CSS3

# Getting Started

* Cascading Style Sheet enables developer to define look & feel (user experience) in separate file
* Any text editor would do to create the css files
* Stylesheets are following types:
  + Internal Stylesheets – easier to refresh hence used during creation of page
  + External Stylesheets – separates styling from page. Faster caching. Extracted for production.
  + Inline Style – attribute **style=”Property1:value1;property2:value2;…”**
* **<link rel=”stylesheet” href=”style.css” media=”screen”>** // Add style sheet in html page
  + The media attribute specifies what media/device the target resource is optimized for. Its values include **tv | print |screen | handheld |projection | all | aural | braille**
* **@charset ‘utf-8’**; //first line in css document. Reduce cross browser issue
* Format of stylesheet : **selector {property1:value1; property2:value2;…}**
* Properties not inherited: Placement tags, Margins, Borders , Background-colors
* Browsers may override inheritance but not explicit settings. Specific styles > general styles
* Specificity Rule calculation
  + Tag selector=1 ; Class selector=10; ID selector=100
  + Pseudo-element (::first-line) =1; Pseudo-class (::link)=10
* Right click and inspect (F12) on browsers to see the applied style or scripts

# Selectors

* Tag Selectors
  + Apply page wide. Just use the **tag name** ex p,a,h1
* Class Selectors
  + Apply to all elements having the given class. Just use the **.className** ex .linkButton
* ID Selectors
  + Apply to specific element with given ID. Just use the **#ID** ex #formID
  + Used in JavaScript to identify specific object.
  + Used to link to specific part of the page.
* **Tag1 tag2 … ex footer p** // selects all paragraphs in the footer.
* **::selection {**

**background-color : rgba (122,192,0,0.2);** // the function takes rgb & opacity values

**color : blue;**

**}** // displays the given background color & text in color when text is selected.

* + It was proposed for CSS3 but failed in recommendation phase
* Pseudo Classes
  + **:first-child, :last-child, :nth-child(odd|even|n)** //ex .myClass :first-child, ul :nth-child(2n-1)
  + **:first-of-type, :last- of-type, :nth- of-type(odd|even|n)** // .myClass p:nth-of-type(odd)
  + **:only-of-type, nth-last-child(#), nth-last-of-type(#)**
  + **Adjacent sibling + , All siblings ~** ex (‘div ~ p’) // all paragraph that are sibling of div
  + **:not(selector)** //selects all elements that are not of this type ex #myID :not(foo)
    - **#content>\*:not(:target,#intro) // selects content that are not target or intro**
  + **:root** //entire browser window or root element ex: html in html document
  + **:empty** // element that has no children including text nodes
  + **:target** // url followed by # linked to a section in document. Style current active target.
* **li:hover p {display:inherit;}** // provides the effect of tooltip on hovering over an list item
* Pseudo classes for input
  + **:enabled, :disabled, :checked, :focus**
  + **:valid, :invalid,:optional,:required** // ex: :not([type=submit]):optional {border-style:dashed;}
  + **::-webkit-input-placeholder, :-ms-input-placeholder, :-moz-placeholder**
* **> operator** // selects the first nested child ex: a has b & b has c then #a > div means only b & not c
* **#myID \* { border-radius:0!important}** //!important means override all style

# Fonts

* Serif Fonts ex Times New Roman, Georgia //excellent for paragraphs
* Sans-Serif Fonts ex Arial ,Verdana ,Tahoma //excellent for headings
* Monospaced fonts ex Courier New , Lucida Console // excellent for Quotes
* Web Fonts – downloaded from net and not available on users system
  + To avoid legal issues & complex code use Google’s Web fonts or font squirrel
  + <link href=’Google fone url’ rel=’stylesheet’ /> goes in head od document
* **<mimeMap fileExtension=”.woff” mimeType=”application/x-woff” />** 
  + Added in web.config under system.webServer -> staticContent section
* **@font-face {**

**font-family : FontName;**

**src: url(woff file path); format(‘woff’)**

**}** //adds reference to the new font type

* **font-style:italic |bold |normal;** //sets the text to italic or bold
* **font-size:medium|large|small|x-large|Npx |em;** //em is in percentages. .5em=50%
* **font-family:Arial Calibri;** // applies that is first match
* **font-color:rgb()|rgba()|colorName|#XXXXXX;** //sets the font color
* **text-transform:uppercase|lowercase|capitalize** // defines the capitalization of the text
* **font-variant:small-caps** //makes the text small caps
* **text-decoration:underline|overline** //underline or overline the text
* **letter-spacing:-1px ; word-spacing:2px; line-height:125%|1.25** //defines the kerning & leading
* **text-shadow :2px 3px 4px #000000;** // shadow added : down right blur color
  + for left & up give negative pixel value

# Background & Color Properties

* **color:rgb()|rgba()|colorName|#XXXXXX|transparent;** //sets the font color.
  + Use rgba(0,0,0,0) instead of transparent. Can also use hsla function
* **currentColor** // like a variable & will be assigned the value of 1st color in selector
* **background-color:rgb()|rgba()|colorName|#XXXXXX;** //sets the background color
* **background: linear-gradient(bottom, #c34000 23%, #ff5400 62%);** //applies the gradient
  + **use fallback color & specific browser references**
* **background: url(image url1) , url(image url2), …,color;**//applies image1,image2…color to the background. Image1 is placed above, image 2 underneath …& color last
  + position can be specified with each image **ex bottom left, top right**
  + **background-size : auto|contain** // in order of images
* **background-repeat:no-repeat** //sets the repetition of image

# Page Layout & Boxes

Box Model

* Margin is space between boxes
* Border is line around edge of box
* Padding is space between Border & contents of box
* Block level tags ex P, DIV have all margins whereas inline tags like STRONG IMG do not have top & bottom margins
* **border**:2px solid black;
  + **border-width, border-style, border-color**
  + **border-top, border-bottom, border-right, border-left**
* **border-radius : 10px | % | em;** //sets the rounded corners. Specific border-top-left-radius
* **padding, padding-top, padding -bottom, padding -right, padding -left** //auto allows browser to set
* **margin, margin-top, margin -bottom, margin -right, margin -left** //auto allows browser to set
* border, margin & padding are listed in Left right top & bottom
* **box-shadow:0 0 15px 5 px rgba()** // sets the box shadow down right blur distance color
  + negative value for up & left
  + to get the glow set down=right=0 & specify blur,distance & color

Layout

* **float:right|left|none** //floats the box to the given side of the outer box.
* To create a column : Move content to the top -> Set its width -> set float -> Enclose main section in div -> set its margin greater than column width
* To float an image : set its width & height ->set its margin -> set float
* Table layout : **display:table, display:table-cell** //all cells are in a row
* Box layout : **display:box, box-ordinal-group:n**
  + box-flex:1 //expand the group as much as possible
* Column layout : **column-count:3** or **column-width:px**
  + **column-gap:0** //no gaps in column

Navigation Bars

* Formatted list of links:
  + Remove Bullets from ul – **list-style-type:none**
  + Eliminate Paddings & margins
  + Eliminate new line : **display:inline**
  + Style the links like **text-decoration:none; display:inline-block**

# Transform & Animation

* **transform :** multiple transform can be applied
  + **rotate(deg)** // rotate(180deg) =upsideDown
  + **skew(deg,deg)** //twist **skewX(deg)** //leanBack **skewY(deg)** //stretch right
  + **scale(.5)** //half **scale(2)** //double **scaleX(.75)** //thin **scaleY(1.25)** //tall
  + **translate(em)** //Move right if em is +ve & left for –ve **translate(em,em)** //Move down & right **translateY(em)** //Move Down if +ve & up for –ve
* **@keyframes kfName { % {property:value} % {property:value}…}** //percentage of TimeInSeconds
  + **@keyframes kfName { from {property:value} to {property:value}}**
  + **animate : kfName timeInSeconds infinite alternate;** //alternate entire sequence in reverse
* **transition:** //happen on properties or all properties when triggered ex hover
  + **property1, property2 … timeInSeconds**
  + **all timeInSeconds** //transition has all properties in hover

# Responsive Design

* website responds to various devices and browser resizes – Media Queries
* **@media screen and (max-width:600px) { {set the properties} }** 
  + Checks if media is screen & maximum width is 600 px like shrink browser
  + **@media screen and (min-width:600px) and (max-width:900px) { {set the properties} }**
* **@media screen and (max-device-width:480px) { {set the properties} }** // max width landscape

# Cross Browser Handling

* Feature Detection – checks for the elements method
  + Use **modernizer.custom.js** to check whether feature is supported or not. Provide the implementation in case of both. (**Modernizer.element** returns true if element is supported)
  + Add class=”no-js” in html tag
  + .no-cssgradients //specify css for not supported features
  + . cssgradients //specify css for supported features
  + In older browsers, even if the site looks different it should still be functional ex :target selector is not supported in older browsers & not +nt in Modernizer so we create script
  + Write branching logic in css using modernizer or script.

# Other Properties

* **input.data.required { background-color :rgba(255,0,0,.04);}** // applies css to required fields
* **input.data.focus { background-color :rgba(255,255,255,.8);}** //applies css to field with focus
* **z-index:n //sets the visibility of the overlapping boxes. 1=visible, 2=show that, -1=hidden**
* **resize:both|horizontal|vertical|none** // sets resize of the box or selector
  + **overflow:auto|visible**
  + Provide **max-width, max height** optionally. Can also provide min-width, min-height
  + **Cursor:move**;//