

Full stack Development Lab

Week 2:

Aim: Write a Program on CSS3 Colors, Fonts, Text Align, Cursors

Description:

2.1 CSS3 Colors

CSS3 has Supported additional color properties as follows –

- RGBA colors
- HSL colors
- HSLA colors
- Opacity

RGBA stands for **Red Green Blue Alpha**. It is an extension of CSS2, Alpha specifies the opacity of a color and parameter number is a numerical between 0.0 to 1.0. A Sample syntax of RGBA as shown below –

```
#d1 {background-color: rgba(255, 0, 0, 0.5);}
#d2 {background-color: rgba(0, 255, 0, 0.5);}
#d3 {background-color: rgba(0, 0, 255, 0.5);}
```

HSL stands for **hue, saturation, lightness**. Here Hue is a degree on the color wheel, saturation and lightness are percentage values between 0 to 100%. A Sample syntax of HSL as shown below –

```
#g1 {background-color: hsl(120, 100%, 50%);}
#g2 {background-color: hsl(120, 100%, 75%);}
#g3 {background-color: hsl(120, 100%, 25%);}
```

HSLA stands for **hue, saturation, lightness and alpha**. Alpha value specifies the opacity as shown RGBA. A Sample syntax of HSLA as shown below –

```
#g1 {background-color: hsla(120, 100%, 50%, 0.3);}
#g2 {background-color: hsla(120, 100%, 75%, 0.3);}
#g3 {background-color: hsla(120, 100%, 25%, 0.3);}
```

opacity is a thinner paints need black added to increase opacity. A sample syntax of opacity is as shown below –

```
#g1 {background-color:rgb(255,0,0);opacity:0.6;}
#g2 {background-color:rgb(0,255,0);opacity:0.6;}
#g3 {background-color:rgb(0,0,255);opacity:0.6;}
```

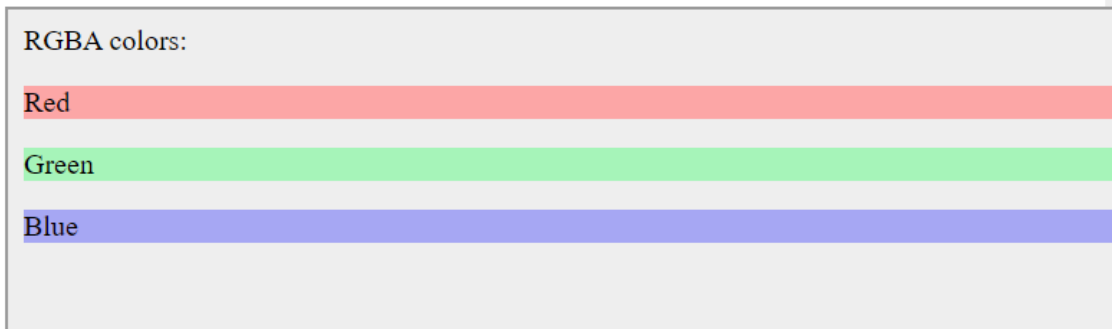
Programs:

The following example shows rgba color property.

```
<html>
<head>
  <style>
    #p1 { background-color:rgba(255,0,0,0.3); }
    #p2 { background-color:rgba(0,255,0,0.3); }
    #p3 { background-color:rgba(0,0,255,0.3); }
  </style>
</head>

<body>
  <p>RGBA colors:</p>
  <p id = "p1">Red</p>
  <p id = "p2">Green</p>
  <p id = "p3">Blue</p>
</body>
</html>
```

Output:



The following example shows HSL color property.

```
<html>
<head>
  <style>
    #g1 { background-color:hsl(120, 100%, 50%); }
    #g2 { background-color:hsl(120,100%,75%); }
    #g3 { background-color:hsl(120,100%,25%); }
  </style>
</head>

<body>
  <p>HSL colors:</p>
  <p id = "g1">Green</p>
  <p id = "g2">Normal Green</p>
```

```
<p id = "g3">Dark Green</p>
</body>
</html>
```

Output:

HSL colors:

Green

Normal Green

Dark Green

The following example shows HSLA color property.

```
<html>
<head>
  <style>
    #d1 { background-color:hsla(120,100%,50%,0.3);}
    #d2 { background-color:hsla(120,100%,75%,0.3);}
    #d3 { background-color:hsla(120,100%,25%,0.3);}
  </style>
</head>

<body>
  <p>HSLA colors:</p>
  <p id = "d1">Less opacity green</p>
  <p id = "d2">Green</p>
  <p id = "d3">Green</p>
</body>
</html>
```

Output:

HSLA colors:

Less opacity green

Green

Green

The following example shows Opacity property.

```
<html>
<head>
  <style>
    #m1 { background-color:rgb(255,0,0);opacity:0.6;}
    #m2 { background-color:rgb(0,255,0);opacity:0.6;}
    #m3 { background-color:rgb(0,0,255);opacity:0.6;}
  </style>
</head>

<body>
  <p>HSLA colors:</p>
  <p id = "m1">Red</p>
  <p id = "m2">Green</p>
  <p id = "m3">Blue</p>
</body>
</html>
```

Output:

Red

Green

Blue

2.2 CSS3 Fonts

Web fonts are used to allow the use of fonts in CSS3, which are not installed on the local system. After choosing the not installed font, just include the font file on the web server and it will be automatically downloaded when needed.

Syntax:

```
@font-face {  
    font details  
}
```

Types of Font Formats: There are many types of font formats which are listed below:

- **TrueType Fonts (TTF):** Whether one uses Microsoft Operating Systems or Mac Operating System, the most commonly used font format is TrueType. This is a font standard developed by Microsoft and Apple in the late 1980's. TrueType fonts describe each glyph as a set of paths. A path means a closed curve specified using points and particular mathematics. For Example, a lower case 'i' has two paths, one for the dot and one for the rest of it. Pixels are used to fill the path to create the final letter form. The advantage of TrueType font format is that the glyphs are scalable, meaning that it can be set to any scale and at any point size.
- **OpenType Fonts (OTF):** OpenType is a font format that was built on TrueType. The OpenType font format was developed by Microsoft and Adobe, but is a registered trademark of Microsoft. Layout features within OpenType fonts are organized by scripts and languages, which allows a single font to support multiple writing systems, within the same script. The OpenType font format addresses the goals of better protection for font data, broader multi-platform support to name a few.
- **The Web Open Font Format (WOFF):** WOFF is a font format is used in web pages developed in 2009 by Mozilla in concert with Type Supply, LettError, and other organizations. WOFF is basically an OpenType or TrueType with compression and additional metadata. The goal of WOFF to support font distribution from a server to a client over a network with bandwidth constraints. There are two versions of WOFF, which are WOFF and WOFF2, they mostly differ in regard to the compression algorithm used. They are described by the 'woff' and 'woff2' format descriptor respectively.
- **SVG Fonts/Shapes:** SVG stands for Scalable Vector Graphics. When SVG was first specified most of the web browsers did not fully support web fonts. But in order to render text correctly, a font description technology had later been added to SVG to provide this ability. It provide the means of embedding glyph information into SVG when rendered.
- **Embedded OpenType Fonts (EOT):** The Embedded OpenType File Format was developed by Microsoft. EOT fonts are a compact form of OpenType fonts

to use as embedded fonts on web pages. It was designed with the purpose of enabling TrueType and OpenType fonts to be linked to web pages for download to render the web page with the font as required by the user.

Font Descriptors: Descriptors can be defined inside the @font-face rule. We shall now explain the different types of font descriptors.

- **font-family:** It is used to define the name of font. It is required for web fonts to function.
- **src:** It is used to define the URL from which we get the font. Like font-family the src is also required. Except these two fields the rest of the descriptors are optional.
- **font-stretch:** It is used to find, how font should be stretched. Normal is the value taken by default. The different font stretch values are normal, condensed, semi-condensed, ultra-condensed, extra-condensed, expanded, semi-expanded, extra-expanded and lastly ultra-expanded.
- **font-style:** It is used to define the font different styles. The different styles that can be set are oblique and the default style is normal.
- **font-weight:** The weight of the font can be defined using this descriptor. Default value of font-weight is “normal”. The different values for the boldness are normal, bold, and we can also give numerical values ranging from 100-900 in increments of 100.

Example:

```
<!DOCTYPE html>
<html>

<head>
  <style>
    @font-face{
      font-family: monospace;
      src:url(sansation_light.woff);
    }

    /* Sets font family to monospace */
    * {
      font-family: monospace;
    }
  </style>
</head>

<body>
  <div>
```

```

        <h1>GRIET college</h1>

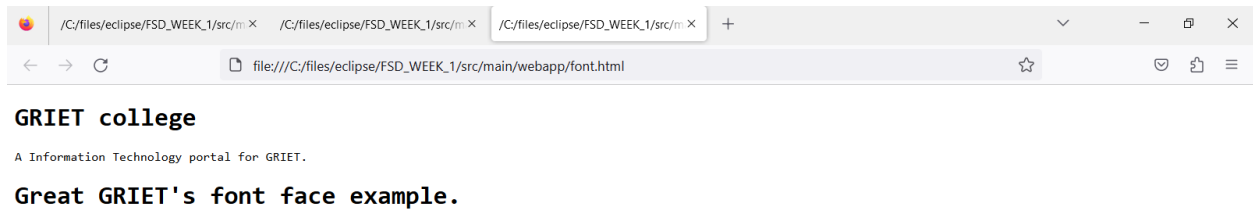
        <p>A Information Technology portal for GRIET.</p>
    </div>

    <h1>Great GRIET's font face example.</h1>
</body>

</html>

```

Output:



```

<!DOCTYPE html>
<html>

<head>
    <style>
        @font-face{

            /* Set font family to monospace */
            font-family:monospace;
            src:url(sansation_light.woff);
        }

        * {
            font-family:monospace;

```

```

        /** font style to italic */
        font-style:italic;
        font-weight:bold;
    }
</style>
</head>

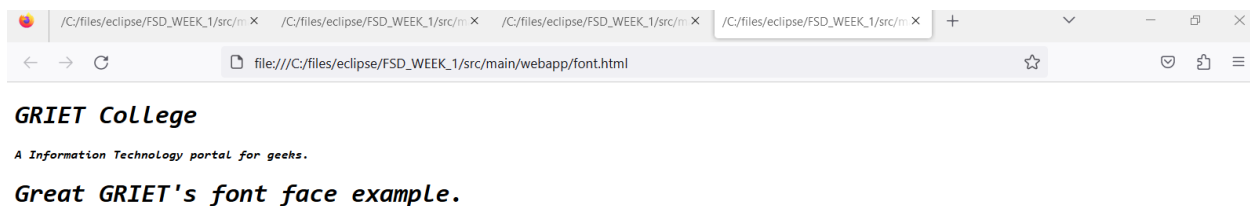
<body>
    <div>
        <h1>GRIET College</h1>
        <p>A Information Technology portal for geeks.</p>
    </div>

    <h1>Great GRIET's font face example.</h1>
</body>

</html>

```

Output:



2.3 CSS3 text align

CSS3 contained several extra features, which is added later on.

- text-overflow
- word-wrap
- word-break

There are following most commonly used property in CSS3 –

Sr.No.	Value & Description
1	text-align-last Used to align the last line of the text
2	text-emphasis Used to emphasis text and color
3	text-overflow used to determines how overflowed content that is not displayed is signaled to users
4	word-break Used to break the line based on word
5	word-wrap Used to break the line and wrap onto next line

Text-overflow

The text-overflow property determines how overflowed content that is not displayed is signaled to users. the sample example of text overflow is shown as follows –

```
<html>
<head>
  <style>
    p.text1 {
      white-space: nowrap;
      width: 500px;
      border: 1px solid #000000;
      overflow: hidden;
      text-overflow: clip;
    }
    p.text2 {
      white-space: nowrap;
      width: 500px;
      border: 1px solid #000000;
      overflow: hidden;
      text-overflow: ellipsis;
    }
  </style>
</head>
```

```
<body>

  <b>Original Text:</b>

  <p>
    SR data solution originated from the idea that there exists a class of
    readers who respond better to online content and prefer to learn new
    skills at their own pace from the comforts of their drawing rooms.
  </p>

  <b>Text overflow:clip:</b>

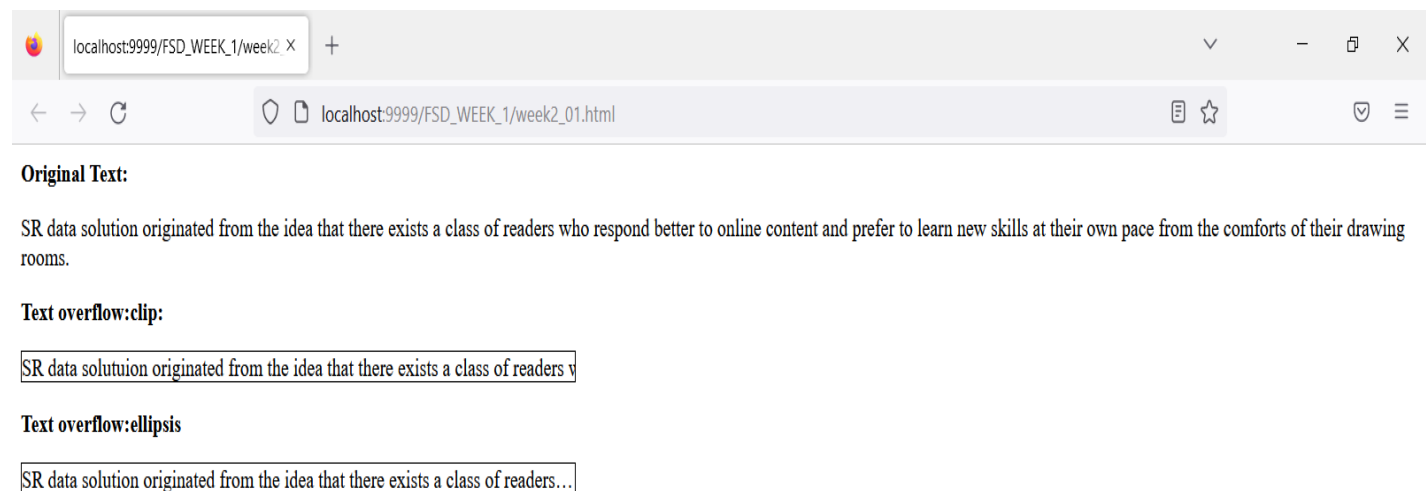
  <p class = "text1">
    SR data solutuion originated from the idea that there exists
    a class of readers who respond better to online content and prefer
    to learn new skills at their own pace from the comforts of their
    drawing rooms.
  </p>

  <b>Text overflow:ellipsis</b>

  <p class = "text2">
    SR data solution originated from the idea that there exists
    a class of readers who respond better to online content and
    prefer to learn new skills at their own pace from the comforts
    of their drawing rooms.
  </p>

</body>
</html>
```

Output:



CSS3 Word Breaking

Used to break the line, following code shows the sample code of word breaking.

```
<html>
<head>
  <style>
    p.text1 {
      width: 140px;
      border: 1px solid #000000;
      word-break: keep-all;
    }
    p.text2 {
      width: 140px;
      border: 1px solid #000000;
      word-break: break-all;
    }
  </style>
</head>

<body>

  <b>line break at hyphens:</b>
  <p class = "text1">
    SR data solutions originated from the idea that there exists a
    class of readers who respond better to online content and prefer
    to learn new skills at their own pace from the comforts of
    their drawing rooms.
  </p>

  <b>line break at any character</b>

  <p class = "text2">
    SR data solutions originated from the idea that there exists a
    class of readers who respond better to online content and
    prefer to learn new skills at their own pace from the comforts
    of their drawing rooms.
  </p>

</body>
</html>
```

Output:



line break at hyphens:

SR data solutions originated from the idea that there exists a class of readers who respond better to online content and prefer to learn new skills at their own pace from the comforts of their drawing rooms.

line break at any character

SR data solutions originated from the idea that there exists a class of readers who respond better to online content and prefer to learn new skills at their own pace from the comforts of their drawing rooms.

CSS word wrapping

Word wrapping is used to break the line and wrap onto next line. the following code will have sample syntax –

```
p {  
  word-wrap: break-word;  
}
```

Practice questions:

1. Alignment of text and inline element inside the block-level element
2. Center alignment of block element using margin property
3. Aligning element horizontally using the float property
4. Aligning element horizontally and vertically using the position property
5. Prevent parent collapsing with the clear property
6. Creating a Simple horizontal menu

2.4 CSS3 Cursors

The `cursor` CSS property specifies the type of cursor to be displayed when the pointer is placed over an element.

The following table summarizes the usages context and the version history of this property.

Syntax


The syntax of the property is given with:















cursor: [url(*address of cursor file*),]^{0 or more times} | [auto](#) | [default](#) | [none](#) | [context-menu](#) | [help](#) | [pointer](#) | [progress](#) | [wait](#) | [cell](#) | [crosshair](#) | [text](#) | [vertical-text](#) | [alias](#) | [copy](#) | [move](#) | [no-drop](#) | [not-allowed](#) | [grab](#) | [grabbing](#) | [e-resize](#) | [n-resize](#) | [ne-resize](#) | [nw-resize](#) | [s-resize](#) | [se-resize](#) | [sw-resize](#) | [w-resize](#) | [ew-resize](#) | [ns-resize](#) | [nesw-resize](#) | [nwse-resize](#) | [col-resize](#) | [row-resize](#) | [all-scroll](#) | [zoom-in](#) | [zoom-out](#) | [initial](#) | [inherit](#)
















The cursor property handles a comma-separated list of user-defined cursors values followed by the "generic cursor". If the first cursor is specified incorrectly or can't be found, the next cursor in the comma-separated list will be used, and so on until a usable cursor is found.





Property Values

The following table describes the values of this property.

Value	Look	Description
General		
auto		The browser determines the cursor to display based on the current context. E.g. equivalent to text when hovering text. This is default.
default		The default cursor for the platform, without regard for the context, typically an arrow.
none		No cursor is rendered.
initial		Sets this property to its default value.
inherit		If specified, the associated element takes the computed value of its parent element <code>cursor</code> property.
Links & status Cursors		

context-menu		Indicates that a context-menu is available.
help		Indicates that help is available.
pointer		A cursor that indicates a link, typically a hand with an extended index finger.
progress		A progress indicator. The program is performing some processing but the user can still interact with the interface (unlike for wait).
wait		Indicates that the program is busy and the user should wait.
Selection Cursors		
cell		Indicates that a cell (or set of cells) can be selected.
crosshair		A simple crosshair. Often used to indicate selection in a bitmap.
text		Indicates text that can be selected, typically an I-beam.
vertical-text		Indicates that vertical text can be selected, a sideways I-beam.
Drag and Drop Cursors		
alias		Indicates that an alias or shortcut is to be created.
copy		Indicates that something can be copied.
move		Indicates that the hovered object can be moved.
no-drop		Indicates that the dragged item cannot be dropped at the current location.
not-allowed		Indicates that something cannot be done.

Resizing & scrolling Cursors		
all-scroll		Indicates that something can be scrolled in any direction (panned).
col-resize		Indicates that the column can be resized horizontally.
row-resize		Indicates that the row can be resized vertically.
n-resize		Indicates that some edge is to be moved up (north).
e-resize		Indicates that some edge is to be moved right (east).
s-resize		Indicates that some edge is to be moved down (south).
w-resize		Indicates that some edge is to be moved left (west).
ne-resize		Indicates that some edge is to be moved up and right (north/east).
nw-resize		Indicates that some edge is to be moved up and left (north/west).
se-resize		Indicates that some edge is to be moved down and right (south/east).
sw-resize		Indicates that some edge is to be moved down and left (south/west).
ew-resize		Indicates a bidirectional resize cursor.
ns-resize		
nesw-resize		
nwse-resize		

Zoom and Grab Cursors		
zoom-in		Indicates that something can be zoomed in.
zoom-out		Indicates that something can be zoomed out.
grab		Indicates that something can be grabbed (dragged to be moved).
grabbing		Indicates that something is grabbed.

Example:

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<meta charset="utf-8">
```

```
<title>Example of CSS cursor property</title>
```

```
<style>
```

```
  a {
```

```
    cursor: url("/examples/images/custom.gif"), url("/examples/images/custom.cur"), default;
```

```
  }
```

```
  .cursor-demo span{
```

```
    min-width: 100px;
```

```
    padding: 5px 10px;
```

```
    margin-bottom: 5px;
```

```
    display: inline-block;
```

```
    border: 1px solid grey;
```

```
    border-radius: 3px;
```

```
  }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
  <h1>Custom Cursor</h1>
```

```
  <p>Place your mouse pointer <a href="#">over me</a> to reveal the custom cursor.</p>
```

```
  <hr>
```

```
  <h2>More Cursors</h2>
```

```
  <p>Place your mouse pointer over the box to reveal the cursor.</p>
```

```
  <div class="cursor-demo">
```

```
    <span style="cursor: auto;">auto</span>
```

```
    <span style="cursor: default;">default</span>
```

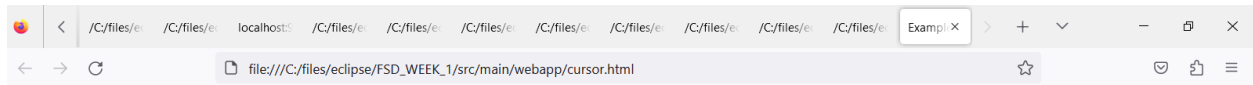
```
    <span style="cursor: none;">none</span>
```



```
<span style="cursor: context-menu;">context-menu</span>
<span style="cursor: help;">help</span>
<span style="cursor: pointer;">pointer</span>
<span style="cursor: progress;">progress</span>
<span style="cursor: wait;">wait</span>
<span style="cursor: cell;">cell</span>
<span style="cursor: crosshair;">crosshair</span>
<span style="cursor: text;">text</span>
<span style="cursor: vertical-text;">vertical-text</span>
<span style="cursor: alias;">alias</span>
<span style="cursor: copy;">copy</span>
<span style="cursor: move;">move</span>
<span style="cursor: no-drop;">no-drop</span>
<span style="cursor: not-allowed;">not-allowed</span>
<span style="cursor: grab;">grab</span>
<span style="cursor: grabbing;">grabbing</span>
<span style="cursor: e-resize">e-resize</span>
<span style="cursor: n-resize;">n-resize</span>
<span style="cursor: ne-resize;">ne-resize</span>
<span style="cursor: nw-resize;">nw-resize</span>
<span style="cursor: s-resize;">s-resize</span>
<span style="cursor: se-resize;">se-resize</span>
<span style="cursor: sw-resize;">sw-resize</span>
<span style="cursor: w-resize;">w-resize</span>
<span style="cursor: ew-resize;">ew-resize</span>
<span style="cursor: ns-resize;">ns-resize</span>
<span style="cursor: nesw-resize;">nesw-resize</span>
<span style="cursor: nwse-resize;">nwse-resize</span>
<span style="cursor: col-resize;">col-resize</span>
<span style="cursor: row-resize;">row-resize</span>
<span style="cursor: all-scroll;">all-scroll</span>
<span style="cursor: zoom-in;">zoom-in</span>
<span style="cursor: zoom-out;">zoom-out</span>
</div>
</body>

</html>
```

Output:



Custom Cursor

Place your mouse pointer [over me](#) to reveal the custom cursor.

More Cursors

Place your mouse pointer over the box to reveal the cursor.

auto	default	none	context-menu	help	pointer	progress	wait	cell	crosshair
text	vertical-text	alias	copy	move	no-drop	not-allowed	grab	grabbing	e-resize
n-resize	ne-resize	nw-resize	s-resize	se-resize	sw-resize	w-resize	ew-resize	ns-resize	nesw-resize
nwse-resize	col-resize	row-resize	all-scroll	zoom-in	zoom-out				

Result: Thus, in the above programs successfully executed without errors
Using CSS3 with colors, fonts, text align and cursor moments in
eclipse editor.