CSS3

Three different types of CSS declaration: inline (takes the most precedence), internal and external

**Syntax and their use:**

<span> tag is used to apply style for specific part of another tag or content.

<hgroup> tag is used for a set of related headlines.

Border-radius : Apx – to have rounded borders. Can be specified for individual corners too (border-radius: 15px 50px 30px;)

text-transform: capitalize; - to turn everything in the text to uppercase or lowercase or camelCase/capitalize first letter of every word.

text-indent: Apx or A%; - to specify the indentation of the first line of a text. Where % is considered relative to the containing block

word-spacing: Apx or Aem; - to specify spacing between words

padding: Aem; - to generate spacing around the content

display: block; - this will make sure all the elements are neatly separated. We don’t need p tags

href: “#myName” – The named anchors are used for in-document navigation. The #myname can be the name of any element inside the document.

position: static; - these elements will not be affected by top, bottom, left or right properties and will follow the regular flow of HTML

{position: relative; top: Apx; left: Bpx;} – the element is positioned relative to its normal position.

{position: fixed; top: Apx; left: Bpx;} - The element stays at the same place even if the page is scrolled

Position: relative – positioned relative to its normal position.

Position – absolute - positioned relative to the nearest positioned parent.

overflow: visible| hidden| scroll| auto| initial| inherit; - specifies what happens when the content overflows the element’s box. Works only for block elements with a specified height.

To ensure the custom user defined CSS is not affected by the web browser styles, reset css will be used to reset the styles to specified default values making the pages look similar across the browsers.

Some of the browser compatibility testing tools are

* [BrowserShots](http://browsershots.org/)
* [IE Tester](http://www.my-debugbar.com/wiki/IETester/HomePage)
* [CloudTesting](http://www.cloudtesting.com/)

**Background**

The background shorthand property sets all background properties in one declaration.

Properties that can be set are:

background-color : #FFF;

background-image : url(sample.gif);

background-position : Xpx Ypx; or x% y%;

background-size : Apx or A%;

background-repeat : no-repeat;

background-origin

background-clip

background-attachment

**ID vs Class**

Id is unique but class is not.

Only one id per element but can have multiple classes (class=”class1 class2 class3”).

ID takes precedence over class.

But class can be reused so it is more preferable. Also, when multiple people are working on different sections it is better to use classes as they may end up using the same id name.

**CSS Combinator Selectors**

1. Descendent Combinator: targets any descendent of the parent element.

div li{} - targets all li inside of div

1. Child Combinator: targets only the direct child of the parent.

div > p {} – targets only the direct child p of the div

1. Adjacent sibling combinator: direct sibling element after the specified element.

H3 + p{} – targets only the p that is adjacent to any h3

1. General sibling combinator: targets all the target element after the specified element

H3 ~ p {} - targets all the p that comes after h3.

**CSS Standard selector**

1. Universal Selector (\*): selects everything; all elements.
2. Type Selector (e): targets elements of the type.
3. Compound Selector (a, b, c)- (name/id/class): targets all the specified elements separated by comma.
4. Group Class Selector (.class): targets the elements with the specified class name. We can also add another element before the .class to target specific elements. For ex: p.class1 will target only the p tags with class1 even if class1 is being used by other tags.
5. Unique id Selector (#id): targets the unique element. Like the class we can specify which element we are targeting by specifying the element before the id (p#mypara)

**Pseudo Class Selector**

These have “: “ in their specification. These are also used to define a specific state of an element like mouse over, blur, focus, etc.

*Structural Pseudo Selectors*

1. E: first-child
2. E: last-child
3. E: first-of-type
4. E: last of type
5. E: only-child – if the specified element is the only child within its parent
6. E: only-of-type – only element with the specified type in the parent
7. E: empty – targets the empty element of the specified type
8. E: root – targets the root which is the HTML – whole document

*Pseudo Element Selectors*

1. E:: before
2. E:: after
3. E:: first-line
4. E:: first-letter

*User Action Selectors*

1. E: active
2. E: hover
3. E: focus

*Link and Anchor Selector*

1. E: link

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1. E: target
2. E: visited

**Z-Index and Stacking Order**

In the default stacking order, the lower you go in the HTML page, the higher the stacking order. The elements in the top or beginning of the html page has lower stacking order.

To overcome this, we can use the z-index in combination with div. The z-index can be **negative**.

The **z**-**index** property only works on elements with a **position** value other than static (e.g. **position**: absolute; , **position**: relative; , or **position**: fixed )

**Reset CSS**

It is a powerful tool that is used to reduce browser inconsistencies in aspects like default height, width, font, etc. the following code should be added to our css stylesheet to reset the settings from the browser.

/\*  
html5doctor.com Reset Stylesheet  
v1.6.1  
Last Updated: 2010-09-17  
Author: Richard Clark - http://richclarkdesign.com  
Twitter: @rich\_clark  
\*/  
  
html, body, div, span, object, iframe,  
h1, h2, h3, h4, h5, h6, p, blockquote, pre,  
abbr, address, cite, code,  
del, dfn, em, img, ins, kbd, q, samp,  
small, strong, sub, sup, var,  
b, i,  
dl, dt, dd, ol, ul, li,  
fieldset, form, label, legend,  
table, caption, tbody, tfoot, thead, tr, th, td,  
article, aside, canvas, details, figcaption, figure,  
footer, header, hgroup, menu, nav, section, summary,  
time, mark, audio, video {  
    margin:0;  
    padding:0;  
    border:0;  
    outline:0;  
    font-size:100%;  
    vertical-align:baseline;  
    background:transparent;  
}  
  
body {  
    line-height:1;  
}  
  
article,aside,details,figcaption,figure,  
footer,header,hgroup,menu,nav,section {  
    display:block;  
}  
  
nav ul {  
    list-style:none;  
}  
  
blockquote, q {  
    quotes:none;  
}  
  
blockquote:before, blockquote:after,  
q:before, q:after {  
    content:'';  
    content:none;  
}  
  
a {  
    margin:0;  
    padding:0;  
    font-size:100%;  
    vertical-align:baseline;  
    background:transparent;  
}  
  
/\* change colours to suit your needs \*/  
ins {  
    background-color:#ff9;  
    color:#000;  
    text-decoration:none;  
}  
  
/\* change colours to suit your needs \*/  
mark {  
    background-color:#ff9;  
    color:#000;  
    font-style:italic;  
    font-weight:bold;  
}  
  
del {  
    text-decoration: line-through;  
}  
  
abbr[title], dfn[title] {  
    border-bottom:1px dotted;  
    cursor:help;  
}  
  
table {  
    border-collapse:collapse;  
    border-spacing:0;  
}  
  
/\* change border colour to suit your needs \*/  
hr {  
    display:block;  
    height:1px;  
    border:0;    
    border-top:1px solid #cccccc;  
    margin:1em 0;  
    padding:0;  
}  
  
input, select {  
    vertical-align:middle;  
}

**RGB Colors**

An RGB color value is specified with: rgb(red, green, blue). Each parameter defines the intensity of the color and can be an integer between 0 and 255, or a percentage value from 0% to 100%.

RGBA is an extension of RGB with the alpha attribute which specifies the opacity of the object. It is a number between 0.0 (fully transparent) to 1.0 (fully opaque). Default value of opacity is 1.

*Note:*

When defining opacity

Opacity: 0.8;

Filter: alpha(opacity=80); - for pre IE9 browsers.

**Rules for applying border radius property**

Border radius property takes 1 to 4 values.

* ***One value***: all four corners are rounded equally.
* ***Two values***: 1st value applies to top-left and bottom-right corner; 2nd value applies to top-right and bottom-left corner.
* ***Three values***: 1st value applies to top-left, 2nd to top-right and bottom-left, and 3rd value applies to bottom-right corner.
* ***Four values***: 1st value applies to top-left, 2nd to top-right, 3rd to bottom-right, and 4th to bottom-left corner.

**CSS3 2D 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 allows both 2D and 3D transformations.

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Opera requires a prefix -o-

Internet Explorer requires a prefix of -ms-

Graphical user interface, website

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The 2nd and 3rd arguments of the matrix are used to skew or rotate the object. To rotate both should be the same number (one negative and one positive). To skew, we can use one of them to point the orientation.

The 5th and 6th arguments are used to move along x and y axis.

The 1st and 4th are to scale the object along the x and y axis.

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**CSS3 3D Transforms**

This is used to do animations on 3D objects.

Flipping Animation: There are 2 elements stacked back-to-back. By default, the one in the back is flipped to 180degrees. And when the animation occurs, it is made to come back to 0degrees and the one in the front is made to rotate 180degrees.

It is better to use onmousedown event in favor of hover because, if the application is to be used in mobile, then hover may not work.

**Web Page Design Methods**

1. Fixed web page design

* Its wrapper has a fixed width and the components also have fixed width.
* It is very easier to build and customize
* Min-width or max-width need not be mentioned
* In terms of usability these score less
* Creates excessive white spaces for larger screen resolutions and requires horizontal scroll bar for smaller screen resolutions.

1. Fluid web page design
   1. The majority of the components inside have percentage widths and adjust to the user’s screen resolution
   2. More user friendly and keeps layout consistent
   3. Can eliminate the horizontal scrollbars for smaller screens
   4. The designer has less control over what the user sees.
   5. Multiple widths are required to accommodate different screen resolutions when dealing with contents like images and video
2. Responsive web page design
   1. This is an approach suggesting that design and development must respond to user’s behavior and environment based on screen size, platform and orientation.
   2. Managing content is easy for different resolution.
   3. Design and development effort reduced due to reuse.
   4. Site updates only have to be applied once.
   5. Horizontal scroll bars are completely eliminated.
   6. Cross browser compatibility – some queries not working.
   7. It also has the limitations of fluid design.

**Video Background**

Just like full screen images being used as backgrounds, videos can also be used as backgrounds.

**Grid view in CSS**

This makes it easier to place elements in a page. By default, a responsive grid=view has 12 columns that shrink and expand as we re-size the window.

*Multi Column Layout*

This is achieved by adding just the below 2 lines to the CSS style for the div that has the content.

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The column-count: 2 specifies the number of panels to display the content in the page.

The column-rule is the horizontal line that is shown in between the panels.

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Code: <http://www.developphp.com/video/CSS/Media-Queries-Responsive-Website-Layout-Tutorial>

**Bootstrap**:

This is the most popular open source HTML and JavaScript framework developed by Twitter for creating responsive web applications.

*Advantages of Bootstrap:*

* Supports responsive design
* Saves lot of development time
* Enables Consistency
* Customizable

When we download the compiled and minified version from getbootstrap.com, we get a single zip file which in turn has 3 folders – css, fonts and js

*CSS folder*:

Inside the css folder we have both original version and minified version of the core style sheet (bootstrap.css) and the theme style sheet (bootstrap-theme.css).

Min version – whitespaces and line breaks are removed. This makes the file smaller in space and is used in production environment to improve the performance.

Original version – this is more readable and is used in the development environment.

Core style sheet has all the styles required but the themes is for a more enhanced visual experience like 3D effects, gradients, shadows, etc.

There are .map files which are called the ‘Source Map File’. Used during development.

When debugging the code, the minified version does not refer to line numbers in the original files. The map files fixes this issue by allowing the web debuggers to refer to the original context from where the file was generated.

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*Fonts folder:*

The folder has the glyphicons fonts file in 5 different formats to support various browsers.

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*JS Folder:*

This is an optional folder. The files are used if you want to use bootstrap widgets like picture carousal, drop down menus, collapsible accordion, etc. One thing to note is that bootstrap js is dependent on JQuery. So a reference to JQuery must also be specified where we want to use the js. The npm file is from NodeJS and is used for npm installing bootstrap.

A picture containing text

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To get started, add the bootstrap folder to your project folder and make an index.html file (There is a basic template available in getbootstrap.com which can be modified as per requirement). Ensure the links to the css and js files are given properly according to your project folder structure. The jquery cdn link are also referenced.

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There is a viewport meta tag which enables proper rendering and touch zooming in mobile devices.

**Animation with CSS:**

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Vendor prefexis to play the animation in non-webkit browsers.

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**CSS Media Queries:**

<https://developer.mozilla.org/en-US/docs/Web/CSS/Media_Queries/Using_media_queries>

**Hands-On 1:**

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**Solution:**

/\* width \*/

::-webkit-scrollbar {

width: 20px;

overflow-y: scroll;

overflow-x: scroll;

}

/\* Track \*/

::-webkit-scrollbar-track {

background-color: #f7ffe6;

box-shadow: inset 0 0 10px #a1d162;

border-radius: 10px;

}

/\* Handle \*/

::-webkit-scrollbar-thumb {

background-color: #a1d162;

box-shadow: inset 0 0 10px #a1d162;

border-radius: 10px;

}

body{

white-space: nowrap;

}

**Hands-On 2:**

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**Hands-On 2**

**Graphical user interface, text, application

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**HandsOn4:**

**Graphical user interface

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**HTML – Handson – registration Form**

**Graphical user interface

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**Text

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**A screenshot of a computer

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**Graphical user interface

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