Page Layout Semantic Elements

A semantic element clearly describes its meaning to both the browser and the developer. We need HTML to help machines understand what we mean.

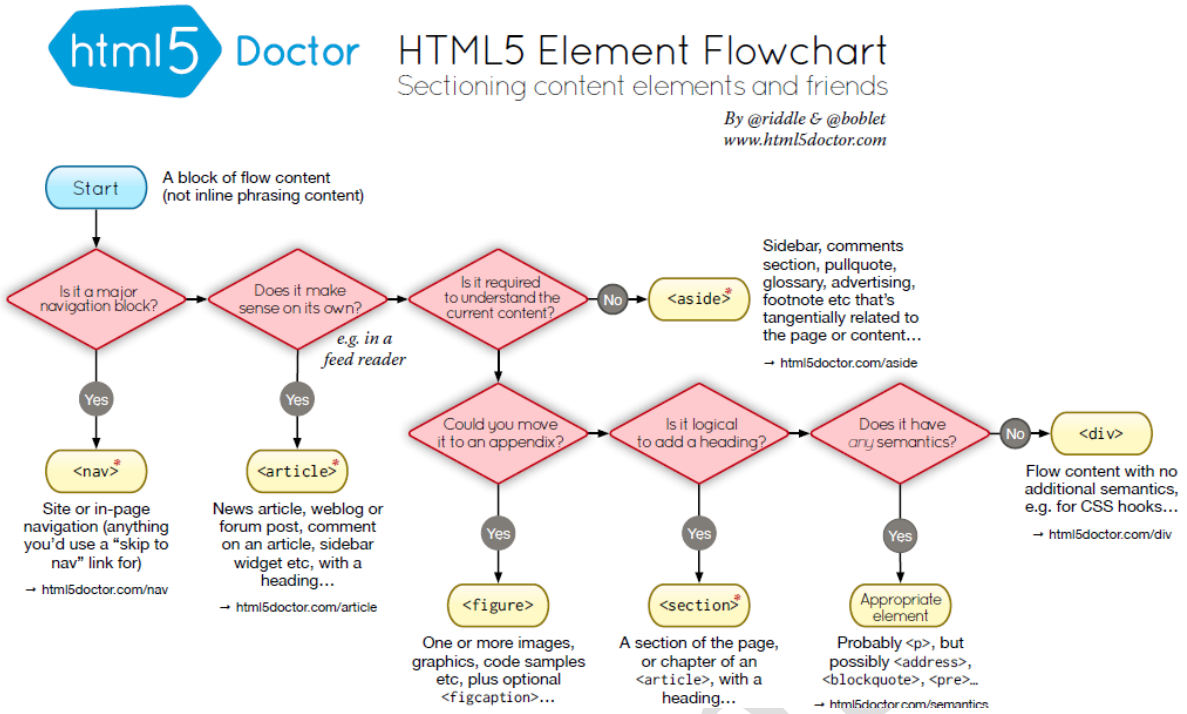
- Examples of **non-semantic** elements: and - Tells nothing about its content.
- Examples of **semantic** elements: <form>, <table>, and <img> - Clearly defines its content.

- There are several new elements defined in HTML5 which are block-level elements.
- Many of existing web sites today contains HTML code like this: , , or , to indicate navigation links, header, and footer.
- HTML5 offers new semantic elements to clearly define different parts of a web page:

  - <header>
  - <nav>
  - <section>
  - <article>
  - <aside>
  - <figure>
  - <figcaption>
  - <footer>
  - <details>
  - <summary>
  - <mark>
  - <time>

These semantic tags contain block-level elements, and HTML5-compliant browsers will style them as **display:block** by default. If you want to use these elements in older browsers, you will need to define the display style manually:

```
article,aside,details,figcaption,figure,footer,header,hgroup,menu,nav,section {
   display:block;
}
```



Header:

This element represents a group of introductory or navigational aids for web pages. A <header> element is intended to contain the section's heading. The header element can also be used to wrap a section's table of contents, a search form, sub headings, bylines, version history information, or any relevant logos.

Eg:

```
<header>
        <h1>The most important heading on this page</h1>
        <p>With some supplementary information</p>
</header>
```

Navigation :-

The nav element represents a section of a page that links to other pages or to parts within the page: a section with navigation links. Not all groups of links on a page need to be in a nav element — only sections that consist of major navigation blocks are appropriate for the nav element

Eg :-

```
<!DOCTYPEhtml>
<html>
<body>
<nav>
```

```
<a href="/SharePoint/">HTML</a>
<a href="/Java/">Java</a>
<a href="/.Net/">MS.Net</a>
<a href="/HTML5/">HTML5</a>
</nav>
</body>
</html>
```

Section:

The <section> element defines a section in a document. Used for grouping together thematically-related content. Sounds like a div element, but it's not.

Eg:-

```
<!DOCTYPEhtml>
<html>
<body>
<section>
<h1>DSS</h1>
<p>Deccansoft Software Service (DSS) is....</p>
</section>
</body>
</html>
```

Article: This tag represents an independent piece of content of a document, such as a blog entry or newspaper article. This is the content which will make meaning even if it is copied and pasted in another location.

Eg:-

```
<!DOCTYPEhtml>
<html>
<body>
<article>
<h1>Windows Workflow Foundation 4.0</h1>
<p>Windows Workflow Foundation (abbreviated as WWF) was released to the public on March 14, 2011 at 21:00 PDT.....</p>
</article>
</body>
</html>
```

Footer: This tag represents a footer for a section and can contain information about the author, copyright information, etc

Eg:

```
<!DOCTYPEhtml>
<html>
<body>
<footer>
<p>Author: Sandeep Soni</p>
<p>Published on <time datetime="2012-03-01 20:10">2012-03-01 20:10</time></p>
</footer>
</body>
</html>
```

Aside: The aside element represents a section of a page that consists of content that is slightly related to the rest of the page. Such sections are often represented as sidebars in printed typography.

Eg:

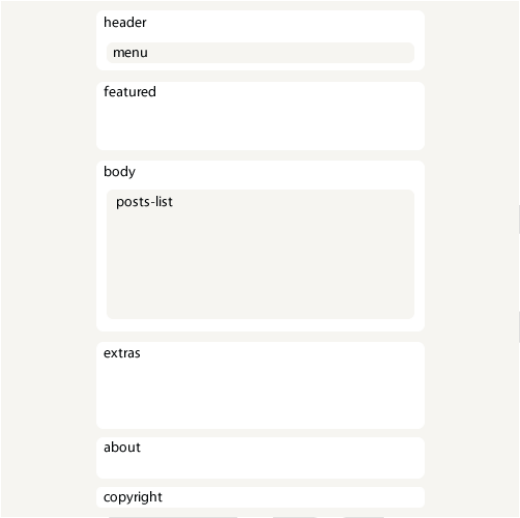
```
<!DOCTYPEhtml>
<html>
<body>
<p>Microsoft has launched SharePoint 2013 this year</p>
<aside>
<h4>SharePoint</h4>
<p>The SharePoint is the product invented by Microsoft</p>
</aside>
</body>
</html>
```

Summary of Semantic Tags

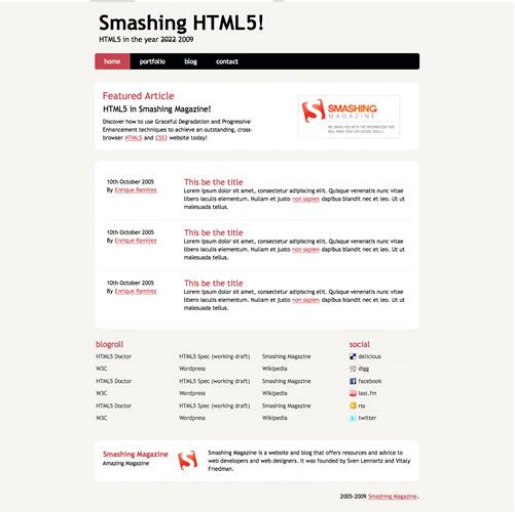
<article>	Defines an article
<aside>	Defines content aside from the page content
<details>	Defines additional details that the user can view or hide
<figcaption>	Defines a caption for a <figure> element

<figure>	Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
<footer>	Defines a footer for a document or section
<header>	Specifies a header for a document or section
<main>	Specifies the main content of a document
<mark>	Defines marked/highlighted text
<nav>	Defines navigation links
<section>	Defines a section in a document
<summary>	Defines a visible heading for a <details> element
<time>	Defines a date/time

General Layout of the Page:



Sample Page




```
<!DOCTYPE html>

<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
<head>
   <meta charset="utf-8" />
   <title>HTML5 Semantic Usage</title>
   <meta name="description" content="This document has sample of HTML5 Semantic tags usage">
   <meta name="author" content="Sandeep Soni">

   <link rel="stylesheet" href="css/styles.css?v=1.0">

   <!--[if lt IE 9]>
   <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>
   <![endif]-->
```

```
  <style>
    article {
      background-color: #f3f3f3;
      margin: 15px;
    }
    article header
    {
      font-weight:bold;
      color:#ae0f31
    }
    article footer
    {
      font-size:8pt
    }
    section h1
    {
      background-color:blue;
     text-align:center;
      color:white
    }
  </style>
</head>
<body>
  <header>
    <h1>About Microsoft Technologies</h1>
    <p>These are considered to be most popular in the inductory for developing applications on Windows Platform</p>
    <nav>
      <a href="/SharePoint/">SharePoint</a>
      <a href="/.Net/">MS.Net</a>
      <a href="/HTML5/">HTML5</a>
    </nav>
  </header>
  <section>
    <h1>SharePoint Overview</h1>
    <section>
      <figure>
        <img src="SharePoint.jpg" alt="SharePoint Logo">
        <figcaption>SharePoint 2013 Logo</figcaption>
      </figure>
      <h2>Introduction</h2>
      <p>
        SharePoint is an extensible web based platform which contains various products and technologies aimed at development of corporate portals. These products and technologies are referred to as SharePoint Products and Technologies.
        It allows individuals in an organization to easily create and manage their own collaborative Websites
      </p>
      <h2>SharePoint Articles</h2>
      <article>
        <header>SharePoint Installation</header>
        <div>
```

```
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft Software Services">DSS</abbr>
          </footer>
        </article>
        <article>
          <header>SharePoint Installation</header>
          <div>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft Software Services">DSS</abbr>
          </footer>
        </article>
        <article>
          <header>SharePoint Installation</header>
          <div>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft Software Services">DSS</abbr>
          </footer>
        </article>

        <details>
          <summary><u>Latest Version is SharePoint 2013</u></summary>
          <p>
            This version of SharePoint introduces new ways to share your work and work with others, organize your projects and teams and discover people and information.
            <ul>
              <li>Share</li>
              <li>Organize</li>
              <li>Discover</li>
              <li>Build</li>
            </ul>
          </p>
          <p>Other versions of SharePoint which are very popular are 2007 and 2010</p>
        </details>
      </section>
      <h1>MS.NET Overview</h1>
      <section>
        <figure>
          <img src="microsoft__net.jpg" alt="MS.NET Logo">
          <figcaption>Microsoft.NET Logo</figcaption>
        </figure>
```

```
        <h2>Introduction</h2>
        <p>
          MS.NET is an extensible web based platform which contains various products and technologies aimed at
development of corporate portals. These products and technologies are referred to as SharePoint Products and
Technologies.
          It allows individuals in an organization to easily create and manage their own collaborative Websites
        </p>
        <h2>MS.NET Articles</h2>
        <article>
          <header>MS.NET Installation</header>
          <div>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis
elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft
Software Services">DSS</abbr>
          </footer>
        </article>
        <article>
          <header>MS.NET Installation</header>
          <div>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis
elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft
Software Services">DSS</abbr>
          </footer>
        </article>
        <article>
          <header>MS.NET Installation</header>
          <div>
            <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque venenatis nunc vitae libero iaculis
elementum. Nullam et justo <a href="#">non sapien</a> dapibus blandit nec et leo. Ut ut malesuada tellus.</p>
          </div>
          <footer>
            Published By Sandeep Soni on <time>10th October 2005</time> through <abbr title="Deccansoft
Software Services">DSS</abbr>
          </footer>
        </article>

        <details>
          <summary><u>Latest Version is MS.NET 4.5.2</u></summary>
          <p>
            This version of SharePoint introduces new ways to share your work and work with others, organize your
projects and teams and discover people and information.
            <ul>
              <li>Share</li>
              <li>Organize</li>
              <li>Discover</li>
              <li>Build</li>
```

```
            </ul>
          </p>
          <p>Other versions of MS.NET which are very popular are 2.0 and 3.5</p>
        </details>
      </section>
    </section>
    <aside>
      <p><a href="http://www.bestsharepointtraining.com">Best SharePoint Training</a></p>
      <p><a href="http://www.bestdotnettraining.com">Best MS.NET Training</a></p>
      <p><a href="http://www.bestHTML5training.com">Best HTML 5 Training</a></p>
    </aside>
    <footer>
      <p>(c) 2010 The Example company</p>
    </footer>
</body>
</html>
```

HTML 5 Global Attributes

Attribute	Description
accesskey	Specifies a shortcut key to activate/focus an element
class	Specifies one or more classnames for an element (refers to a class in a style sheet)
contenteditable**	Specifies whether the content of an element is editable or not
contextmenu**	Specifies a context menu for an element. The context menu appears when a user right-clicks on the element (Works only in FF)
data-	Used to store custom data private to the page or application
dir	Specifies the text direction for the content in an element
draggable**	Specifies whether an element is draggable or not
dropzone**	Specifies whether the dragged data is copied, moved, or linked, when dropped
hidden**	Specifies that an element is not yet, or is no longer, relevant
id	Specifies a unique id for an element
lang	Specifies the language of the element's content
spellcheck**	Specifies whether the element is to have its spelling and grammar checked or not
style	Specifies an inline CSS style for an element
tabindex	Specifies the tabbing order of an element
title	Specifies extra information about an element
translate**	Specifies whether the content of an element should be translated or not

** Are New in HTML 5

Context Menu Example: Works only in FF

```
<div contextmenu="mymenu">
    Right-click inside this box to see the context menu!
    <menu type="context" id="mymenu">
      <menuitem label="Refresh" onclick="window.location.reload();"
icon="ico_reload.png"></menuitem>
```

```
        <menu label="Share on...">
            <menuitem label="Twitter" icon="ico_twitter.png"
onclick="window.open('//twitter.com/intent/tweet?text=' +
window.location.href);"></menuitem>
            <menuitem label="Facebook" icon="ico_facebook.png"
onclick="window.open('//facebook.com/sharer/sharer.php?u=' +
window.location.href);"></menuitem>
        </menu>
        <menuitem label="Email This Page"
onclick="window.location='mailto:?body='+window.location.href;"></menuitem>
    </menu>
</div>
```

Form Input types

HTML5 has several new input types for forms, using these means less development time and an improved user experience. These new features allow better input control and validation.

- color
- date
- datetime
- datetime-local
- email
- month
- number
- range
- search
- tel
- time
- url
- week

HTML5 has several new attributes for <form> and <input>.

New attributes for <form>:

- autocomplete
- novalidate

New attributes for <input>:

- autocomplete
- autofocus
- form
- formaction
- formenctype
- formmethod
- formnovalidate
- formtarget
- height and width
- list
- min and max
- multiple
- pattern (regexp)
- placeholder
- required

- step

Note: If a browser doesn't support any input type then it will automatically behave like text field.

```
<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta charset="utf-8" />
  <title>HTML Form</title>
  <style>
    input:required:invalid, input:focus:invalid {
      border-color:red;
      -moz-box-shadow: none;
    }
    input:focus:valid
    {
       color:blue
    }
  </style>
</head>
<body>
  <form action="/" method="post">
    Name: <input type="text" placeholder="LastName, FirstName" required/>      <br />
    Employee ID: <input type="text" pattern="[a-z][0-9]{4}" placeholder="1 letter + 4 nums" />      <br />
    Color: <input type="color" id="colorpicker" name="color" value="#ff0000"><div id="hexcolor"></div>
<br />
    Experience (0-20): <input type="range" min="0" max="20" step="1" value="3"  />     <br />
    Date of Birth: <input type="date" name="dob" value="2011-01-13" />     <br/>
    Time of Birth: <input type="time" name="bdaymonth">     <br />
    Join Month and Year: <input type="month" name="bdaymonth">     <br />
    Choose Even Number: <input type="number" min="0" max="200" step="2" value="0" />     <br />
    Telephone Number: <input type="tel" name="telphone" value="98490 01840" />     <br />
    Email Id: <input type="email" list="choices" name="lstCourses" />
    <datalist id="choices">
      <option label="Sandeep Soni" value="sandeepsoni@deccansoft.com">
      <option label="Rahul" value="rahul@deccansoft.com">
      <option label="E.M. Sai" value="sai@deccansoft.com">
    </datalist>     <br />
    URL: <input type="url" name="siteurl" value="http://www.deccansoft.com" />     <br />
    Preferred Holiday Week: <input type="week" name="week_year">     <br />
```

```
    <input type="submit" name="submit" value="Submit" />
  </form>
</body>
</html>
```

Form Elements

<output> element :- The <output> element represents the result of a calculation

```
<form oninput= "x.value=parseInt(a.value) + parseInt(b.value)">0
<input type="range" id="a" value="50">100 +
<input type="number" id="b" value="50">=
<output name="x" for="a b"></output>
</form>
```

Attributes in Form tag

<form> /<input> autocomplete Attribute

The autocomplete attribute is used to provide help for user during form entry by showing previous entered data in drop-down list for re-entering data. The autocomplete attribute has two states, on and off. By default its state is on for form.

```
<form action="demo1.php" target="my-iframe1" id="form1" autocomplete="on">
 Enter your Name: <input type="text" name="name"/>
 Contact Num: <input type="text" name="num"/>
 Email ID: <input type="email" name="mail" autocomplete="off"/>
 <input type="submit"/>
</form>
```

<form> novalidate Attribute

novalidate if a form-level attribute used to turn off validation for a form, despite the attributes of the inputs it contains (i.e. will override inputs with the required attribute

```
<form action="saveperson.aspx">
        <label for="name">Name: </label>
        <input type="text" name="name" required/><br/>
        <label for="age">Age: </label>
        <input type="number" name="age"/><br/>
<input type="submit" value="Save"/>
<input type="submit" value="Cancel" formaction='cancel.aspx' formnovalidate/>
</form>
```

Attributes for <input>

<input> autofocus Attribute

It specifies that an <input> element should automatically get focus when the page loads.

```
<form action="demo_form.asp">
 Name:<input type="text" name="name" autofocus><br>
 Telephone: <input type="tel" name="tel"><br>
<input type="submit">
</form>
```

<input> form Attribute

It specifies one or more forms an <input> element belongs to

```
<form action="form.asp" id="form1">
Student Name<input type="text" name="fname"><br>
<input type="submit" value="Submit">
</form>
PhoneNumber <input type="tel" name="Phonenum" form="form1">
</body>
</html>
```

<input> form related Attribute

```
<form action="demo_form.asp">
 <input type="submit" formaction="form2.asp" formenctype="multipart/form-data" formmethod="post"
formtarget="_blank" value="Submit to form2">
      <input type="submit" value="Save 2" formtarget="_self"/>
</form>
```

formenctype :-

The formenctype attribute can force a form to submit the data in the specified encoding rather than the encoding specified in the form element when submitted as "post".

Valid as an attribute of elements that can submit a form, including <input type=submit> and <input type=image> and <button>.

Possible values include

- the default of "**application/x-www-form-urlencoded**" which encodes special chars in the URL to ASCII HEX values and spaces to '+',
- no encoding with **multipart/form-data**, and
- **text/plain** which only converts spaces to +, and leaves other characters as is.

height and width:

Similar to the <img> element, the height, width, src, and alt attributes define the height, width, source and alterative text of the image button.

```
<input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
```

multiple Attribute: We can take our lists and datalists one step further by applying the Boolean attribute multiple to allow more than one value to be entered from the datalist

```
<form action="form1.asp">
 Select multiple files to upload: <input type="file" name="file" multiple>
 <input type="submit">
</form>
```

Canvas element

1. A Canvas is a rectangular area on an HTML page, and it is the new element introduced in HTML5 to draw graphics on the fly using script i.e., JavaScript.
2. Canvas acts like a container for graphics, we have to use script to draw graphics.
3. Canvas supports several methods for drawing paths, boxes, circles, characters, and adding images etc.
4. Canvas is supported by most of the browsers like Internet Explorer 9, Firefox, Opera, Chrome, and Safari.
5. Internet Explorer 8 and earlier versions, do not support the <canvas> element.
6. By default, the <canvas> element has no border and no content.

```
<canvas id="MyCanvas" width="300" height="100"></canvas>
```

ID attribute is used to refer canvas in script and a width and height attribute to define the size of the canvas.

We can have multiple canvas elements with unique IDs in one HTML page.

Canvas Coordinates:

1. The canvas is a two-dimensional grid.
2. The upper-left corner of the canvas has coordinate (0,0)

Drawing Shapes

Example1: Creating a rectangle filed with Blue color.

```
<!DOCTYPE html>

<head>

<title>Demo Page</title>

</head>
```

```
<body>

<canvas id="MyCanvas" width="200" height="100"
style="border: 1pxsolid#c3c3c3;"> </canvas>

<script>

   var c = document.getElementById("MyCanvas");

   var ctx = c.getContext("2d");

   ctx.fillStyle = "blue";

   ctx.fillRect(0, 0, 150, 75);

</script>

</body>

</html>
```

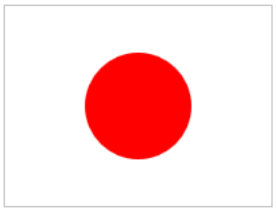
Understanding the Code:

- **getElementById("CanvasId"):** This JavaScript Method is used to get a reference to the canvas declared in the HTML page.
- **getContext("2d"):** Thisis a built-in HTML5 object, with many properties and methods for drawing paths, boxes, circles, text, images etc.
- **fillStyle:**This property can be a CSS color, a gradient, or a pattern. The default fillStyle is #000000 (black).
- **fillRect(x,y,width,height):**Thismethod draws a rectangle filled with the current fill style.

Example: Creating a circle filed with Red color using arc() method.

arc(x,y,r,start,stop)

```
ctx.beginPath();

ctx.arc(100, 75, 40, 0, 2 * Math.PI);

ctx.fillStyle = "Red";

ctx.fill();

ctx.stroke(); //Draw an empty circle with black border
```



Using Pattern

```
var imageObj = new Image();

imageObj.onload = function () {

 var pattern = ctx.createPattern(imageObj, 'repeat');

 ctx.rect(0, 0, canvas.width, canvas.height);

 ctx.fillStyle = pattern;

 ctx.fill();

};

imageObj.src = 'Smiley.png';
```

Drawing Paths

Canvas paths are used to draw lines on a canvas. To draw the line, we must use one of the "ink" methods, like stroke().

1. beginPath()
2. closePath()
3. moveTo(*x,y*) defines the starting point of the line
4. lineTo(*x,y*) defines the ending point of the line
5. arc(x, y, radius, startAngle, endAngle, counterClockwise)
6. quadraticCurveTo(cx, cy, x, y)
7. bezierCurveTo(cx1, cy1, cx2, cy2, x, y)

Example:

```
var canvas =
document.getElementById('MyCanvas');

var ctx = canvas.getContext('2d');

ctx.lineWidth = 20;

// miter line join (left)

ctx.beginPath();



ctx.moveTo(99, 150);
```

To set the line join style of an HTML5 Canvas path, we can set the **lineJoin** context property. Paths can have one of three line joins: miter, round, or bevel. Unless otherwise specified, the HTML5 Canvas line join property is defaulted with the miter style.

```
ctx.lineTo(149, 50);

ctx.lineTo(199, 150);

ctx.lineJoin = 'miter';

ctx.stroke();



// round line join (middle)

ctx.beginPath();

ctx.moveTo(239, 150);

ctx.lineTo(289, 50);

ctx.lineTo(339, 150);

ctx.lineJoin = 'round';

ctx.stroke();



// bevel line join (right)

ctx.beginPath();

ctx.moveTo(379, 150);

ctx.lineTo(429, 50);

ctx.lineTo(479, 150);

ctx.lineJoin = 'bevel';

ctx.stroke();
```

Example:

```
ctx.moveTo(50, 50);

ctx.lineTo(200, 100);

ctx.lineWidth = 2;

ctx.strokeStyle = "black";

ctx.stroke();

ctx.strokeStyle = "red"

ctx.beginPath()

ctx.moveTo(150, 50);

ctx.quadraticCurveTo(0, 50, 150, 150);

ctx.stroke();
```

```
ctx.beginPath();

ctx.moveTo(170, 80);

ctx.bezierCurveTo(130, 100, 130, 150, 230, 150);

ctx.bezierCurveTo(250, 180, 320, 180, 340, 150);

ctx.bezierCurveTo(420, 150, 420, 120, 390, 100);

ctx.bezierCurveTo(430, 40, 370, 30, 340, 50);

ctx.bezierCurveTo(320, 5, 250, 20, 250, 50);

ctx.bezierCurveTo(200, 5, 150, 20, 170, 80);

ctx.strokeStyle = 'blue';

ctx.stroke();
```

Drawing Text

Following are the important properties and methods.

1. font - defines the font properties for text

2. fillText(text,x,y) - Draws "filled" text on the canvas
3. strokeText(text,x,y) - Draws text on the canvas (no fill)

Writing a 25px high filled text on the canvas, using "Arial"font:

```
ctx.font = "30px Arial";

ctx.textAlign = 'Center'

ctx.fillText("Deccansoft", 10, 50);
```

strokeText()

```
ctx.font = "25px Arial";

ctx.strokeStyle = "black";

ctx.strokeText("Deccansoft", 35, 50);
```

Working with Gradients

Gradients are used to fill rectangles, circles, lines, text, etc. with multiple colors and shades.

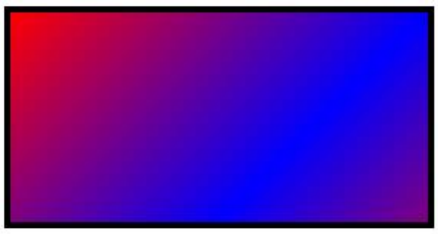
Two different types of gradients:

- **createLinearGradient**(*x,y,x1,y1*) - Creates a linear gradient.
- **createRadialGradient**(*x,y,r,x1,y1,r1*) - Creates a radial/circular gradient

These methods returns gradient object. We can add two or more color stops using addColorStop() method to this gradient object. It takes gradient position and color as parameters. Gradient position can range from 0 to 1.

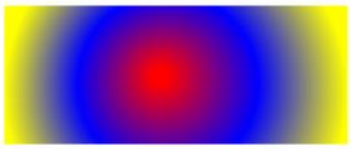
Example: Drawing a rectangle with three colors.

```
// Create gradient

var grd = ctx.createLinearGradient(0, 0, 200, 200);

grd.addColorStop(0, "red");

grd.addColorStop(0.5, "blue");

grd.addColorStop(1, "red");

// Fill with gradient

ctx.fillStyle = grd;

ctx.fillRect(0, 0, 200, 100);
```



Example: createRadialGradient(*x,y,r,x1,y1,r1*):

```
// Create gradient

var grd = ctx.createRadialGradient(100, 50, 5, 110, 60, 100);

grd.addColorStop(0, "red");

grd.addColorStop(0.5, "blue");

grd.addColorStop(1, "white");

// Fill with gradient

ctx.fillStyle = grd;

ctx.fillRect(10, 10, 200, 80);
```



Example: Text with Gradient.

```
ctx.font = "30px Verdana";

var grd3 = ctx.createLinearGradient(50, 20, 100, 90);

grd3.addColorStop(0, "black");

grd3.addColorStop("0.6", "blue");

grd3.addColorStop("0.8", "green");

grd3.addColorStop(1, "red");

ctx.strokeStyle = grd3;

ctx.strokeText("Deccansoft", 35, 50);
```

Creating Shadow Effect

```
ctx.shadowColor = 'black';

ctx.shadowBlur = 2;

ctx.shadowOffsetX = 3;

ctx.shadowOffsetY = 5;
```

```
ctx.font = "25px Arial";

ctx.strokeStyle = 'red'

ctx.strokeText("Deccansoft", 35, 50);
```

Translation:

```
ctx.translate(50, 50)

ctx.scale(2, 1);

ctx.rotate(Math.PI / 4);



ctx.font = "25px Arial";

ctx.strokeStyle = 'red'

ctx.strokeText("Deccansoft", 35, 50);

//ctx.scale(-1, 1) – To Flip Horizontal
```

Working with Images

Canvas – Image is used to draw an image on a canvas.

context.drawImage(imageObj, sx, sy, sw, sh, dx, dy, dw, dh);

```
<!DOCTYPE html>

<html>

<head>

  <title>An example to draw an polygon</title>

</head>

<body>

  <canvas id="MyCanvas" width="250" height="250" style="border: 1px solid #c3c3c3;"></canvas>
```

```
  <script>
    var imageObj = new Image();
    imageObj.onload = function () {
      var c = document.getElementById("MyCanvas");
      ctx = c.getContext("2d");
      ctx.drawImage(imageObj, 0, 0, 100, 100, 20, 20, 50, 50);
    };
    imageObj.src = 'SharePoint.jpg';
  </script>
</body>
</html>
```

Example: Creating Smiley

```
<!DOCTYPE html>
<html>
<head>
  <title>An example to draw an polygon</title>
</head>
<body>
  <canvas id="MyCanvas" width="250" height="250" style="border: 1px solid #c3c3c3;"></canvas>
  <script>
    var c = document.getElementById("MyCanvas");
    var ctx = c.getContext("2d");
    ctx.arc(50, 50, 20, 0, 2 * Math.PI);
    var grd = ctx.createLinearGradient(40, 40, 50, 75);
    grd.addColorStop(0, '#F9FF00');
    grd.addColorStop(1, '#E0C000');
    // Set the fill style
    ctx.fillStyle = grd;
    ctx.fill();

    // Create others circles (1st Eye)
```

```
ctx.beginPath();
ctx.arc(44, 45, 4, 0, 2 * Math.PI);
ctx.fillStyle = "#ffffff";
ctx.fill();

ctx.beginPath();
ctx.arc(44, 45, 2, 0, 2 * Math.PI);
ctx.fillStyle = "#000000";
ctx.fill();

//2nd Eye
ctx.beginPath();
ctx.arc(58, 45, 4, 0, 2 * Math.PI);
ctx.fillStyle = "#ffffff";
ctx.fill();

ctx.beginPath();
ctx.arc(58, 45, 2, 0, 2 * Math.PI);
ctx.fillStyle = "#000000";
ctx.fill();

ctx.beginPath();
ctx.arc(50, 55, 10, 0, Math.PI);
ctx.stroke();

//——second smiley————
ctx.beginPath();
ctx.arc(100, 50, 20, 0, 2 * Math.PI, true);
var grd = ctx.createLinearGradient(40, 40, 50, 75);
grd.addColorStop(0, '#F9FF00');
grd.addColorStop(1, '#E0C000');
ctx.fillStyle = grd;
ctx.fill();

ctx.beginPath();
ctx.arc(94, 45, 4, 0, 2 * Math.PI, true);
ctx.fillStyle = "#000000";
ctx.fill();
```

```
    ctx.beginPath();
    ctx.arc(106, 45, 4, 0, 2*Math.PI, true);
    ctx.fillStyle = "#000000";
    ctx.fill();

    ctx.beginPath();
    ctx.arc(100, 62, 10, 0, Math.PI, true);
    ctx.stroke();
  </script>
</body>
</html>
```

Canvas API Reference

http://cheatsheetworld.com/programming/html5-canvas-cheat-sheet/