT INTO LOGS (id, log) VALUES
(1, "foobar")');
tx.executeSql('INSERT INTO LOGS (id, log) VALUES
(2, "logmsg")');
msg = '<p>Log message created and row inserted.</p>';
document.querySelector('#status').innerHTML = msg;
});
db.transaction(function (tx) {
tx.executeSql('SELECT * FROM LOGS', [], function
(tx, results) {
var len = results.rows.length, i;
msg = "<p>Found rows: " + len + "</p>";
document.querySelector('#status').innerHTML += msg;

for (i = 0; i < len; i++){
msg = "<p><b>" + results.rows.item(i).log +
"</b></p>";
document.querySelector('#status').innerHTML += msg;
}
}, null);
});
</script>
</head>
<body>
<div id="status" name="status">Status Message</div>
</body>
</html>
```

2.4 geolocation api

By this we can get the user geographical location by its longitude and latitude information. But this feature requires user permission to send user location to server[5].

```
<!DOCTYPE html>
<html>
<body>
<p>Click the button to get your coordinates.</p>
<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>

</body>
</html>
```

3. Conclusion

HTML 5 provides lots of more new features for example video, drag and drop api etc. These features defiantly helps the programmer and create a rich user interface in web pages.

References

- [1] <https://en.wikipedia.org/wiki/HTML>
- [2] Pilgrim, Mark. HTML5: up and running. " O'Reilly Media, Inc.", 2010.
- [3] <http://www.html5canvastutorials.com/>
- [4] http://www.tutorialspoint.com/html5/html5_web_sql.htm
- [5] http://www.w3schools.com/html/html5_geolocation.asp