Datalist element in HTML 5 helps to provide autocomplete feature in a textbox as shown below.

here are 10 important new form elements introduced in HTML 5:-

**Form elements** : datalist, datetime, output, keygen, date, month, week, time, number, range, email, and url.

**Input Types**- Color,Date,Datetime-local,Email,Time,Url,Range,Telephone,Number,Search

**Input Attributes**- autocomplete, autofocus, required, placeholder, min and max, pattern (regexp)

How do you optimize a website’s assets?

* + There are a [number of answers](http://www.sitepoint.com/web-site-optimization-steps/) to this question: File concatenation, file compression, CDN Hosting, offloading assets, re-organizing and refining code, etc. Have a few ready.

What are three ways to reduce page load time?

* + Again there are [many answers here](http://skilledup.go2cloud.org/aff_c?offer_id=114&aff_id=2&url=http://blog.teamtreehouse.com/speeding-up-page-load-times): Reduce image sizes, remove unnecessary widgets, HTTP compression, put CSS at the top and script references at the bottom or in external files, reduce lookups, minimize redirects, caching, etc.

What are some new HTML5 markup elements?

* + There are [several](http://www.w3.org/TR/html-markup/elements.html): <article>, <aside>, <bdi>, <command>, <details>, <figure>, <figcaption>, <summary>, <header>, <footer>, <hgroup>, <mark>, <meter>, <nav>, <progress>, <ruby>, <rt>, <section>, <time>, and <wpr>

CSS3

CSS3 has been split into "modules". It contains the "old CSS specification" (which has been split into smaller pieces). In addition, new modules are added.

Some of the most important CSS3 modules are:

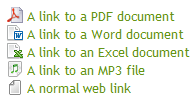
* Selectors
* Backgrounds and Borders
* Text Effects –colors, shadow
* 2D/3D Transformations
* Animations
* Multiple Column Layout
* User Interface
* Box Model
* Image Values and Replaced Content
* **[att^=val] – the “begins with” selector(a[href^=”http://”] p[title^=”Hello”])**

<div class="example1">  
<ul>  
<li><a href="http://www.google.com">Visit a website</a></li>  
<li><a href="https://www.google.com">Visit a secure website</a></li>  
<li><a href="mailto:email@email.com">Send an email</a></li>  
<li><a href="ftp://www.google.com">Connect to an FTP server</a></li>  
<li><a href="magnet:…">Download from a magnet link</a></li>  
</ul>  
</div>

div.example1 ul li a {  
padding-left: 20px;  
background-image: url(demo-images/file.png);  
background-repeat: no-repeat;  
}   
div.examples1 ul li a[href^=”https://”] {  
background-image: url(demo-images/lock.png);  
}  
   
div.example1 a[href^=”magnet”] {  
background-image: url(demo-images/magnet.png);  
}

* **[att$=val] – the “ends with” selector(a[href$=”.pdf”] ,p[title$=”World”])**

<div class="example2">  
<ul>  
<li><a href="http://www.css3.info/demos/files/1.pdf">A link to a PDF document</a></li>  
<li><a href="http://www.css3.info/demos/files/1.docx">A link to a Word document</a></li>  
<li><a href="http://www.css3.info/demos/files/1.xlsx">A link to an Excel document</a></li>  
<li><a href="http://www.css3.info/demos/files/1.mp3">A link to an MP3 file</a></li>  
<li><a href="http://www.css3.info">A normal web link</a></li>  
</ul>  
</div>



**[att\*=val] – the “contains” selector(a[href\*=”google.com”],p[title$=”orl”])**

|  |  |  |  |
| --- | --- | --- | --- |
| Selector | Example | Example description | CSS |
| [.*class*](http://www.w3schools.com/cssref/sel_class.asp) | .intro | Selects all elements with class="intro" | 1 |
| [#*id*](http://www.w3schools.com/cssref/sel_id.asp) | #firstname | Selects the element with id="firstname" | 1 |
| [\*](http://www.w3schools.com/cssref/sel_all.asp) | \* | Selects all elements | 2 |
| [*element*](http://www.w3schools.com/cssref/sel_element.asp) | p | Selects all <p> elements | 1 |
| [*element,element*](http://www.w3schools.com/cssref/sel_element_comma.asp) | div, p | Selects all <div> elements and all <p> elements | 1 |
| [*element* *element*](http://www.w3schools.com/cssref/sel_element_element.asp) | div p | Selects all <p> elements inside <div> elements | 1 |
| [*element*>*element*](http://www.w3schools.com/cssref/sel_element_gt.asp) | div > p | Selects all <p> elements where the parent is a <div> element | 2 |
| [*element*+*element*](http://www.w3schools.com/cssref/sel_element_pluss.asp) | div + p | Selects all <p> elements that are placed immediately after <div> elements | 2 |
| [[*attribute*]](http://www.w3schools.com/cssref/sel_attribute.asp) | [target] | Selects all elements with a target attribute | 2 |
| [[*attribute*=*value*]](http://www.w3schools.com/cssref/sel_attribute_value.asp) | [target=\_blank] | Selects all elements with target="\_blank" | 2 |
| [[*attribute*~=*value*]](http://www.w3schools.com/cssref/sel_attribute_value_contains.asp) | [title~=flower] | Selects all elements with a title attribute containing the word "flower" | 2 |
|  |  |  |  |
| [:active](http://www.w3schools.com/cssref/sel_active.asp) | a:active | Selects the active link | 1 |
| [::after](http://www.w3schools.com/cssref/sel_after.asp) | p::after | Insert something after the content of each <p> element | 2 |
| [:first-child](http://www.w3schools.com/cssref/sel_firstchild.asp) | p:first-child | Selects every <p> element that is the first child of its parent | 2 |
| [::first-letter](http://www.w3schools.com/cssref/sel_firstletter.asp) | p::first-letter | Selects the first letter of every <p> element | 1 |
| [::first-line](http://www.w3schools.com/cssref/sel_firstline.asp) | p::first-line | Selects the first line of every <p> element | 1 |
| [:focus](http://www.w3schools.com/cssref/sel_focus.asp) | input:focus | Selects the input element which has focus | 2 |
| [:hover](http://www.w3schools.com/cssref/sel_hover.asp) | a:hover | Selects links on mouse over | 1 |
|  |  |  |  |
|  |  |  |  |
| [:lang(*language*)](http://www.w3schools.com/cssref/sel_lang.asp) | p:lang(it) | Selects every <p> element with a lang attribute equal to "it" (Italian) | 2 |
|  |  |  |  |
|  |  |  |  |
| [:link](http://www.w3schools.com/cssref/sel_link.asp) | a:link | Selects all unvisited links | 1 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| [:visited](http://www.w3schools.com/cssref/sel_visited.asp) | a:visited | Selects all visited links | 1 |
| [[*attribute*^=*value*]](http://www.w3schools.com/cssref/sel_attr_begin.asp) | a[href^="https"] | Selects every <a> element whose href attribute value begins with "https" | 3 |
| [[*attribute*$=*value*]](http://www.w3schools.com/cssref/sel_attr_end.asp) | a[href$=".pdf"] | Selects every <a> element whose href attribute value ends with ".pdf" | 3 |
| [[*attribute*\*=*value*]](http://www.w3schools.com/cssref/sel_attr_contain.asp) | a[href\*="w3schools"] | Selects every <a> element whose href attribute value contains the substring "w3schools" | 3 |
| [:valid](http://www.w3schools.com/cssref/sel_valid.asp) | input:valid | Selects all input elements with a valid value | 3 |
| [:not(*selector*)](http://www.w3schools.com/cssref/sel_not.asp) | :not(p) | Selects every element that is not a <p> element | 3 |
| [:nth-child(*n*)](http://www.w3schools.com/cssref/sel_nth-child.asp) | p:nth-child(2) | Selects every <p> element that is the second child of its parent | 3 |
| [:nth-last-child(*n*)](http://www.w3schools.com/cssref/sel_nth-last-child.asp) | p:nth-last-child(2) | Selects every <p> element that is the second child of its parent, counting from the last child | 3 |
| [:nth-last-of-type(*n*)](http://www.w3schools.com/cssref/sel_nth-last-of-type.asp) | p:nth-last-of-type(2) | Selects every <p> element that is the second <p> element of its parent, counting from the last child | 3 |
| [:nth-of-type(*n*)](http://www.w3schools.com/cssref/sel_nth-of-type.asp) | p:nth-of-type(2) | Selects every <p> element that is the second <p> element of its parent | 3 |
| [:only-of-type](http://www.w3schools.com/cssref/sel_only-of-type.asp) | p:only-of-type | Selects every <p> element that is the only <p> element of its parent | 3 |
| [:only-child](http://www.w3schools.com/cssref/sel_only-child.asp) | p:only-child | Selects every <p> element that is the only child of its parent | 3 |
| [:optional](http://www.w3schools.com/cssref/sel_optional.asp) | input:optional | Selects input elements with no "required" attribute | 3 |
| [:out-of-range](http://www.w3schools.com/cssref/sel_out-of-range.asp) | input:out-of-range | Selects input elements with a value outside a specified range | 3 |
| [:read-only](http://www.w3schools.com/cssref/sel_read-only.asp) | input:read-only | Selects input elements with the "readonly" attribute specified | 3 |
| [:read-write](http://www.w3schools.com/cssref/sel_read-write.asp) | input:read-write | Selects input elements with the "readonly" attribute NOT specified | 3 |
| [:required](http://www.w3schools.com/cssref/sel_required.asp) | input:required | Selects input elements with the "required" attribute specified | 3 |
| [:root](http://www.w3schools.com/cssref/sel_root.asp) | :root | Selects the document's root element | 3 |
| [::selection](http://www.w3schools.com/cssref/sel_selection.asp) | ::selection | Selects the portion of an element that is selected by a user |  |
| [:target](http://www.w3schools.com/cssref/sel_target.asp) | #news:target | Selects the current active #news element (clicked on a URL containing that anchor name) | 3 |
| [:last-child](http://www.w3schools.com/cssref/sel_last-child.asp) | p:last-child | Selects every <p> element that is the last child of its parent | 3 |
| [:last-of-type](http://www.w3schools.com/cssref/sel_last-of-type.asp) | p:last-of-type | Selects every <p> element that is the last <p> element of its parent | 3 |
| [:in-range](http://www.w3schools.com/cssref/sel_in-range.asp) | input:in-range | Selects input elements with a value within a specified range | 3 |
| [:invalid](http://www.w3schools.com/cssref/sel_invalid.asp) | input:invalid | Selects all input elements with an invalid value | 3 |
| [:first-of-type](http://www.w3schools.com/cssref/sel_first-of-type.asp) | p:first-of-type | Selects every <p> element that is the first <p> element of its parent |  |
| [:checked](http://www.w3schools.com/cssref/sel_checked.asp) | input:checked | Selects every checked <input> element | 3 |
| [:disabled](http://www.w3schools.com/cssref/sel_disabled.asp) | input:disabled | Selects every disabled <input> element | 3 |
| [:empty](http://www.w3schools.com/cssref/sel_empty.asp) | p:empty | Selects every <p> element that has no children (including text nodes) | 3 |
| [:enabled](http://www.w3schools.com/cssref/sel_enabled.asp) | input:enabled | Selects every enabled <input> element | 3 |

**CSS3 Rounded Corners**

  border-radius: 15px 50px 30px 5px;

You could also create elliptical corners:

border-radius: 50px/15px;  border-radius: 15px/50px; 

|  |  |
| --- | --- |
| [border-radius](http://www.w3schools.com/cssref/css3_pr_border-radius.asp) | A shorthand property for setting all the four border-\*-\*-radius properties |
| [border-top-left-radius](http://www.w3schools.com/cssref/css3_pr_border-top-left-radius.asp) | Defines the shape of the border of the top-left corner |
| [border-top-right-radius](http://www.w3schools.com/cssref/css3_pr_border-top-right-radius.asp) | Defines the shape of the border of the top-right corner |
| [border-bottom-right-radius](http://www.w3schools.com/cssref/css3_pr_border-bottom-right-radius.asp) | Defines the shape of the border of the bottom-right corner |
| [border-bottom-left-radius](http://www.w3schools.com/cssref/css3_pr_border-bottom-left-radius.asp) | Defines the shape of the border of the bottom-left corner |

## CSS3 border-image Property

The CSS3 border-image property allows you to specify an image to be used instead of the normal border around an element.

The property has three parts:

* The image to use as the border
* Where to slice the image
* Define whether the middle sections should be repeated or stretched

We will use the following image (called "border.png"):

## CSS3 Backgrounds

CSS3 contains a few new background properties, which allow greater control of the background element.

In this chapter you will learn how to add multiple background images to one element.

You will also learn about the following new CSS3 properties:

* background-size
* background-origin
* background-clip

#example1 {  
    background-image: url(img\_flwr.gif), url(paper.gif);  
    background-position: right bottom, left top;  
    background-repeat: no-repeat, repeat;  
}

## CSS3 Background Properties

|  |  |
| --- | --- |
| **Property** | **Description** |
| [background](http://www.w3schools.com/cssref/css3_pr_background.asp) | A shorthand property for setting all the background properties in one declaration |
| [background-clip](http://www.w3schools.com/cssref/css3_pr_background-clip.asp) | Specifies the painting area of the background |
| [background-image](http://www.w3schools.com/cssref/pr_background-image.asp) | Specifies one or more background images for an element |
| [background-origin](http://www.w3schools.com/cssref/css3_pr_background-origin.asp) | Specifies where the background image(s) is/are positioned |
| [background-size](http://www.w3schools.com/cssref/css3_pr_background-size.asp) | Specifies the size of the background image(s) |

## CSS3 Colors

* **RGBA** colors **rgba(255, 0, 0, 0.2);**
* **HSL colors** Hue, Saturation and Lightness. hsl(0 degree(360), 100%, 50%);
* **HSLA colors** HSLA color value is specified with: hsla(hue, saturation, lightness, alpha), where the alpha parameter defines the opacity. The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque). hsla(0, 100%, 30%, 0.3);
* **Opacity** The opacity property value must be a number between 0.0 (fully transparent) and 1.0 (fully opaque). rgb(255, 0, 0);opacity:0.8;

## CSS3 Text

* text-overflow
* word-wrap
* word-break
* The following table lists the new CSS3 text properties:

|  |  |
| --- | --- |
| **Property** | **Description** |
| [text-align-last](http://www.w3schools.com/cssref/css3_pr_text-align-last.asp) | Specifies how to align the last line of a text |
| [text-emphasis](http://www.w3schools.com/cssref/css3_pr_text-emphasis.asp) | A shorthand for setting text-emphasis-style and text-emphasis-color in one declaration |
| [text-justify](http://www.w3schools.com/cssref/css3_pr_text-justify.asp) | Specifies how justified text should be aligned and spaced |
| [text-overflow](http://www.w3schools.com/cssref/css3_pr_text-overflow.asp) | Specifies how overflowed content that is not displayed should be signaled to the user- clip; This is some long text that will not fit  overflow: ellipsis:This is some long text that wil… |
| [word-break](http://www.w3schools.com/cssref/css3_pr_word-break.asp) | Specifies line breaking rules for non-CJK scripts **word-break: keep-all;**  **break-all** |
| [word-wrap](http://www.w3schools.com/cssref/css3_pr_word-wrap.asp) | Allows long words to be able to be broken and wrap onto the next line **: break-word;** |

if a word is too long to fit within an area, it expands outside:

This paragraph contains a very long word: thisisaveryveryveryveryveryverylongword. The long word will break and wrap to the next line.

The word-wrap property allows you to force the text to wrap - even if it means splitting it in the middle of a word:

This paragraph contains a very long word: **thisisaveryveryveryveryveryverylongword**. The long word will break and wrap to the next line.

[Text-shadow](http://www.w3.org/TR/2003/CR-css3-text-20030514/#text-shadows)

CSS3 finally eliminates the need for Photoshop when all you want to do is a simple shadow. The [text-shadow](http://www.w3.org/TR/2003/CR-css3-text-20030514/#text-shadows) property is used as follows:

text-shadow: 2px 2px 2px #000;

This produces the following text with a shadow 2px right and below of the text, which blurs for 2px:

## CSS3 Transforms

CSS3 transforms allow you to translate, rotate, scale, and skew elements.

A transformation is an effect that lets an element change shape, size and position.

## CSS3 2D Transforms

In this chapter you will learn about the following 2D transformation methods:

* translate()transform: translate(50px,100px);
* rotate()rotate(20deg)
* scale()transform: scale(2,3);
* skewX()skewX(20deg);
* skewY()skew(20deg, 10deg);
* matrix()matrix(scaleX(),skewY(),skewX(),scaleY(),translateX(),translateY()):

The **translate**() method moves an element from its current position (according to the parameters given for the X-axis and the Y-axis).

## CSS3 3D Transforms

In this chapter you will learn about the following 3D transformation methods:

* rotateX()
* rotateY()
* rotateZ()

## CSS3 Animations

CSS3 animations allows animation of most HTML elements without using JavaScript or Flash!

@keyframes example {  
    from {background-color: red;}  
    to {background-color: yellow;}  
}

div {  
    animation-name: example;  
    animation-duration: 5s;  
    animation-timing-function: linear;  
    animation-delay: 2s;  
    animation-iteration-count: infinite;  
    animation-direction: alternate;  
}

div {  
    animation: example 5s linear 2s infinite alternate;  
}

## CSS3 Animation Properties

The following table lists the @keyframes rule and all the animation properties:

|  |  |
| --- | --- |
| **Property** | **Description** |
| [@keyframes](http://www.w3schools.com/cssref/css3_pr_animation-keyframes.asp) | Specifies the animation code |
| [animation](http://www.w3schools.com/cssref/css3_pr_animation.asp) | A shorthand property for setting all the animation properties  animation-name  animation-duration  animation-timing-function  animation-delay  animation-iteration-count  animation-direction  animation-fill-mode  animation-play-state |
| [animation-delay](http://www.w3schools.com/cssref/css3_pr_animation-delay.asp) | Specifies a delay for the start of an animation |
| [animation-direction](http://www.w3schools.com/cssref/css3_pr_animation-direction.asp) | Specifies whether an animation should play in reverse direction or alternate cycles |
| [animation-duration](http://www.w3schools.com/cssref/css3_pr_animation-duration.asp) | Specifies how many seconds or milliseconds an animation takes to complete one cycle |
| [**animation-fill-mode**](http://www.w3schools.com/cssref/css3_pr_animation-fill-mode.asp) | **Specifies a style for the element when the animation is not playing (when it is finished, or when it has a delay) none|forwards|backwards|both|initial|inherit;** |
| [animation-iteration-count](http://www.w3schools.com/cssref/css3_pr_animation-iteration-count.asp) | Specifies the number of times an animation should be played |
| [animation-name](http://www.w3schools.com/cssref/css3_pr_animation-name.asp) | Specifies the name of the @keyframes animation |
| [animation-play-state](http://www.w3schools.com/cssref/css3_pr_animation-play-state.asp) | Specifies whether the animation is running or paused |
| [animation-timing-function](http://www.w3schools.com/cssref/css3_pr_animation-timing-function.asp) | Specifies the speed curve of the animation **ease-in** |

## CSS3 Transitions

CSS3 transitions allows you to change property values smoothly (from one value to another), over a given duration.

div {  
    transition-property: width;    transition-duration: 2s;    transition-timing-function: linear;  
    transition-delay: 1s;  
}

|  |  |
| --- | --- |
| Property | Description |
| [transition](http://www.w3schools.com/cssref/css3_pr_transition.asp) | A shorthand property for setting the four transition properties into a single property |
| [transition-delay](http://www.w3schools.com/cssref/css3_pr_transition-delay.asp) | Specifies a delay (in seconds) for the transition effect |
| [transition-duration](http://www.w3schools.com/cssref/css3_pr_transition-duration.asp) | Specifies how many seconds or milliseconds a transition effect takes to complete |
| [transition-property](http://www.w3schools.com/cssref/css3_pr_transition-property.asp) | Specifies the name of the CSS property the transition effect is for |
| [transition-timing-function](http://www.w3schools.com/cssref/css3_pr_transition-timing-function.asp) | Specifies the speed curve of the transition effect |

## CSS3 Multi-column Layout

The CSS3 multi-column layout allows easy definition of multiple columns of text - just like in newspapers:

## CSS3 Multi-columns Properties

The following table lists all the multi-columns properties:

|  |  |
| --- | --- |
| Property | Description |
| [column-count](http://www.w3schools.com/cssref/css3_pr_column-count.asp): 3 | Specifies the number of columns an element should be divided into |
| [column-fill](http://www.w3schools.com/cssref/css3_pr_column-fill.asp) | Specifies how to fill columns |
| [column-gap](http://www.w3schools.com/cssref/css3_pr_column-gap.asp):40px | Specifies the gap between the columns |
| [column-rule](http://www.w3schools.com/cssref/css3_pr_column-rule.asp):4px outset #ff00ff; | A shorthand property for setting all the column-rule-\* properties |
| [column-rule-color](http://www.w3schools.com/cssref/css3_pr_column-rule-color.asp): ightblue | Specifies the color of the rule between columns |
| [column-rule-style](http://www.w3schools.com/cssref/css3_pr_column-rule-style.asp) :solid | Specifies the style of the rule between columns |
| [column-rule-width](http://www.w3schools.com/cssref/css3_pr_column-rule-width.asp): 1px | Specifies the width of the rule between columns |
| [column-span](http://www.w3schools.com/cssref/css3_pr_column-span.asp):all | Specifies how many columns an element should span across |
| [column-width](http://www.w3schools.com/cssref/css3_pr_column-width.asp): 100px | Specifies a suggested, optimal width for the columns |
| [columns](http://www.w3schools.com/cssref/css3_pr_columns.asp) | A shorthand property for setting column-width and column-count |

## CSS3 User Interface

CSS3 has new user interface features such as resizing elements, outlines, and box sizing.In this chapter you will learn about the following user interface properties:

1. resize
2. outline-offset

## CSS3 Resizing

The resize property specifies whether or not an element should be resizable by the user.

This div element is resizable by the user (works in Chrome, Firefox, Safari and Opera).

The following example lets the user resize only the width of a <div> element:

## CSS3 Outline Offset

The outline-offset property adds space between an outline and the edge or border of an element.

Outlines differ from borders in three ways:

1. An outline is a line drawn around elements, outside the border edge
2. An outline does not take up space
3. An outline may be non-rectangular

