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CSS

by Prashant Chaudhari

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Introduction

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Introduction

- Cascading Style Sheets
- Presentational Technology
- CSS introduced in 1996 by the W3C
- Separation of presentation and content
- Simpler HTML markup and better maintainability

Who can learn?

- Anyone
- Students
- Professionals

What is needed?

- Time, patience and dedication
- Completing tutorial

Use of CSS

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Use of CSS

- Same style rules on multiple elements
- Control presentation of multiple pages with single stylesheet
- Can style dynamic states of elements (hover, focus, etc.)
- Changing position of elements
- Transform elements (scale, rotate, etc.)
- Animation and transition effects

Advantages

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Advantages

- Pages load faster
- Superior styles to HTML
- Save lots of time
- Easy maintenance
- Multiple device compatibility

Ways of Styling

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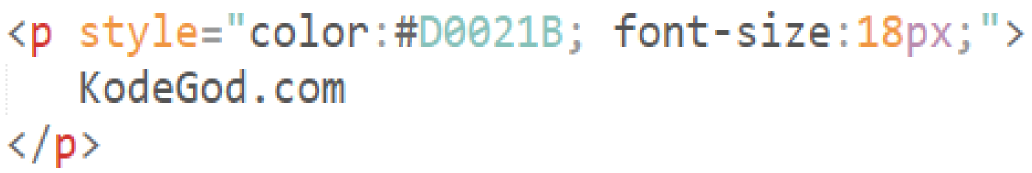
Ways of Styling

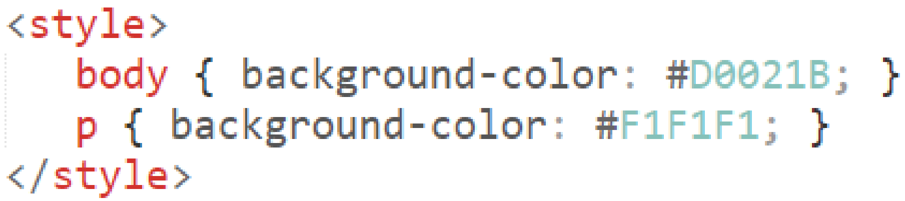
- **Three ways to include css in HTML**
- **Inline Styles**
  - Using **style** attribute in HTML start tag
  - Property and value pairs
  - Each pair separated by ;



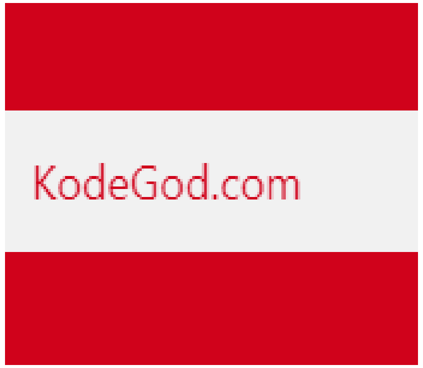
```
<p style="color:#D0021B; font-size:18px;">
   KodeGod.com
</p>
```

Ways of Styling

- **Embedded Style Sheets**
  - Only effect in same document
  - Defined in **<head>** tag using **<style>** element
  - Can define any number of **<style>** elements in **<head>**



```
<style>
    body { background-color: #D0021B; }
    p { background-color: #F1F1F1; }
</style>
```



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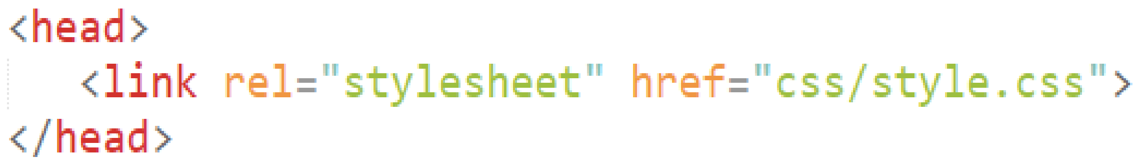
Ways of Styling

- **External Style Sheets**
  - Applied to many pages
  - Multiple style rules in separate document
  - Two ways to attach **Linking, Importing**
- **Linking**
  - External style sheet file using **<link>** tag in **<head>**



```
<head>
   <link rel="stylesheet" href="css/style.css">
</head>
```

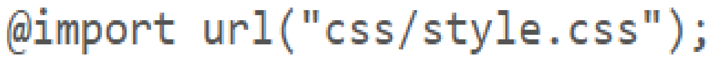
Ways of Styling

- **Importing**

  1. Using **@import** rule inside **<style>** tag inside

     <head> tag

  2. Using **@import** in another style sheets



```
@import url("css/style.css");
```

Syntax

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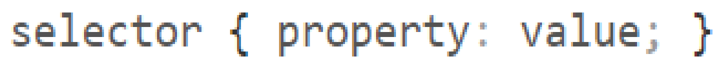
Syntax

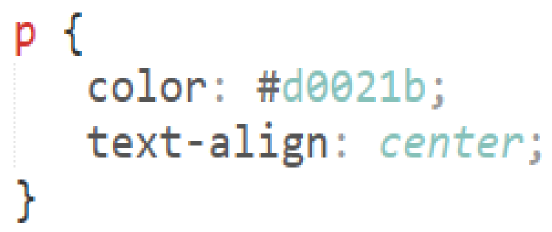
- **Two parts**
  - Selector and one or more declarations

- Use **/* -comment - */** to write comments

  in css file



```
selector { property: value; }
```



```
p {
    color: #d0021b;
    text-align: center;
}
```

Selectors

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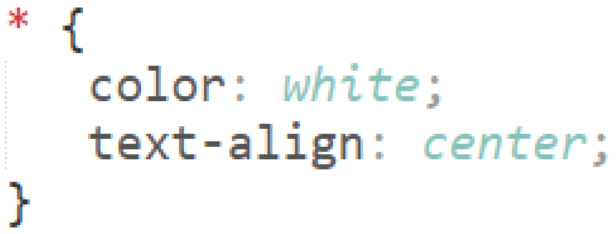
Selectors

- Used to select elements to style
- **Types of selectors**
    - **Universal Selector**

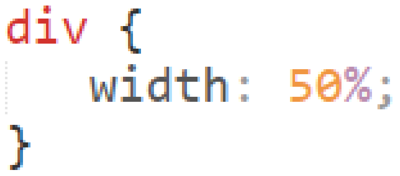
      Uses * to match every element on page

    - **Element Type Selector**

      Matches every instance of element in document



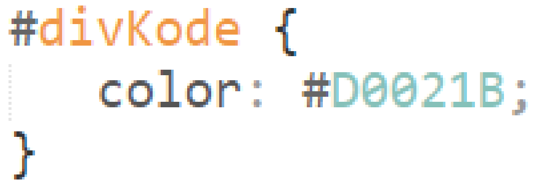
```css
* {
    color: white;
    text-align: center;
}
```



```css
div {
    width: 50%;
}
```

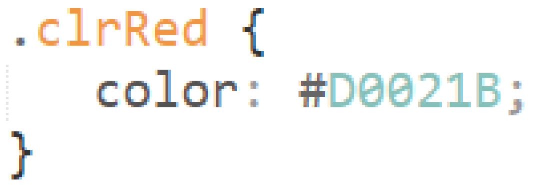
Selectors

- **ID Selector**
  - For single or unique element
  - Defined by **(#)** symbol followed by id value



```
#divKode {
    color: #D0021B;
}
```

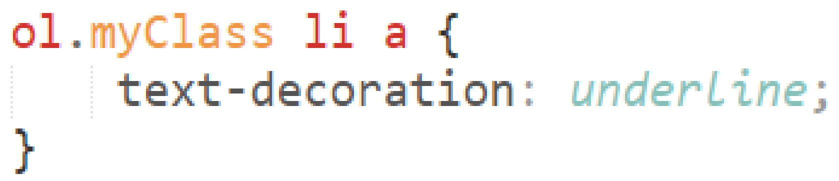
- **Class Selector**
  - Matches every instance of element that has a similar **class** attribute value
  - Defined by **(.)** symbol followed by class value



```
.clrRed {
    color: #D0021B;
}
```

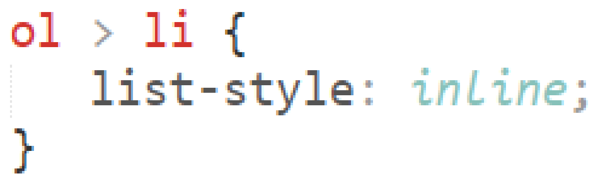
Selectors

- **Descendant Selector**
  - To select element that is descendant of other element



```css
ol.myClass li a {
    text-decoration: underline;
}
```

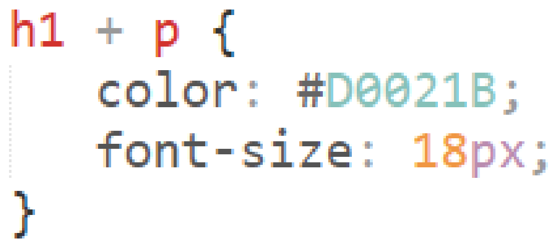
- **Child Selector**
  - Select direct children of some element
  - Defined by **(>)** symbol



```css
ol > li {
   list-style: inline;
}
```

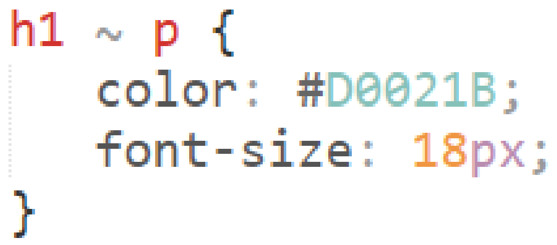
Selectors

- **Adjacent Sibling Selector**
  - To select sibling elements
  - **Syntax** E1 + E2



```css
h1 + p {
    color: #D0021B;
    font-size: 18px;
}
```

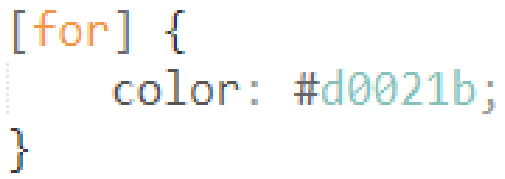
- **General Sibling Selector**
  - Similar to adjacent, but less strict
  - Separated by **(~)** symbol
  - **Syntax** E1 ~ E2



```css
h1 ~ p {
    color: #D0021B;
    font-size: 18px;
}
```

Selectors

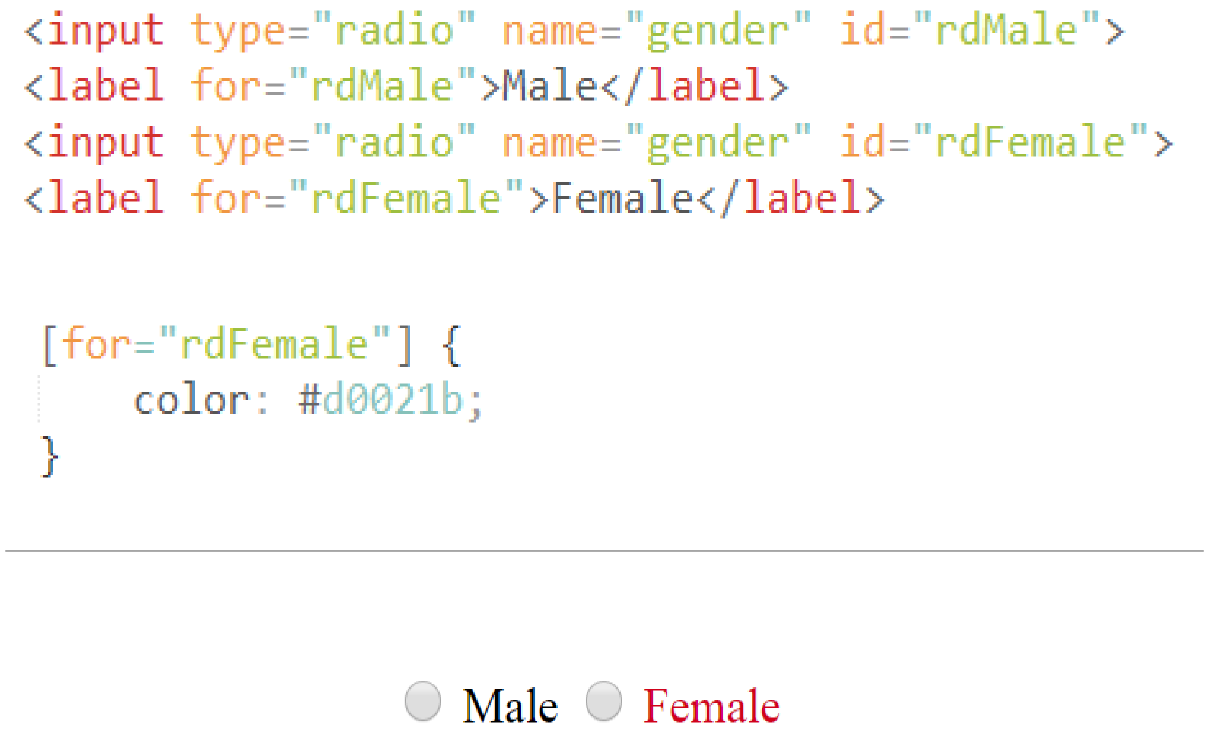
- **Attribute Selector**
  - Selects element with specific attribute or attribute with a specified value
  - Use **square brackets** to create attribute selectors
  - **Common types**
    - **[attribute]**
      - Selects all elements that matches given attribute



```
[for] {
    color: #d0021b;
}
```

Selectors

- **Attribute Selector**
  - **[attribute="value"]**
    - Selects all elements that matches given attribute with exactly same value



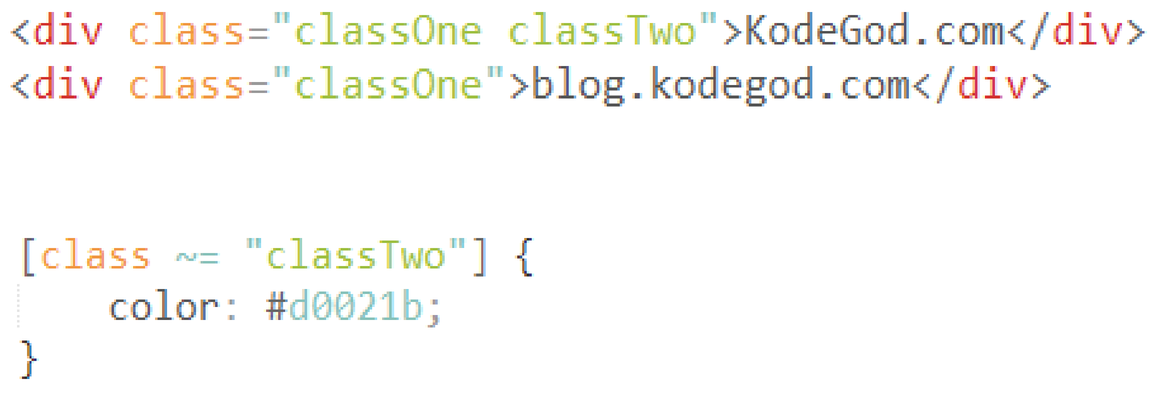
```
<input type="radio" name="gender" id="rdMale">
<label for="rdMale">Male</label>
<input type="radio" name="gender" id="rdFemale">
<label for="rdFemale">Female</label>
```

```
[for="rdFemale"] {
    color: #d0021b;
}
```

○ Male ○ Female

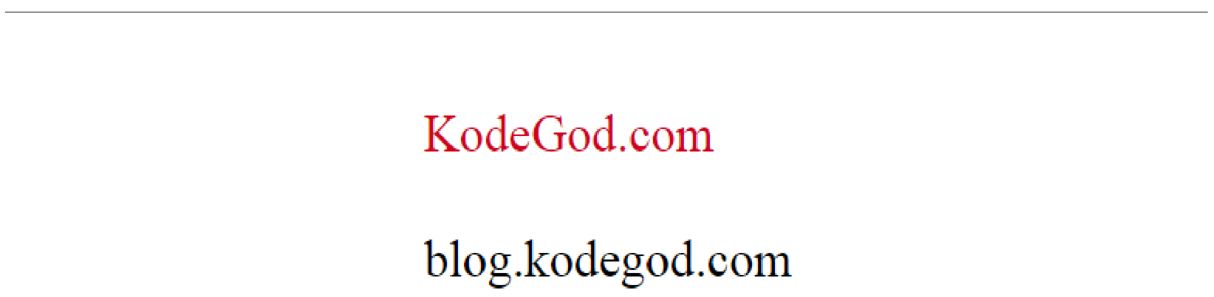
Selectors

- **Attribute Selector**
    - **[attribute ~="value"]**
        - Selects all elements whose attribute value is list of space separated values one of which is exactly same as specified value



```
<div class="classOne classTwo">KodeGod.com</div>
<div class="classOne">blog.kodegod.com</div>


[class ~= "classTwo"] {
    color: #d0021b;
}
```



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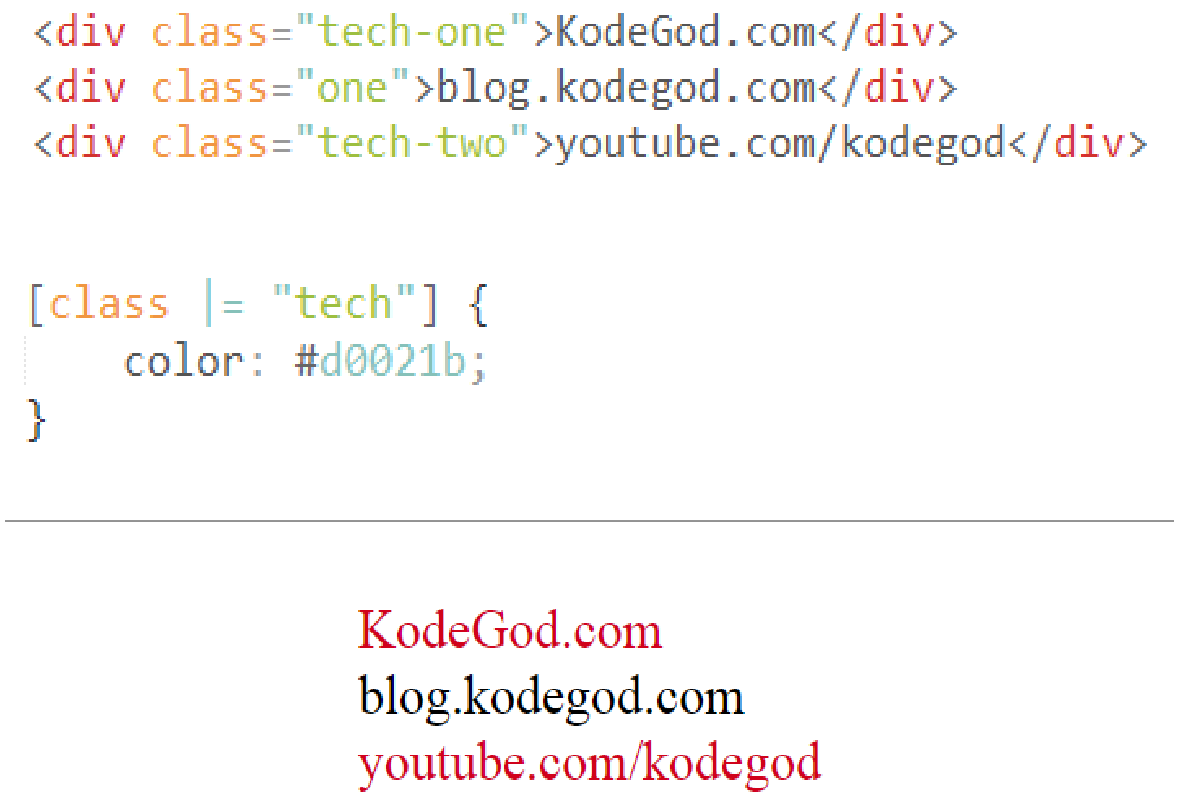
blog.kodegod.com

Selectors

- **Attribute Selector**
  - **[attribute |="value"]**
    - Selects all elements whose attribute has hyphen-separated list of values beginning with specified value



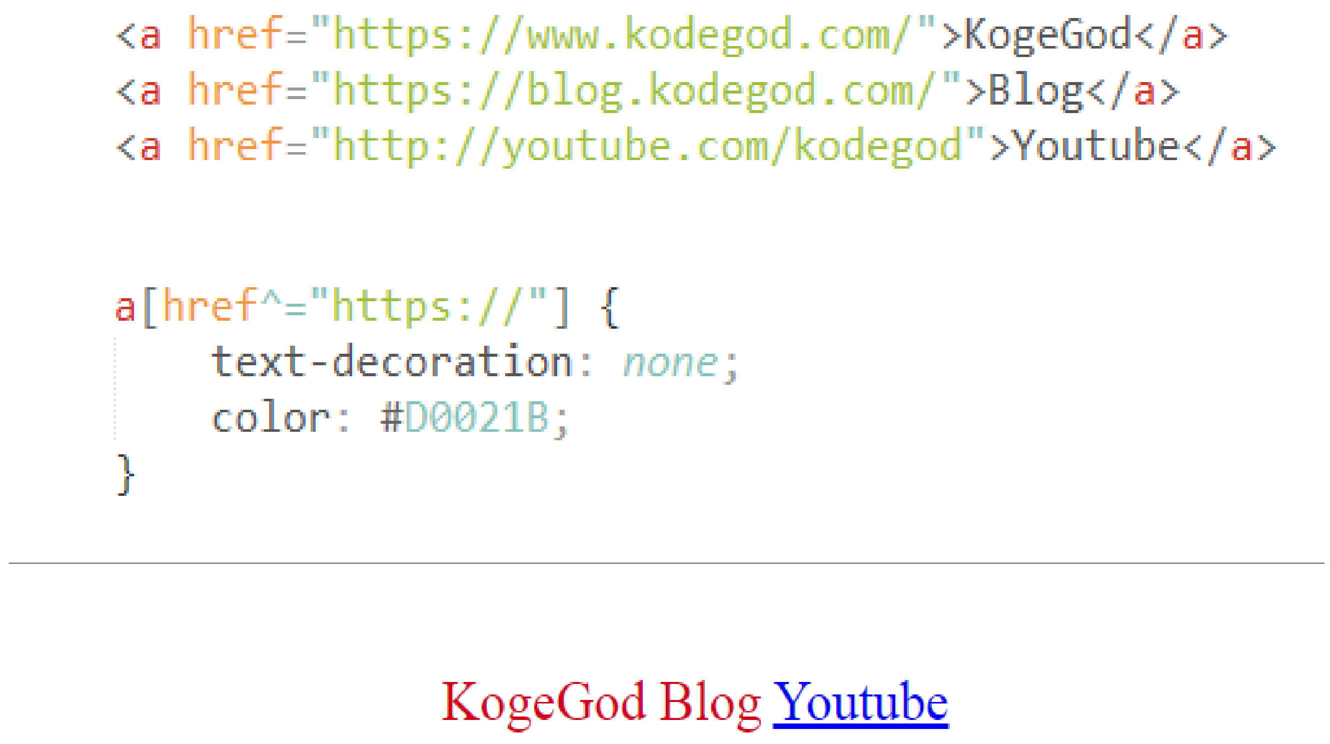
```html
<div class="tech-one">KodeGod.com</div>
<div class="one">blog.kodegod.com</div>
<div class="tech-two">youtube.com/kodegod</div>
```

```css
[class |= "tech"] {
    color: #d0021b;
}
```

KodeGod.com
blog.kodegod.com
youtube.com/kodegod

Selectors

- **Attribute Selector**
  - **[attribute ^="value"]**
    - Selects all elements whose attribute value starts with a specified value



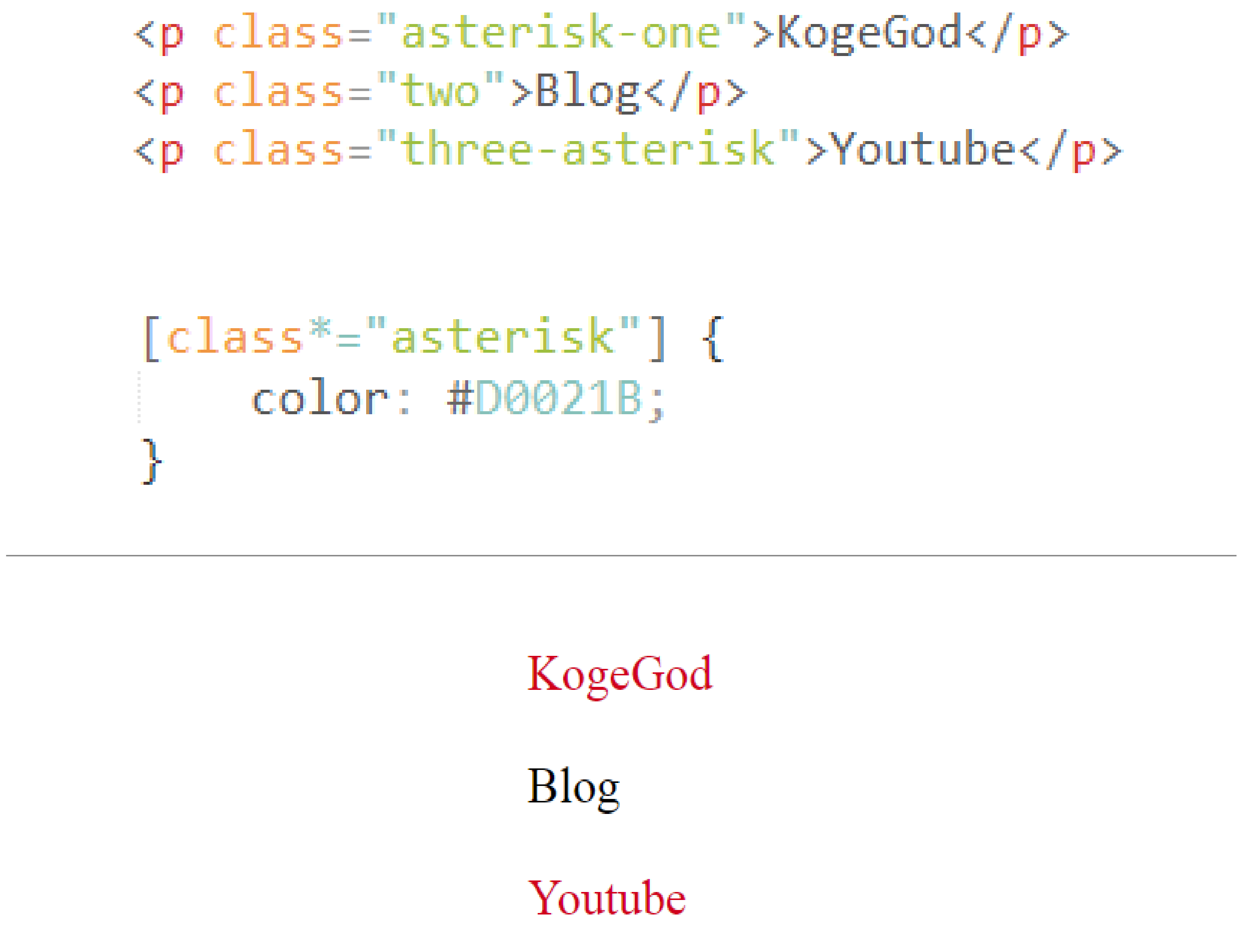
```
<a href="https://www.kodegod.com/">KogeGod</a>
<a href="https://blog.kodegod.com/">Blog</a>
<a href="http://youtube.com/kodegod">Youtube</a>


a[href^="https://"] {
    text-decoration: none;
    color: #D0021B;
}
```

KogeGod Blog Youtube

Selectors

- **Attribute Selector**
  - **[attribute *="value"]**
    - Selects all elements whose attribute value contains a specified value



```
<p class="asterisk-one">KogeGod</p>
<p class="two">Blog</p>
<p class="three-asterisk">Youtube</p>
```

```
[class*="asterisk"] {
    color: #D0021B;
}
```

KogeGod

Blog

Youtube

Margin

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Margin

- Clears an area around the sides of an element box
- No background-color, completely transparent
- Can set margins to top, right, bottom, left

- Can set margin to all sides using single property named **margin**
- E.g.

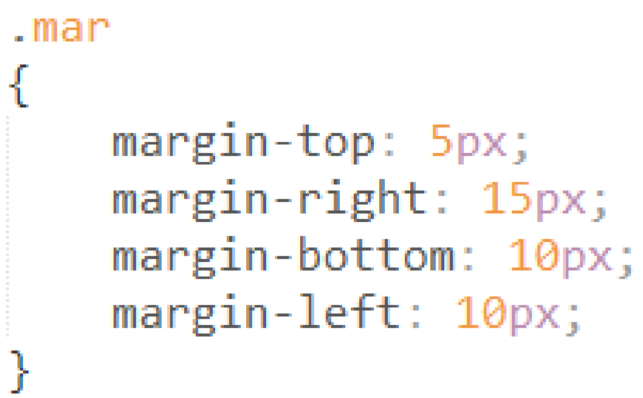
  margin : top right bottom left;

  OR

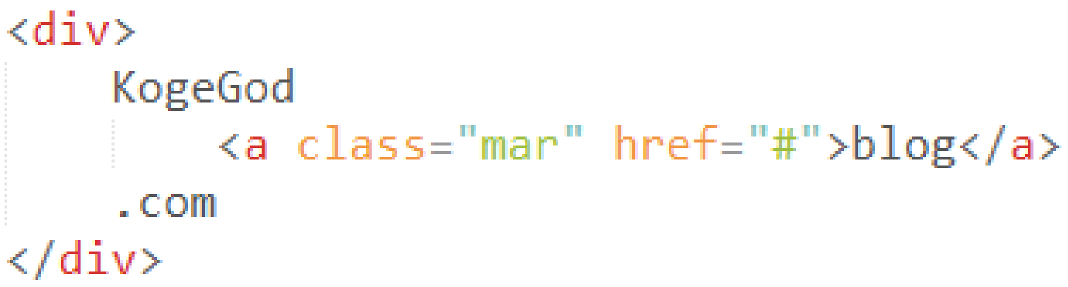
  margin : top|bottom right|left;

Margin

- E.g. (For each side)

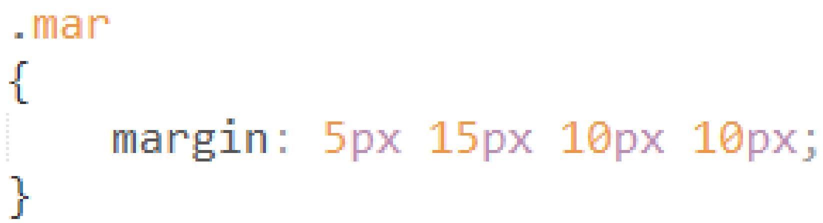


```
.mar
{
    margin-top: 5px;
    margin-right: 15px;
    margin-bottom: 10px;
    margin-left: 10px;
}
```

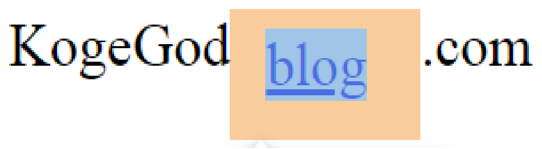


```
<div>
    KogeGod
        <a class="mar" href="#">blog</a>
    .com
</div>
```

- E.g. (All in one)



```
.mar
{
    margin: 5px 15px 10px 10px;
}
```



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Padding

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Padding

- Separates elements border from its content
- Affected by background-color
- Can set padding to each sides
- Can set padding to all sides using single property named **padding**

- E.g.

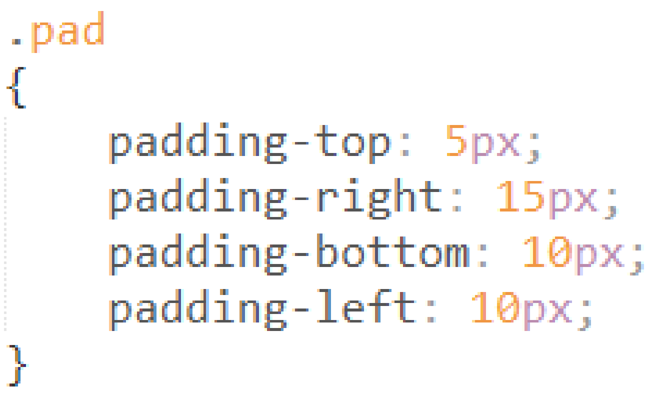
  padding : top right bottom left;

  OR

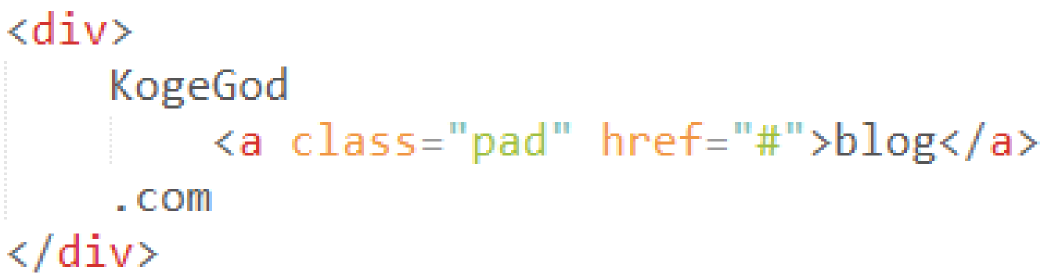
  padding : top|bottom right|left;

Padding

- E.g. (For each side)

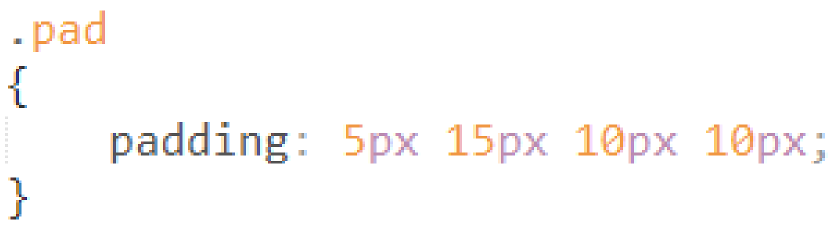


```
.pad
{
    padding-top: 5px;
    padding-right: 15px;
    padding-bottom: 10px;
    padding-left: 10px;
}
```

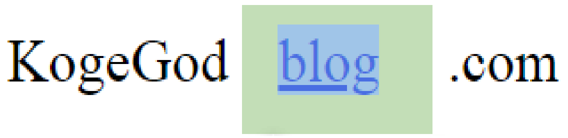


```
<div>
    KogeGod
        <a class="pad" href="#">blog</a>
    .com
</div>
```

- E.g. (All in one)



```
.pad
{
    padding: 5px 15px 10px 10px;
}
```



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Borders

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Borders

- Defines border area of box
- Goes around padding and content
- **Properties**
  - **border-width**

    sets width of border
  - **border-style**

    sets style of box's border
  - **border-color**

    sets border color

Border – border-styles

- **none**

  No border

- **hidden**

  Hidden border

- **dotted**

  Dotted border

- **dashed**

  Dashed border

- **solid**

  Solid border

- **double**

  Two solid borders

- **groove**

  3D grooved border, depends on border color value

- **ridge**

  3D ridge border, depends on border color value

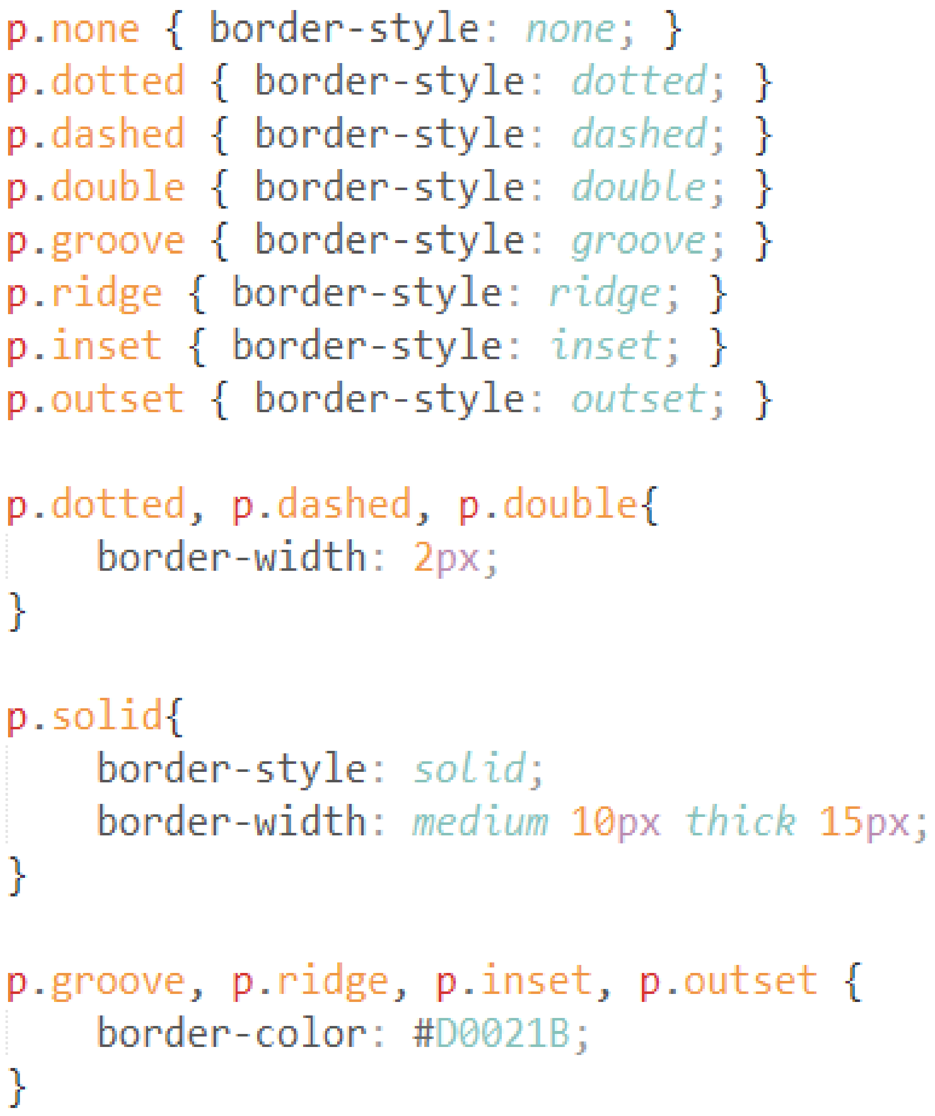
- **inset**

  3D inset border, depends on border color value

- **outset**

  3D outset border, depends on border color value

Border – Example

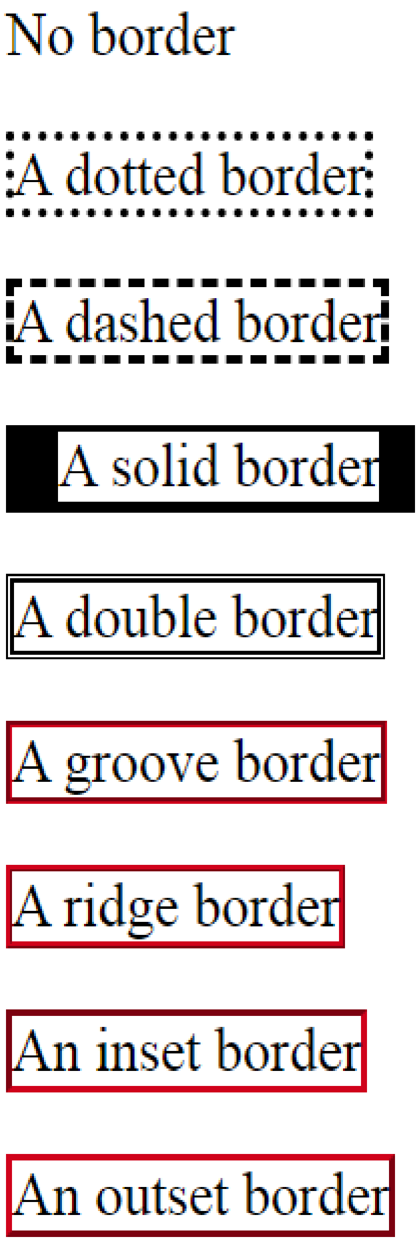


```
p.none { border-style: none; }
p.dotted { border-style: dotted; }
p.dashed { border-style: dashed; }
p.double { border-style: double; }
p.groove { border-style: groove; }
p.ridge { border-style: ridge; }
p.inset { border-style: inset; }
p.outset { border-style: outset; }

p.dotted, p.dashed, p.double{
    border-width: 2px;
}

p.solid{
    border-style: solid;
    border-width: medium 10px thick 15px;
}

p.groove, p.ridge, p.inset, p.outset {
    border-color: #D0021B;
}
```



No border

A dotted border

A dashed border

A solid border

A double border

A groove border

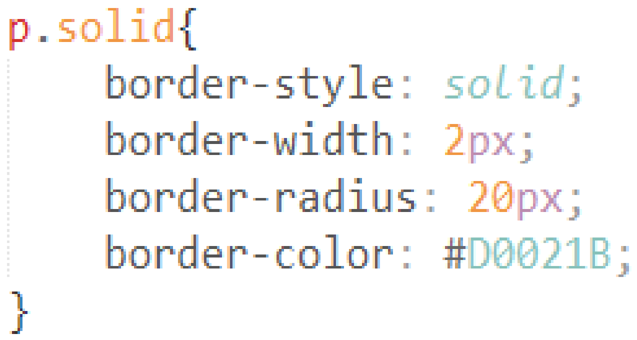
A ridge border

An inset border

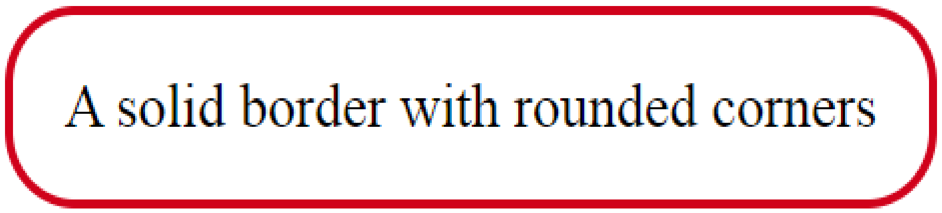
An outset border

Borders

- **Two new properties in CSS3**
  - **border-radius**
    - Making rounded corners



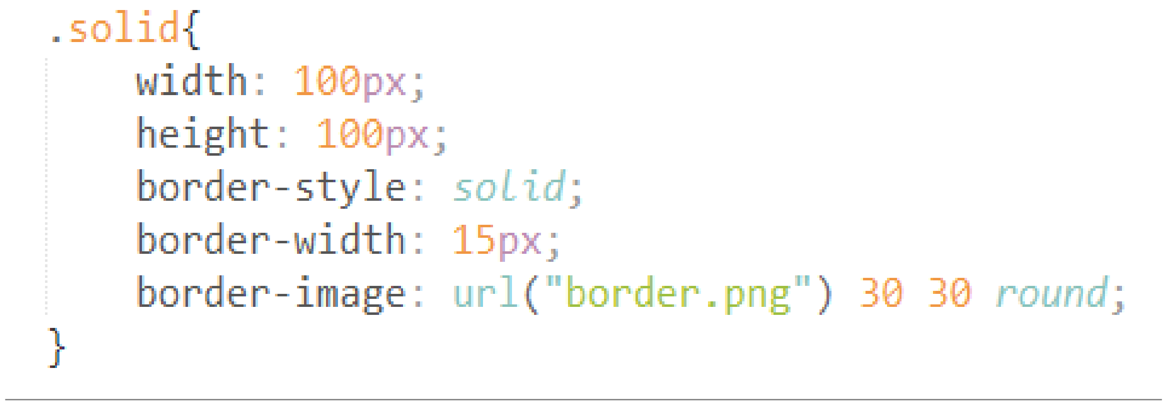
```
p.solid{
    border-style: solid;
    border-width: 2px;
    border-radius: 20px;
    border-color: #D0021B;
}
```



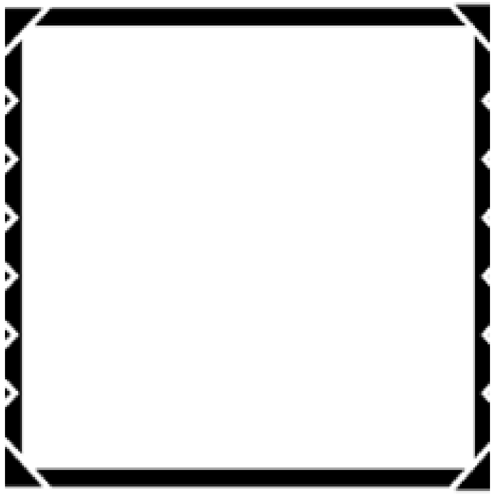
A solid border with rounded corners

Borders

- **border-image**
  - Allows to specify image to act like an element's border
  - Image may be sliced, repeated, scaled, stretched to fit the size of border image area



```
.solid{
    width: 100px;
    height: 100px;
    border-style: solid;
    border-width: 15px;
    border-image: url("border.png") 30 30 round;
}
```



Color

CSS3 by Prashant Chaudhari

Color

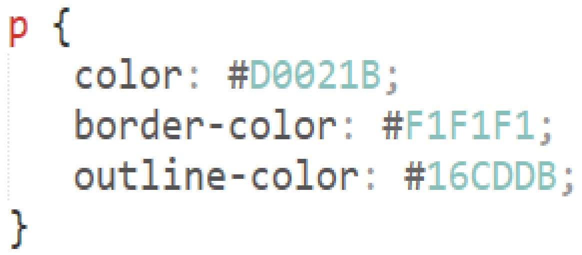
- Defines color of text content of element
- Color values can be in

  Hex value "**#D0021B**"

  RGB value "**rgb(208,2,27)**"

  Color name "**Red**"
- Color can be applied to **borders, outlines, boxes,**

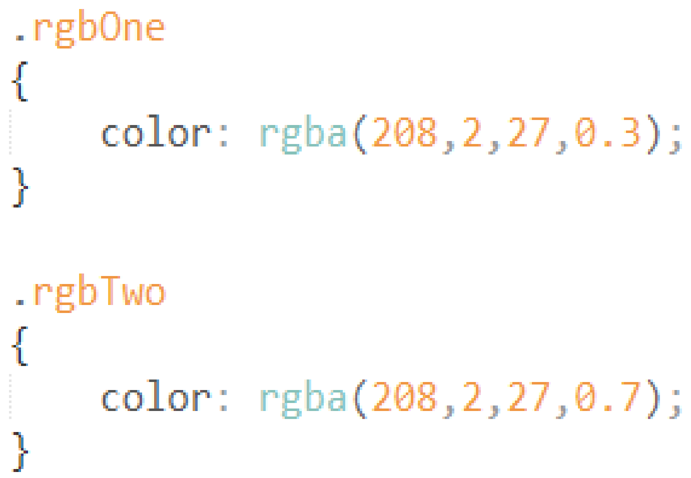
  text, etc.



```
p {
    color: #D0021B;
    border-color: #F1F1F1;
    outline-color: #16CDDB;
}
```

Color

- CSS3 introduced new functional notations to set color values
- **New notations**
  - **RGBA**
    - Red-Green-Blue-Alpha
    - RGB accepts value between 0-255 and alpha accepts value between 0.0-1.0

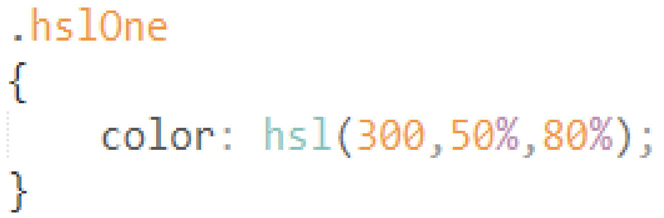


```
.rgbOne
{
    color: rgba(208,2,27,0.3);
}

.rgbTwo
{
    color: rgba(208,2,27,0.7);
}
```

Color

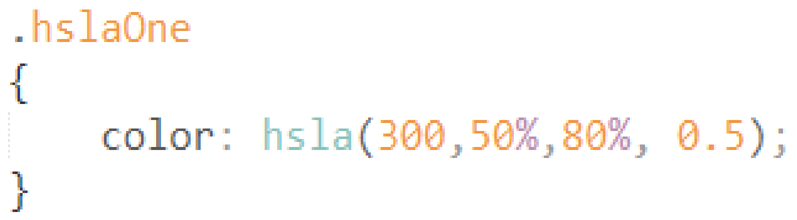
- **HSL**
  - Hue-Saturation-Lightness
  - Hue accepts value between 0-360
  - Saturation and Lightness accepts value in percentage
  - 100% saturation means full color, 0% means shade of gray
  - 100% lightness is white, 0% is black and 50% is normal



```
.hslOne
{
    color: hsl(300,50%,80%);
}
```

Color

- **HSLA**
  - Hue-Saturation-Lightness-Alpha
  - Alpha accept values from 0.0(transparent) to 1.0(fully opaque)



```
.hslaOne
{
    color: hsla(300,50%,80%, 0.5);
}
```

Background

CSS3 by Prashant Chaudhari

Background

- Defines background styles of elements
- **Style properties include**

  background-color,

  background-image,

  background-repeat,

  background-attachment,

  background-position

Background

- **background-color**

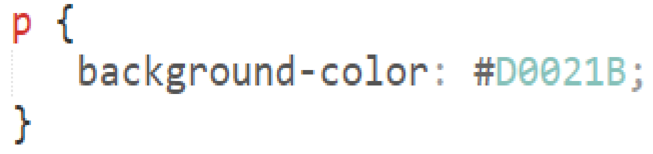
  Sets background color

- **background-image**

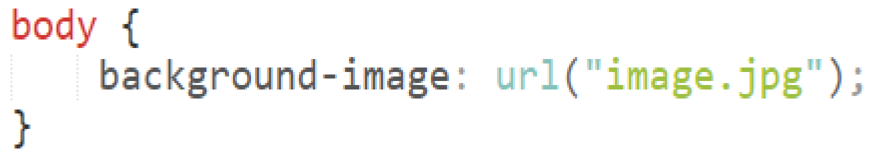
  Sets image as a background

- **background-repeat**
  - Controls how background image is tiled
  - Values can be repeat, round, repeat-x, repeat-y,

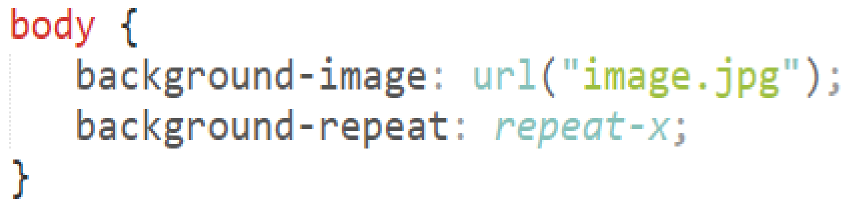
    no-repeat



```
p {
    background-color: #D0021B;
}
```



```
body {
    background-image: url("image.jpg");
}
```

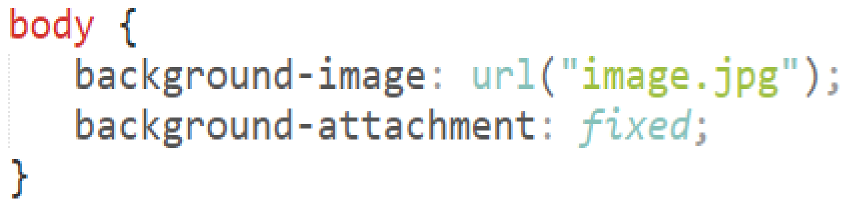


```
body {
    background-image: url("image.jpg");
    background-repeat: repeat-x;
}
```

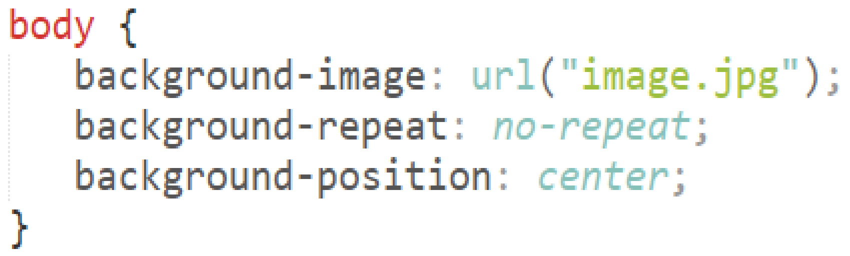
Background

- **background-attachment**
  - Determines whether background image is fixed

    or can be scrolled
  - Values can be fixed, scroll
- **background-position**
  - Controls position of background image
  - Default position (0,0)
  - Values can be bottom, center, left, right, top



```css
body {
    background-image: url("image.jpg");
    background-attachment: fixed;
}
```

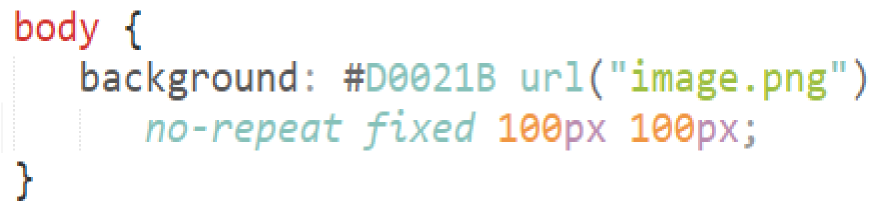


```css
body {
    background-image: url("image.jpg");
    background-repeat: no-repeat;
    background-position: center;
}
```

Background

- **Background shorthand property**
  - Can specify all properties in single rule
  - **background** is a shorthand used to set all

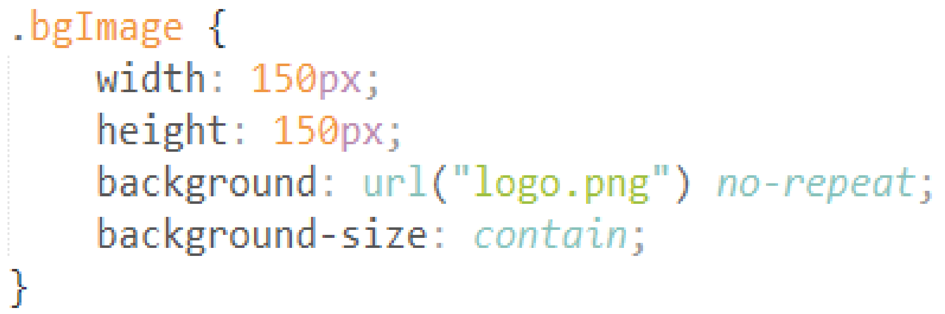
    properties in one



```
body {
    background: #D0021B url("image.png")
        no-repeat fixed 100px 100px;
}
```

Background – New in CSS3

- **background-size**
  - Specifies size of background image
  - Can be specified by pixels, percentage or keywords like auto, contain and cover



```
.bgImage {
    width: 150px;
    height: 150px;
    background: url("logo.png") no-repeat;
    background-size: contain;
}
```

kode
god
.com

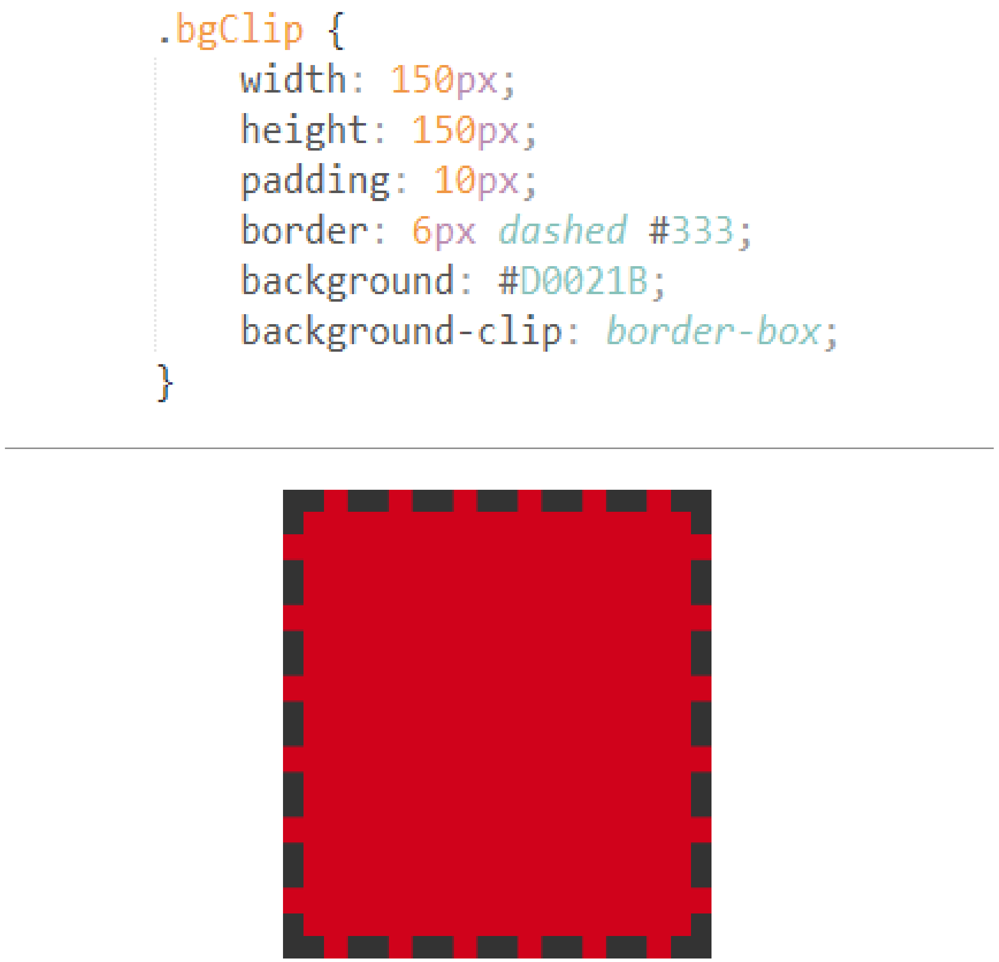
Background – New in CSS3

- **background-clip**
  - Specifies whether background

    extends into the border or not
  - **Takes three values**

    border-box, padding-box, content-box

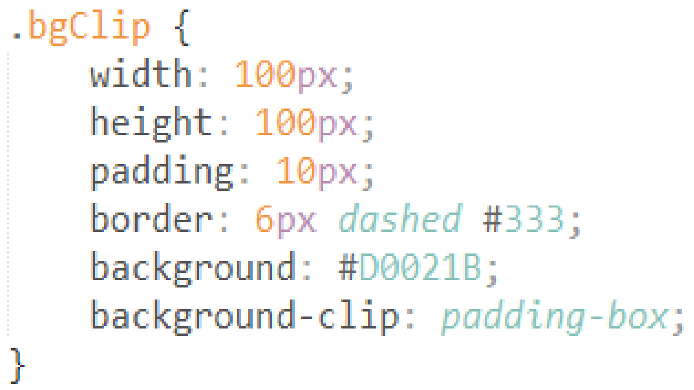
- **border-box**



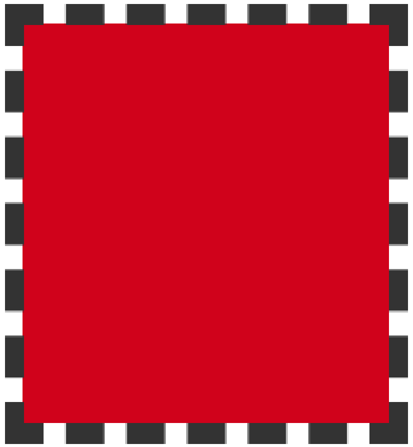
```
.bgClip {
    width: 150px;
    height: 150px;
    padding: 10px;
    border: 6px dashed #333;
    background: #D0021B;
    background-clip: border-box;
}
```

Background – New in CSS3

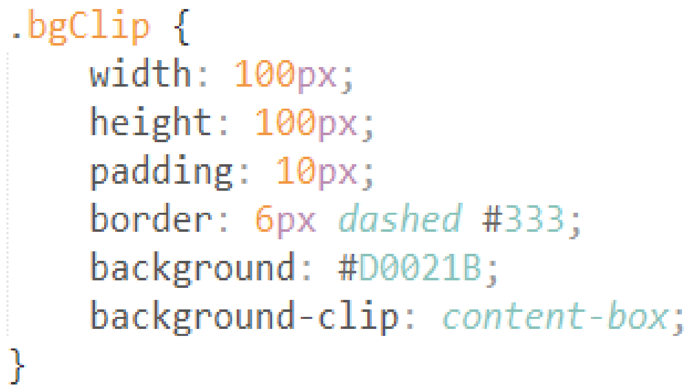
- **padding-box**



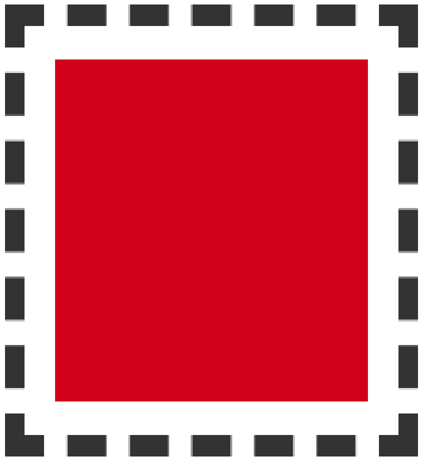
```
.bgClip {
    width: 100px;
    height: 100px;
    padding: 10px;
    border: 6px dashed #333;
    background: #D0021B;
    background-clip: padding-box;
}
```



- **content-box**



```
.bgClip {
    width: 100px;
    height: 100px;
    padding: 10px;
    border: 6px dashed #333;
    background: #D0021B;
    background-clip: content-box;
}
```

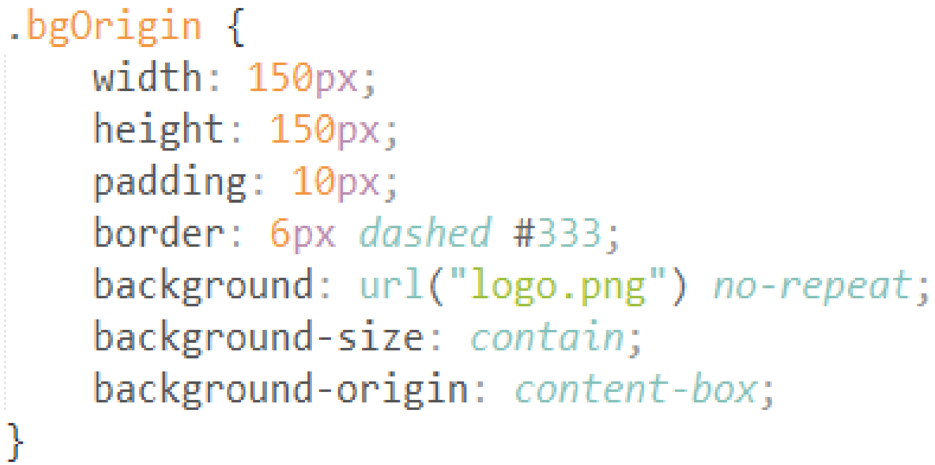


Background – New in CSS3

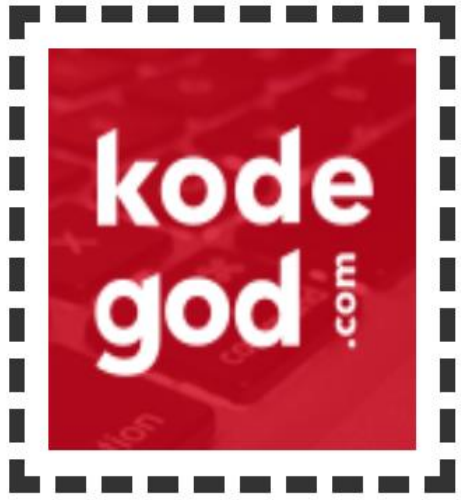
- **background-origin**
  - Specifies positioning area of the

    background image
  - Same as background-clip
  - **Takes three values**

    border-box, padding-box, content-box

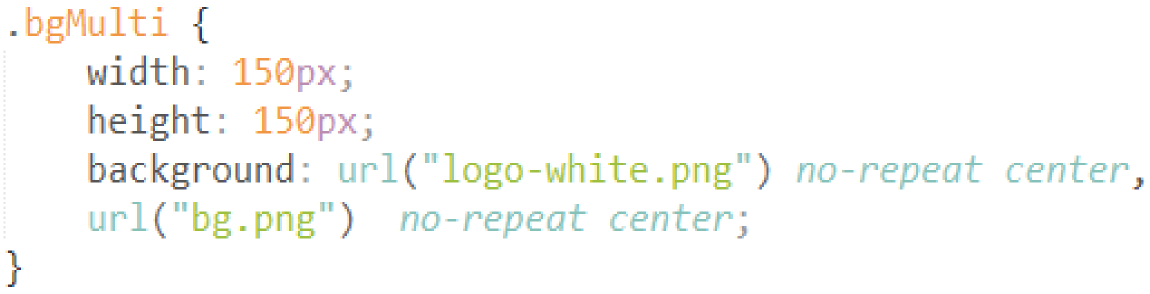


```
.bgOrigin {
    width: 150px;
    height: 150px;
    padding: 10px;
    border: 6px dashed #333;
    background: url("logo.png") no-repeat;
    background-size: contain;
    background-origin: content-box;
}
```

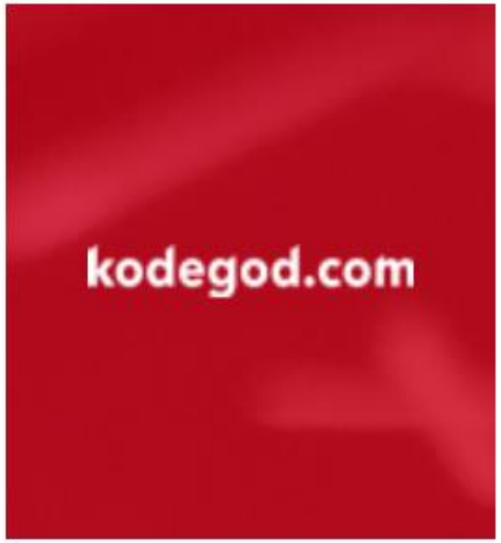


Background

- **Multiple Backgrounds**
  - Add multiple backgrounds to single element
  - Layered top of one another
  - First value in comma-separated list will appear on top and last value at bottom
  - Only last value can contain background-color



```
.bgMulti {
    width: 150px;
    height: 150px;
    background: url("logo-white.png") no-repeat center,
    url("bg.png")  no-repeat center;
}
```



Fonts

CSS3 by Prashant Chaudhari

Fonts

- Styling fonts of text content
- **Font properties include**

  font-family,

  font-style,

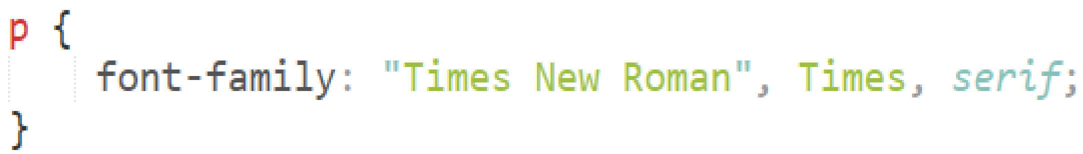
  font-variant,

  font-weight,

  font-size

Fonts

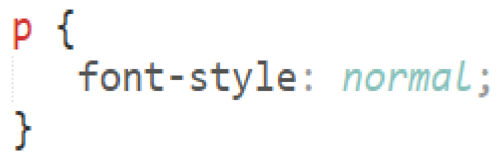
- font-family
  - Font family for text of selected element



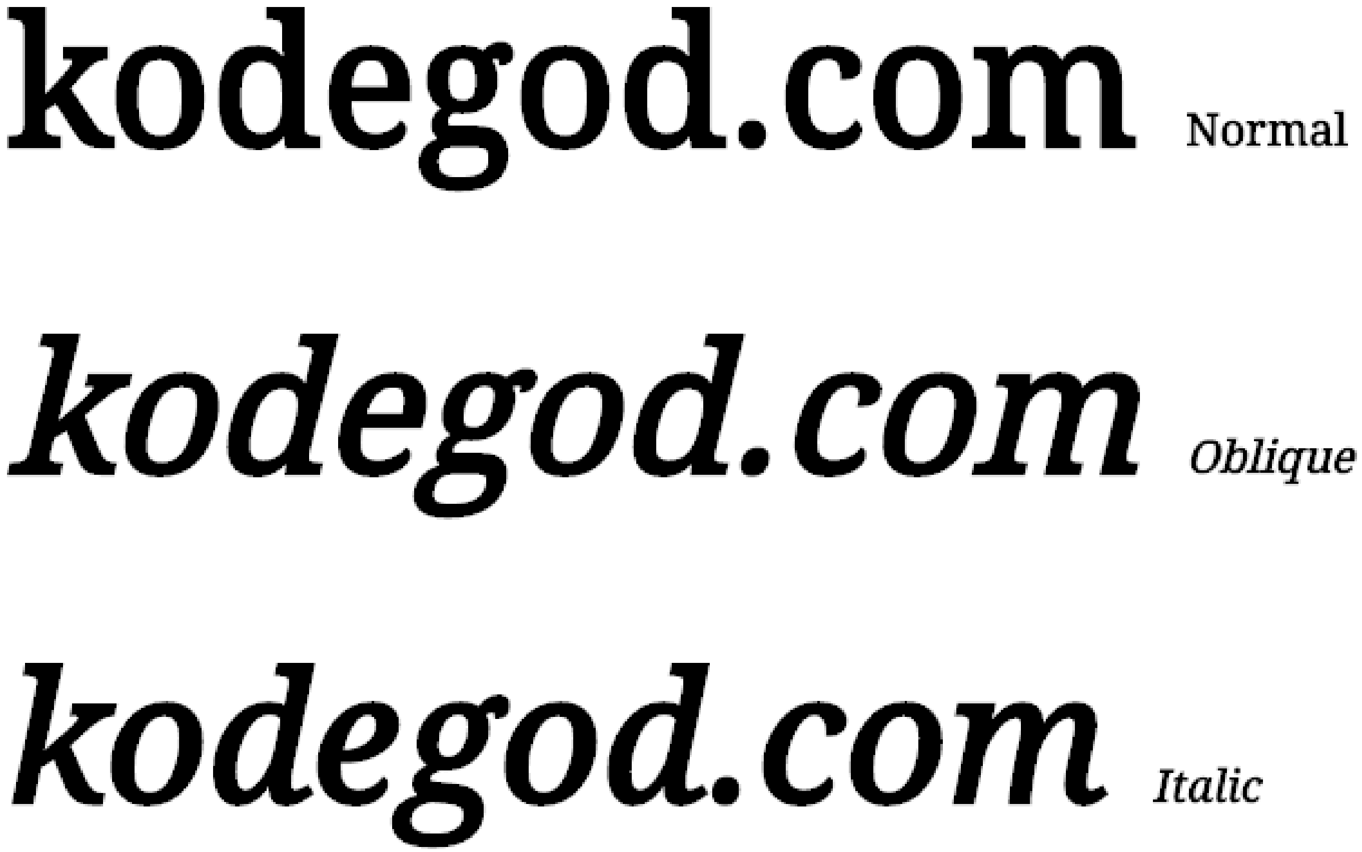
```
p {
    font-family: "Times New Roman", Times, serif;
}
```

Fonts

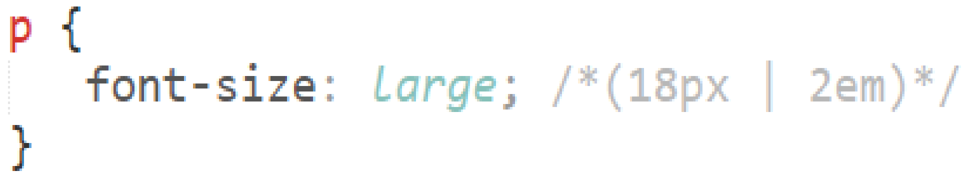
- font-style
  - Font style for text content of an element
  - Property values normal, italic, oblique



```
p {
    font-style: normal;
}
```



Fonts



```
p {
    font-size: large; /*(18px | 2em)*/
}
```

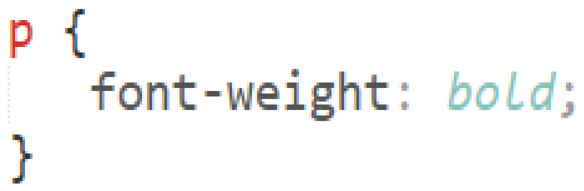
- **font-size**
  - Sets size of font for text content of an element
  - **Property values** with keywords, pixels, ems, %
  - **Keywords** xx-small, x-small, small, medium, large, x-large, xx-large
  - Default 16px
  - If parent is 16px then 1em = 16px
  - If root is 16px then 1rem = 16px

Fonts

- **font-weight**
  - Specifies weight or boldness of font
  - **Property values**

    normal, bold, bolder, lighter, 100, 200, 300,

    400, 500, 600, 700, 800, 900, inherit

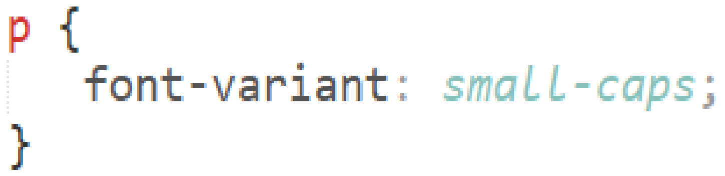


```
p {
    font-weight: bold;
}
```

Fonts

- **font-variant**
  - Text displayed in special small-caps variation
  - **Property values**

    normal, small-caps, inherit



```
p {
    font-variant: small-caps;
}
```

Text

CSS3 by Prashant Chaudhari

Text

- Control over characters, spaces, words,

  paragraphs, etc.

- **Text properties include**

  text-color, text-align,

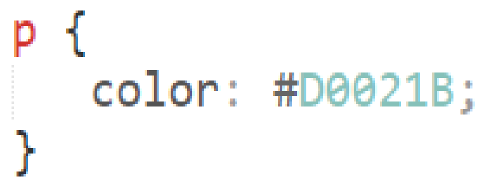
  text-decoration, text-transform,

  text-indent, word-spacing,

  letter-spacing, line-height

Text

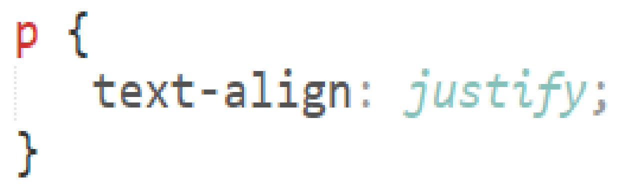
- **text-color**
  - Sets text color using css **color** property



```
p {
    color: #D0021B;
}
```

- **text-align**
  - Sets horizontal alignment of text
  - **Property values**

    left, right, center, justify, inherit



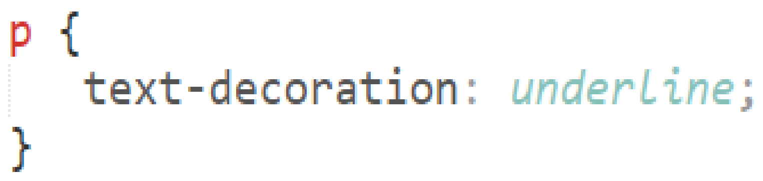
```
p {
    text-align: justify;
}
```

Text

- **text-decoration**
  - Set or remove decoration from text
  - **Property values**

    none, underline, overline, line-through,

    blink, inherit

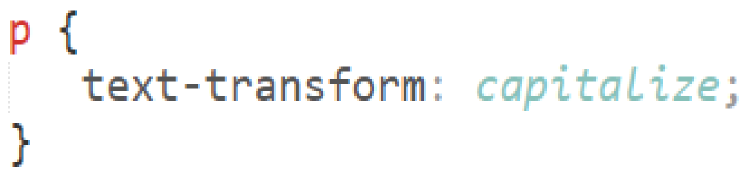


```
p {
    text-decoration: underline;
}
```

- **text-transform**
  - Sets cases for text
  - **Property values**

    none, capitalize, uppercase, lowercase,

    inherit

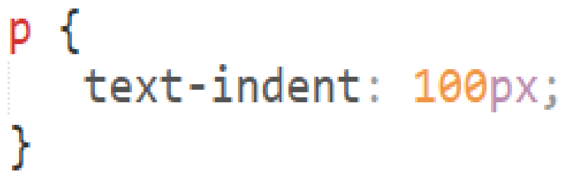


```
p {
    text-transform: capitalize;
}
```

Text

- **text-indent**
  - Set indentation of first line of text
  - **Property values**

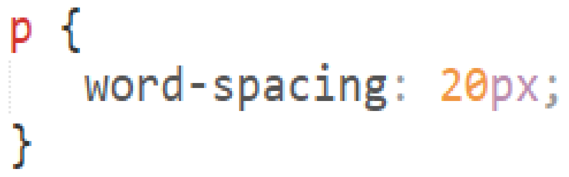
    %, length(px) or inherit



```
p {
    text-indent: 100px;
}
```

- **word-spacing**
  - Sets spacing between words
  - **Property values**

    length(px), normal, inherit

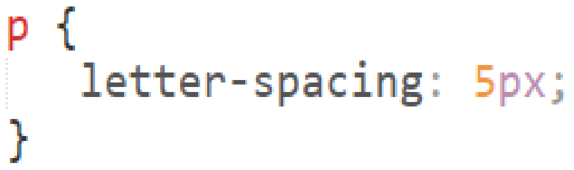


```
p {
    word-spacing: 20px;
}
```

Text

- **letter-spacing**
  - Sets spacing between characters of words
  - **Property values**

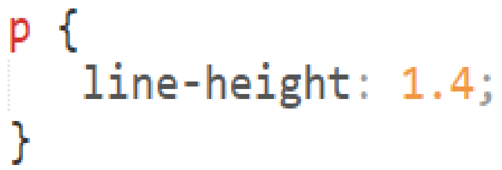
    %, length(px) or inherit



```
p {
    letter-spacing: 5px;
}
```

- **line-height**
  - Sets height of line of text
  - **Property values**

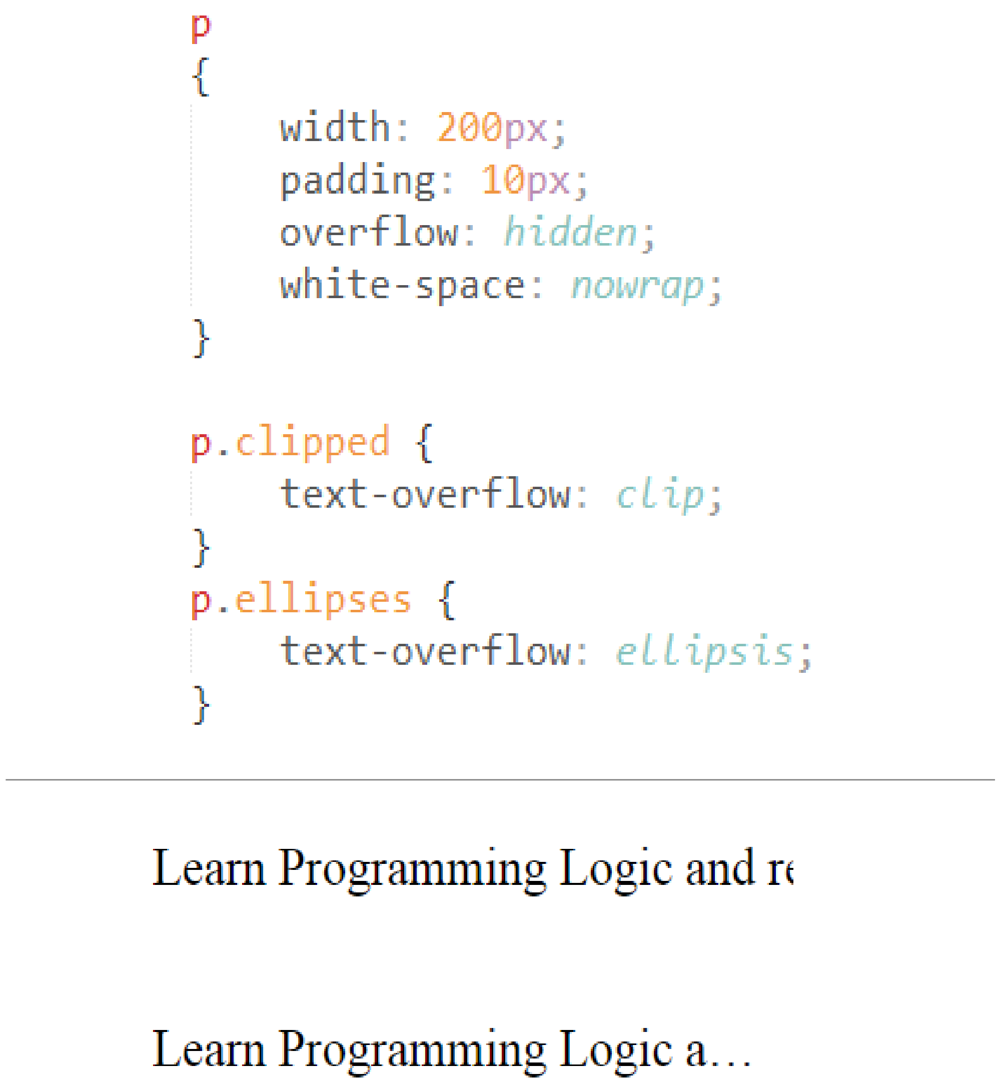
    %, length, normal, inherit



```
p {
    line-height: 1.4;
}
```

Text

- **Hiding overflow text**
  - **text-overflow** property used to hide overflow text using **clip or ellipsis**



```
p
{
    width: 200px;
    padding: 10px;
    overflow: hidden;
    white-space: nowrap;
}

p.clipped {
    text-overflow: clip;
}
p.ellipses {
    text-overflow: ellipsis;
}
```

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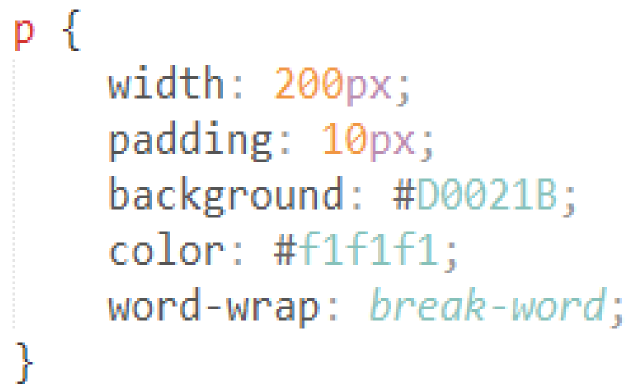
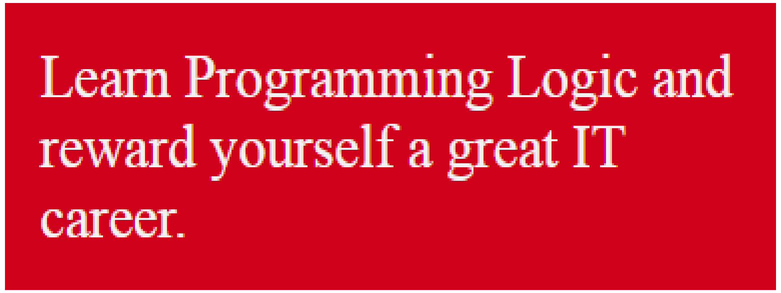
Text

- **Breaking overflow text**
  - **word-wrap** property used to break overflow text to new line using values **normal** and **break-word**



```
p {
    width: 200px;
    padding: 10px;
    background: #D0021B;
    color: #f1f1f1;
    word-wrap: break-word;
}
```



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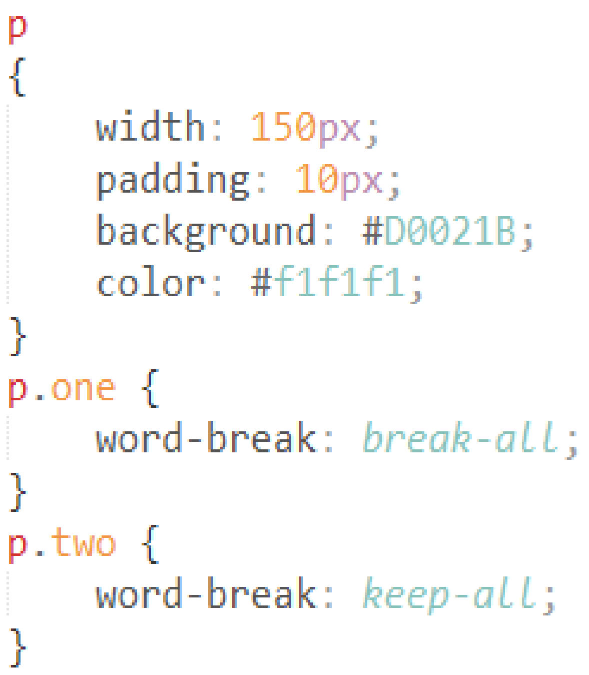
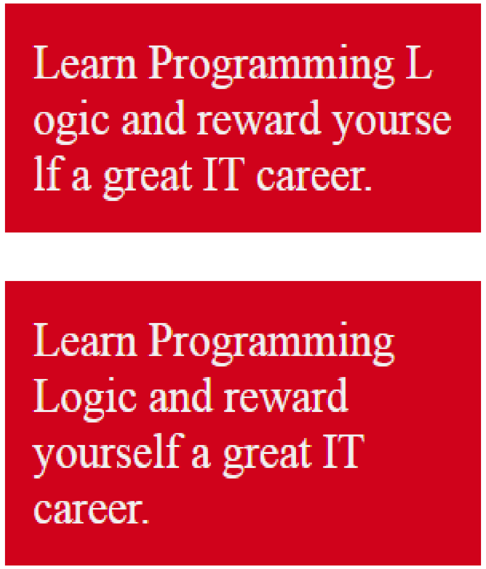
Text

- **Word breaking rules**
  - **word-break** property used to break lines within words using values **normal, break-all** and **keep-all**



```
p
{
    width: 150px;
    padding: 10px;
    background: #D0021B;
    color: #f1f1f1;
}
p.one {
    word-break: break-all;
}
p.two {
    word-break: keep-all;
}
```



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career.

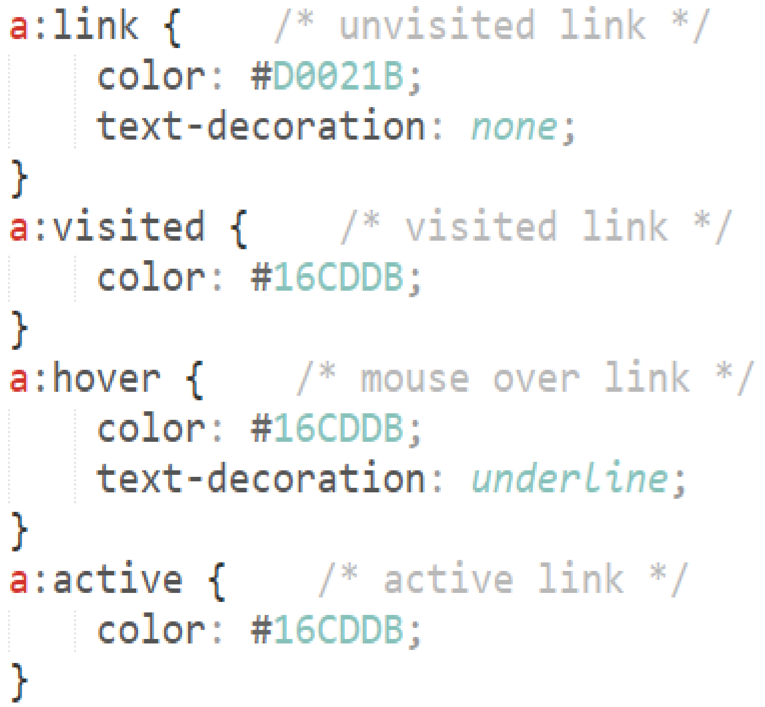
Links

CSS3 by Prashant Chaudhari

Links

- Connection from one web resource to another
- Has four different states

  link, visited, active, hover
- Sets using **selector: state**



```
a:link {     /* unvisited link */
    color: #D0021B;
    text-decoration: none;
}
a:visited {     /* visited link */
    color: #16CDDB;
}
a:hover {     /* mouse over link */
    color: #16CDDB;
    text-decoration: underline;
}
a:active {     /* active link */
    color: #16CDDB;
}
```

Lists

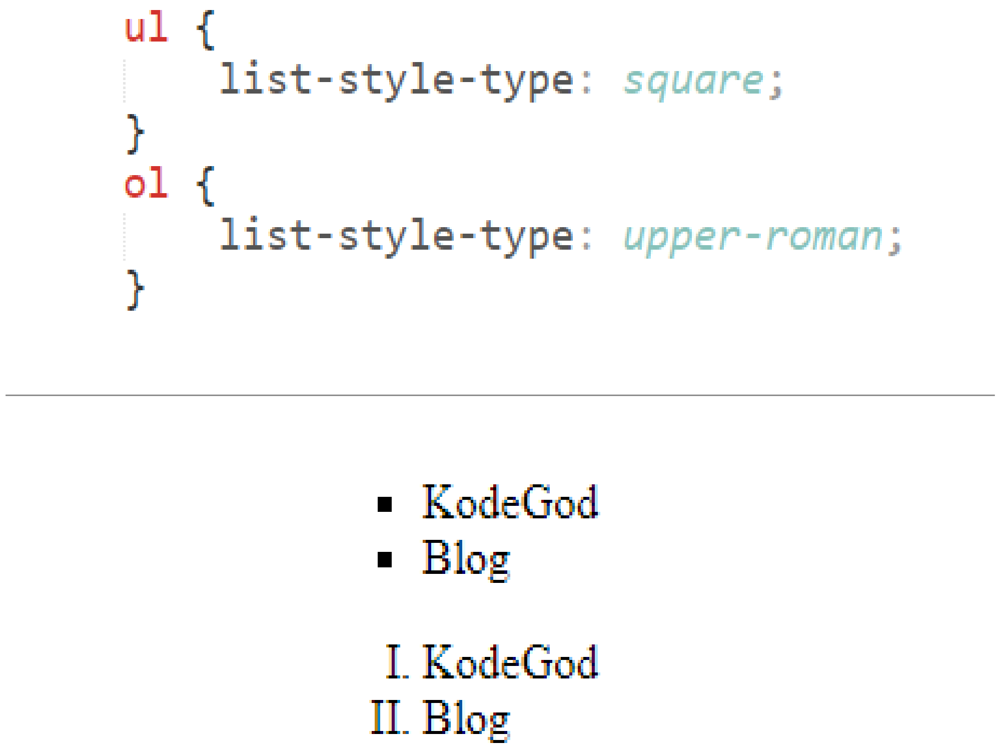
CSS3 by Prashant Chaudhari

Lists

- Controls the presentation of list item markers
- **Properties**
  - **List Style Type**

    Can change marker types to circle, square,

    roman numbers, latin letters, etc.



```
ul {
    list-style-type: square;
}
ol {
    list-style-type: upper-roman;
}
```

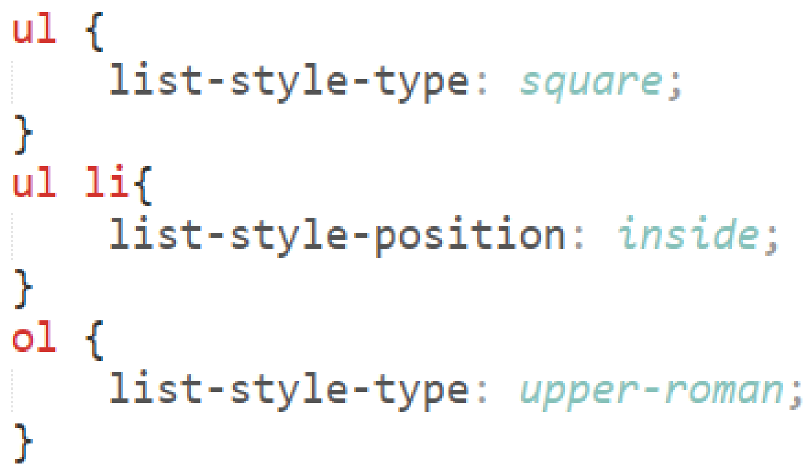
```
▪ KodeGod
▪ Blog

 I. KodeGod
II. Blog
```

Lists - Properties

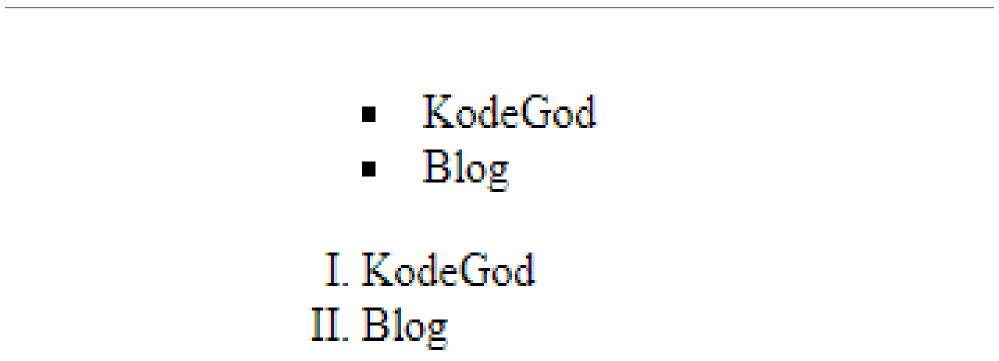
- **List Style Position**

  Specify marker or bullets appear inside or outside

  of list items block boxes



```
ul {
    list-style-type: square;
}
ul li{
    list-style-position: inside;
}
ol {
    list-style-type: upper-roman;
}
```

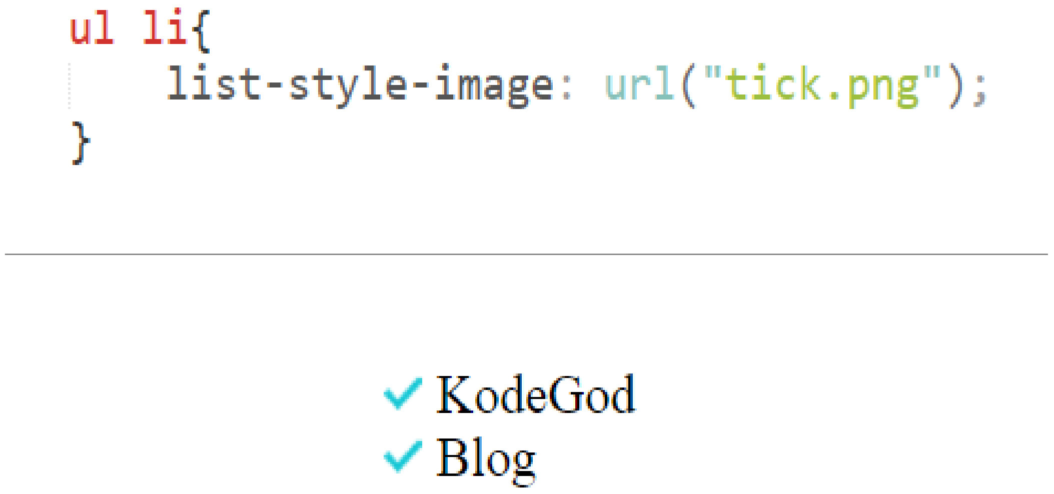


```
   ▪  KodeGod
   ▪  Blog

  I. KodeGod
 II. Blog
```

Lists

- **List Style Image**

  Specify marker or bullets appear as image



```
ul li{
    list-style-image: url("tick.png");
}
```

✓ KodeGod
✓ Blog

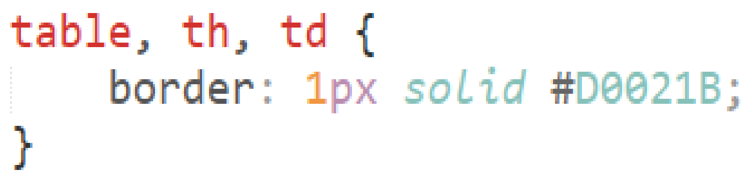
Tables

CSS3 by Prashant Chaudhari

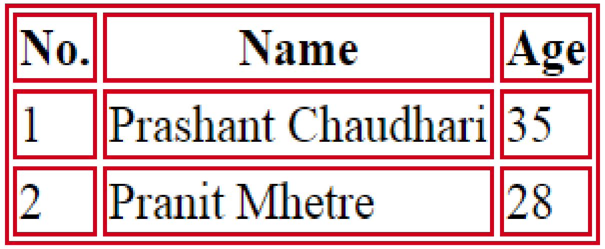
Tables

- Controls the presentation of tables
- **Properties**
  - **border**

    Defines borders of the table



```
table, th, td {
    border: 1px solid #D0021B;
}
```

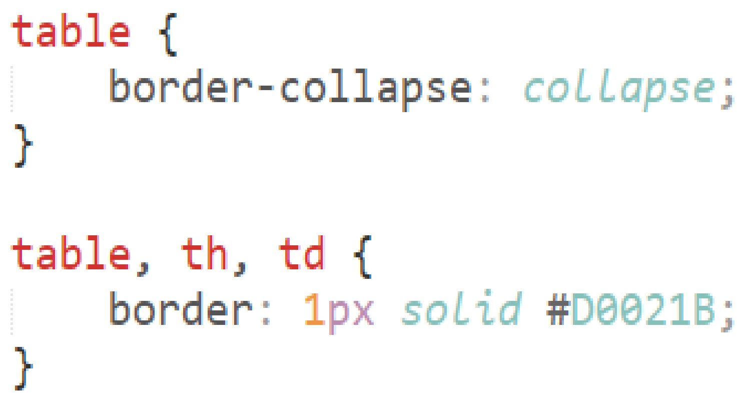


No.	Name	Age
1	Prashant Chaudhari	35
2	Pranit Mhetre	28

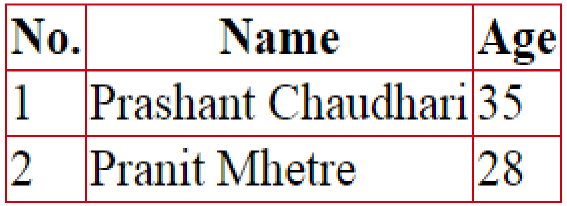
Tables - Properties

- **border-collapse**

  Defines borders of the table without any spacing



```
table {
    border-collapse: collapse;
}

table, th, td {
    border: 1px solid #D0021B;
}
```

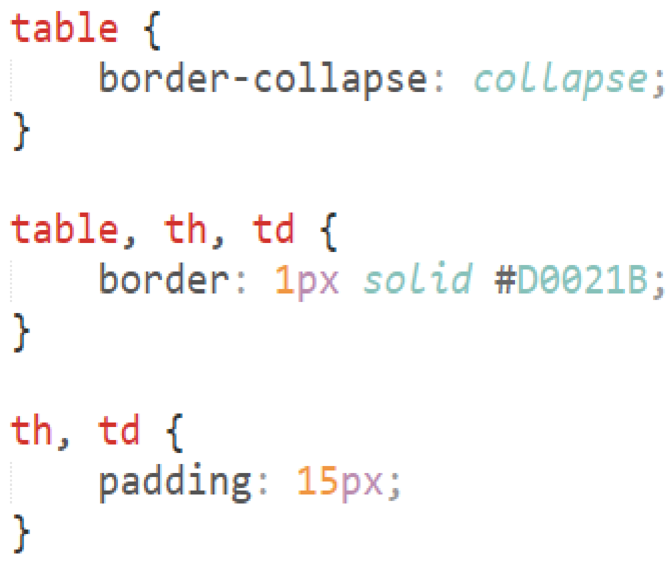


No.	Name	Age
1	Prashant Chaudhari	35
2	Pranit Mhetre	28

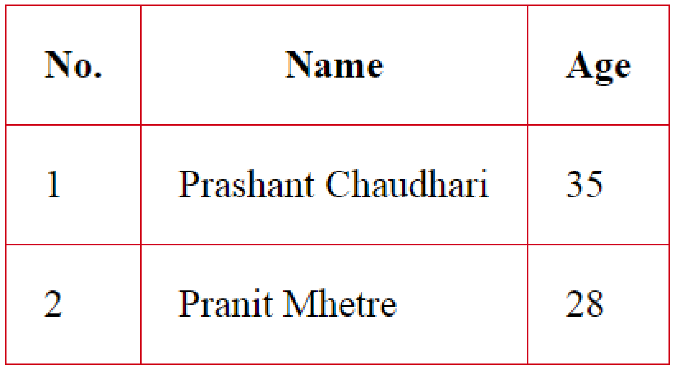
Tables - Properties

- **padding**

  More space around table cells



```
table {
    border-collapse: collapse;
}

table, th, td {
    border: 1px solid #D0021B;
}

th, td {
    padding: 15px;
}
```



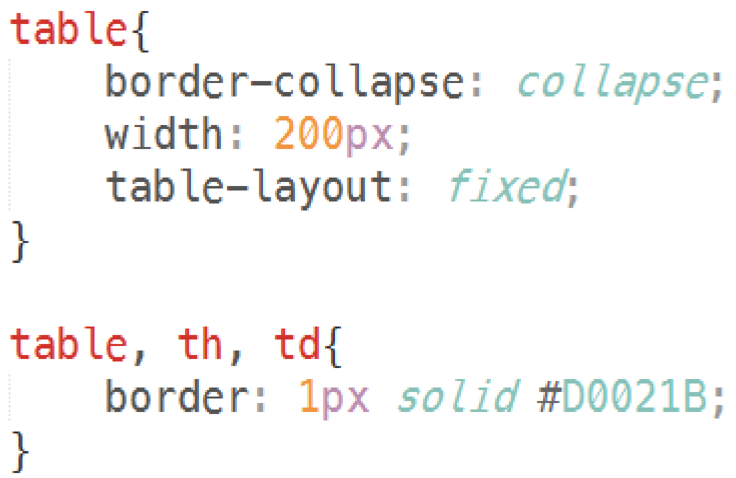
No.	Name	Age
1	Prashant Chaudhari	35
2	Pranit Mhetre	28

Tables - Properties

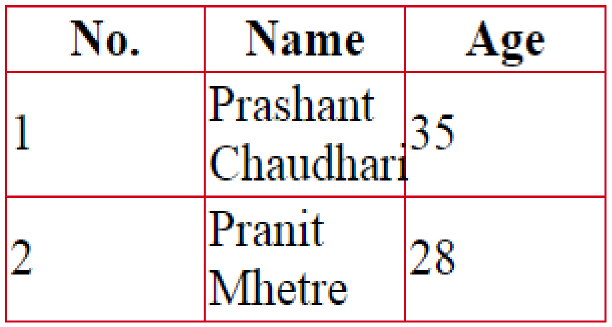
- **table-layout**
  - Control the width of the table
  - **Property values**

    auto Adjusted to fit content

    fixed Depends on table width



```
table{
    border-collapse: collapse;
    width: 200px;
    table-layout: fixed;
}

table, th, td{
    border: 1px solid #D0021B;
}
```

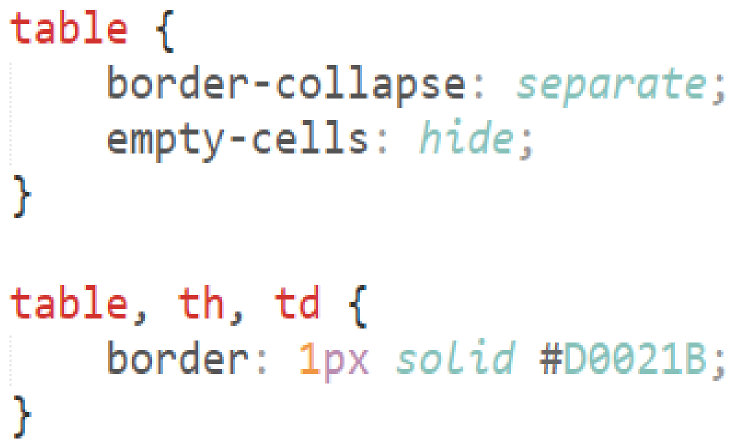


No.	Name	Age
1	Prashant Chaudhari	35
2	Pranit Mhetre	28

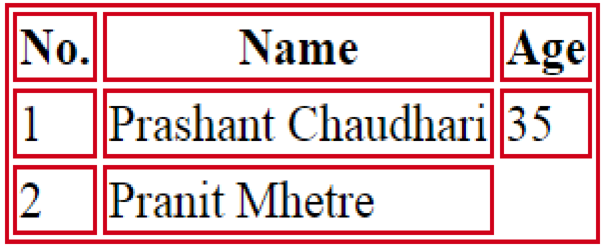
Tables - Properties

- **empty-cells**
  - Rendering of borders and backgrounds of empty cells
  - **Property values**

    show, hide, inherit



```
table {
    border-collapse: separate;
    empty-cells: hide;
}

table, th, td {
    border: 1px solid #D0021B;
}
```



No.	Name	Age
1	Prashant Chaudhari	35
2	Pranit Mhetre	

Outline

CSS3 by Prashant Chaudhari

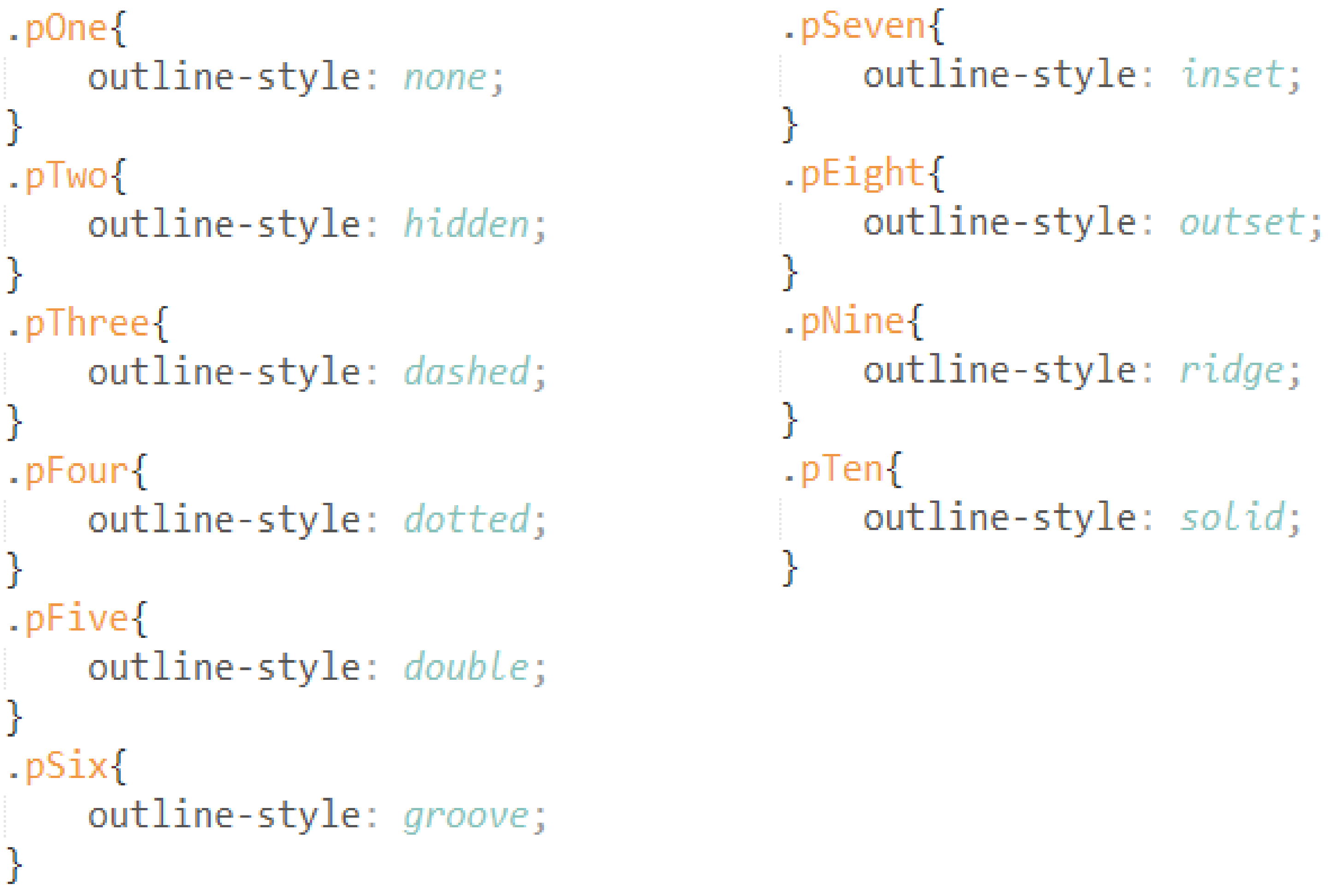
Outline

- Used to highlight elements
- **Properties**
  - **outline-style**
    - Set style for outline
    - **Property Values**

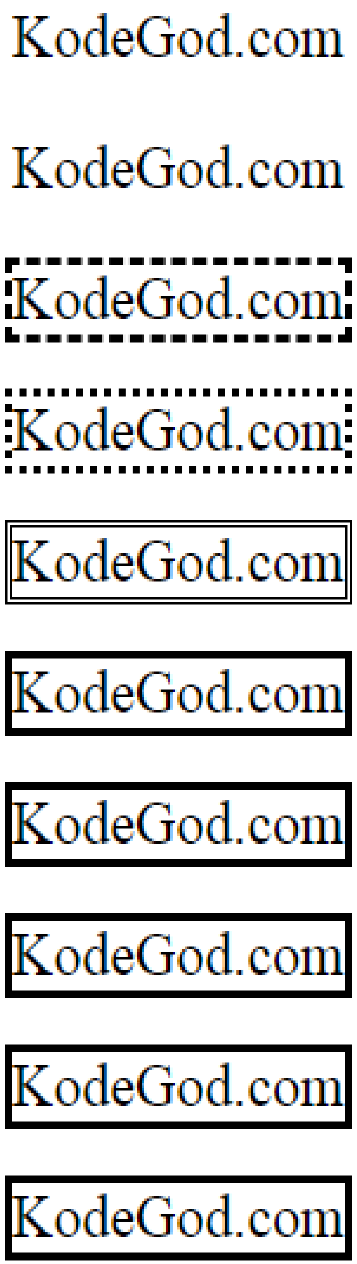
      none, hidden, dashed, dotted, double, groove, inset,

      outset, ridge and solid

Outline (outline-style) - Example



```
.pOne{
    outline-style: none;
}
.pTwo{
    outline-style: hidden;
}
.pThree{
    outline-style: dashed;
}
.pFour{
    outline-style: dotted;
}
.pFive{
    outline-style: double;
}
.pSix{
    outline-style: groove;
}
.pSeven{
    outline-style: inset;
}
.pEight{
    outline-style: outset;
}
.pNine{
    outline-style: ridge;
}
.pTen{
    outline-style: solid;
}
```



```
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KodeGod.com
KodeGod.com
KodeGod.com
KodeGod.com
KodeGod.com
KodeGod.com
KodeGod.com
```
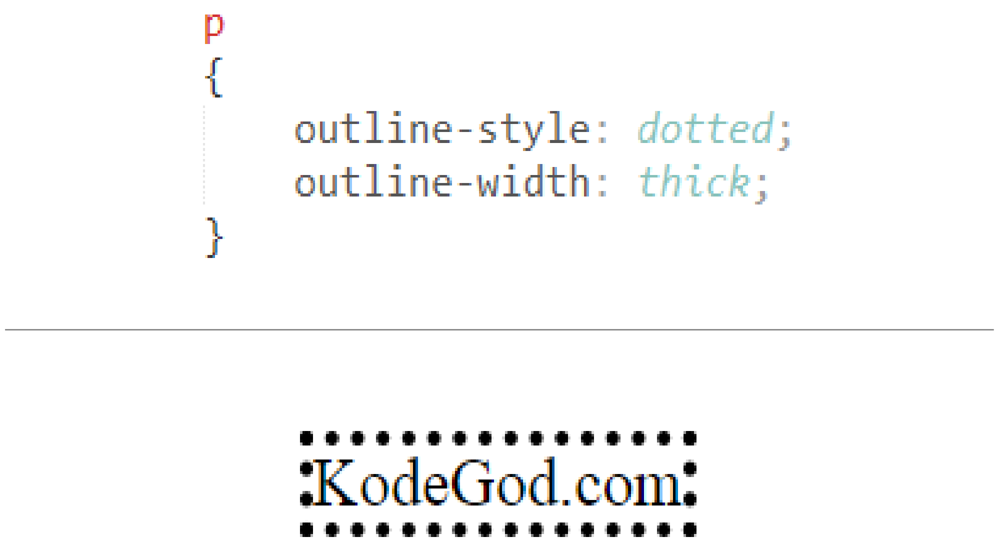

Outline - Properties

- **outline-width**
  - Specifies width of outline
  - Values should be in length (px, em, pt and so on) or allowed keywords (medium, thick, thin, inherit)
  - Values cannot be in % or negative



```
p
{
     outline-style: dotted;
     outline-width: thick;
}
```

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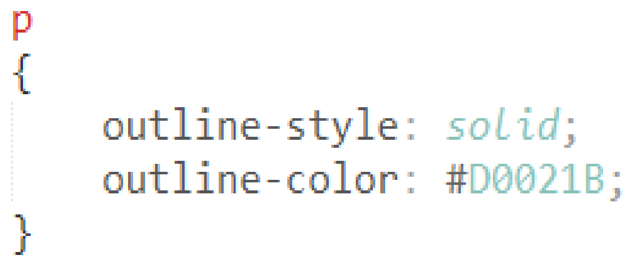
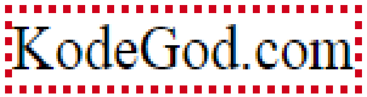
Outline - Properties

- **outline-color**
  - Sets the color of an outline



```
p
{
    outline-style: solid;
    outline-color: #D0021B;
}
```



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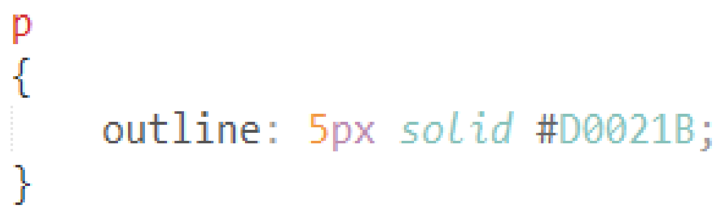
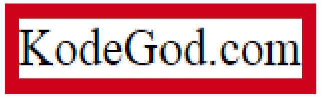
Outline

- **Shorthand Property**
  - Setting multiple properties in single rule
  - **outline** keyword is used for shorthand
  - **Syntax**

    outline: outline-width outline-style outline-color;



```
p
{
    outline: 5px solid #D0021B;
}
```



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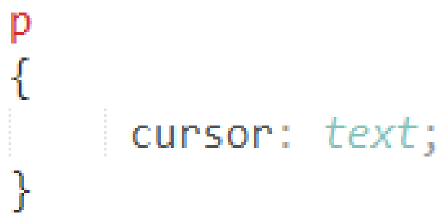
Cursors

CSS3 by Prashant Chaudhari

Cursors

- **cursor** property used to define cursor type
- Can redefine default cursor properties
- **Cursors** auto, default, none, context-menu, help, pointer, progress, wait, cell, crosshair, text, vertical-text, alias, copy, move, no-drop, not-allowed, grab, grabbing, all-scroll, zoom-in, zoom out, initial, inherit, etc.

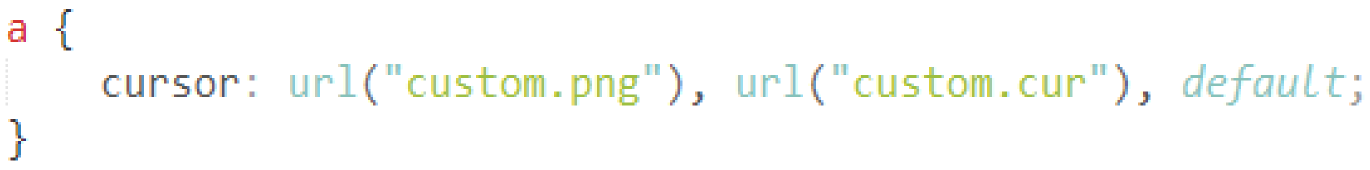


```
p
{
    cursor: text;
}
```

Cursors

- We can have customized cursors
- **cursor** property can have comma-separated list of user-defined

  cursors followed by generic cursor
- Standard format for cursor is **(.cur)**



```css
a {
    cursor: url("custom.png"), url("custom.cur"), default;
}
```

Overflow

CSS3 by Prashant Chaudhari

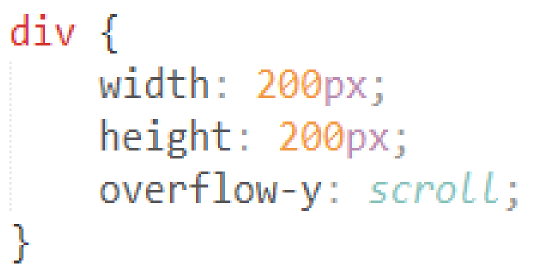
Overflow

- Occurs when element's content overflows element's box
- **overflow** property allows to specify whether to clip or render scroll

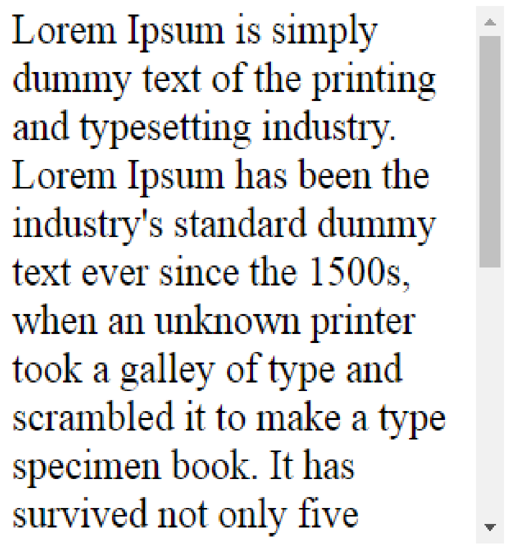
  bar of block level element
- **Property Values**

  visible, hidden, scroll, auto
- **Two More Properties**

  overflow-x and overflow-y for vertical and horizontal clipping



```css
div {
    width: 200px;
    height: 200px;
    overflow-y: scroll;
}
```



Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five

Dimension

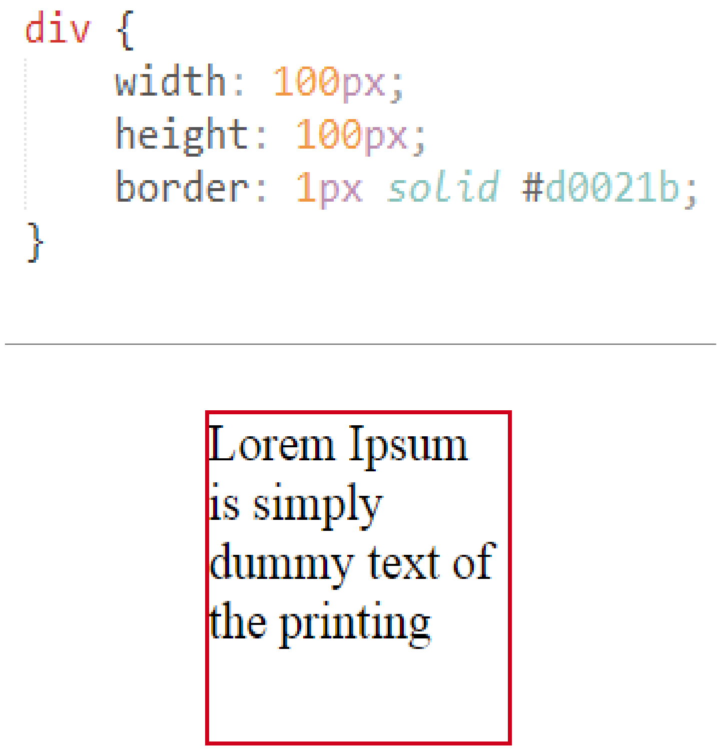
CSS3 by Prashant Chaudhari

Dimension

- Controls height and width of element
- **Properties**

  height, width, max-height, max-width, min-height, min-width
- **Height and Width**
  - Does not include padding, border, margins
  - Takes values in length (px, pt, em, etc.), percentage or keyword

    auto

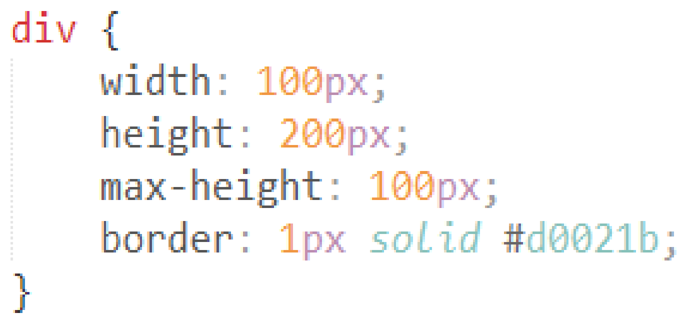


```css
div {
    width: 100px;
    height: 100px;
    border: 1px solid #d0021b;
}
```

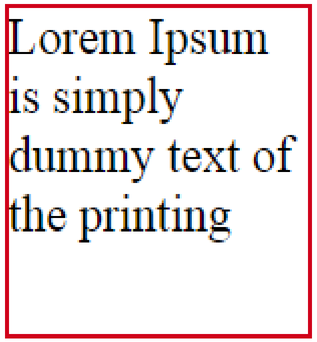
```
Lorem Ipsum
is simply
dummy text of
the printing
```

Dimension - Properties

- **max-height**
  - Maximum height of the box
  - If height set to 200px and max-height set to 100px, then actual height of element is 100px



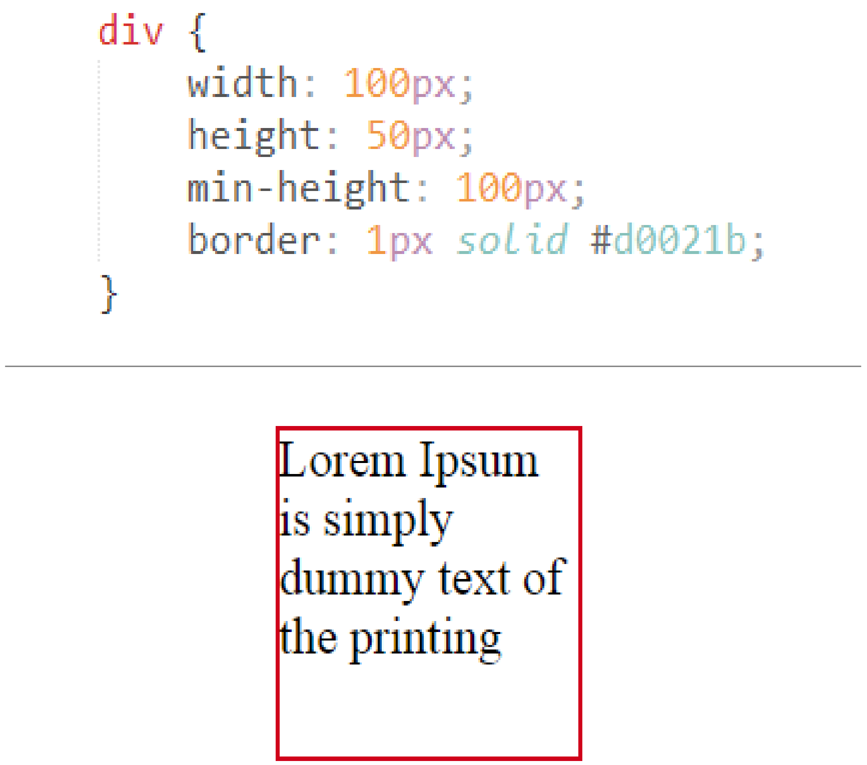
```
div {
    width: 100px;
    height: 200px;
    max-height: 100px;
    border: 1px solid #d0021b;
}
```



Lorem Ipsum is simply dummy text of the printing

Dimension - Properties

- **min-height**
  - Minimum height of the box
  - If height set to 50px and min-height set to 100px, then actual height of element is 100px

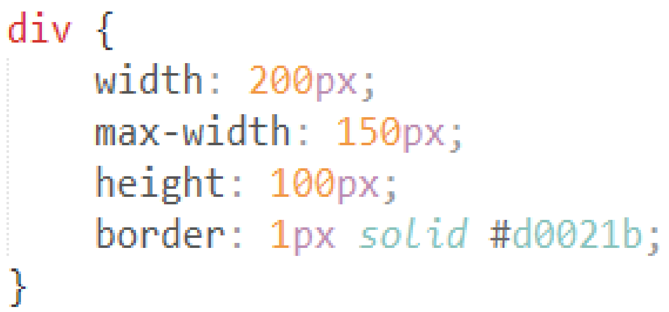


```
div {
    width: 100px;
    height: 50px;
    min-height: 100px;
    border: 1px solid #d0021b;
}
```

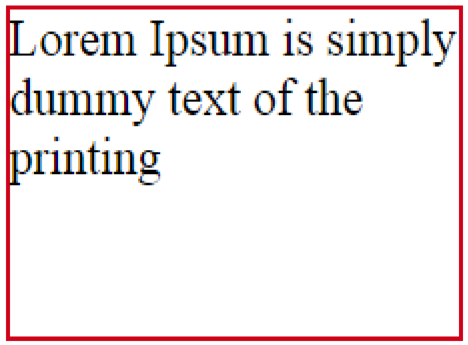
Lorem Ipsum is simply dummy text of the printing

Dimension - Properties

- **max-width**
  - Maximum width of the box
  - If width set to 200px and max-width set to 150px, then actual height of element is 150px



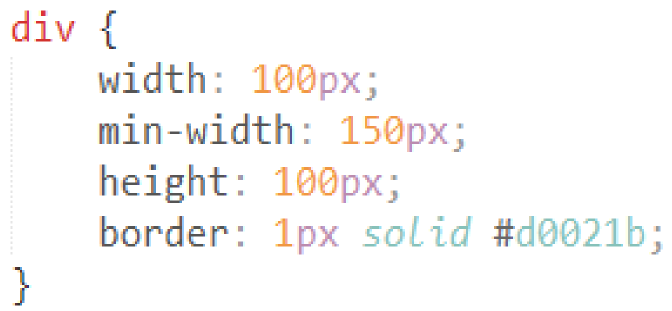
```
div {
    width: 200px;
    max-width: 150px;
    height: 100px;
    border: 1px solid #d0021b;
}
```



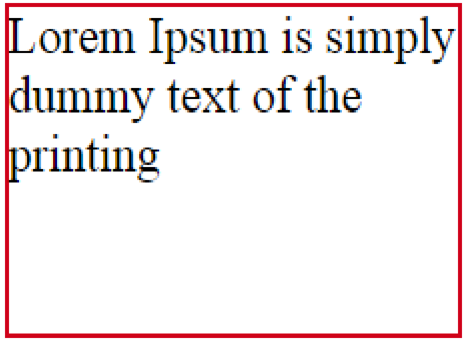
Lorem Ipsum is simply dummy text of the printing

Dimension - Properties

- **min-width**
  - Minimum width of the box
  - If width set to 100px and min-width set to 150px, then actual height of element is 150px



```
div {
    width: 100px;
    min-width: 150px;
    height: 100px;
    border: 1px solid #d0021b;
}
```



Lorem Ipsum is simply dummy text of the printing

Units

CSS3 by Prashant Chaudhari

Units

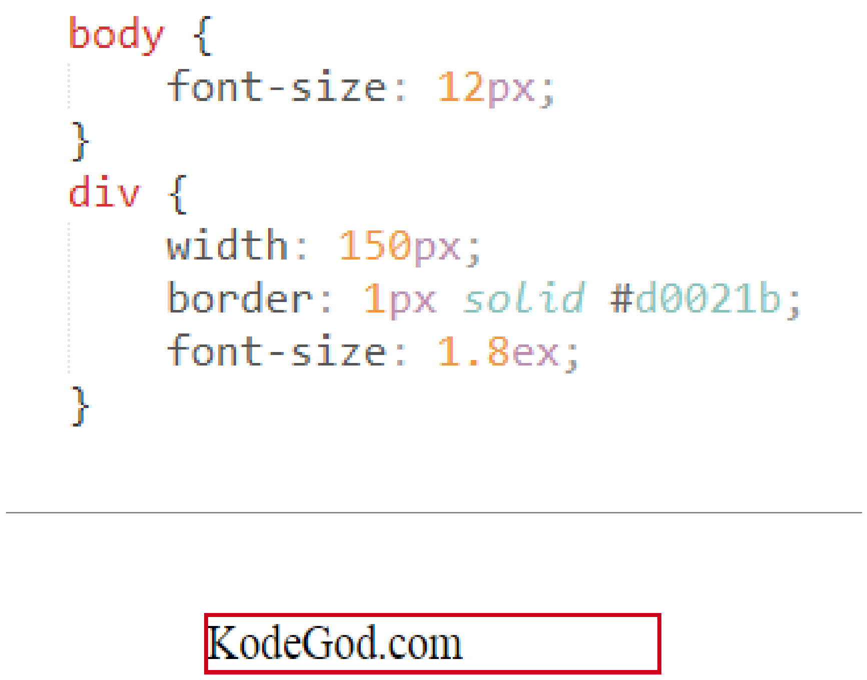
- Units in which length is measured
- **Two types**
  - **Relative length units**
  - **Absolute length units**

Relative Length Units

- Specifies length relative to another length property
- Scales better between different rendering mediums
- em, ex, cm, rem, vw, vh, vmin, vmax, %

Relative Length Units

- **ex**
  - ex units equals to x-height of current font
  - x-height means height of lowercase **'x'**
  - If 'x' is not present, then font size is set to default



```
body {
    font-size: 12px;
}
div {
    width: 150px;
    border: 1px solid #d0021b;
    font-size: 1.8ex;
}
```

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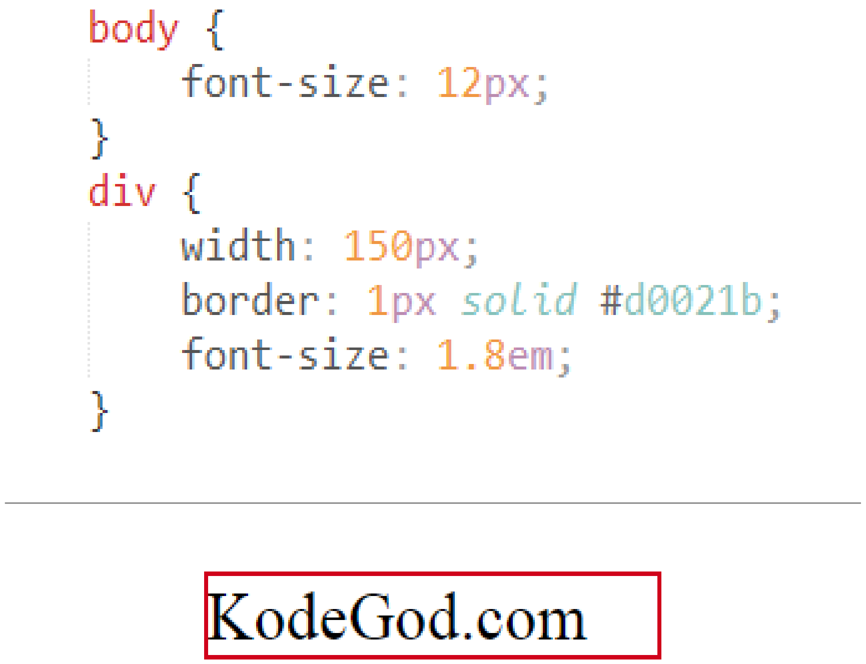
Relative Length Units

- **em**
  - Used for vertical and horizontal measurement
  - E.g. If font-size set to 18px and line-height set to 1.8em, then line-height in pixels is

    1.8 * 18 = 32.4px
  - If specify font size in em like 1.8em, makes the text 1.8 times larger than parent element's text



```
body {
    font-size: 12px;
}
div {
    width: 150px;
    border: 1px solid #d0021b;
    font-size: 1.8em;
}
```

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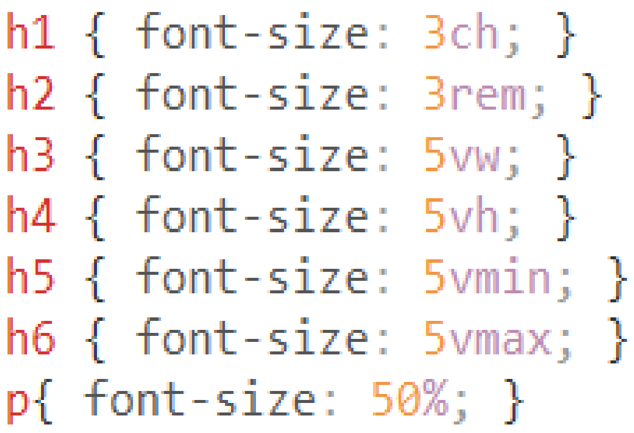
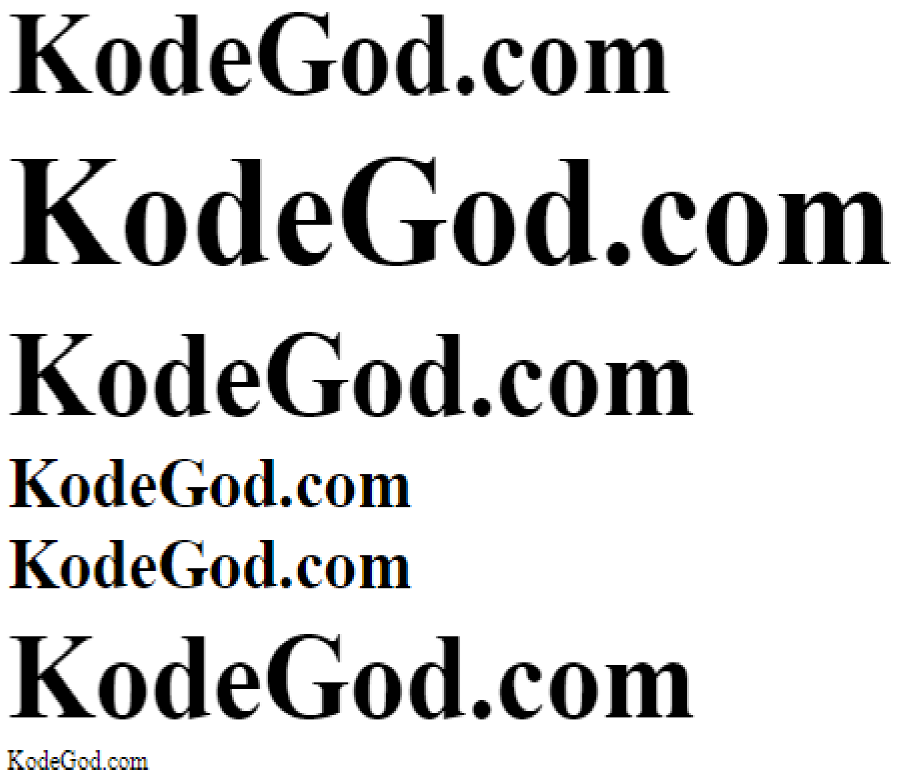
Relative Length Units

- **ch**
  - Relative to the width of character zero
- **rem**
  - Relative to font-size of root element
- **vw**
  - Relative to 1% of width of viewport
- **%**
  - Relative to parent element
- **vh**
  - Relative to 1% of height of viewport
- **vmin**
  - Relative to 1% of viewports smaller dimension
- **vmax**
  - Relative to 1% of viewports larger dimension

Relative Length Units - Example



```
h1 { font-size: 3ch; }
h2 { font-size: 3rem; }
h3 { font-size: 5vw; }
h4 { font-size: 5vh; }
h5 { font-size: 5vmin; }
h6 { font-size: 5vmax; }
p{ font-size: 50%; }
```



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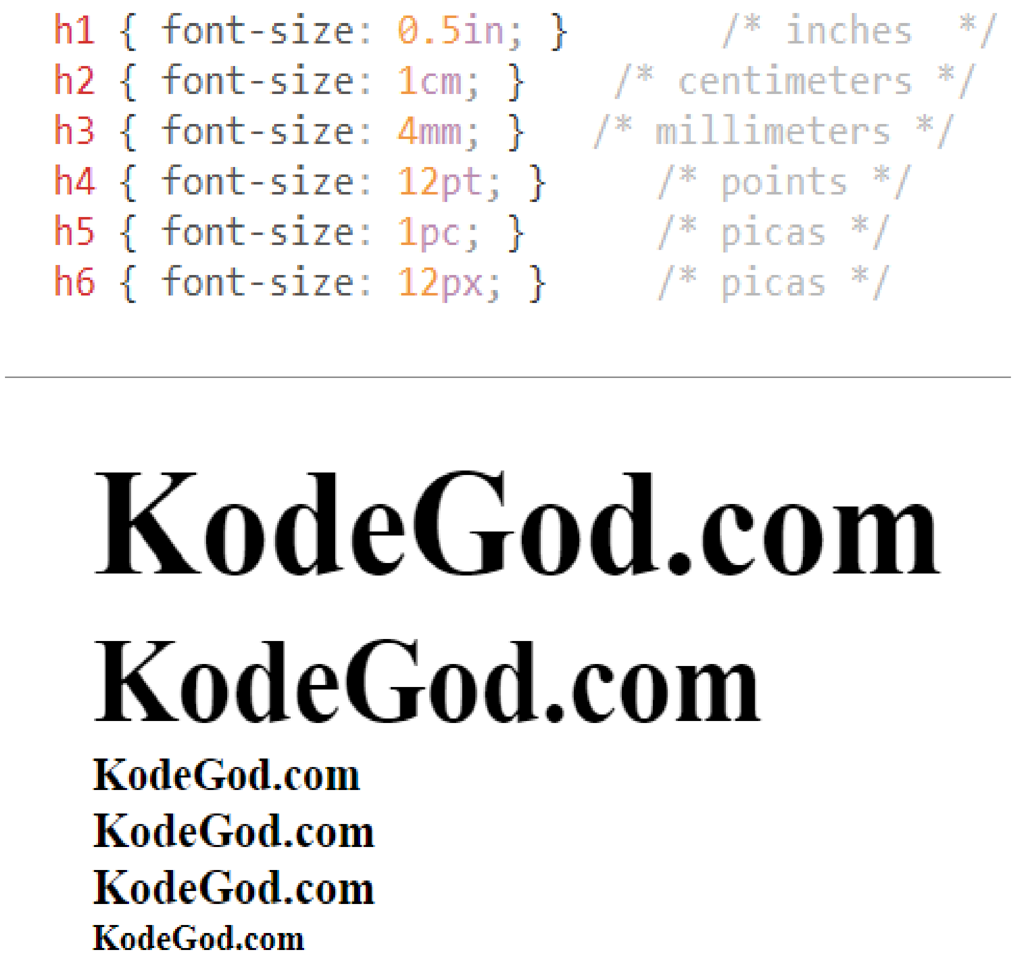
Absolute Length Units

- This are fixed and appear as specified
- Used when output medium is known
- in, cm, mm used for print media and high-resolution devices
- px, pt, pc used for desktop and lower resolution devices



```
h1 { font-size: 0.5in; }       /* inches  */
h2 { font-size: 1cm; }     /* centimeters */
h3 { font-size: 4mm; }    /* millimeters */
h4 { font-size: 12pt; }      /* points */
h5 { font-size: 1pc; }       /* picas */
h6 { font-size: 12px; }      /* picas */
```

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Display

CSS3 by Prashant Chaudhari

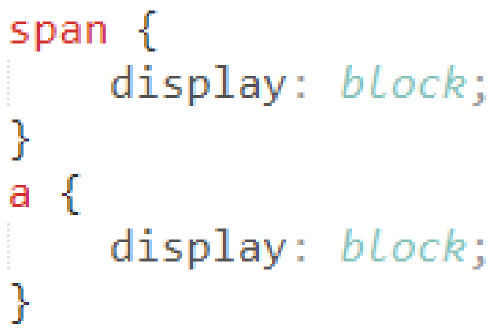
Display

- Controls the box’s type generated by element
- Every element has default display value
- E.g. div element has display value block and span has inline
- To change default display value **display** property is used

Display - Properties

- **Display Block**
  - Forces element to behave like

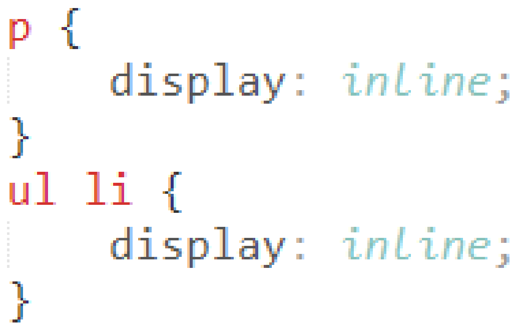
    block-level element like **div** and **p**



```
span {
    display: block;
}
a {
    display: block;
}
```

- **Display Inline**
  - Forces element to behave like

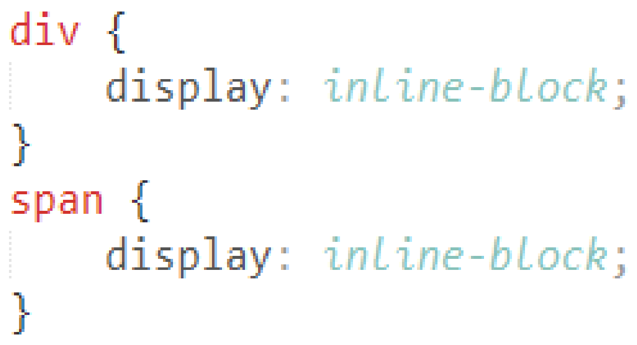
    inline-level element like **span** and **a**



```
p {
    display: inline;
}
ul li {
    display: inline;
}
```

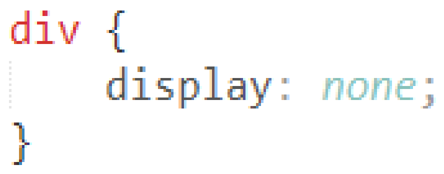
Display - Properties

- **Display Inline-Block**
  - Forces element to generate block box with content in the same line



```
div {
    display: inline-block;
}
span {
    display: inline-block;
}
```

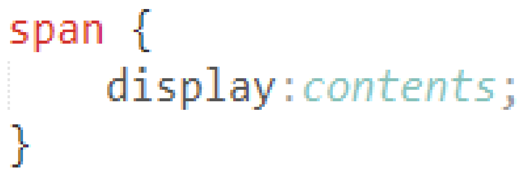
- **Display None**
  - Simply hides the element and its child elements



```
div {
    display: none;
}
```

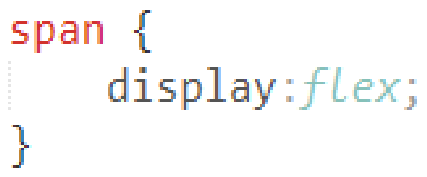
Display - Properties

- **Display Contents**
  - Makes container disappear
  - Makes child elements children of the element next level up in the DOM



```
span {
    display:contents;
}
```

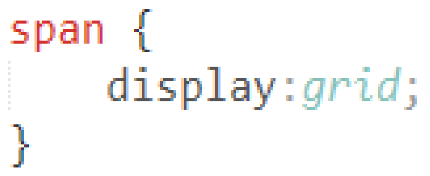
- **Display Flex**
  - Displays element as block-level flex container



```
span {
    display:flex;
}
```

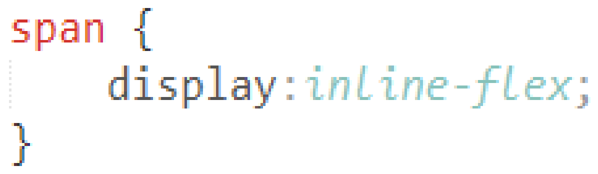
Display - Properties

- **Display Grid**
  - Displays element as block-level grid container



```
span {
    display:grid;
}
```

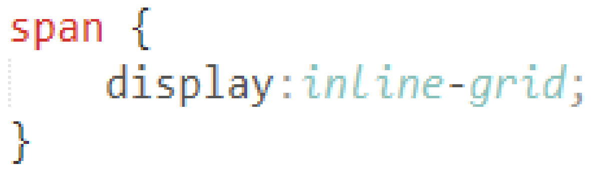
- **Display Inline-Flex**
  - Displays element as inline-level flex container



```
span {
    display:inline-flex;
}
```

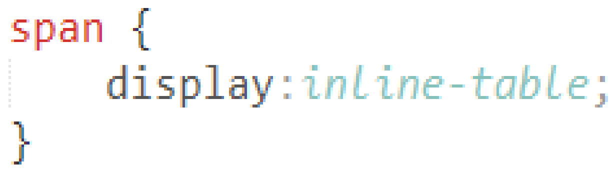
Display - Properties

- **Display Inline-Grid**
  - Displays element as inline-level grid container



```
span {
    display:inline-grid;
}
```

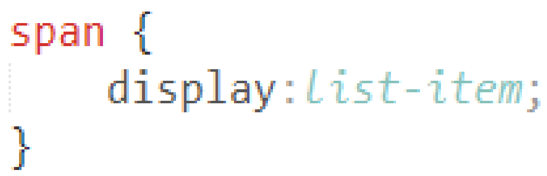
- **Display Inline-Table**
  - Displays element as inline-level table



```
span {
    display:inline-table;
}
```

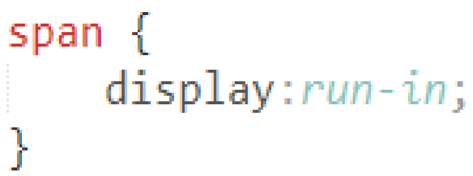
Display - Properties

- **Display List-Item**
  - Let element behave like <li> element



```
span {
    display:list-item;
}
```

- **Display Run-In**
  - Displays element as either block or inline, depending on context

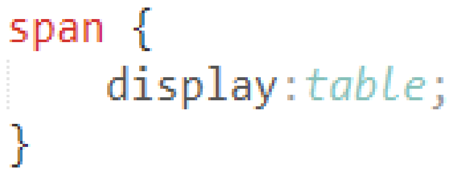


```
span {
    display:run-in;
}
```

Display - Properties

- **Display Table**
  - Let the element behave like

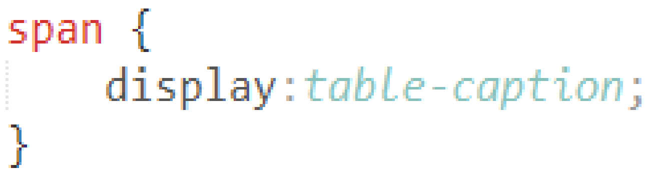
    <table> element



```
span {
    display:table;
}
```

- **Display Table-Caption**
  - Let the element behave like

    <caption> element

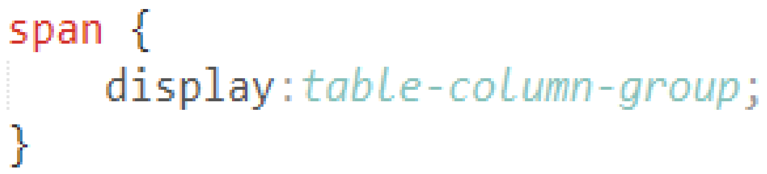


```
span {
    display:table-caption;
}
```

Display - Properties

- **Display Table-Column-Group**
  - Let the element behave like

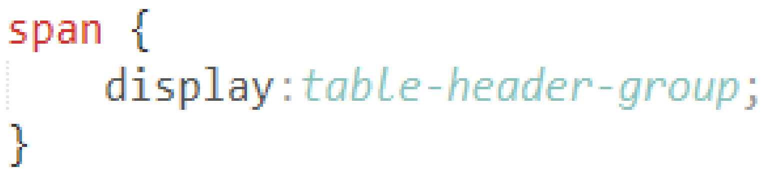
    <colgroup> element



```
span {
    display:table-column-group;
}
```

- **Display Table-Header-Group**
  - Let the element behave like

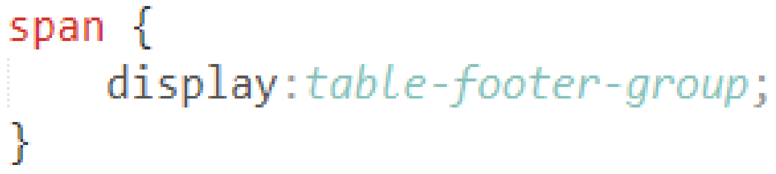
    <thead> element



```
span {
    display:table-header-group;
}
```

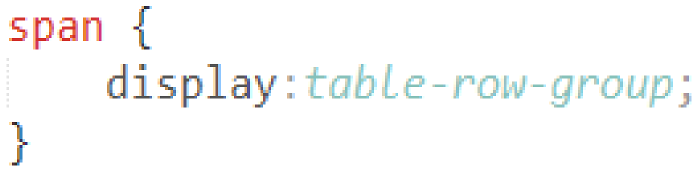
Display - Properties

- **Display Table-Footer-Group**
  - Let the element behave like <tfoot> element



```
span {
    display:table-footer-group;
}
```

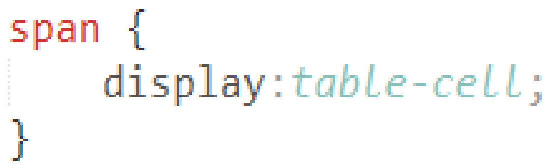
- **Display Table-Row-Group**
  - Let the element behave like <tbody> element



```
span {
    display:table-row-group;
}
```

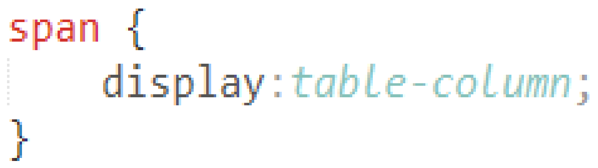
Display - Properties

- **Display Table-Cell**
  - Let the element behave like <td> element



```
span {
    display:table-cell;
}
```

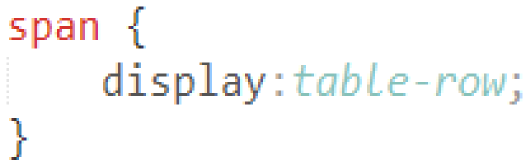
- **Display Table-Column**
  - Let the element behave like <col> element



```
span {
    display:table-column;
}
```

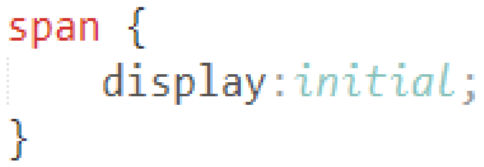
Display - Properties

- **Display Table-Row**
  - Let the element behave like <tr> element



```
span {
    display:table-row;
}
```

- **Display Initial**
  - Sets to default value



```
span {
    display:initial;
}
```

Visibility

CSS3 by Prashant Chaudhari

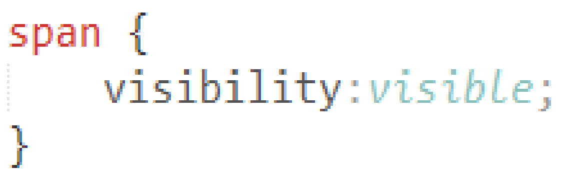
Visibility

- Determines whether element is visible or hidden
- **visibility** property is used
- **Property values**

  visible, hidden, collapse, inherit

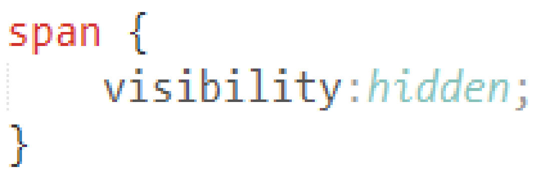
Visibility - Properties

- **visible**
  - Element block and its contents are visible



```
span {
    visibility:visible;
}
```

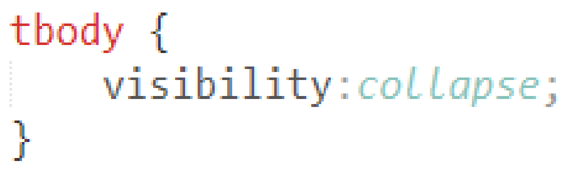
- **hidden**
  - Element block and its contents are invisible but still can affect the layout of page



```
span {
    visibility:hidden;
}
```

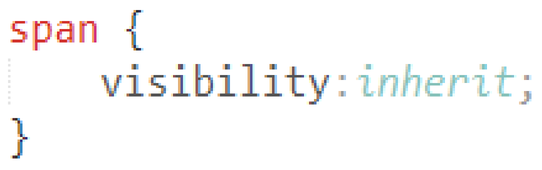
Visibility - Properties

- **collapse**
  - Causes entire row and column to be removed from display.
  - Used for row, row-group, column, column-group elements



```css
tbody {
    visibility:collapse;
}
```

- **inherit**
  - Property value inherited from parent element
  - i.e. if parent elements visibility value is collapse then inherited value is collapse



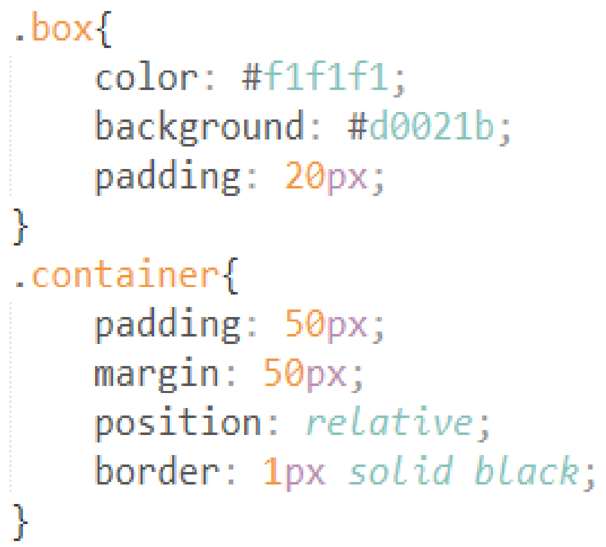
```css
span {
    visibility:inherit;
}
```

Position

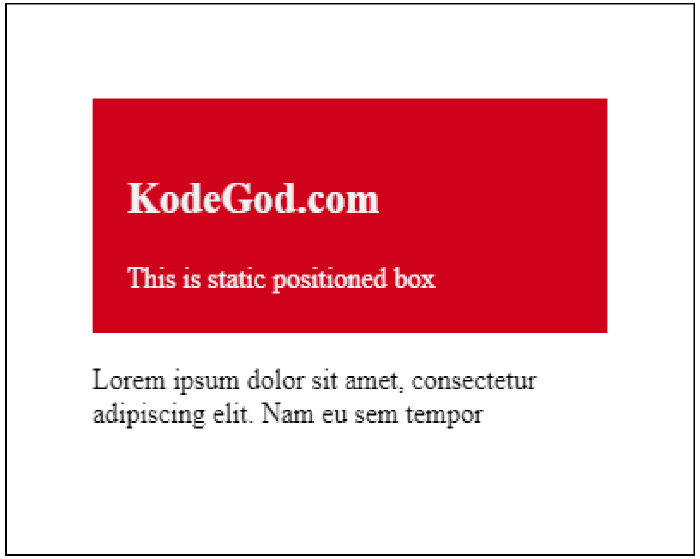
CSS3 by Prashant Chaudhari

Position

- Defines how an element will be positioned on a page
- **Positioning methods**
- **Static positioning**
  - Positioned according to the normal flow of page
  - Elements positioned static by default
  - Static positioned elements not affected by top, bottom, left, right, z-index properties



```
.box{
    color: #f1f1f1;
    background: #d0021b;
    padding: 20px;
}
.container{
    padding: 50px;
    margin: 50px;
    position: relative;
    border: 1px solid black;
}
```



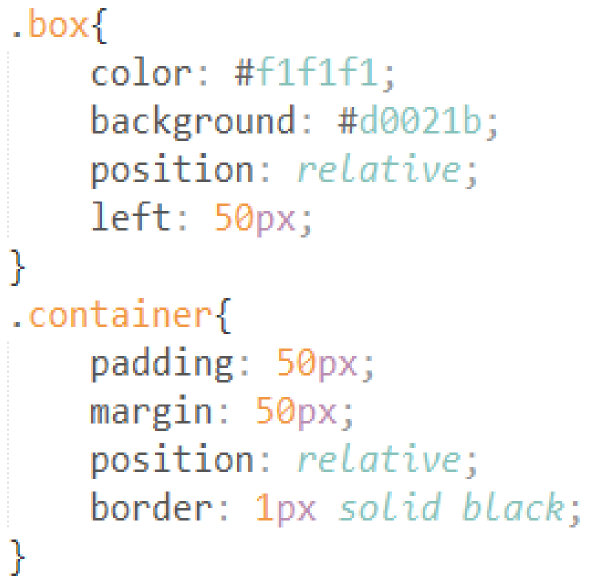
KodeGod.com

This is static positioned box

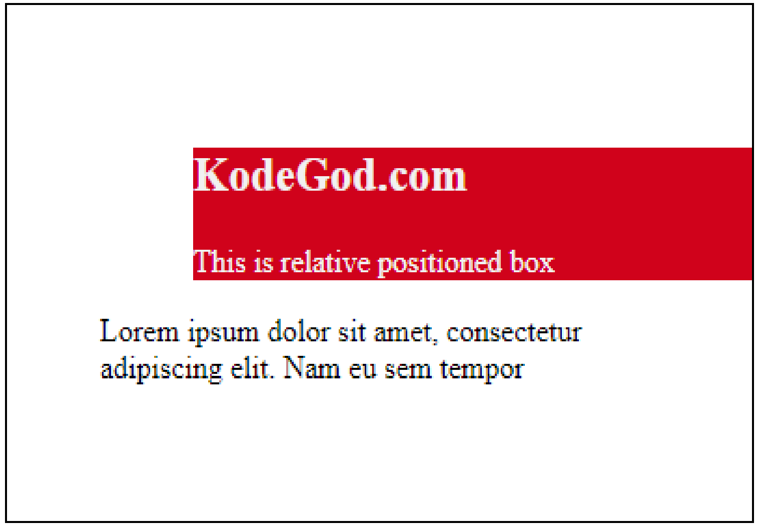
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam eu sem tempor

Position

- **Relative positioning**
  - Positioned relative to its normal position
  - Elements shifted from its normal position using properties top, bottom, left, right



```
.box{
    color: #f1f1f1;
    background: #d0021b;
    position: relative;
    left: 50px;
}
.container{
    padding: 50px;
    margin: 50px;
    position: relative;
    border: 1px solid black;
}
```



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This is relative positioned box

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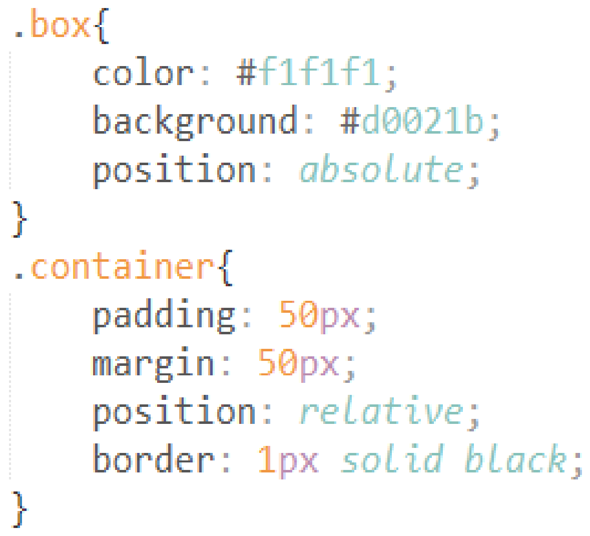
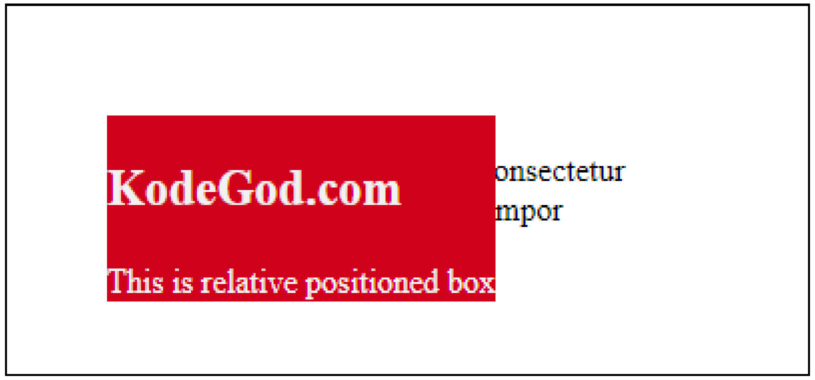
Position

- **Absolute positioning**
  - Positioned relative to first parent element that has position other than static
  - It can overlap other elements depending z-index property value



```
.box{
    color: #f1f1f1;
    background: #d0021b;
    position: absolute;
}
.container{
    padding: 50px;
    margin: 50px;
    position: relative;
    border: 1px solid black;
}
```



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This is relative positioned box

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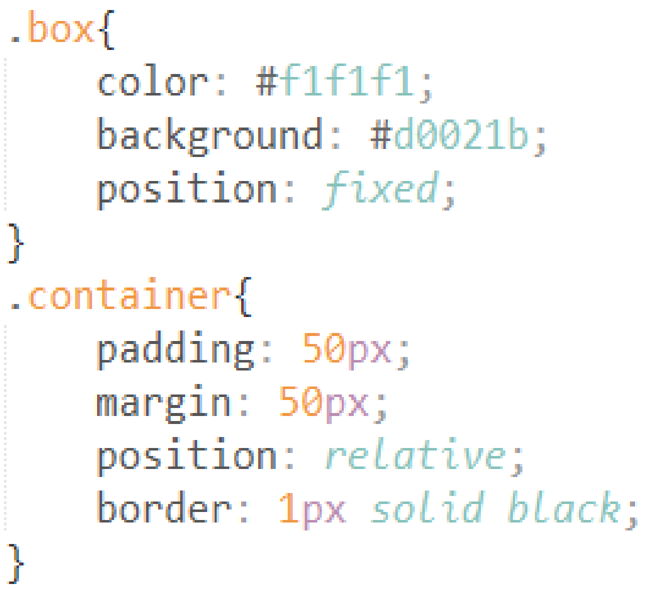
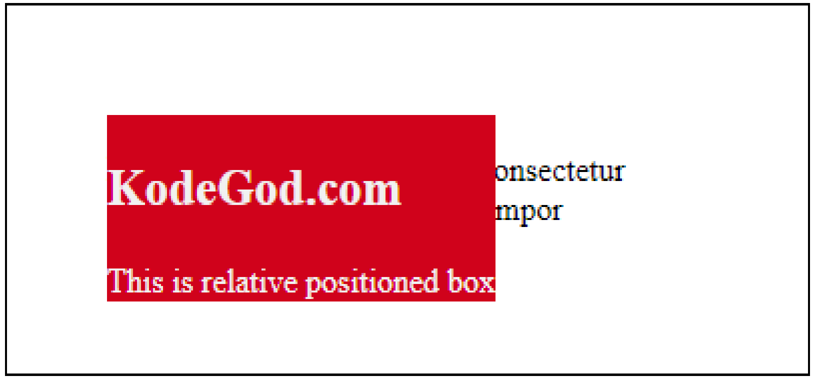
Position

- **Fixed positioning**
  - Subcategory of absolute positioning
  - Fixed with respect to browser's viewport
  - Does not move when scroll



```
.box{
    color: #f1f1f1;
    background: #d0021b;
    position: fixed;
}
.container{
    padding: 50px;
    margin: 50px;
    position: relative;
    border: 1px solid black;
}
```



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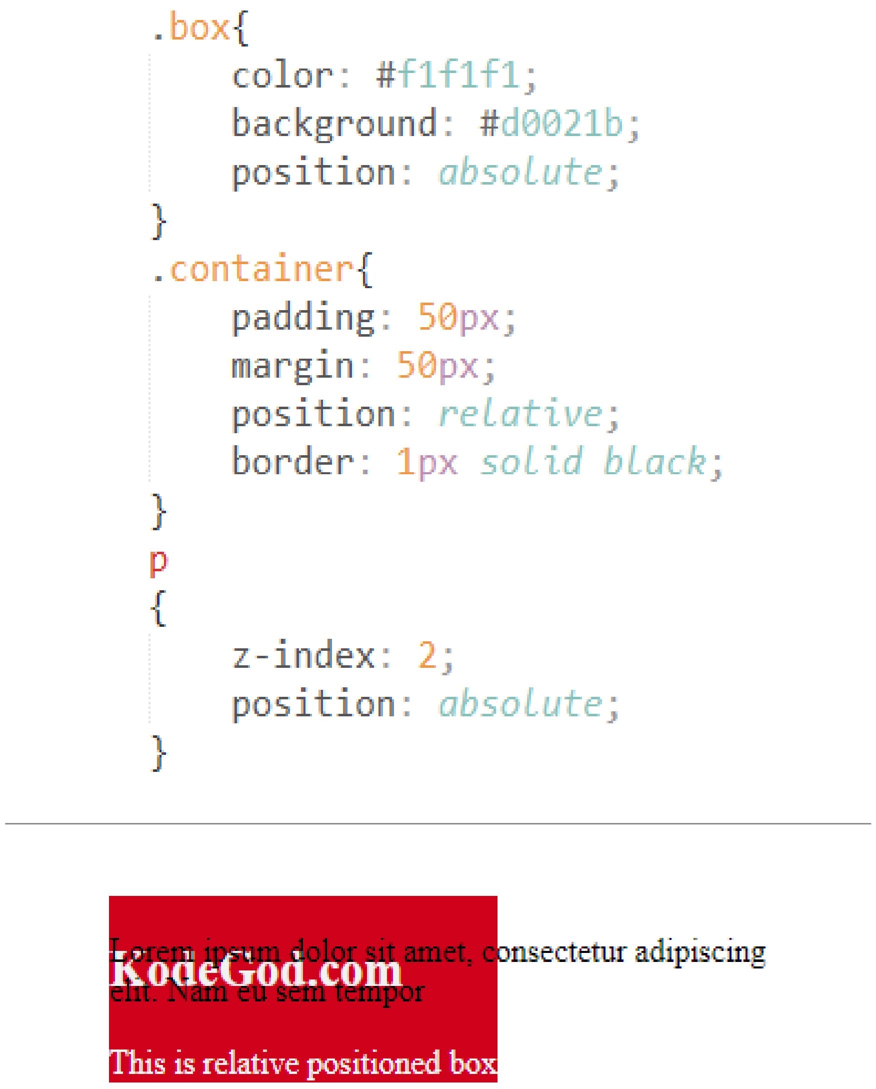
Layers

CSS3 by Prashant Chaudhari

Layers

- **z-index** property can be used with **position** property to create layers
- Elements can be stacked along z-axis one on top of other using z-index
- Values is in integer represents stacking order of rendering
- Larger z-index overlaps lower one



```
.box{
    color: #f1f1f1;
    background: #d0021b;
    position: absolute;
}
.container{
    padding: 50px;
    margin: 50px;
    position: relative;
    border: 1px solid black;
}
p
{
    z-index: 2;
    position: absolute;
}
```

KodeGod.com

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam eu sem tempor

This is relative positioned box

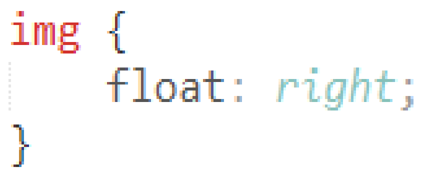
Float

CSS3 by Prashant Chaudhari

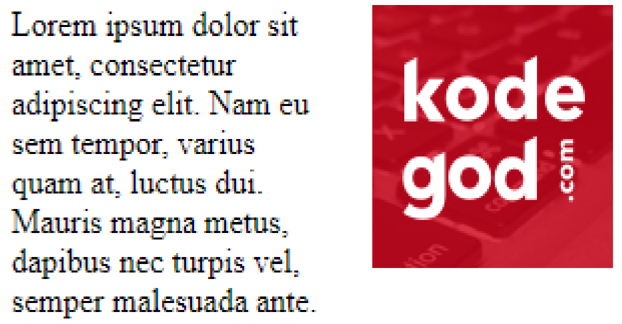
Float

- **float** property specifies whether element should float or not
- Applies only to box-level elements
- Elements which are not absolutely positioned
- **Property values**

  left, right, none



```
img {
    float: right;
}
```



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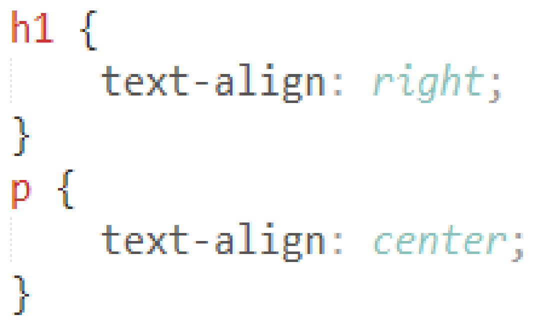
Alignment

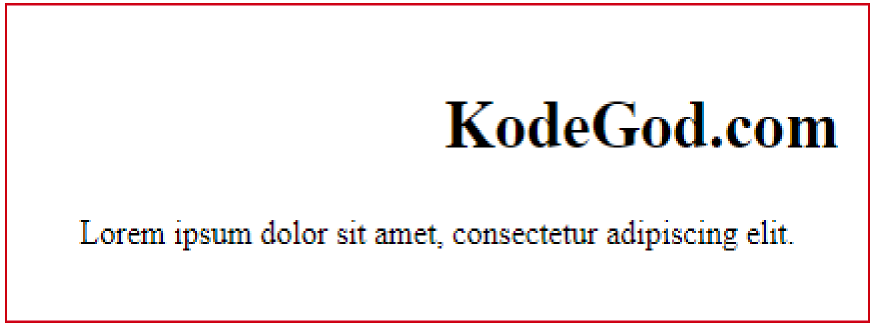
CSS3 by Prashant Chaudhari

Alignment

- Text inside box-level elements align using **text-align** property
- **Property values**
  - left align to left
  - right align to right
  - center align to center
  - initial sets default value
  - inherit takes value of parent element
- start align to start of element
- end align to end of element



```css
h1 {
    text-align: right;
}
p {
    text-align: center;
}
```



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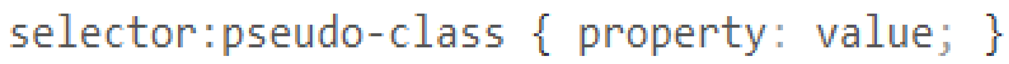
Pseudo Classes

CSS3 by Prashant Chaudhari

Pseudo Classes

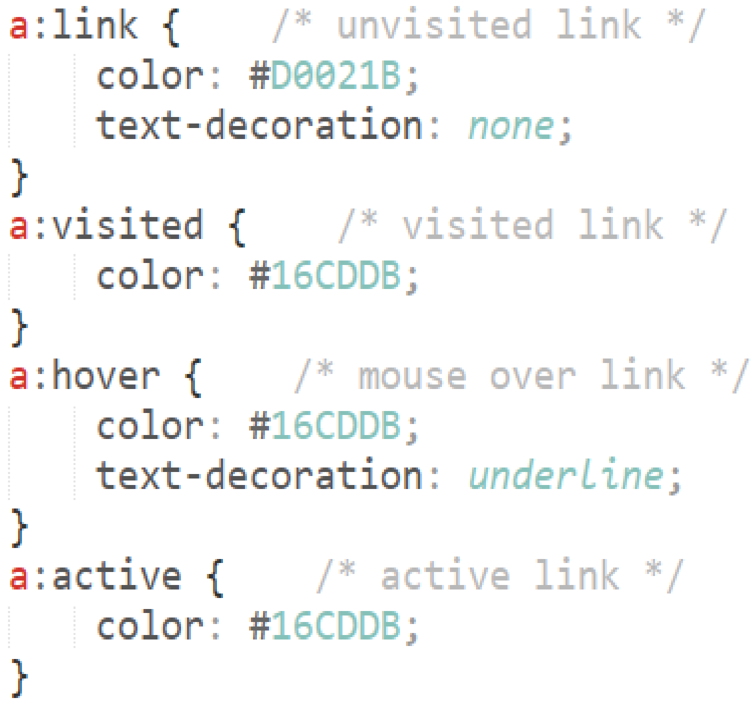
- Matches elements based on additional condition
- Allows to style dynamic states of elements (hover, active, focus)
- Starts with (:)
- **Syntax**



```
selector:pseudo-class { property: value; }
```

Pseudo Classes

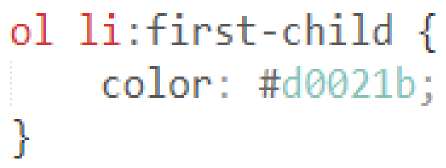
- **Anchor Pseudo-Classes**
    - Links can displayed in different ways



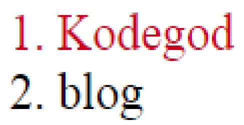
```
a:link {     /* unvisited link */
    color: #D0021B;
    text-decoration: none;
}
a:visited {     /* visited link */
    color: #16CDDB;
}
a:hover {     /* mouse over link */
    color: #16CDDB;
    text-decoration: underline;
}
a:active {     /* active link */
    color: #16CDDB;
}
```

Pseudo Classes

- **:first-child** pseudo-class
  - Matches element that is first child element of other element



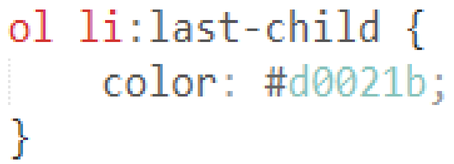
```
ol li:first-child {
    color: #d0021b;
}
```



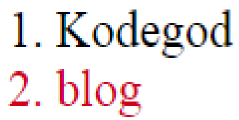
1. Kodegod
2. blog

Pseudo Classes

- **:last-child** pseudo-class
  - Matches element that is last child element of other element



```
ol li:last-child {
    color: #d0021b;
}
```



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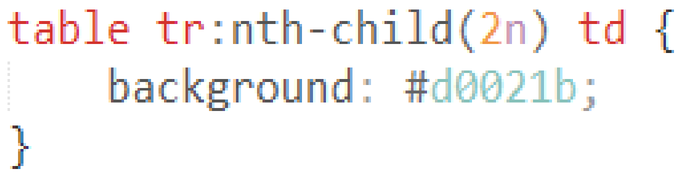
Pseudo Classes

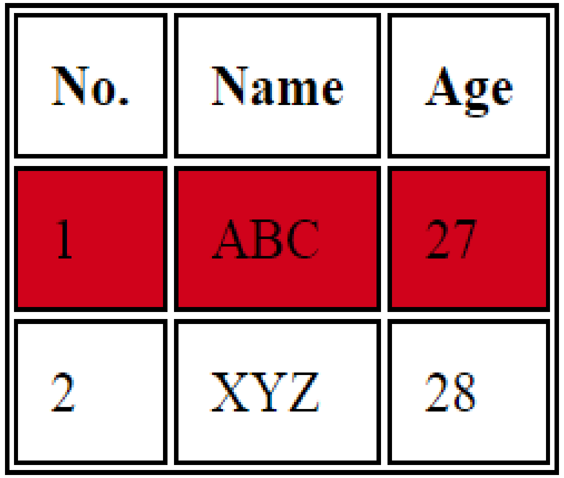
- **:nth-child** pseudo-class
  - Targets one or more element of parent element
  - **Syntax**

    :nth-child(N), where (**N**) can be a number,

    keyword (odd, even) or expression (xn +y)



```css
table tr:nth-child(2n) td {
    background: #d0021b;
}
```

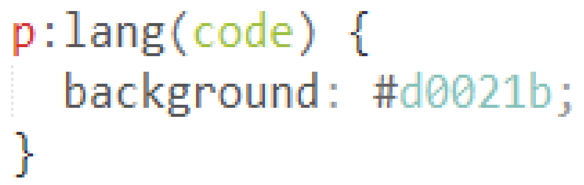


No.	Name	Age
1	ABC	27
2	XYZ	28

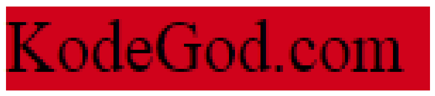
Pseudo Classes

- **:lang** pseudo-class
  - Used to select elements with **lang** attribute with specified value
  - **Syntax**

    :lang(languagecode)



```
p:lang(code) {
  background: #d0021b;
}
```



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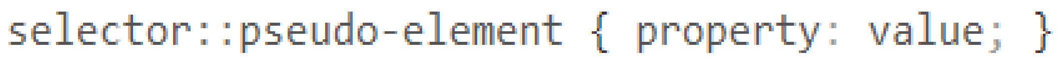
Pseudo Elements

CSS3 by Prashant Chaudhari

Pseudo Elements

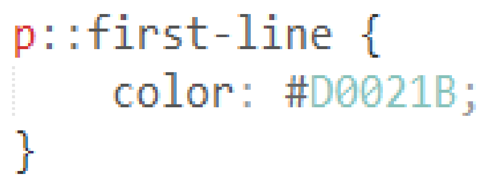
- Way of styling elements that are explicitly defined by a position in document tree
- Can style elements without id or class
- **Syntax**



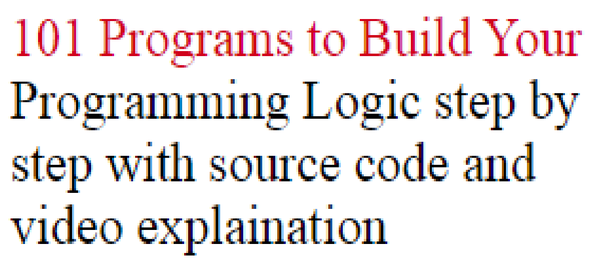
```
selector::pseudo-element { property: value; }
```

Pseudo Elements

- **::first-line** pseudo element
  - Applies to first line of text



```
p::first-line {
    color: #D0021B;
}
```



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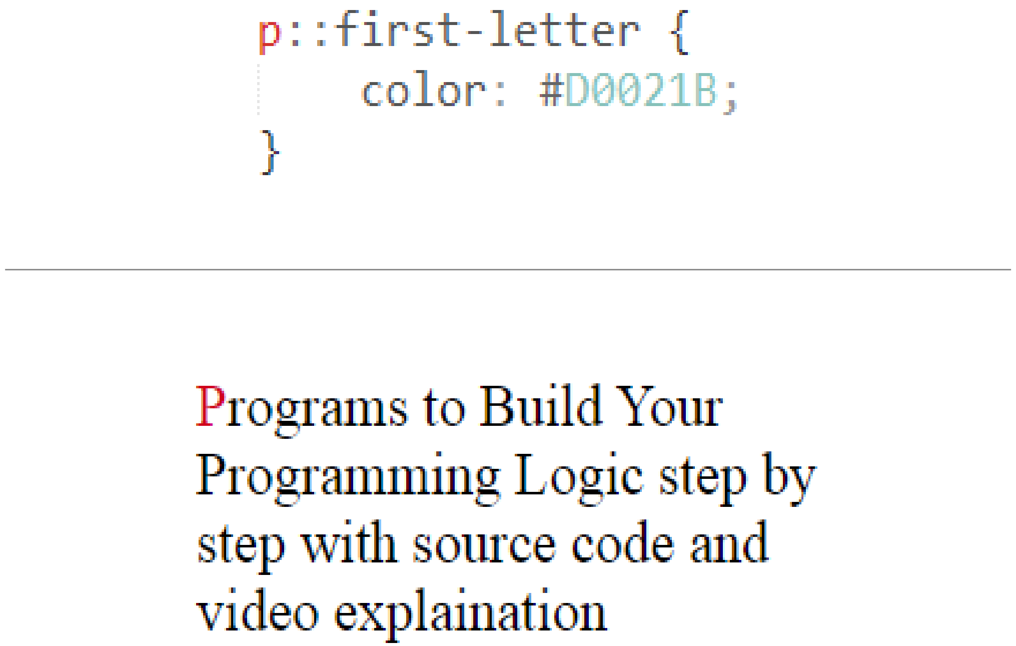
Pseudo Elements

- **::first-letter** pseudo element
  - Applies style to first letter of first line of text



```
p::first-letter {
    color: #D0021B;
}
```

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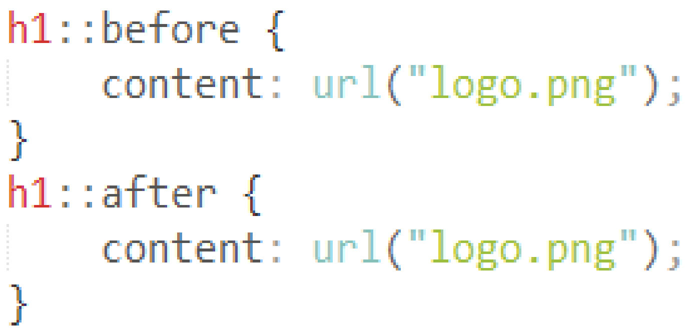
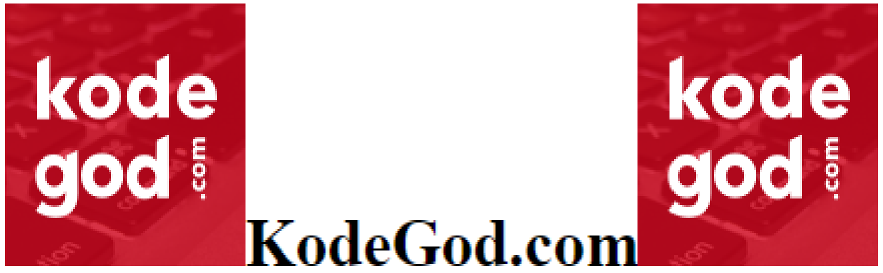
Pseudo Elements

- **::before and ::after** pseudo element
  - Used to insert content before or after element’s content
  - **content** property is used to add content



```css
h1::before {
    content: url("logo.png");
}
h1::after {
    content: url("logo.png");
}
```



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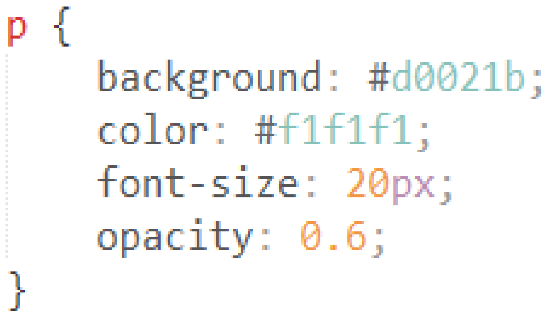
Opacity

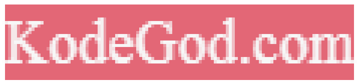
CSS3 by Prashant Chaudhari

Opacity

- Specifies transparency of element
- Cross browser opacity
  - Firefox, safari, chrome, opera, IE9



```css
p {
    background: #d0021b;
    color: #f1f1f1;
    font-size: 20px;
    opacity: 0.6;
}
```



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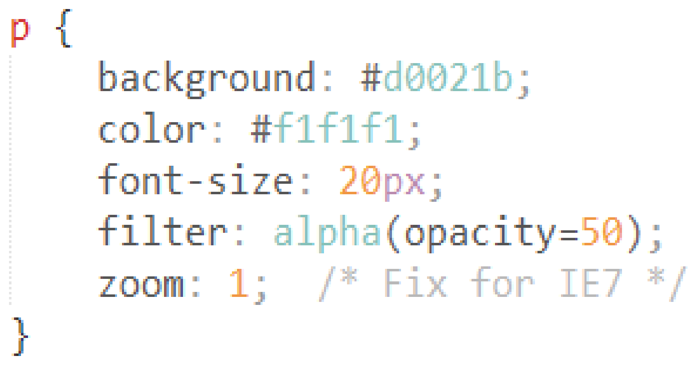
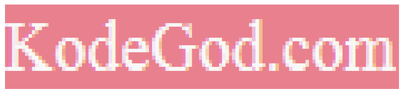
Opacity

- Cross browser opacity
  - IE8 and lower
    - Supports a Microsoft-only property "alpha filter"
  - **zoom** property is used to scale the content

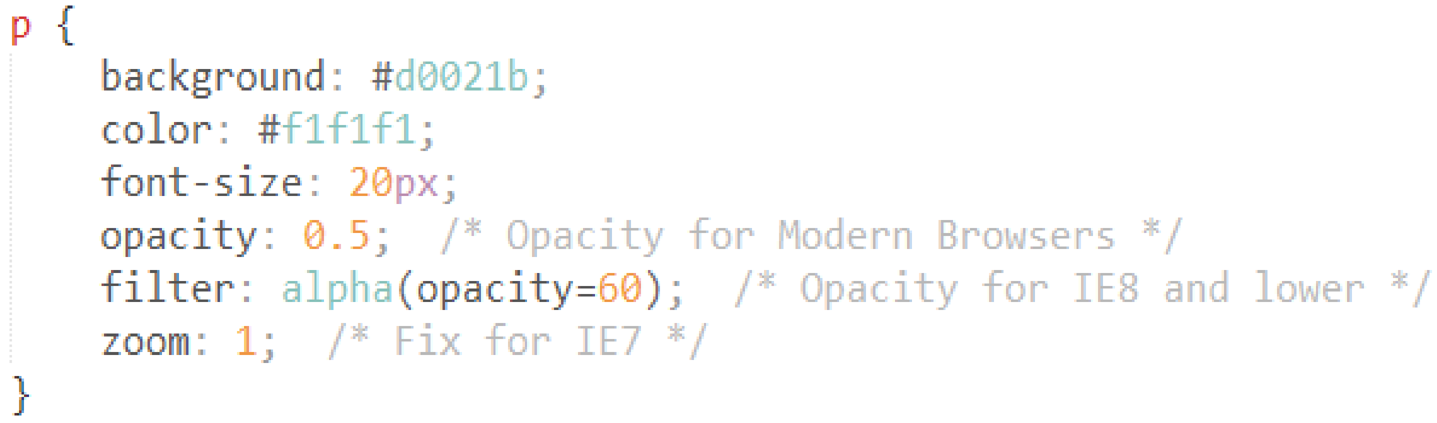


```
p {
    background: #d0021b;
    color: #f1f1f1;
    font-size: 20px;
    filter: alpha(opacity=50);
    zoom: 1;  /* Fix for IE7 */
}
```



Opacity

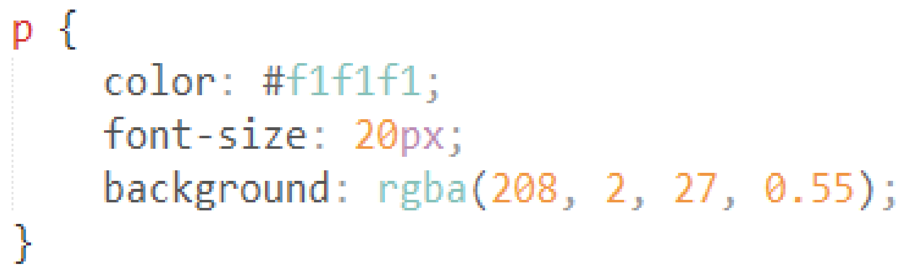
- All browsers



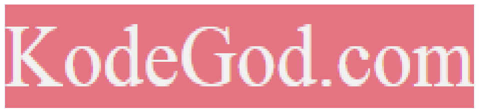
```
p {
    background: #d0021b;
    color: #f1f1f1;
    font-size: 20px;
    opacity: 0.5;  /* Opacity for Modern Browsers */
    filter: alpha(opacity=60);  /* Opacity for IE8 and lower */
    zoom: 1;  /* Fix for IE7 */
}
```

Opacity

- Using **RGBA**
  - rgba value includes alpha transparency as part of color value.
  - RGB value ranges between (0-255) for each red, green and blue color and alpha value ranges between 0 to 1



```
p {
    color: #f1f1f1;
    font-size: 20px;
    background: rgba(208, 2, 27, 0.55);
}
```



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Gradients

CSS3 by Prashant Chaudhari

Gradients

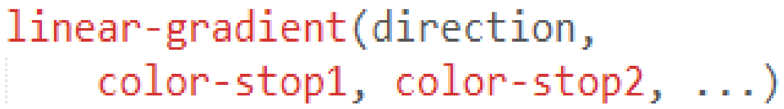
- Allows to create smooth transitions between two

  or more colors
- **Available in two styles**
  - **Linear**
  - **Radial**

Linear Gradient

- Must define at least two color stops
- Can also set starting point and a direction along

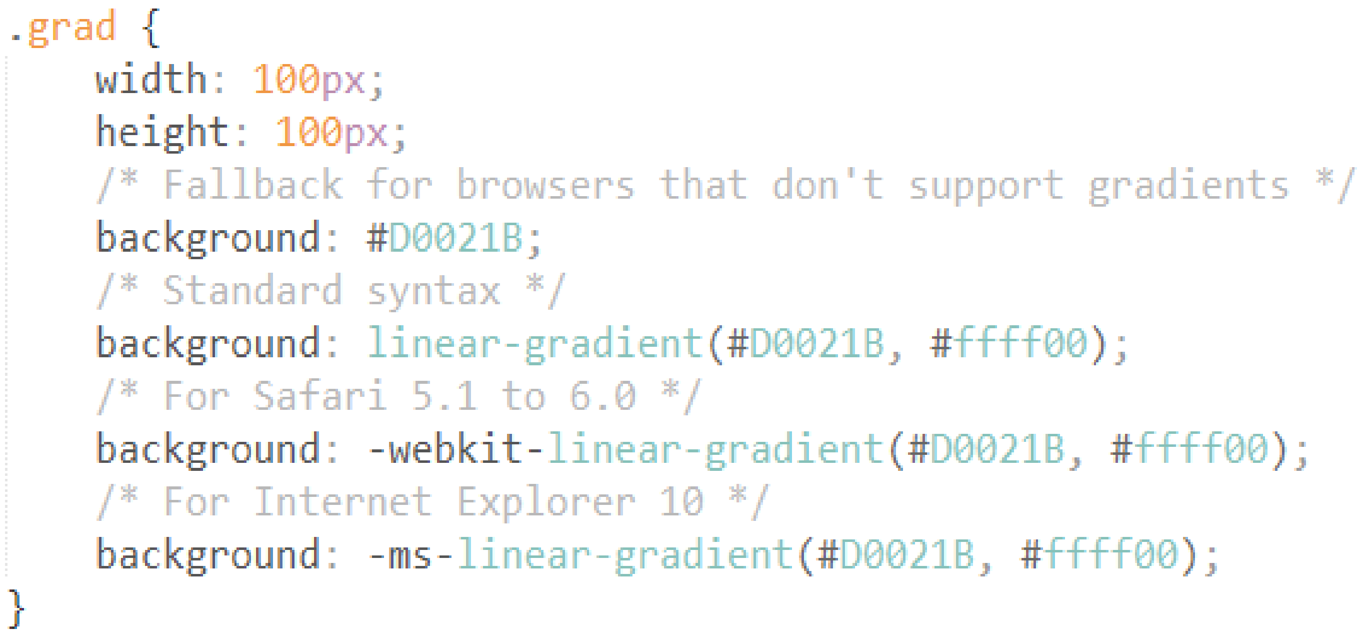
  which gradient effect is applied
- **Syntax**



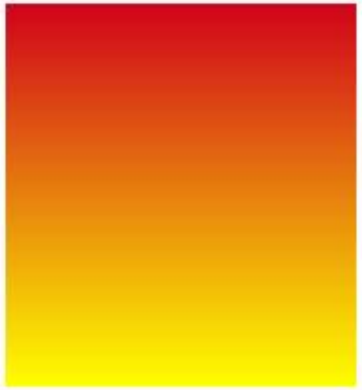
```
linear-gradient(direction,
    color-stop1, color-stop2, ...)
```

Linear Gradient

- **Linear gradient (Top to bottom)**

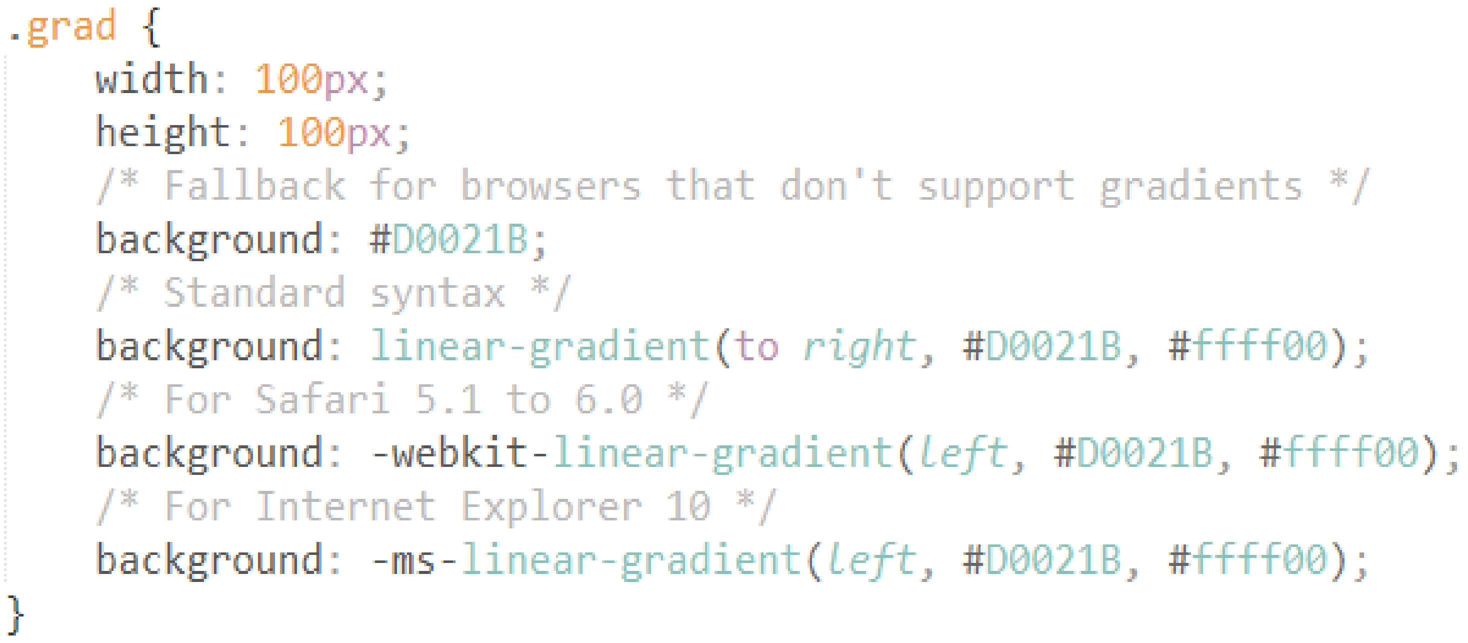


```css
.grad {
    width: 100px;
    height: 100px;
    /* Fallback for browsers that don't support gradients */
    background: #D0021B;
    /* Standard syntax */
    background: linear-gradient(#D0021B, #ffff00);
    /* For Safari 5.1 to 6.0 */
    background: -webkit-linear-gradient(#D0021B, #ffff00);
    /* For Internet Explorer 10 */
    background: -ms-linear-gradient(#D0021B, #ffff00);
}
```

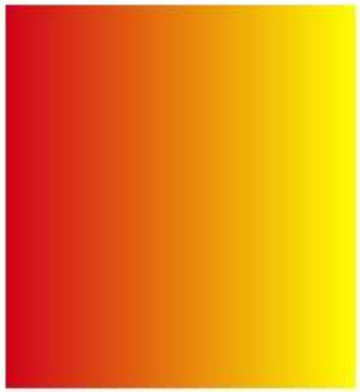


Linear Gradient

- **Linear gradient (Left to Right)**

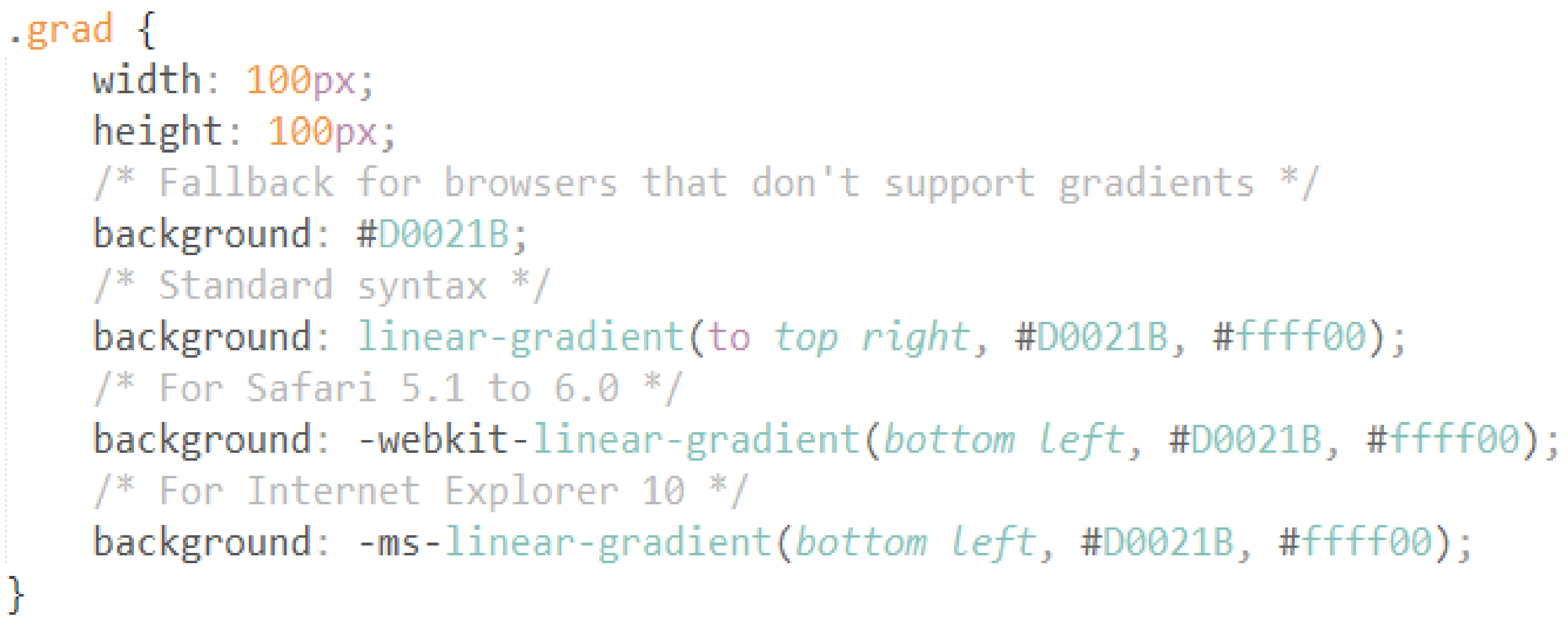


```css
.grad {
    width: 100px;
    height: 100px;
    /* Fallback for browsers that don't support gradients */
    background: #D0021B;
    /* Standard syntax */
    background: linear-gradient(to right, #D0021B, #ffff00);
    /* For Safari 5.1 to 6.0 */
    background: -webkit-linear-gradient(left, #D0021B, #ffff00);
    /* For Internet Explorer 10 */
    background: -ms-linear-gradient(left, #D0021B, #ffff00);
}
```

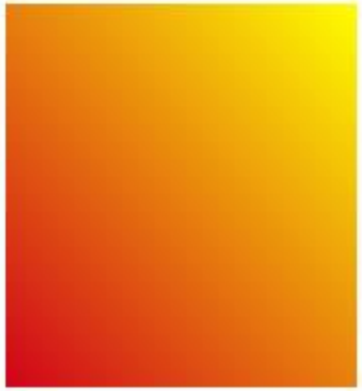


Linear Gradient

- **Linear gradient (Diagonal)**

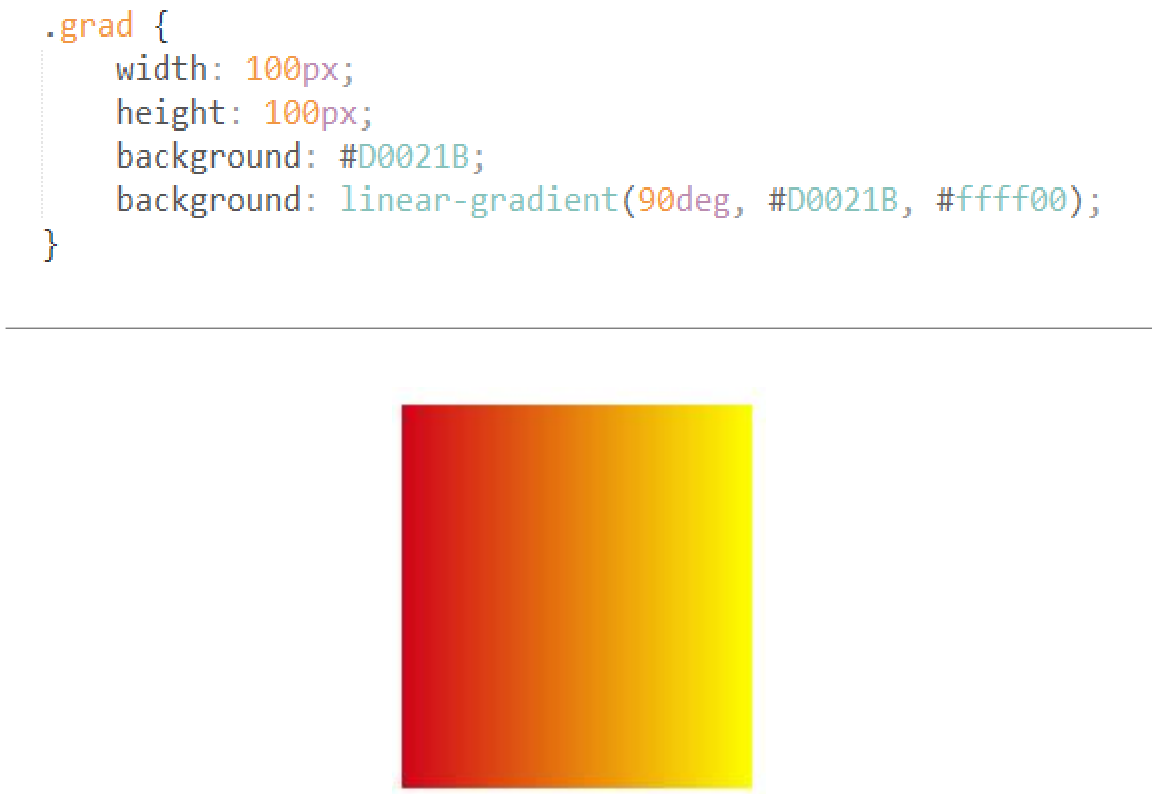


```
.grad {
    width: 100px;
    height: 100px;
    /* Fallback for browsers that don't support gradients */
    background: #D0021B;
    /* Standard syntax */
    background: linear-gradient(to top right, #D0021B, #ffff00);
    /* For Safari 5.1 to 6.0 */
    background: -webkit-linear-gradient(bottom left, #D0021B, #ffff00);
    /* For Internet Explorer 10 */
    background: -ms-linear-gradient(bottom left, #D0021B, #ffff00);
}
```



Linear Gradient

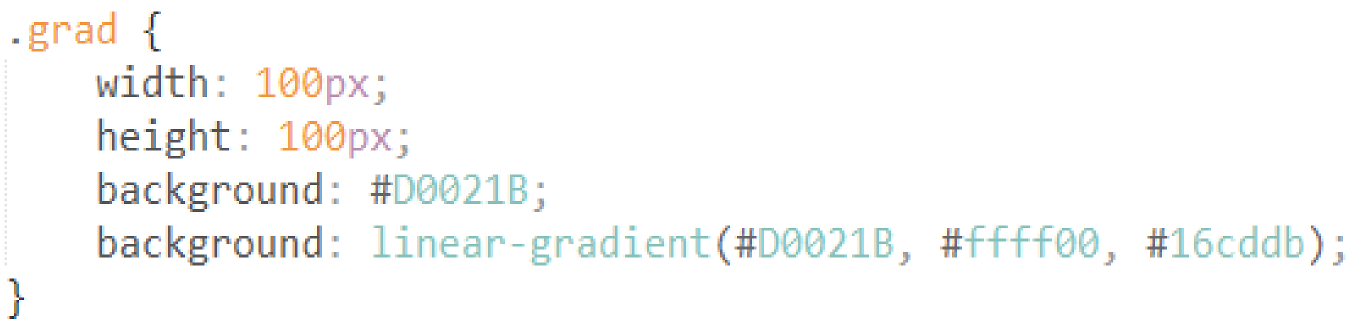
- **Linear gradient (Using angles)**
  - Can control directions using angles instead of predefined keywords
  - Angle 0deg creates bottom to top gradient, and positive angle represents clockwise rotation



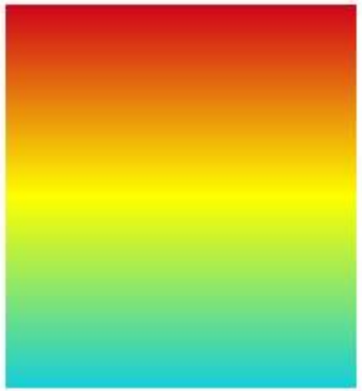
```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: linear-gradient(90deg, #D0021B, #ffff00);
}
```

Linear Gradient

- **Linear gradient (Multiple colors)**

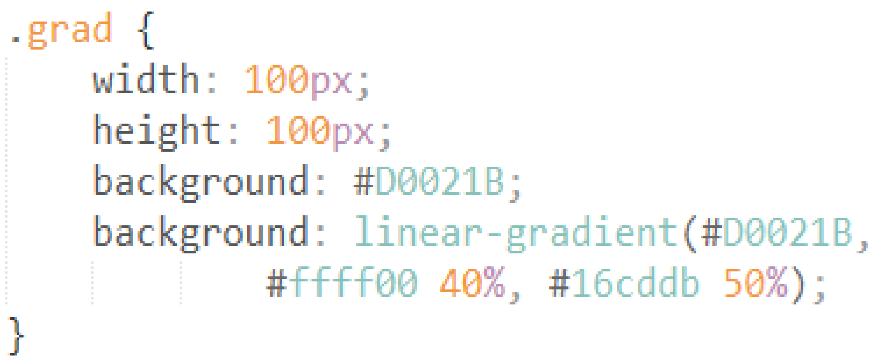


```css
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: linear-gradient(#D0021B, #ffff00, #16cddb);
}
```

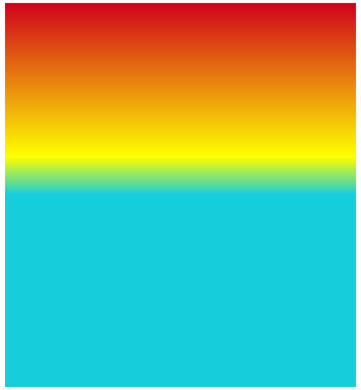


Linear Gradient

- **Linear gradient (Location color stops)**
  - Location color stop can be specified either as percentage or an absolute length

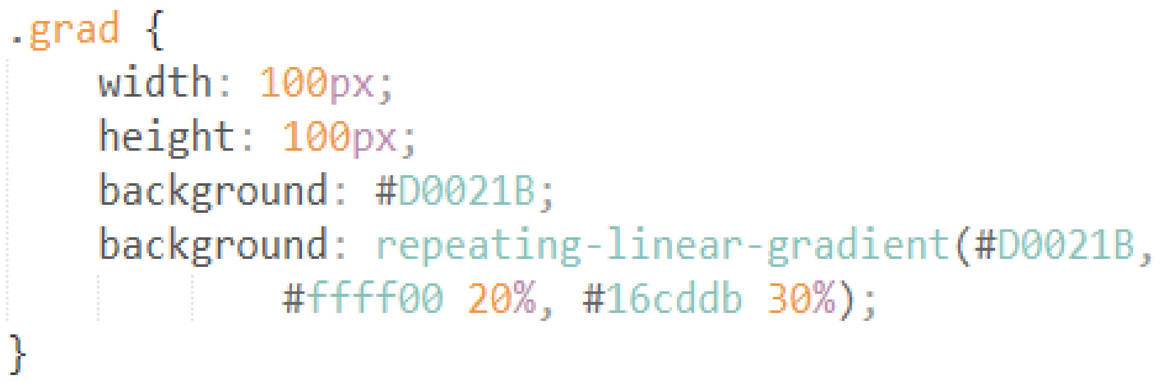


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: linear-gradient(#D0021B,
            #ffff00 40%, #16cddb 50%);
}
```

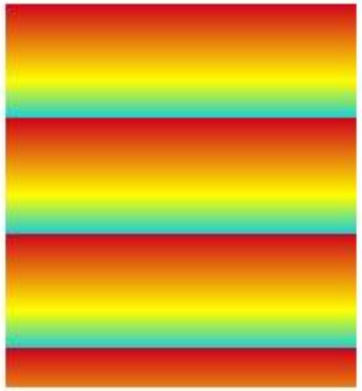


Linear Gradient

- **Repeating Linear gradient**

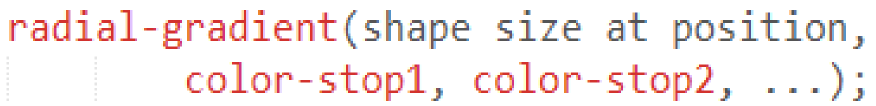


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: repeating-linear-gradient(#D0021B,
                #ffff00 20%, #16cddb 30%);
}
```



Radial Gradient

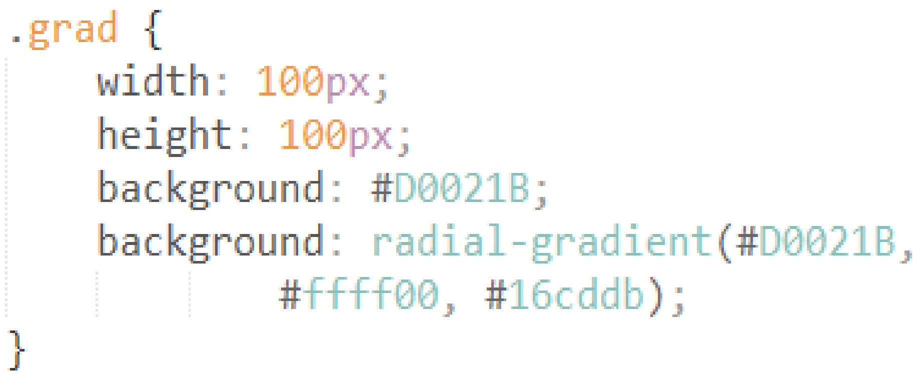
- Color emerge from single point and smoothly spread in circular or elliptical shape
- **Syntax**



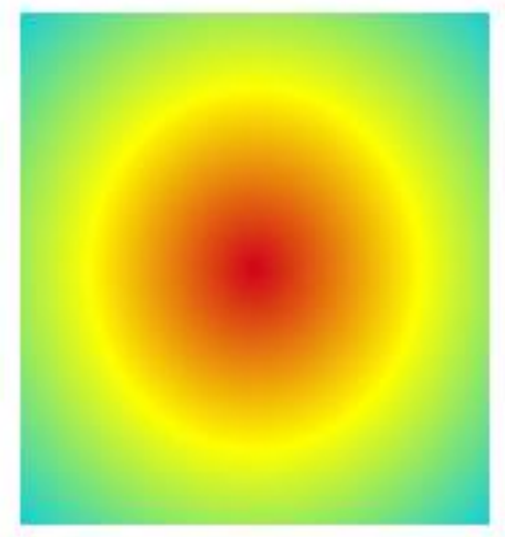
```
radial-gradient(shape size at position,
          color-stop1, color-stop2, ...);
```

- **Shape** Gradients ending shape, can be circle or ellipse
- **Size** Size of the gradients ending shape, default is farthest-side
- **Position** Starting point of the gradient, can be in units (px, em or %) or keywords (left, right, top, bottom)

Radial Gradient

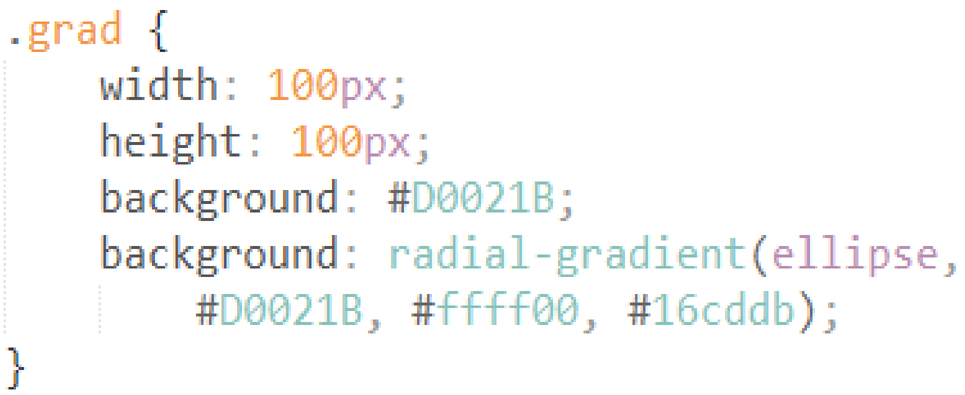


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: radial-gradient(#D0021B,
            #ffff00, #16cddb);
}
```

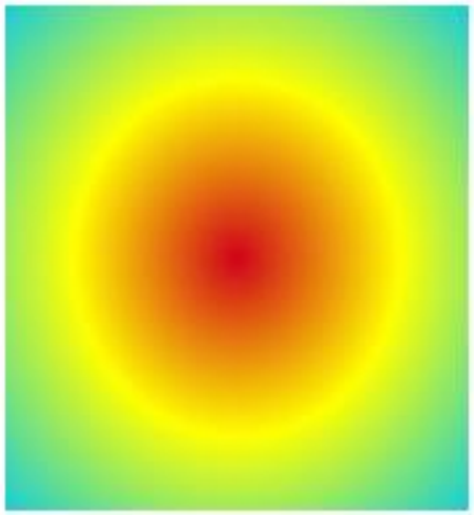


Radial Gradient

- **Radial (Using Shape)**

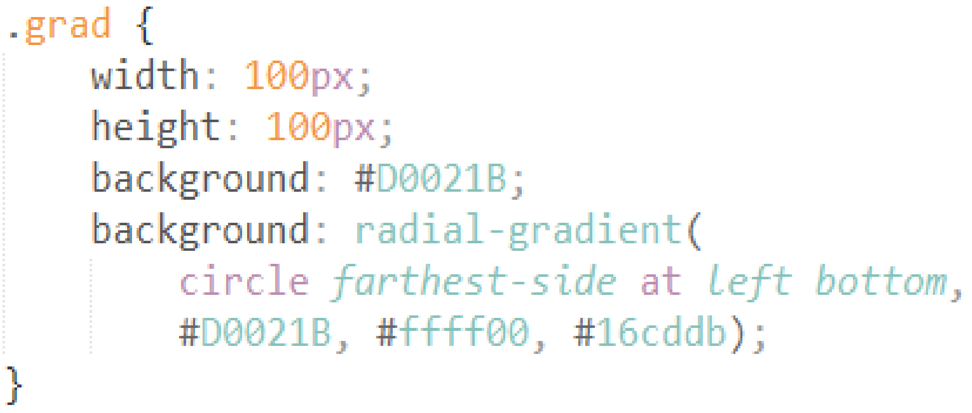


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: radial-gradient(ellipse,
        #D0021B, #ffff00, #16cddb);
}
```

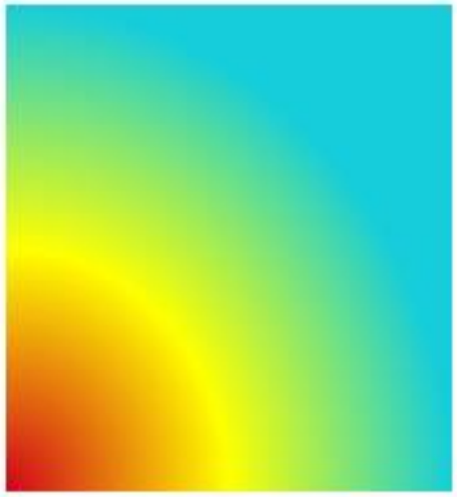


Radial Gradient

- **Radial (Using Size and Position)**
  - Can be set using units or keywords (closest-side, farthest-side, closest-corner, farthest-corner)

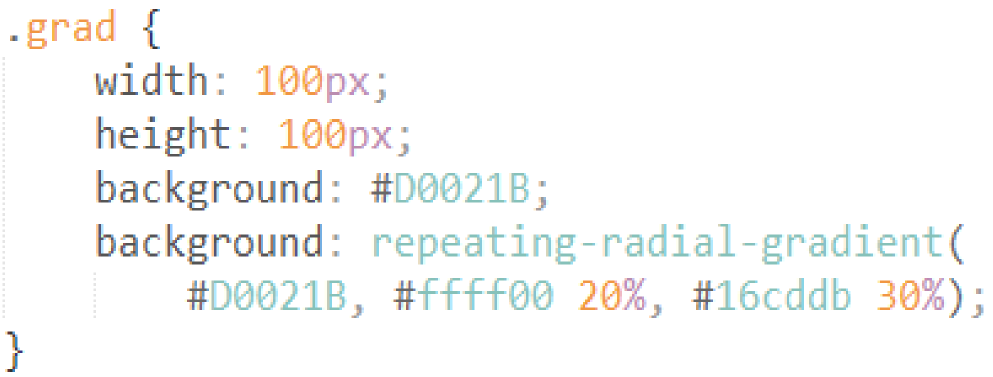


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: radial-gradient(
        circle farthest-side at left bottom,
        #D0021B, #ffff00, #16cddb);
}
```

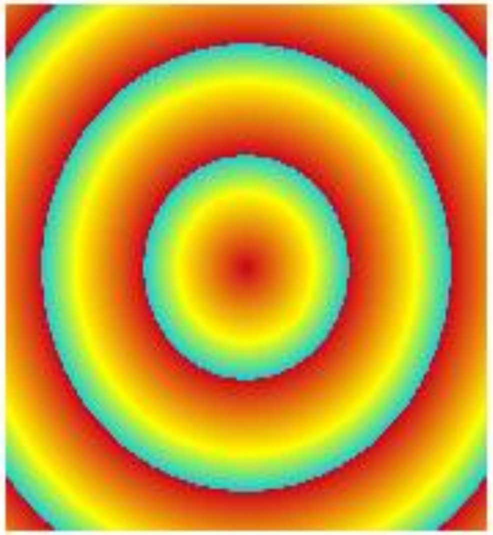


Radial Gradient

- **Repeating Radial Gradient**

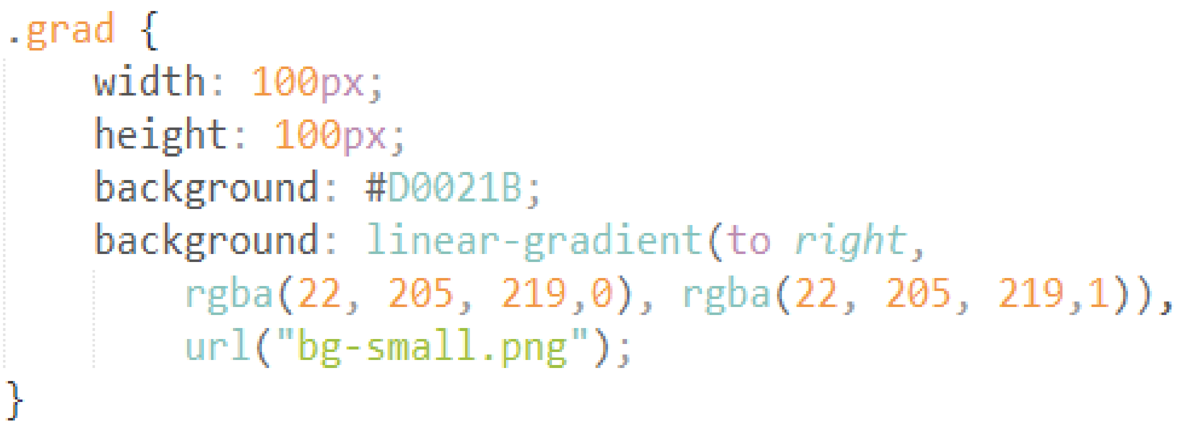


```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: repeating-radial-gradient(
        #D0021B, #ffff00 20%, #16cddb 30%);
}
```

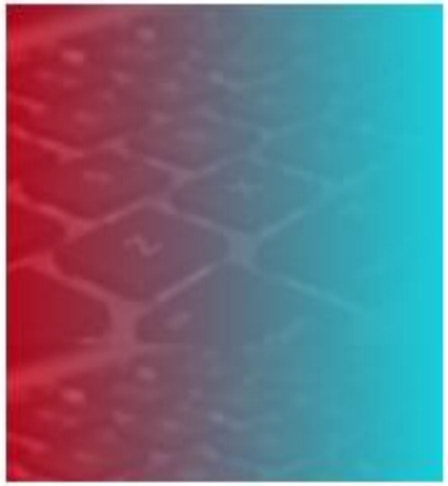


Gradients

- **Transparency with Gradient**



```
.grad {
    width: 100px;
    height: 100px;
    background: #D0021B;
    background: linear-gradient(to right,
        rgba(22, 205, 219,0), rgba(22, 205, 219,1)),
        url("bg-small.png");
}
```

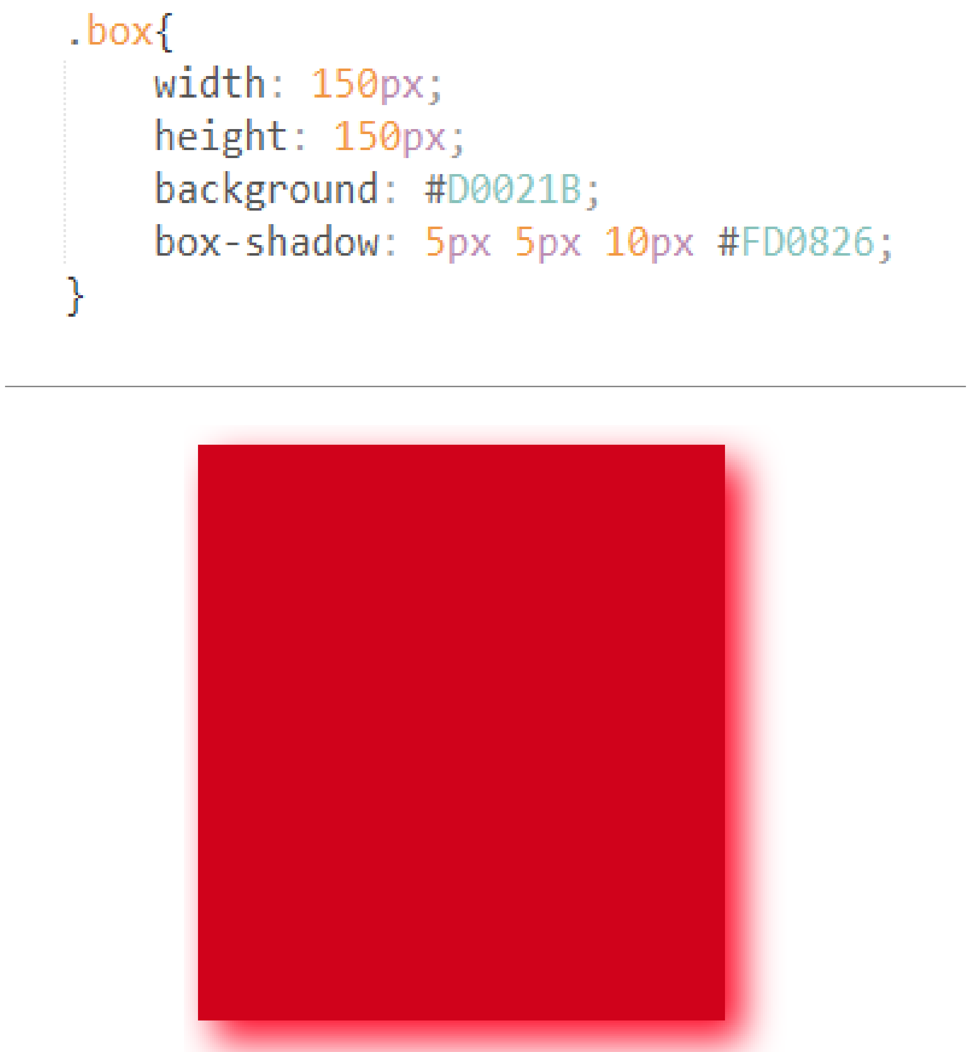


Drop Shadow

CSS3 by Prashant Chaudhari

Drop Shadow

- Allows to apply shadow to elements
- **Properties**
  - **box-shadow**
    - Adds shadow to the element’s boxes
    - Can add one or more shadow effects using comma-separated list of shadows
    - **Syntax**

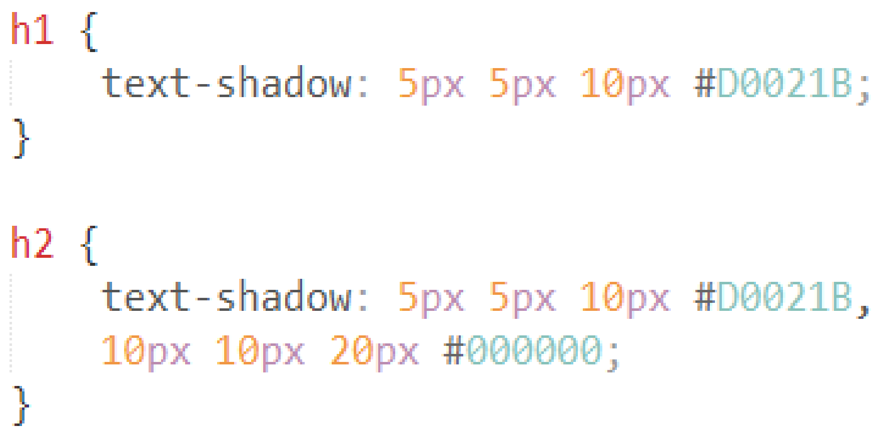


```
.box{
    width: 150px;
    height: 150px;
    background: #D0021B;
    box-shadow: 5px 5px 10px #FD0826;
}
```

```
box-shadow: offset-x offset-y blur-radius color;
```

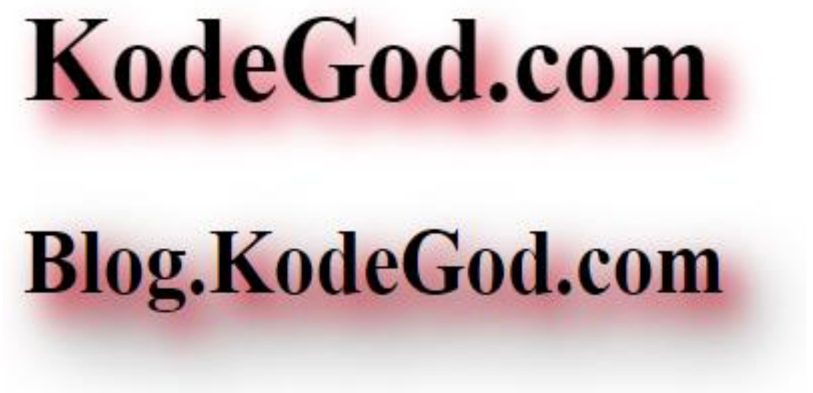
Drop Shadow - Properties

- **text-shadow**
  - Apply shadow effects on text



```
h1 {
    text-shadow: 5px 5px 10px #D0021B;
}

h2 {
    text-shadow: 5px 5px 10px #D0021B,
    10px 10px 20px #000000;
}
```



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2D Transforms

CSS3 by Prashant Chaudhari

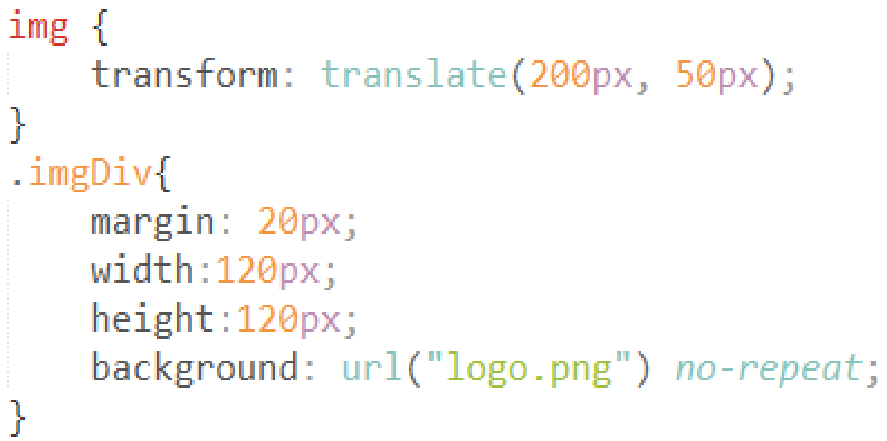
2D Transforms

- Allows elements to be transformed in 2D space
- Can move , rotate, scale, skew elements
- Not affects on surrounding elements but can overlap them
- Manipulates coordinate system used by an element

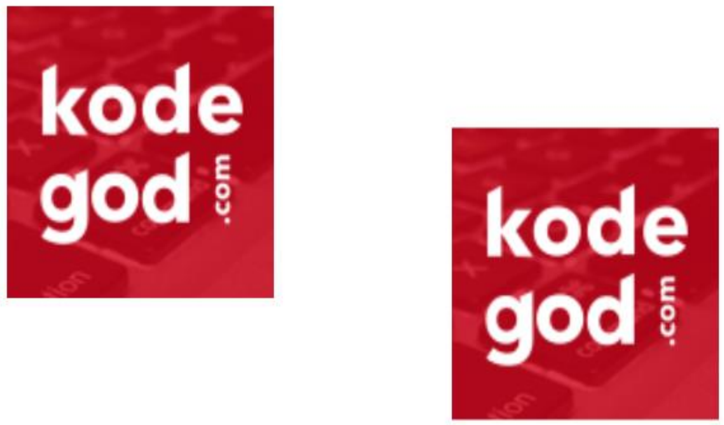
2D Transforms - Functions

- **translate**
  - moves element along x and y axis
  - **Syntax**

    translate(tx, ty)



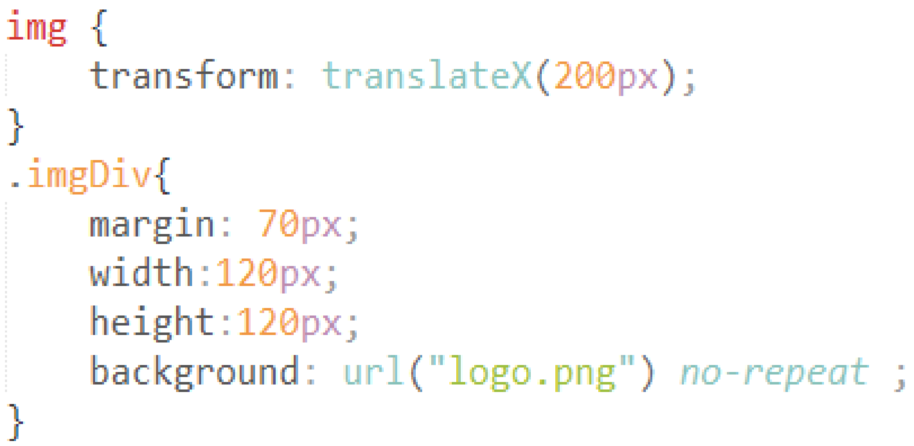
```
img {
    transform: translate(200px, 50px);
}
.imgDiv{
    margin: 20px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```



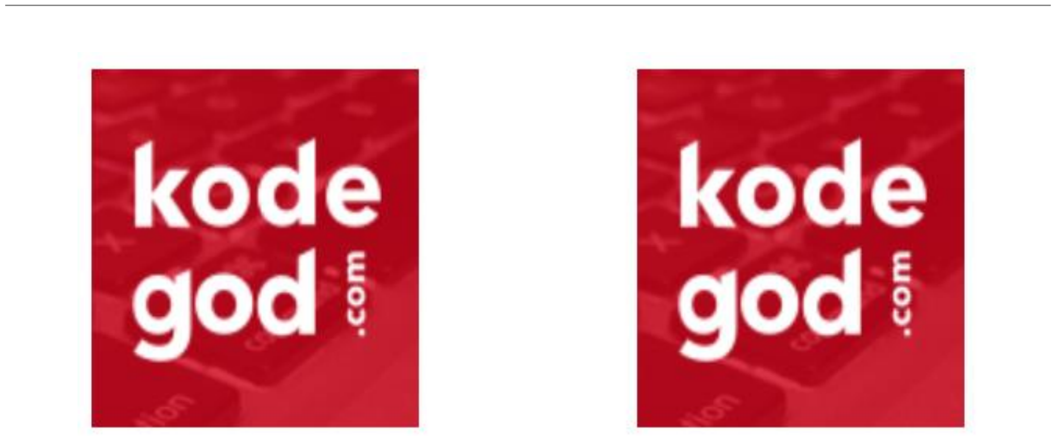
2D Transforms - Functions

- **translate** (x-axis)
  - moves element along x axis
  - **Syntax**

    translateX(tx)



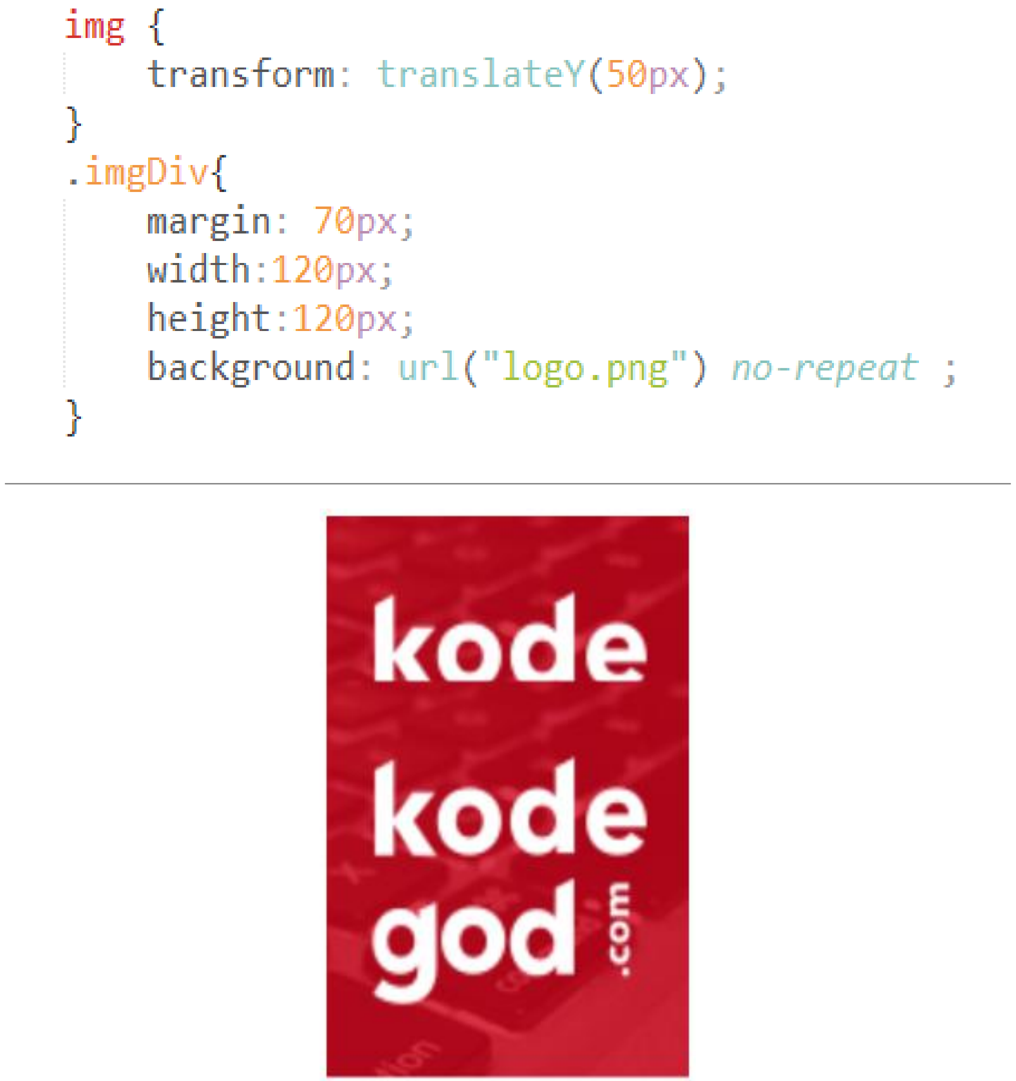
```
img {
    transform: translateX(200px);
}
.imgDiv{
    margin: 70px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat ;
}
```



2D Transforms - Functions

- **translate** (y-axis)
  - moves element along y axis
  - **Syntax**

    translateY(ty)

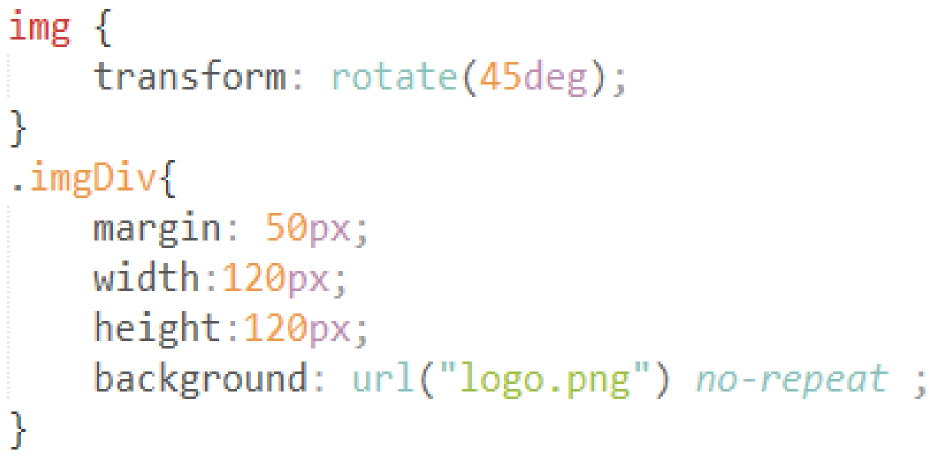


```
img {
    transform: translateY(50px);
}
.imgDiv{
    margin: 70px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat ;
}
```

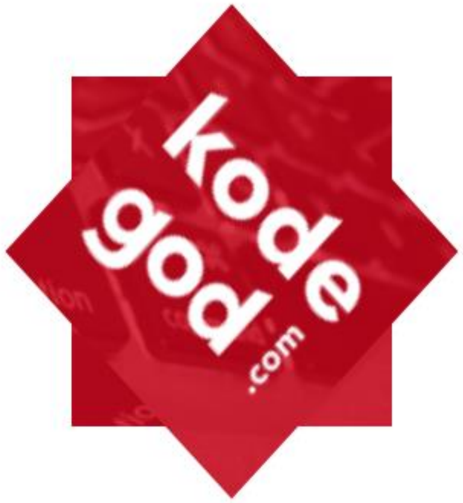
2D Transforms - Functions

- **rotate**
  - rotates element around its origin by specified angle
  - **Syntax**

    rotate(a)



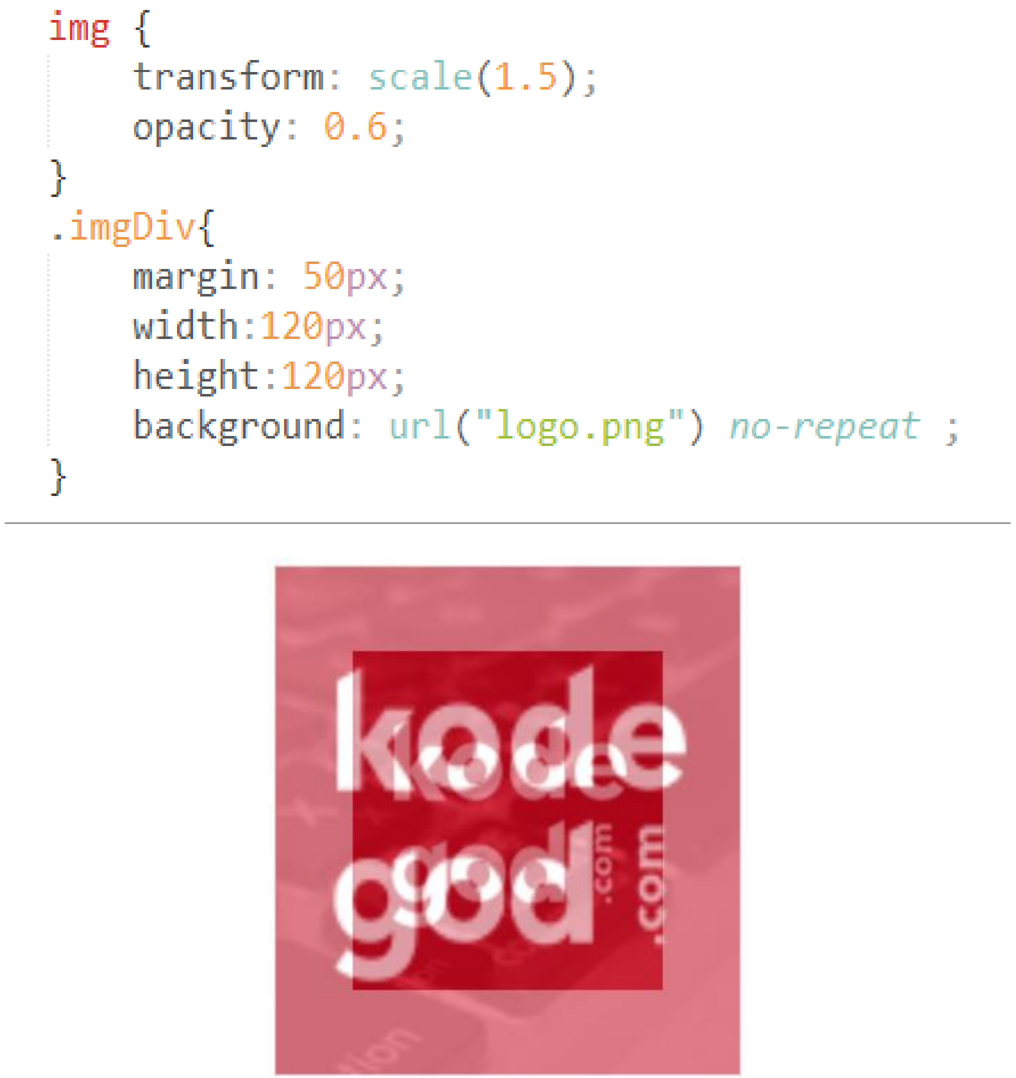
```
img {
    transform: rotate(45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat ;
}
```



2D Transforms - Functions

- **scale**
  - Increases or decreases size of an element
  - **Syntax**

    scale(size)

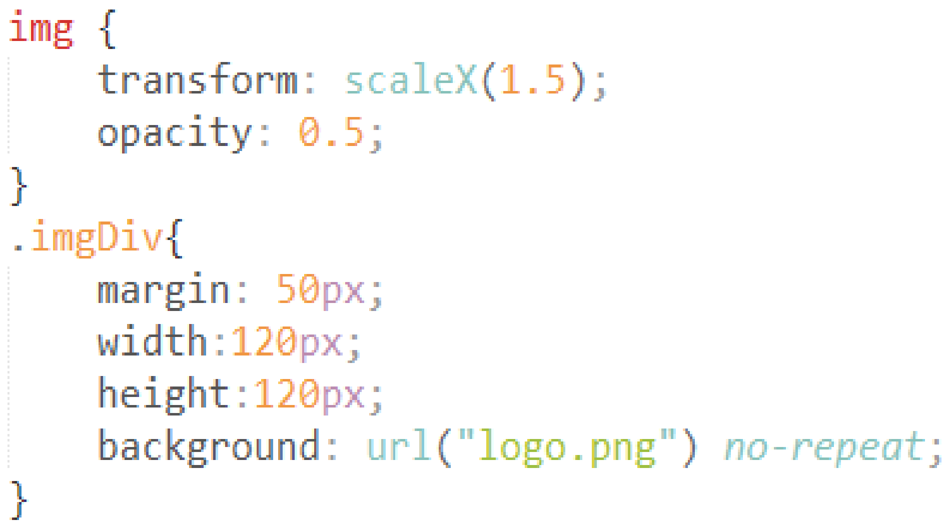


```
img {
    transform: scale(1.5);
    opacity: 0.6;
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat ;
}
```

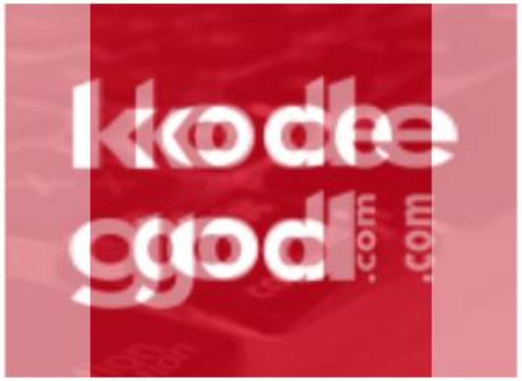
2D Transforms - Functions

- **scale** (X-axis)
    - Scales width of an element by given amount
    - **Syntax**

      scaleX(sx)



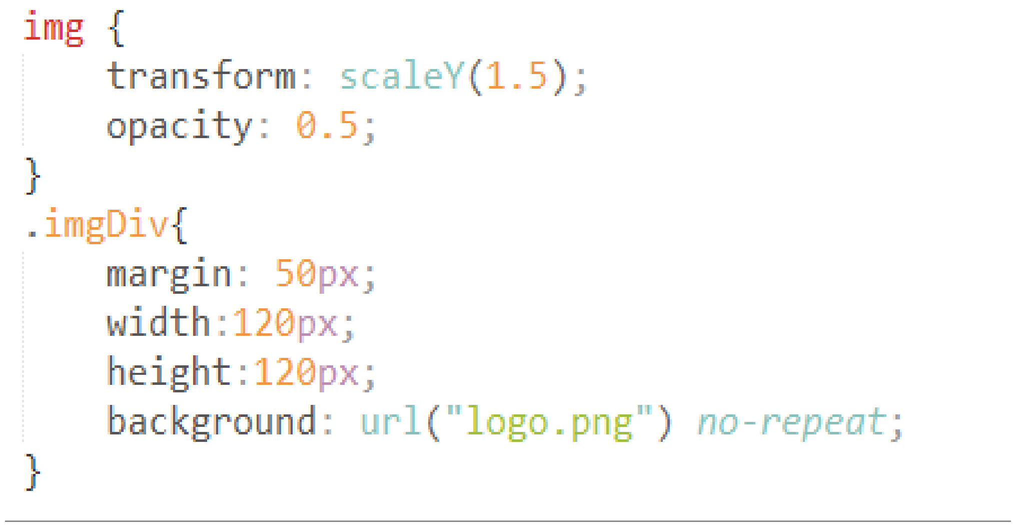
```
img {
    transform: scaleX(1.5);
    opacity: 0.5;
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```



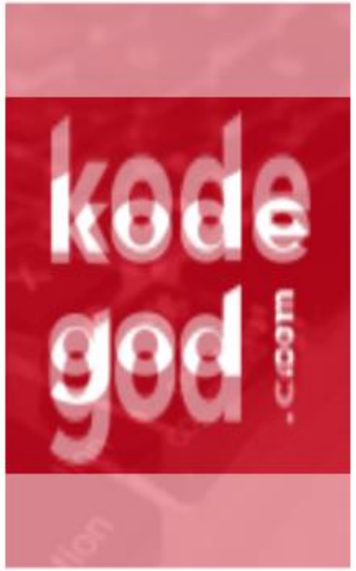
2D Transforms - Functions

- **scale** (Y-axis)
    - Scales height of an element by given amount
    - **Syntax**

      scaleY(sy)



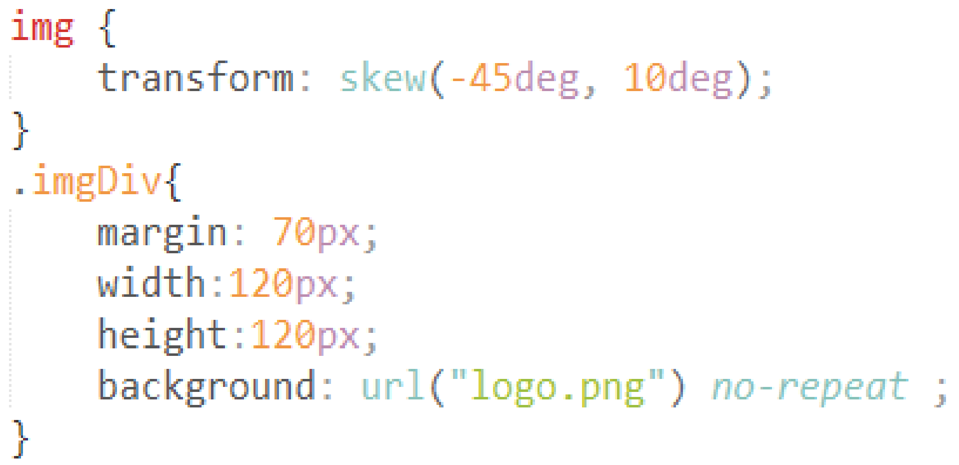
```
img {
    transform: scaleY(1.5);
    opacity: 0.5;
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```



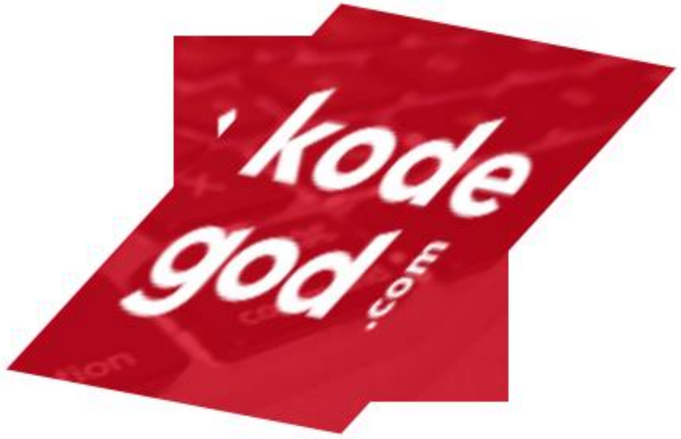
2D Transforms - Functions

- **skew**
  - Skews element along x and y axes by specified angle
  - **Syntax**

    skew(ax, ay)



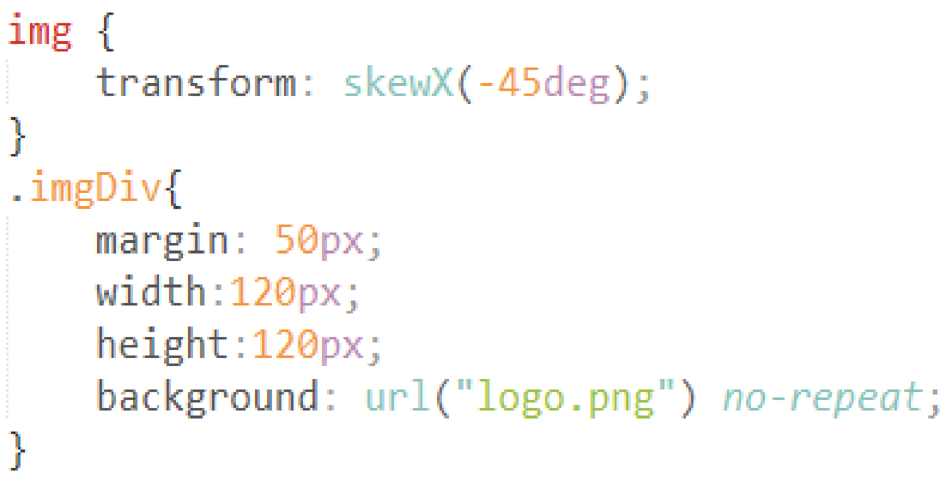
```
img {
    transform: skew(-45deg, 10deg);
}
.imgDiv{
    margin: 70px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat ;
}
```



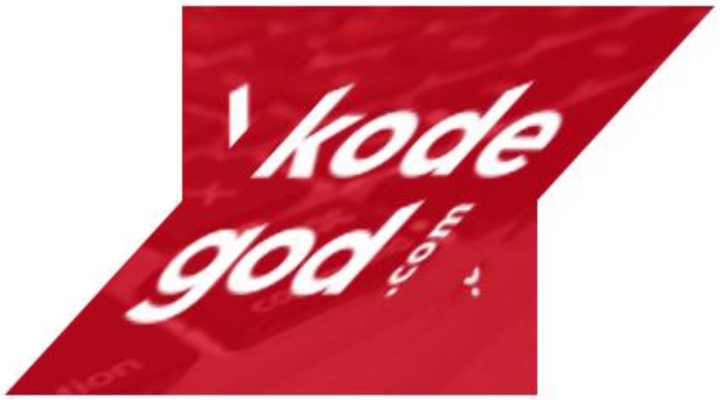
2D Transforms - Functions

- **skew** (X-axis)
  - Skews element along x axis by specified angle
  - **Syntax**

    skewX(ax)



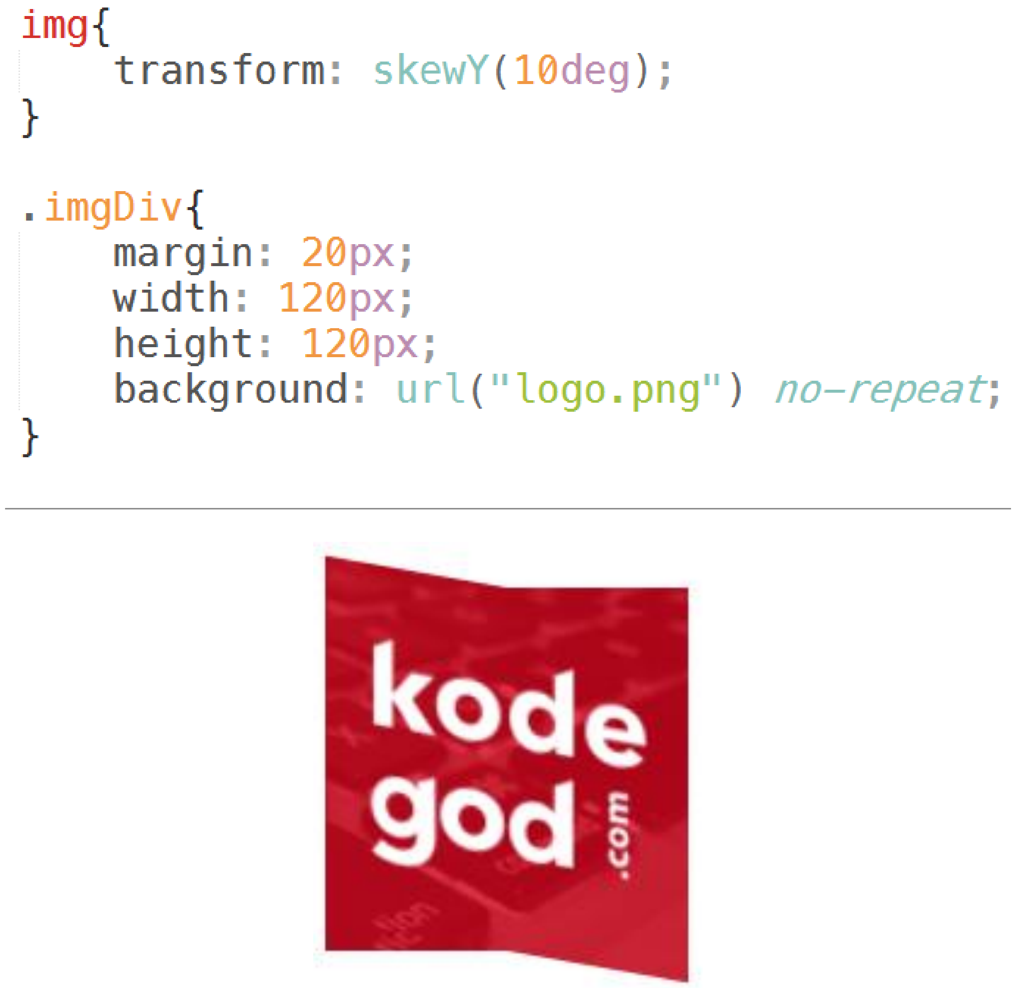
```
img {
    transform: skewX(-45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```



2D Transforms - Functions

- **skew** (Y-axis)
  - Skews element along y axis by specified angle
  - **Syntax**

    skewY(ay)



```
img{
    transform: skewY(10deg);
}

.imgDiv{
    margin: 20px;
    width: 120px;
    height: 120px;
    background: url("logo.png") no-repeat;
}
```

2D Transforms - Functions

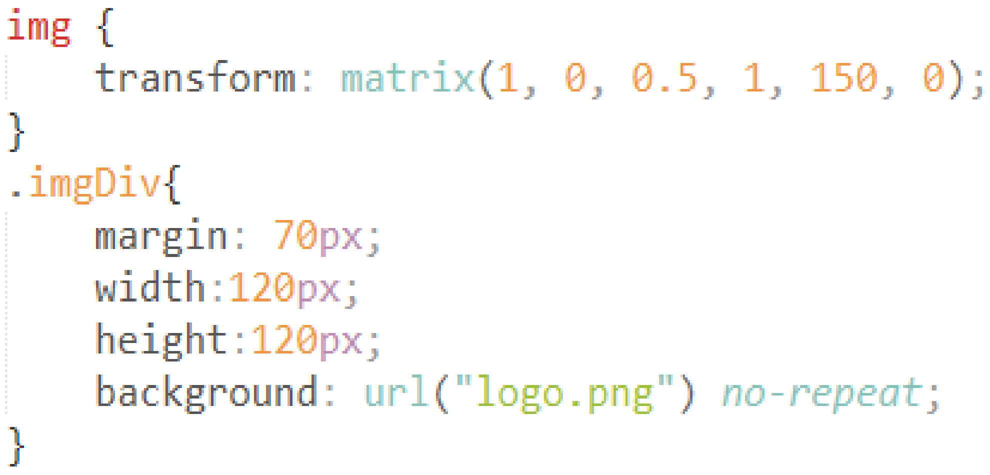
- **matrix**
  - Performs all 2D transformations at once
  - Takes six parameters in form of matrix
  - **Syntax**

    matrix(a, b, c, d, e, f)

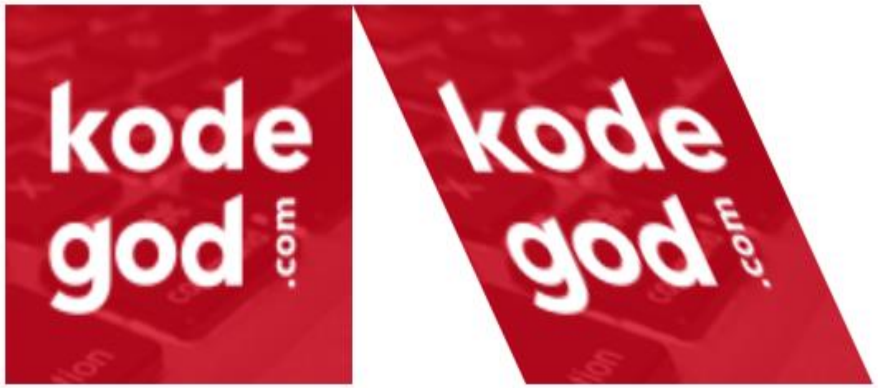
- **translate(tx, ty) = matrix(1, 0, 0, 1, tx, ty)**, where tx and ty are horizontal and vertical translation values
- **rotate(a) = matrix(cos(v), sin(v), -sin(v), cos(v), 0, 0),** where **v** is a value in degree. Swap sin(v) and –sin(v) values to reverse the rotation

2D Transforms - Functions

- **scale(sx, sy) = matrix(sx, 0, 0, sy, 0, 0)**, where sx and sy are horizontal and vertical scaling values
- **skew(ax, ay) = matrix(1, tan(ax), tan(ay), 1, 0, 0),** where **ax** and **ay** are horizontal and vertical values in degree

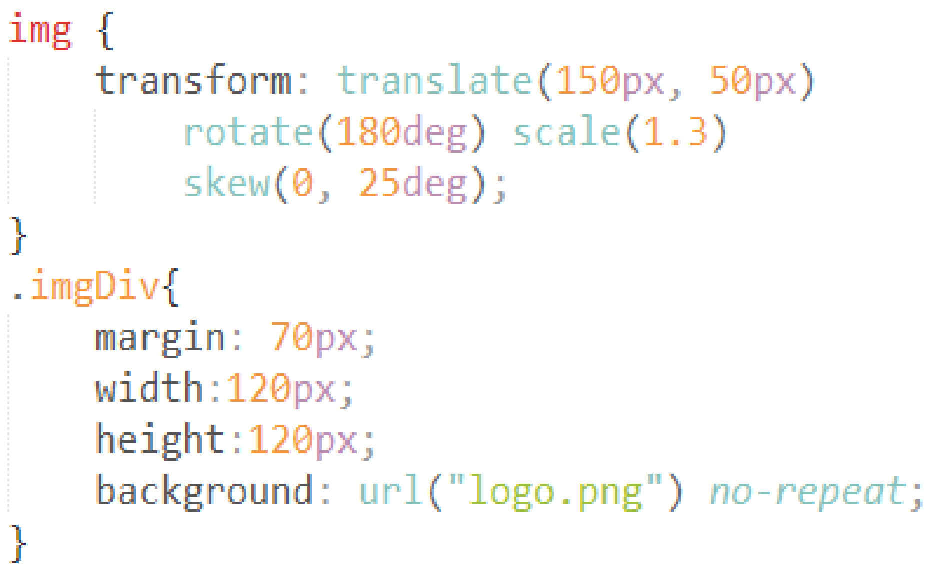


```
img {
    transform: matrix(1, 0, 0.5, 1, 150, 0);
}
.imgDiv{
    margin: 70px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```

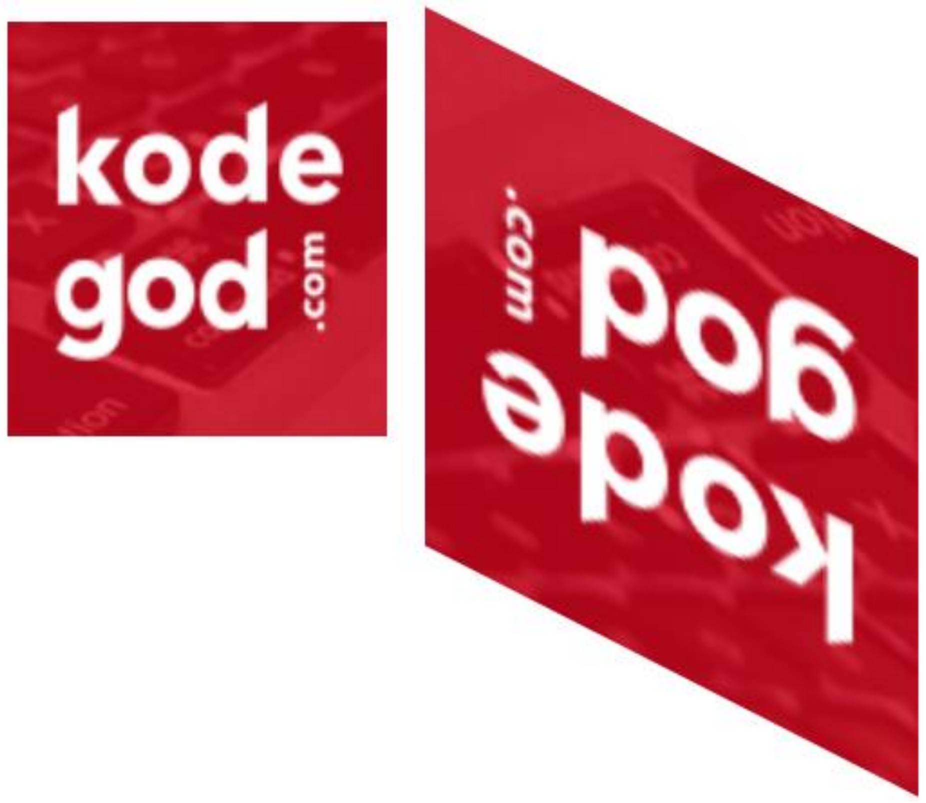


2D Transforms - Functions

- Performing more than one transformation at once



```
img {
    transform: translate(150px, 50px)
        rotate(180deg) scale(1.3)
        skew(0, 25deg);
}
.imgDiv{
    margin: 70px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
}
```



3D Transforms

CSS3 by Prashant Chaudhari

3D Transforms

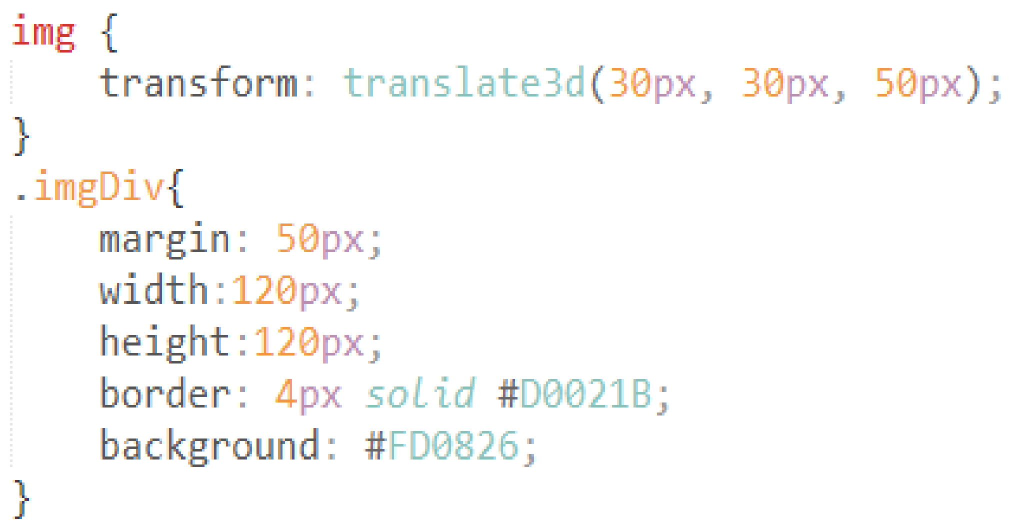
- Allows elements to be transformed in 3D space
- Can move, rotate, scale, skew elements
- Not affects on surrounding elements but can overlap them
- Manipulates coordinate system used by an element

- **Imp**
  - **perspective(length)**
    - Defines perspective view for 3D transformed element
    - Value of this function increases, element will appear further away from viewer

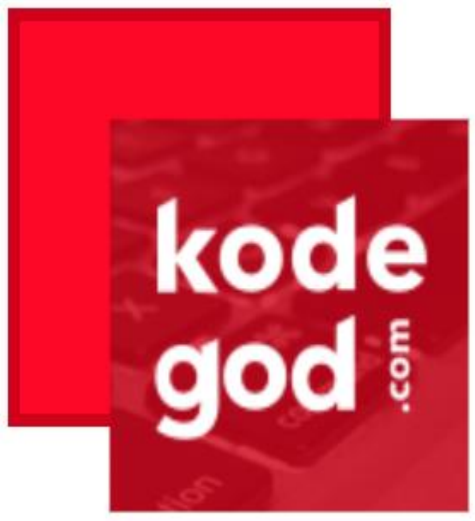
3D Transforms - Functions

- **translate3d**
  - moves element along x, y and z axis
  - **Syntax**

    translate3d(tx, ty, tz)



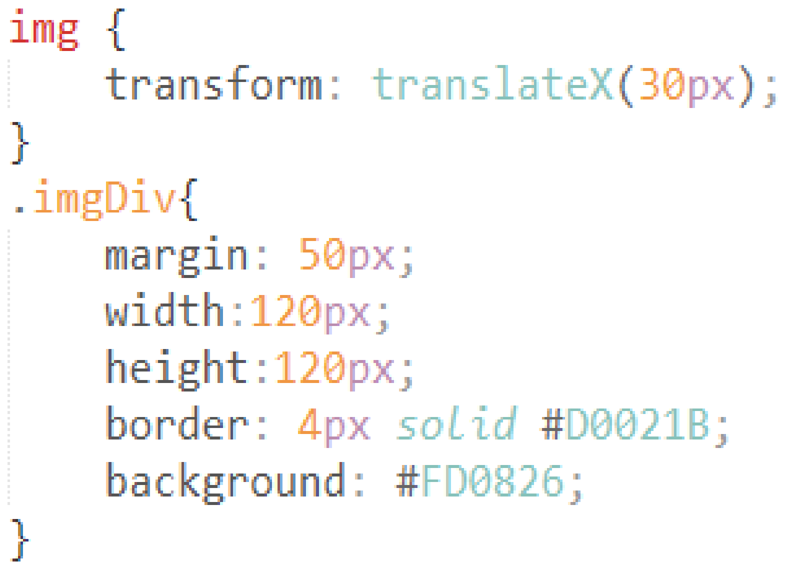
```
img {
    transform: translate3d(30px, 30px, 50px);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
}
```



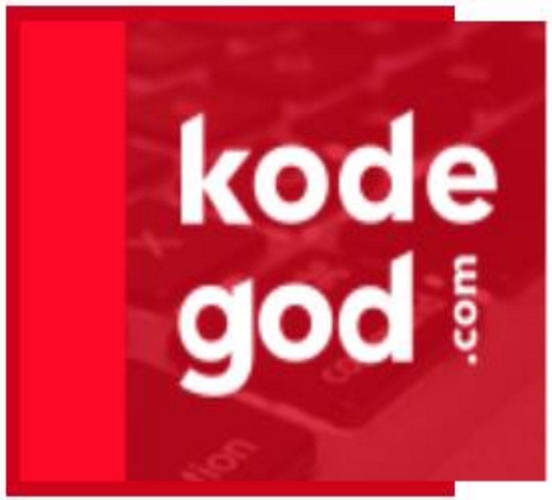
3D Transforms - Functions

- **translateX** (x-axis)
    - moves element along x axis
    - **Syntax**

      translateX(tx)



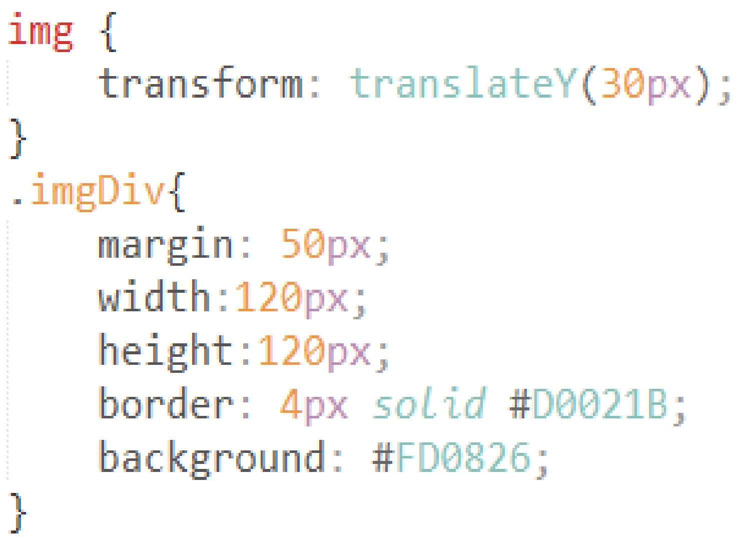
```
img {
    transform: translateX(30px);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
}
```



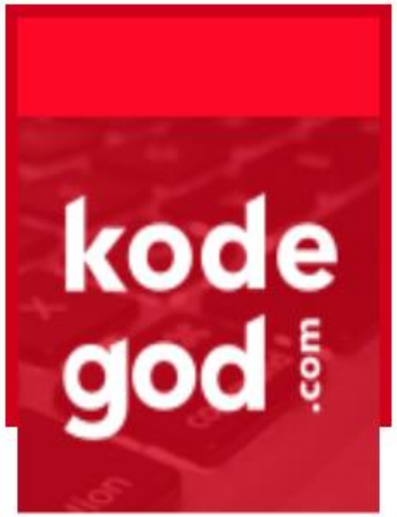
3D Transforms - Functions

- **translateY** (y-axis)
  - moves element along y axis
  - **Syntax**

    translateY(ty)



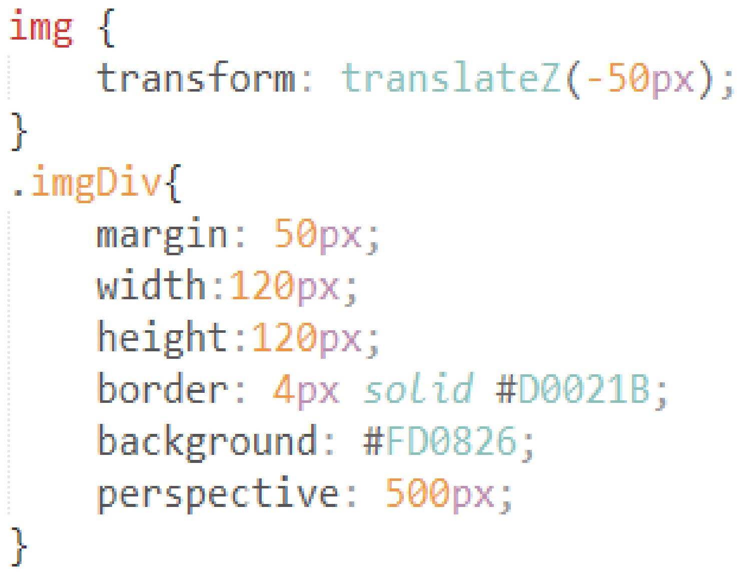
```
img {
    transform: translateY(30px);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
}
```



3D Transforms - Functions

- **translateZ** (z-axis)
  - moves element along z axis
  - **Syntax**

    translateZ(tz)



```
img {
    transform: translateZ(-50px);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

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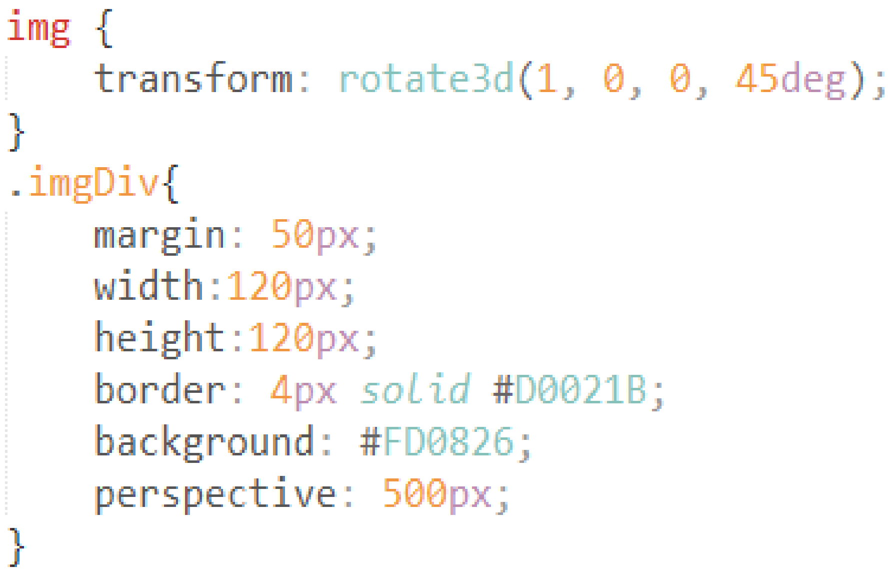
3D Transforms - Functions

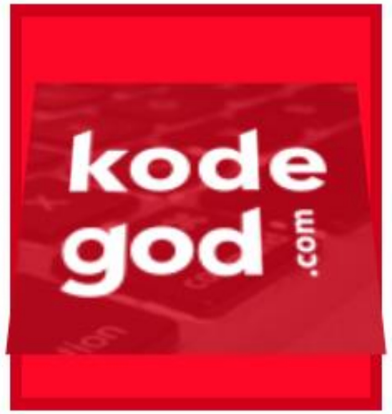
- **rotate3d**
  - rotates element in 3D space by specified

    angle around [x, y, z] direction vector
  - **Syntax**

    rotate3d(x, y, z, a)



```css
img {
    transform: rotate3d(1, 0, 0, 45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

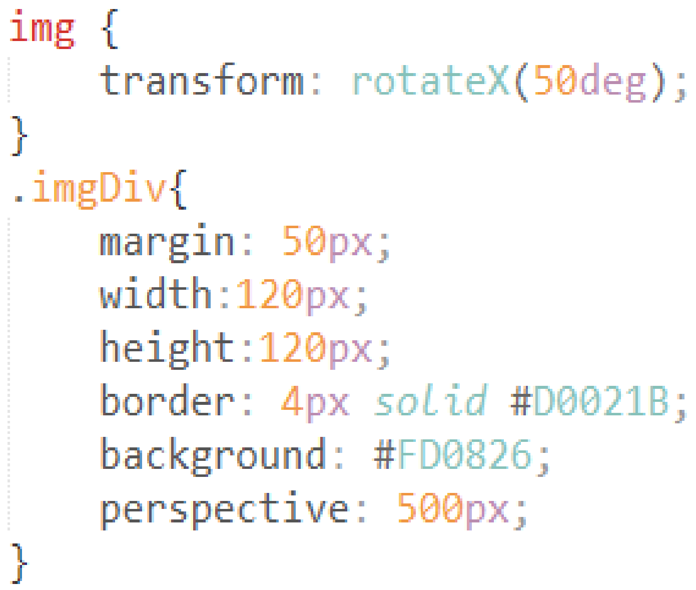


3D Transforms - Functions

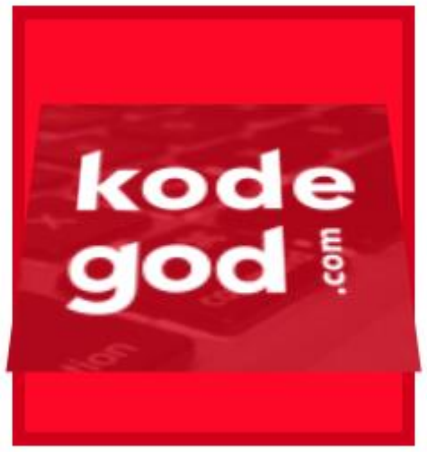
- **rotateX (X-axis)**
  - rotates element by specified angle

    around x-axis
  - **Syntax**

    rotateX(a)



```
img {
    transform: rotateX(50deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

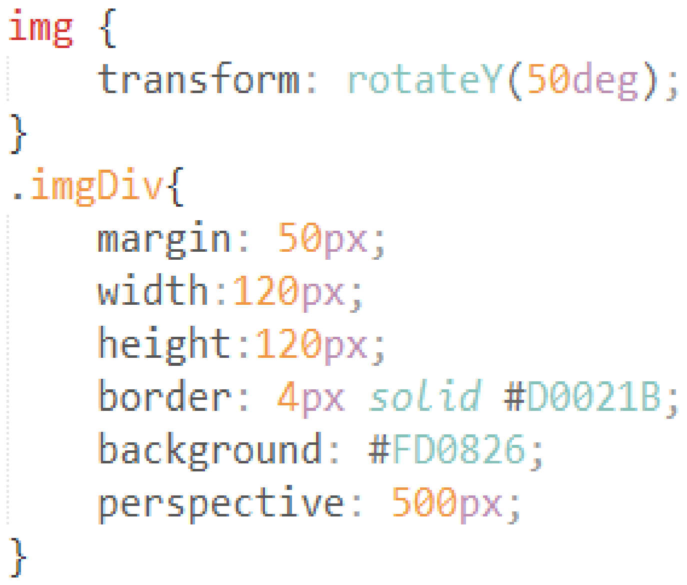


3D Transforms - Functions

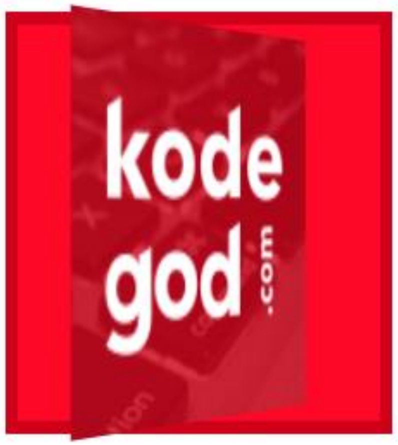
- **rotateY (Y-axis)**
  - rotates element by specified angle

    around y-axis
  - **Syntax**

    rotateY(a)



```
img {
    transform: rotateY(50deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

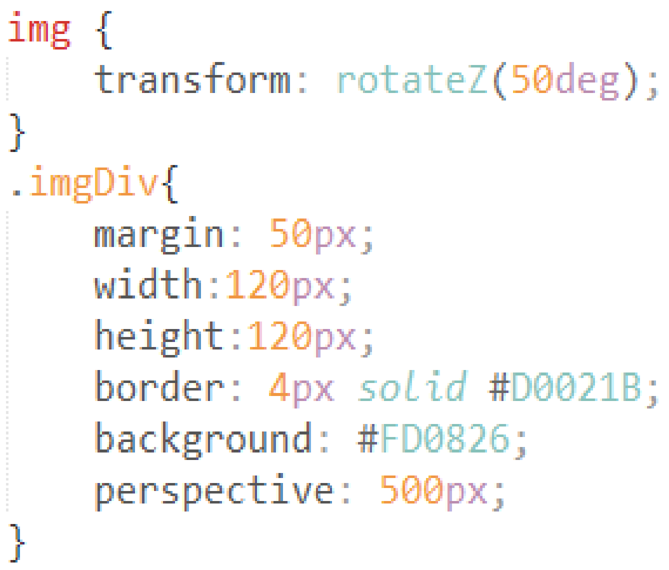


3D Transforms - Functions

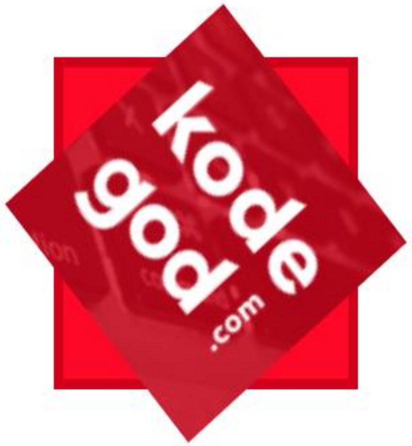
- **rotateZ (Z-axis)**
  - rotates element by specified angle

    around z-axis
  - **Syntax**

    rotateZ(a)



```
img {
    transform: rotateZ(50deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

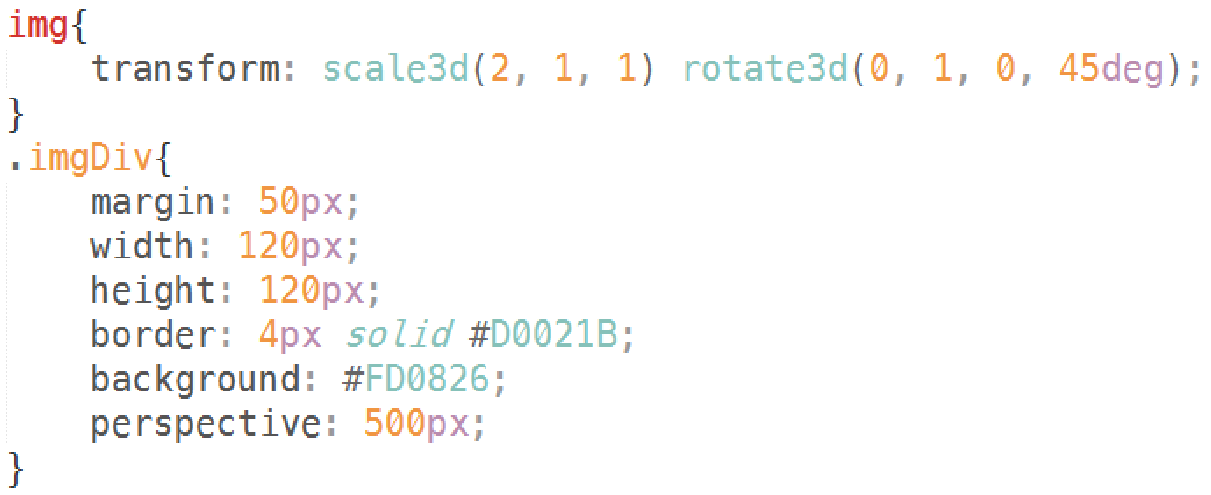


3D Transforms - Functions

- **scale3d**
  - Changes size of an element
  - **Syntax**

    scale3d(sx, sy, sz)
  - Must used with combination of rotate

    and perspective function



```
img{
    transform: scale3d(2, 1, 1) rotate3d(0, 1, 0, 45deg);
}
.imgDiv{
    margin: 50px;
    width: 120px;
    height: 120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

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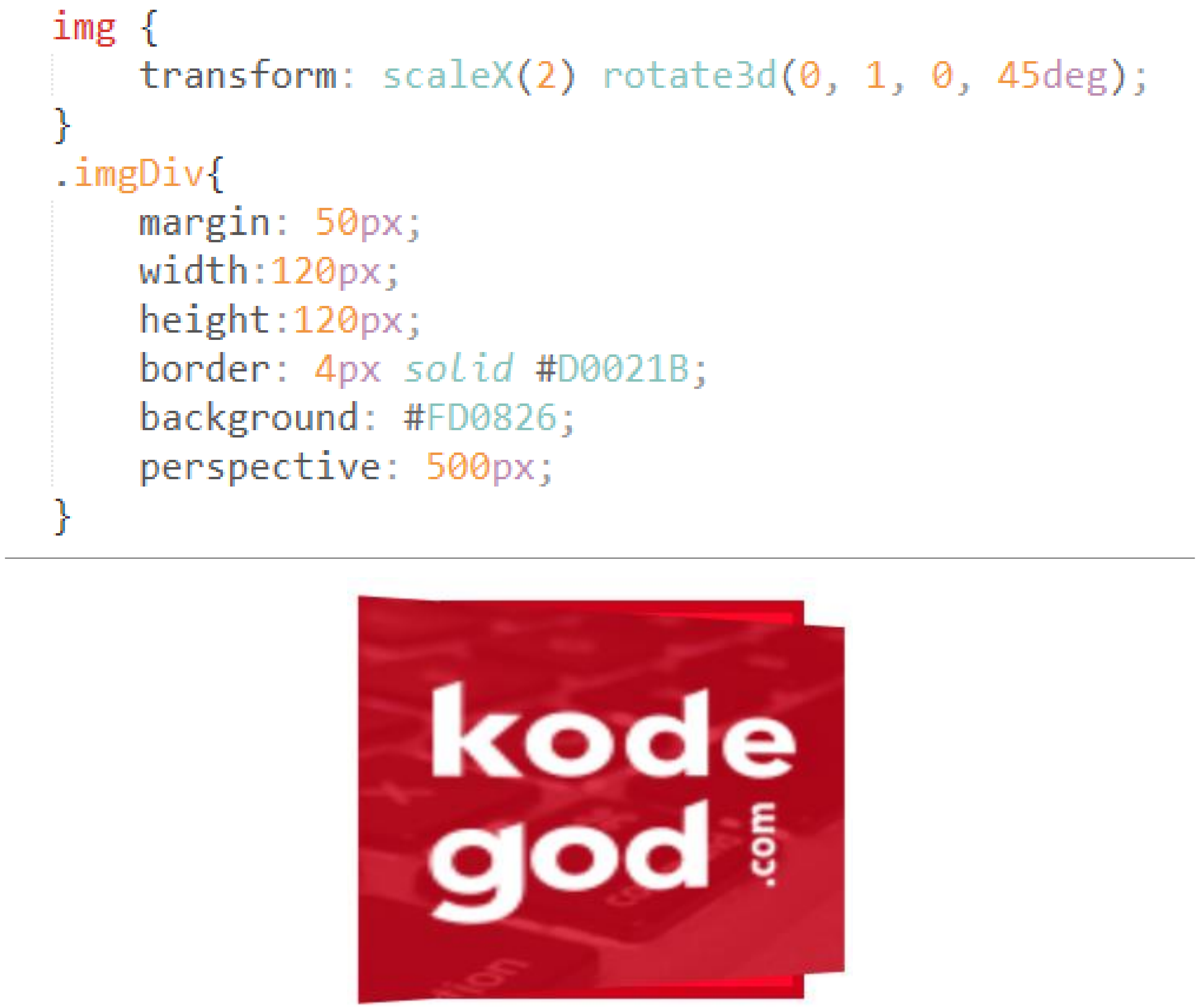
3D Transforms - Functions

- **scaleX** (X-axis)
  - Scales element along x-axis
  - **Syntax**

    scaleX(sx)

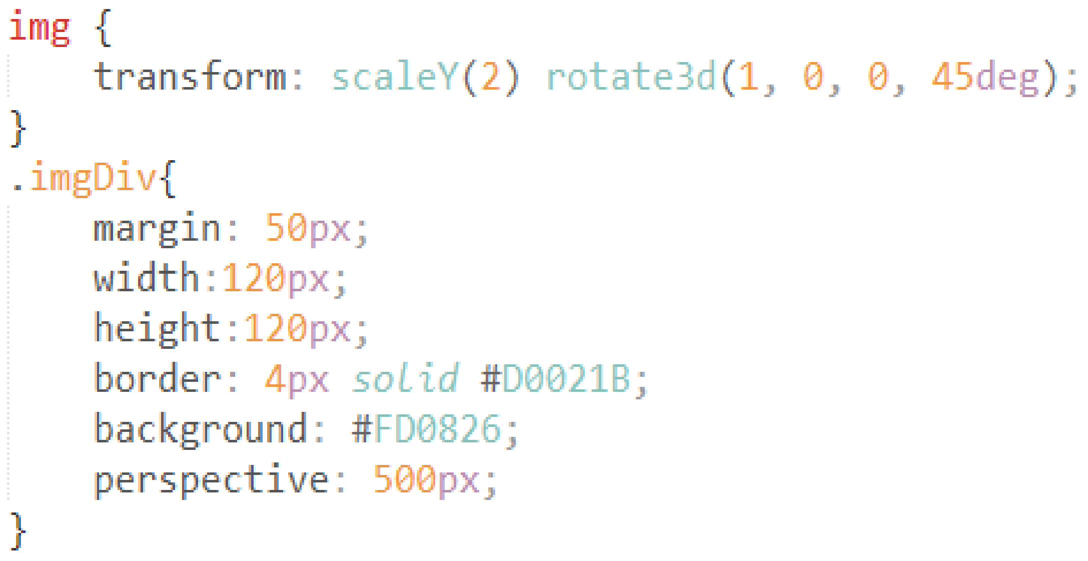


```
img {
    transform: scaleX(2) rotate3d(0, 1, 0, 45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

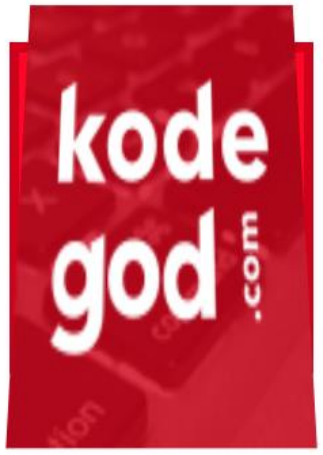
3D Transforms - Functions

- **scaleY** (Y-axis)
  - Scales element along y-axis
  - **Syntax**

    scaleY(sy)



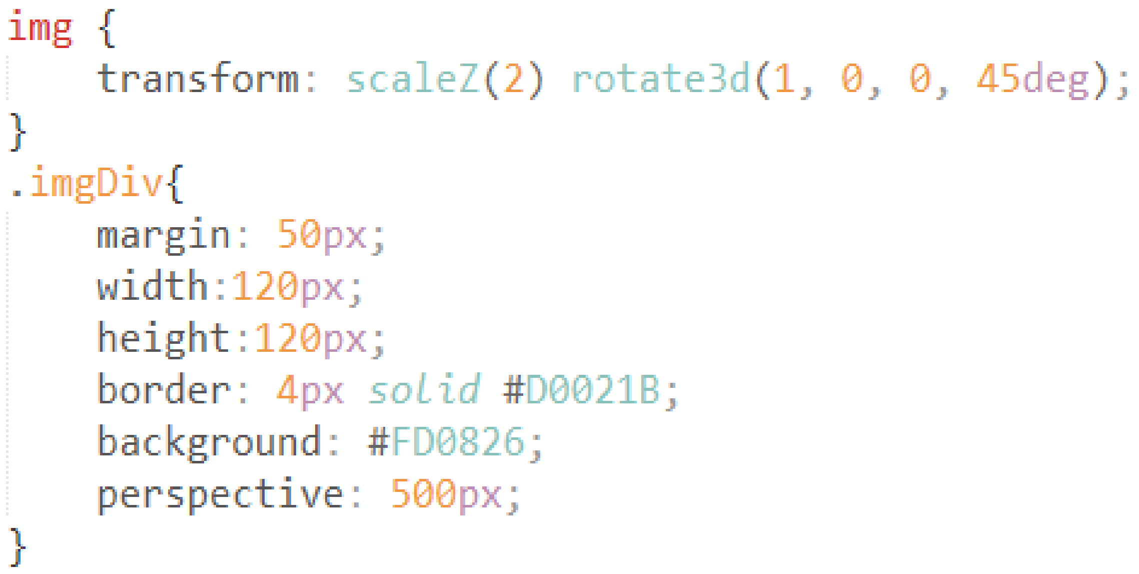
```
img {
    transform: scaleY(2) rotate3d(1, 0, 0, 45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```



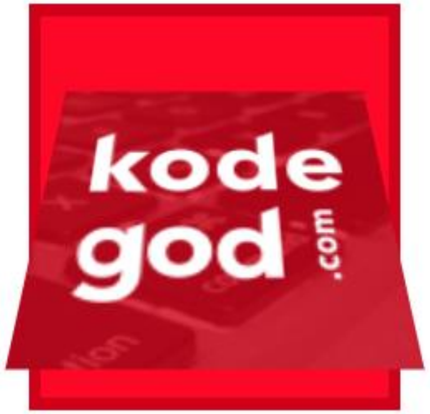
3D Transforms - Functions

- **scaleZ** (Z-axis)
  - Scales element along z-axis
  - **Syntax**

    scaleZ(sz)

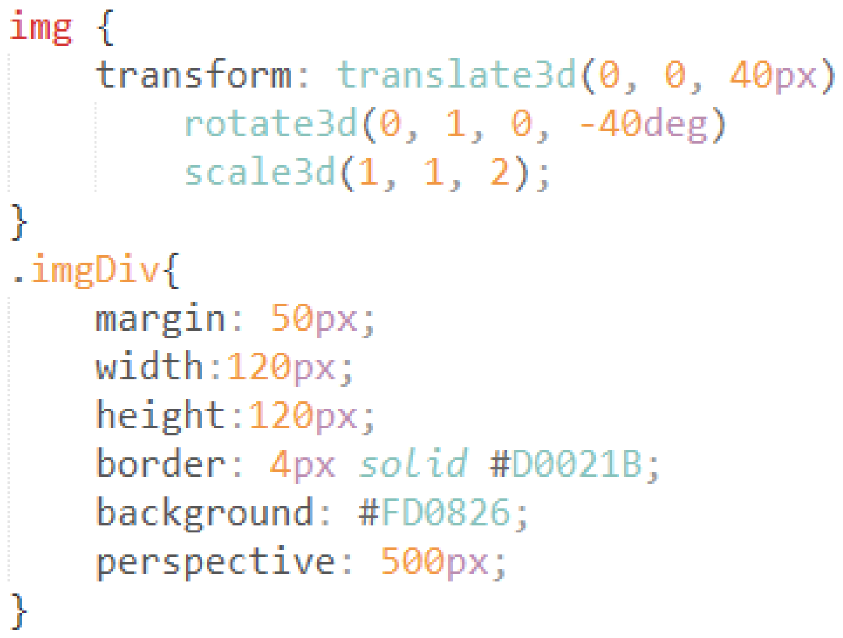


```
img {
    transform: scaleZ(2) rotate3d(1, 0, 0, 45deg);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```

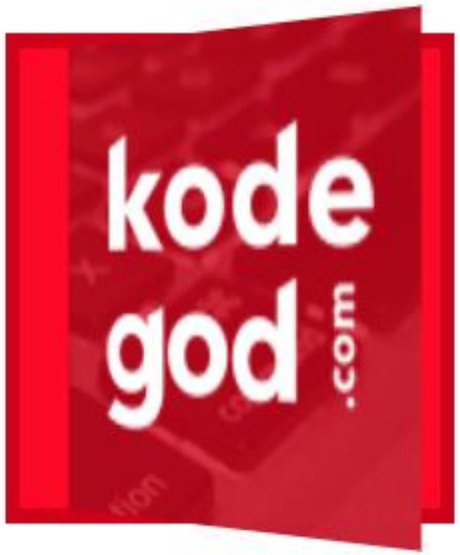


3D Transforms - Functions

- To perform more than one transformation at once, use individual transformation and list them in order



```
img {
    transform: translate3d(0, 0, 40px)
        rotate3d(0, 1, 0, -40deg)
        scale3d(1, 1, 2);
}
.imgDiv{
    margin: 50px;
    width:120px;
    height:120px;
    border: 4px solid #D0021B;
    background: #FD0826;
    perspective: 500px;
}
```



Transitions

CSS3 by Prashant Chaudhari

Transitions

- Allows to animate property from old value to new value smoothly over time
- **Properties**

  transition, transition-delay, transition-property, transition-duration, transition-timing-function

- **transition-property**
  - Specifies name of css properties to which transition effect applied
  - **Values** border, background, etc.

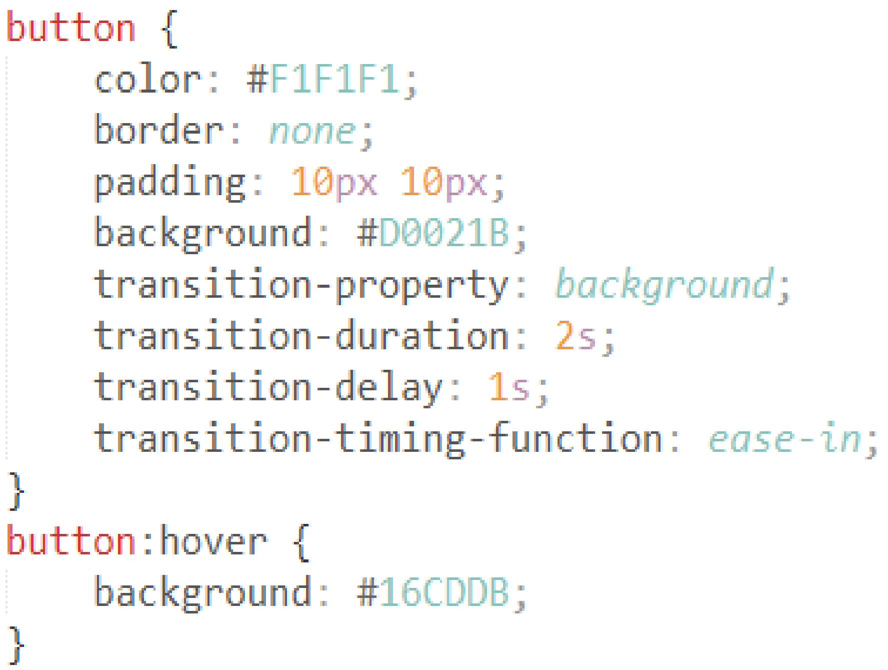
Transitions

- **transition-duration**
  - Specifies number of seconds or milliseconds transition operation takes to complete
- **transition-delay**
  - Specifies when transition will start

- **transition-timing-function**
  - Specifies how values of css properties affected by transition
  - **Possible values** cubic-bezier, ease, ease-in, ease-in-out, ease-out, frames, linear, steps, step-end, step-middle, step-start

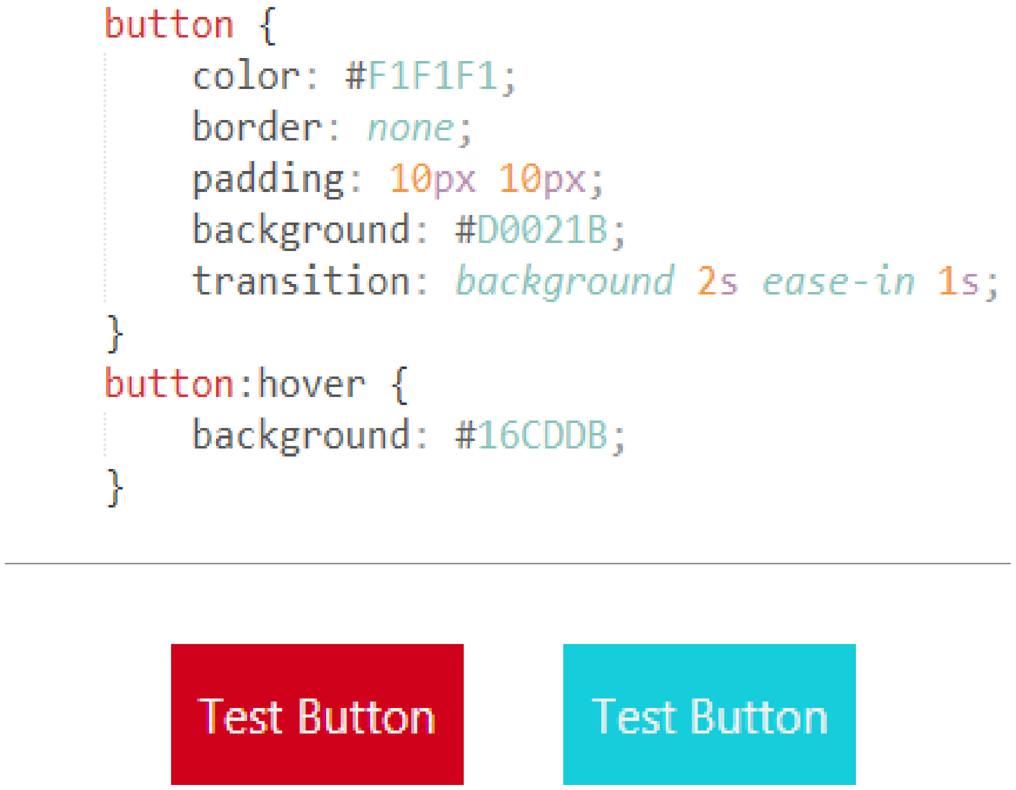
Transitions

- E.g. (Using individual property)



```
button {
    color: #F1F1F1;
    border: none;
    padding: 10px 10px;
    background: #D0021B;
    transition-property: background;
    transition-duration: 2s;
    transition-delay: 1s;
    transition-timing-function: ease-in;
}
button:hover {
    background: #16CDDB;
}
```

- E.g. (Shorthand property)



```
button {
    color: #F1F1F1;
    border: none;
    padding: 10px 10px;
    background: #D0021B;
    transition: background 2s ease-in 1s;
}
button:hover {
    background: #16CDDB;
}
```

Animations

CSS3 by Prashant Chaudhari

Animations

- Allows to specify changes in css properties over time as a set of keyframes
- **Creating animation is two step process**
  1. Defining individual keyframes and naming an animation with keyframe declaration
  2. Referencing keyframe by name using **animation-name** property

Animation - Properties

- **animation-name**

  specifies name of keyframes defined animations

- **animation-duration**

  time to complete one animation cycle (in s or ms)

- **animation-timing-function**

  specifies how animation will progress over each cycle

- **animation-iteration-count**

  number of animation cycles

- **animation-direction**

  specifies whether or not animation should play in reverse

- **animation-fill-mode**

  specifies how css animation should apply styles to its target before and after execution

Animation - Properties

- **animation-play-state**

  animation running or paused

- **@keyframes**

  value of animating properties at various points

  during animation

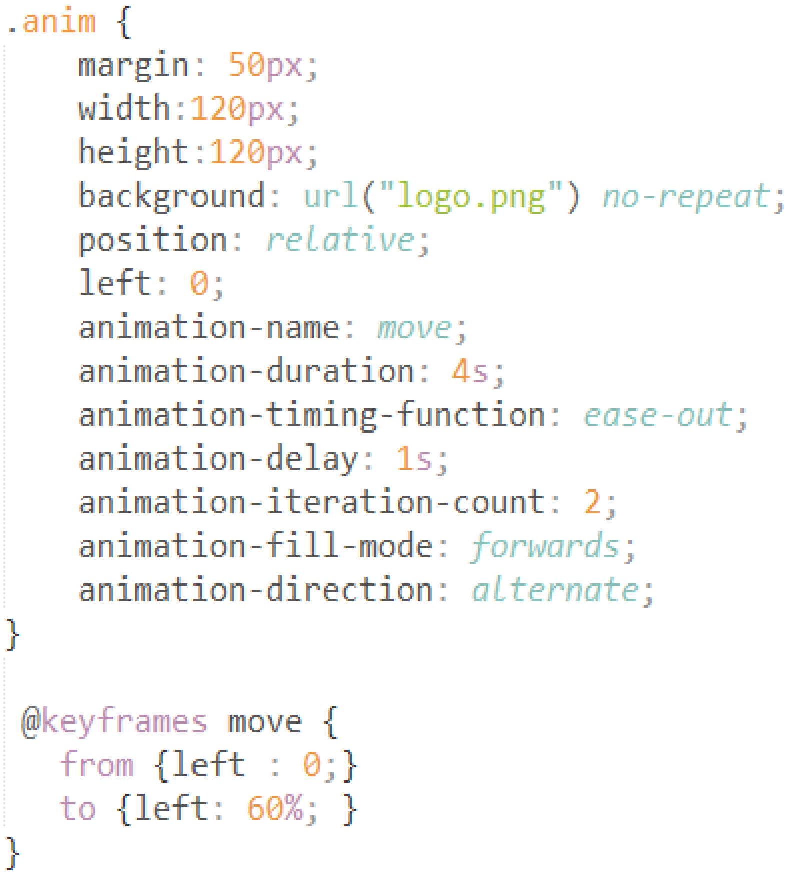
- **animation**

  shorthand property to specify all properties in

  single declaration

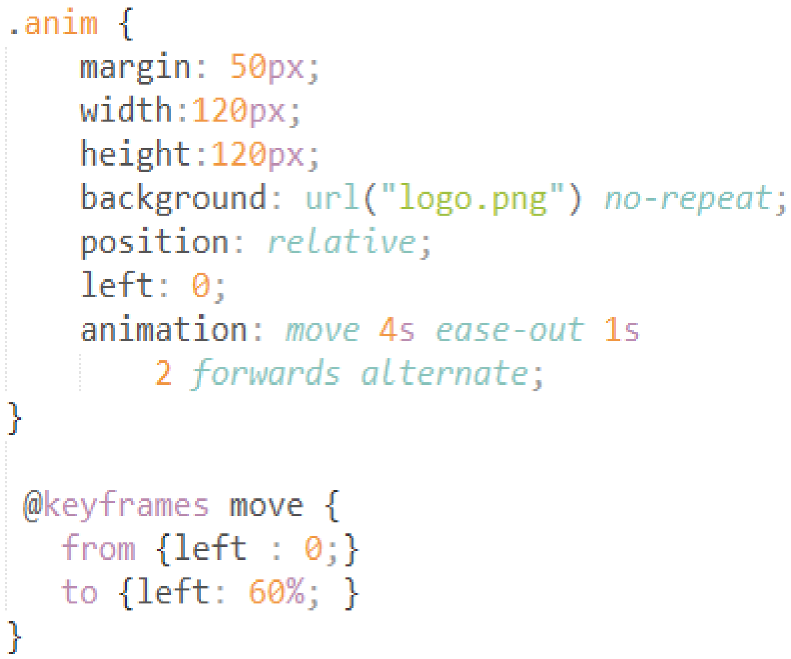
Animation - Example

- E.g. (Each property)



```css
.anim {
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
    position: relative;
    left: 0;
    animation-name: move;
    animation-duration: 4s;
    animation-timing-function: ease-out;
    animation-delay: 1s;
    animation-iteration-count: 2;
    animation-fill-mode: forwards;
    animation-direction: alternate;
}

 @keyframes move {
   from {left : 0;}
   to {left: 60%; }
}
```

- E.g. (Shorthand)



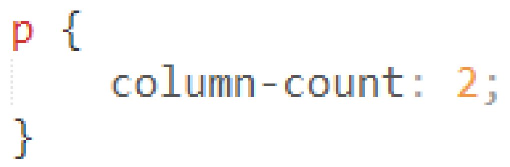
```css
.anim {
    margin: 50px;
    width:120px;
    height:120px;
    background: url("logo.png") no-repeat;
    position: relative;
    left: 0;
    animation: move 4s ease-out 1s
        2 forwards alternate;
}

 @keyframes move {
   from {left : 0;}
   to {left: 60%; }
}
```

Multi-Column Layout

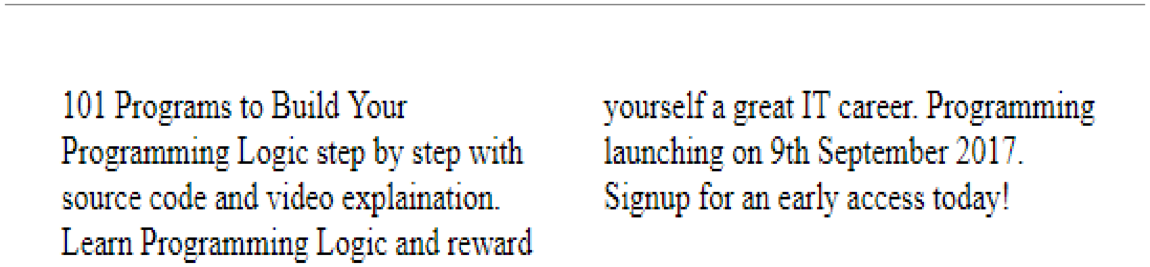
CSS3 by Prashant Chaudhari

Multi-Column Layout

- Allows to create multiple columns without using floating boxes
- **Properties**
    - **column-count**
        - Specifies how many columns will appear



```
p {
    column-count: 2;
}
```



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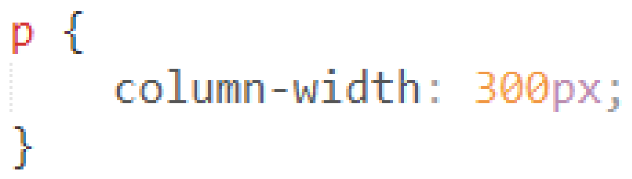
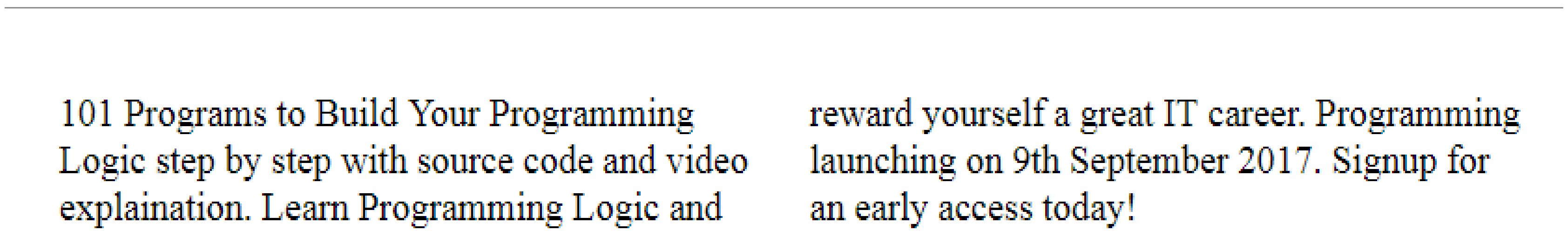
Multi-Column Layout - Properties

- **column-width**
  - Sets desired column width



```
p {
    column-width: 300px;
}
```



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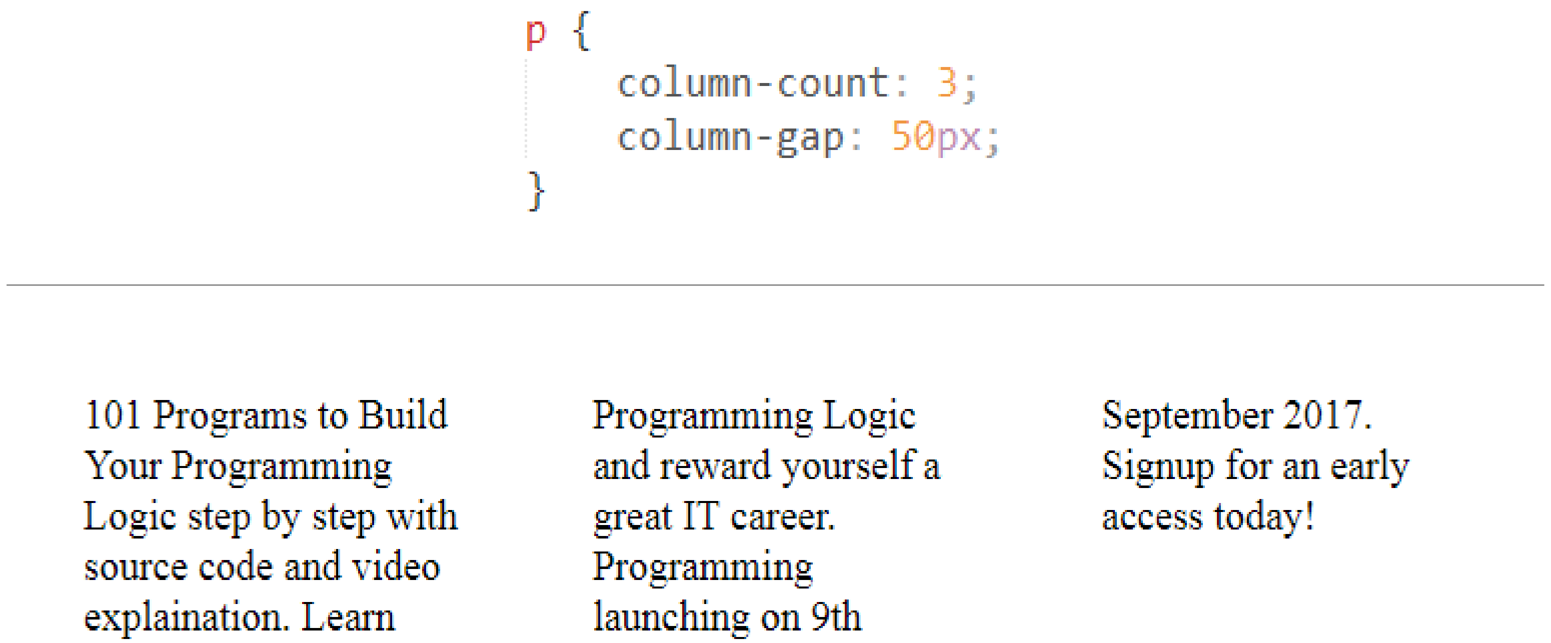
Multi-Column Layout - Properties

- **column-gap**
  - Controls gaps between columns



```
p {
    column-count: 3;
    column-gap: 50px;
}
```

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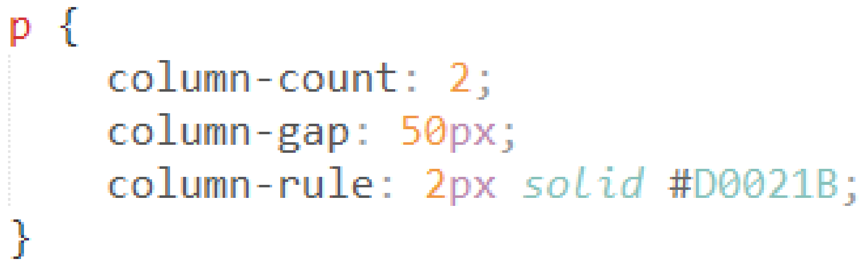
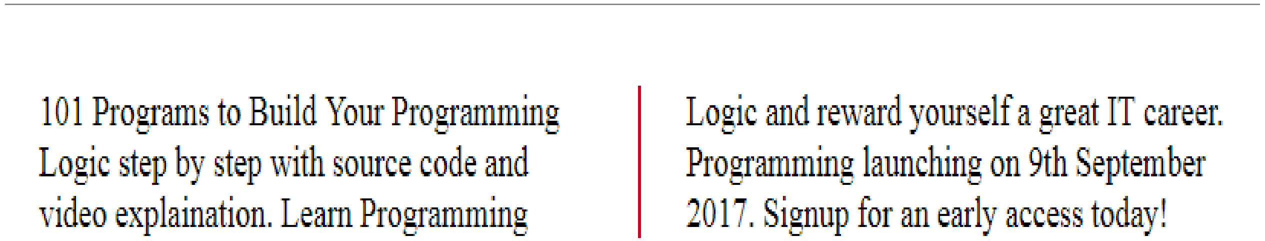
Multi-Column Layout - Properties

- **column-rule**
  - Adds line between columns with width, style and color



```
p {
    column-count: 2;
    column-gap: 50px;
    column-rule: 2px solid #D0021B;
}
```



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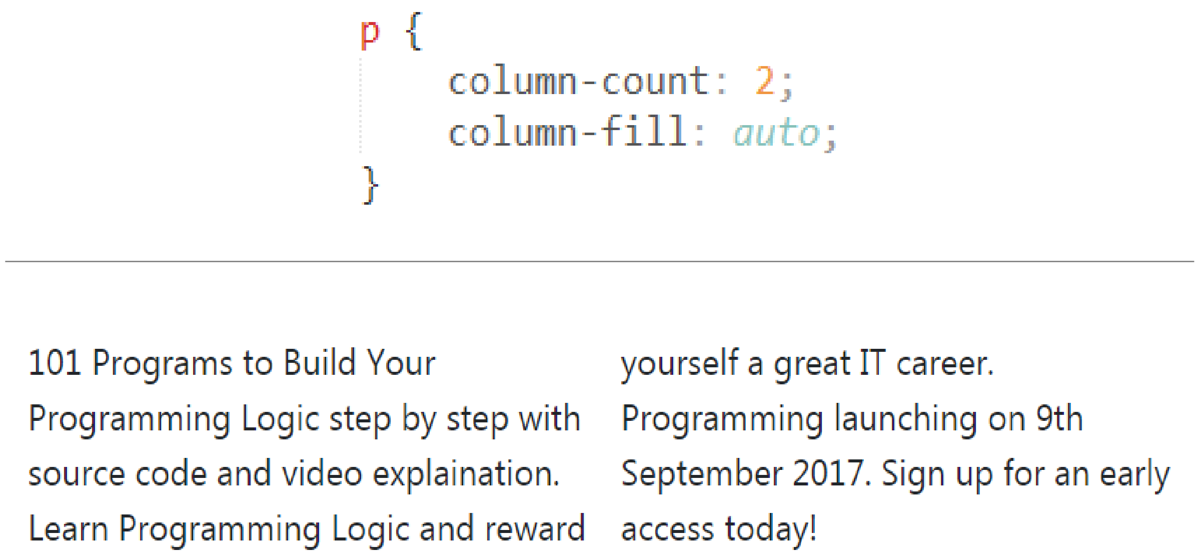
Multi-Column Layout - Properties

- **column-fill**
  - Specifies how the column lengths in multi-column element are affected by content flow
  - **Property values**

    Balance, auto, initial, inherit
  - **Default value** balance



```
p {
    column-count: 2;
    column-fill: auto;
}
```

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Box Sizing

CSS3 by Prashant Chaudhari

Box Sizing

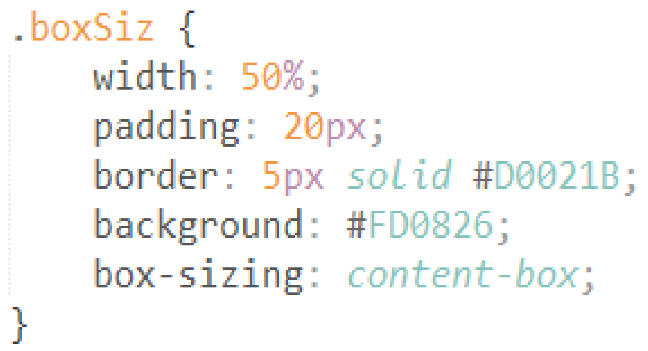
- **CSS box model** adds padding or border outside of content area which affects elements width and height
- **box-sizing** property alters css box model and any padding or border specified on element is laid out and drawn inside of content area
- Using this rendered width and height of element is same as specified CSS width and height properties
- **Property values**

  border-box, content-box

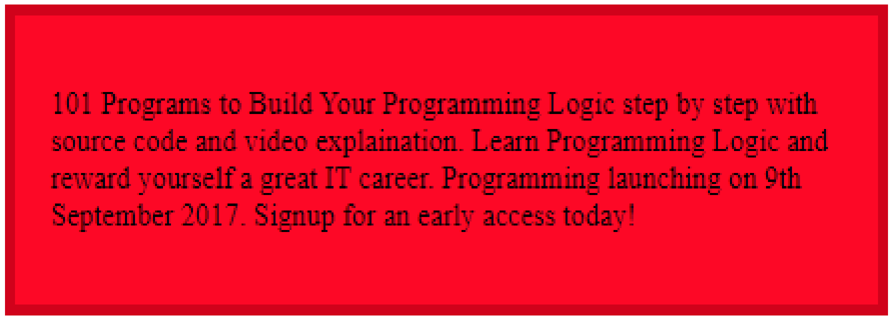
Box Sizing

- **content-box**
  - Default box-sizing behavior
  - Adds elements padding and border width

    in elements width making element wider



```
.boxSiz {
    width: 50%;
    padding: 20px;
    border: 5px solid #D0021B;
    background: #FD0826;
    box-sizing: content-box;
}
```



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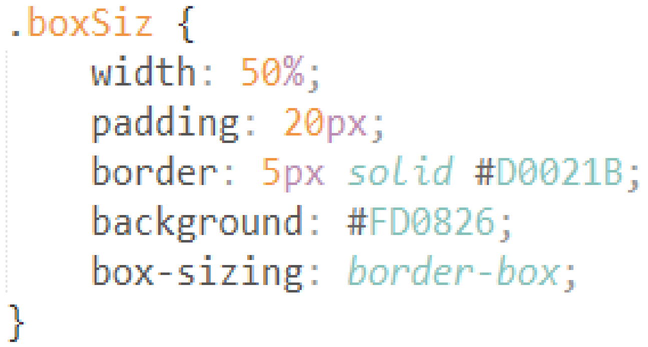
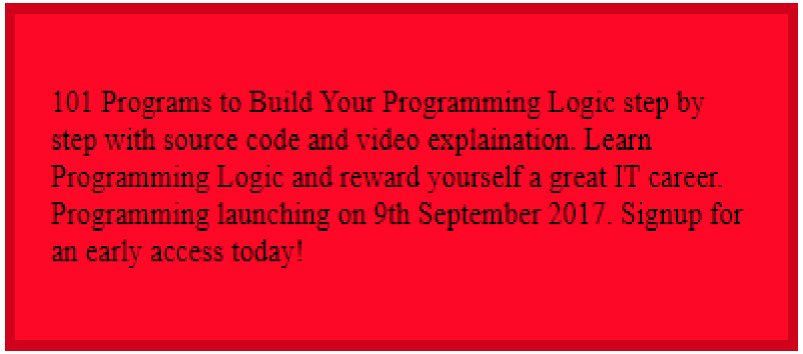
Box Sizing

- **border-box**
  - Absorbs elements padding and border width, i.e. not increasing elements width



```
.boxSiz {
    width: 50%;
    padding: 20px;
    border: 5px solid #D0021B;
    background: #FD0826;
    box-sizing: border-box;
}
```



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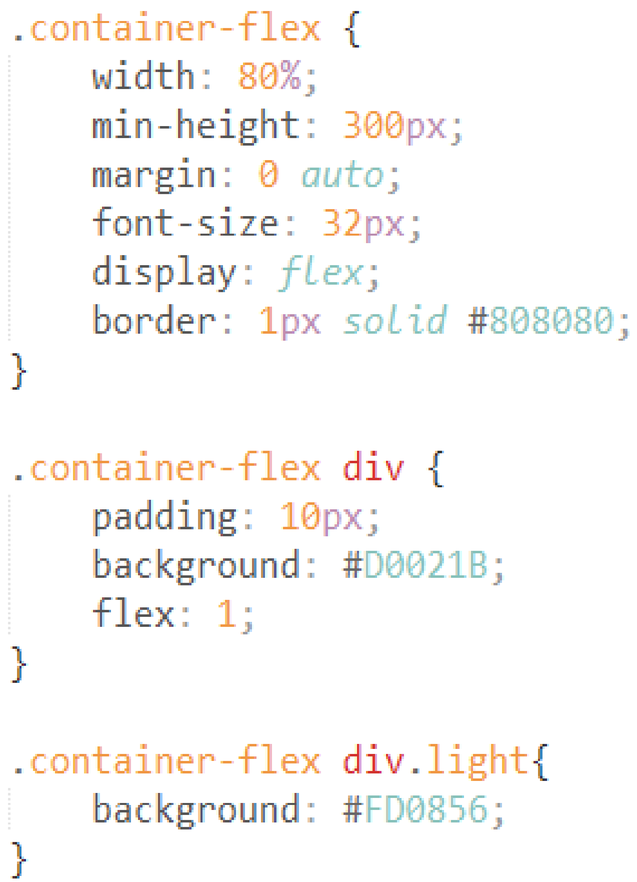
Flexible Box Layout

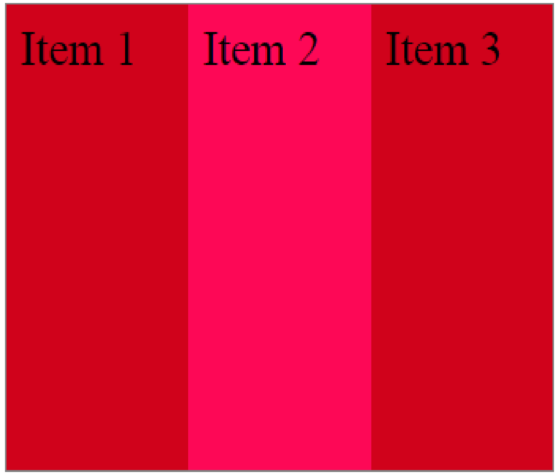
CSS3 by Prashant Chaudhari

Flexible Box Layout

- **Flexbox**
  - flexible user interface with rows and column without percentage or fixed length values

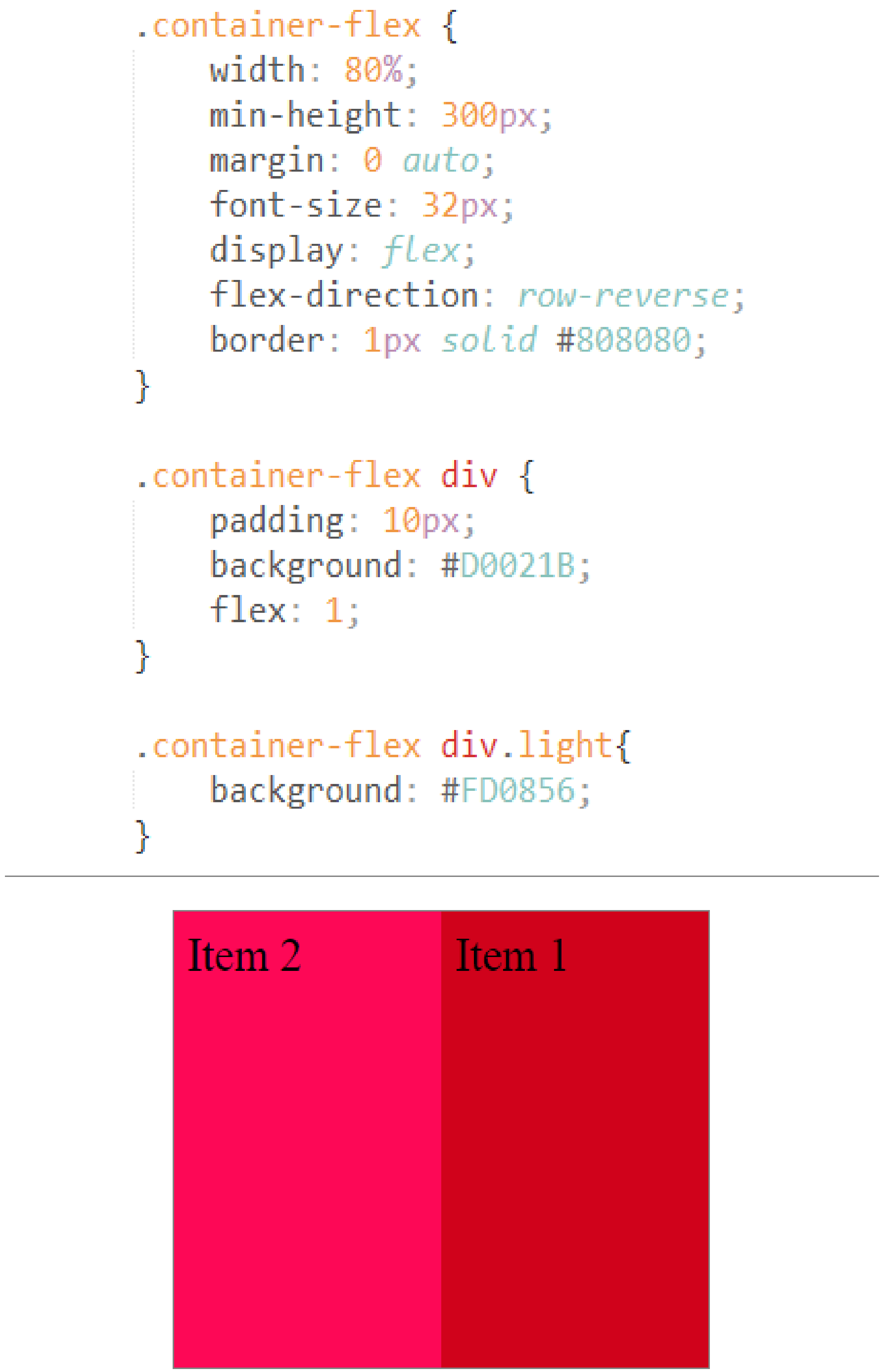


```
.container-flex {
    width: 80%;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
}

.container-flex div {
    padding: 10px;
    background: #D0021B;
    flex: 1;
}

.container-flex div.light{
    background: #FD0856;
}
```



Flexible Box Layout

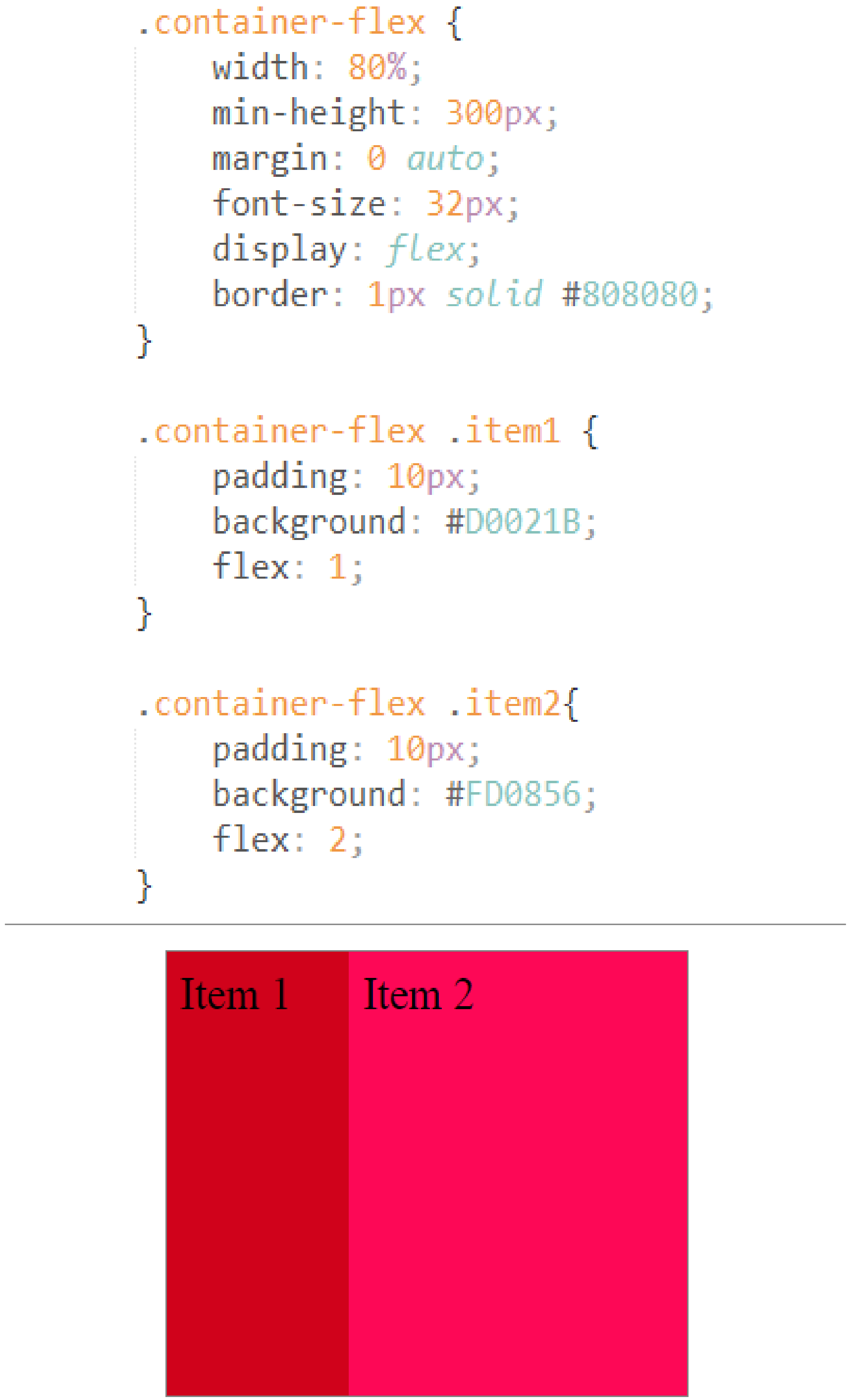
- **flex-direction**
  - Controls flow of flex items inside flex container
  - Default value is **row**
  - **Possible values**
    - row, row-reverse, column, column-reverse



```
.container-flex {
    width: 80%;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    flex-direction: row-reverse;
    border: 1px solid #808080;
}

.container-flex div {
    padding: 10px;
    background: #D0021B;
    flex: 1;
}

.container-flex div.light{
    background: #FD0856;
}
```

Flexible Box Layout

- **flex**
  - Alter width or height to fill available space



```css
.container-flex {
    width: 80%;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
}

.container-flex .item1 {
    padding: 10px;
    background: #D0021B;
    flex: 1;
}

.container-flex .item2{
    padding: 10px;
    background: #FD0856;
    flex: 2;
}
```

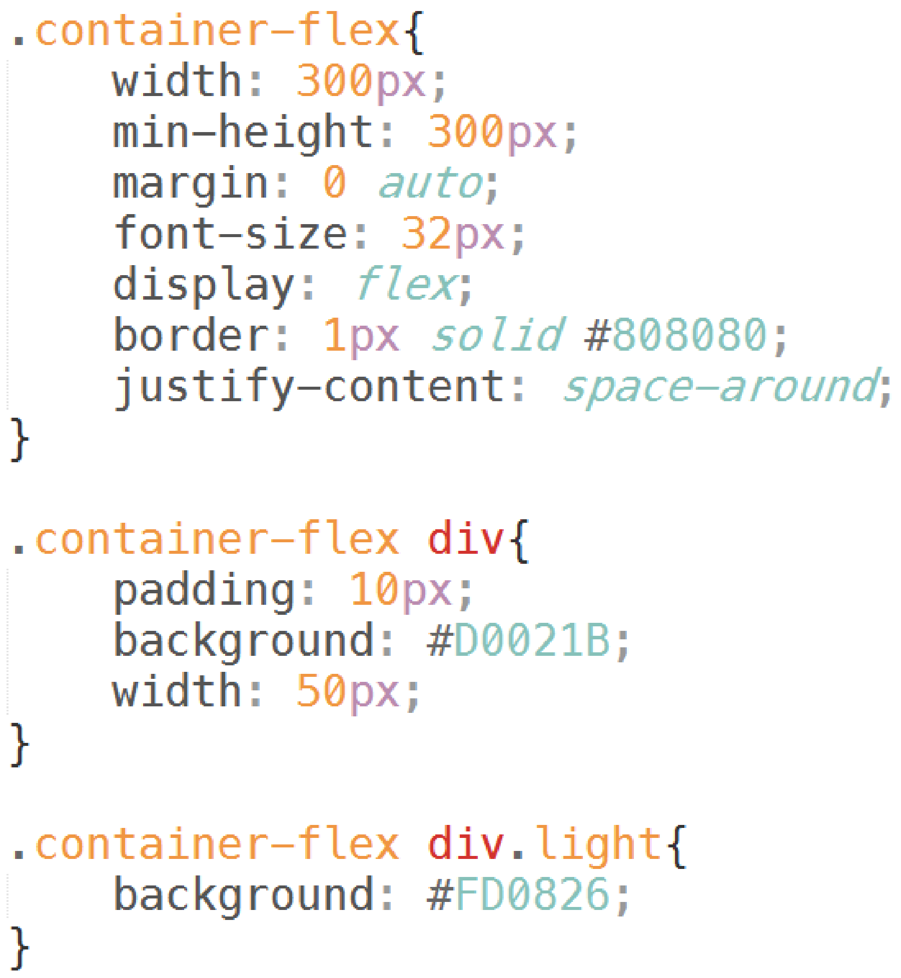
Flexible Box Layout

- **Aligning flex items**
    - **Properties**
        - justify-content
        - align-content
        - align-items
        - align-self
    - First three for flex-container and last one for flex-items

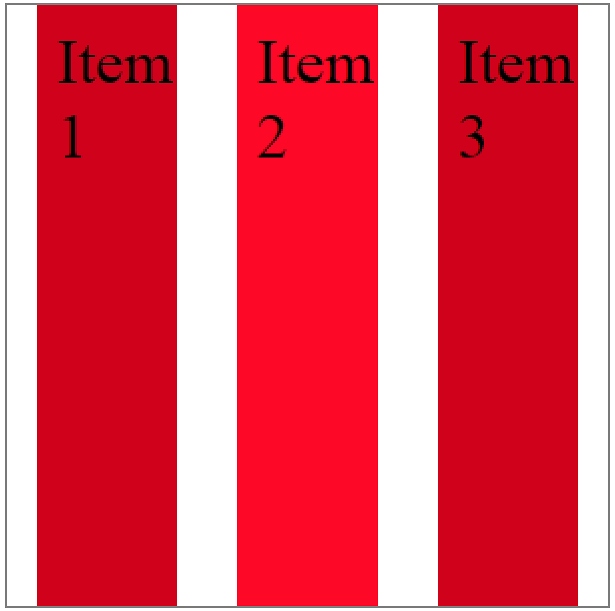
Flexible Box Layout - Properties

- **justify-content**
  - align items in horizontal direction of container
  - **Values**
    - flex-start
    - flex-end
    - center
    - space-between
    - space-around

Flexible Box Layout – justify-content



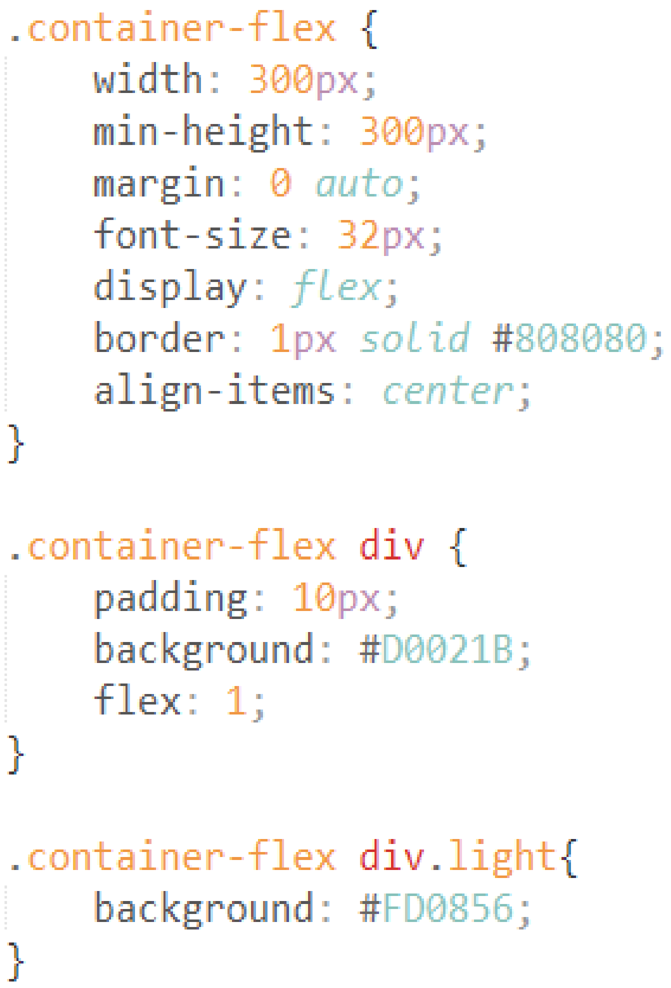
```
.container-flex{
    width: 300px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
    justify-content: space-around;
}

.container-flex div{
    padding: 10px;
    background: #D0021B;
    width: 50px;
}

.container-flex div.light{
    background: #FD0826;
}
```



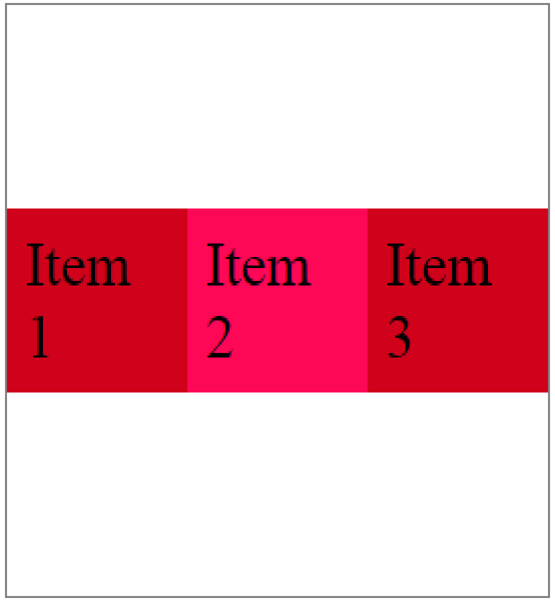
Flexible Box Layout - Properties

- **align-items**
  - align items in perpendicular direction of container
  - **Values**
    - flex-start
    - flex-end
    - Center
    - baseline
    - stretch

Flexible Box Layout – align-items



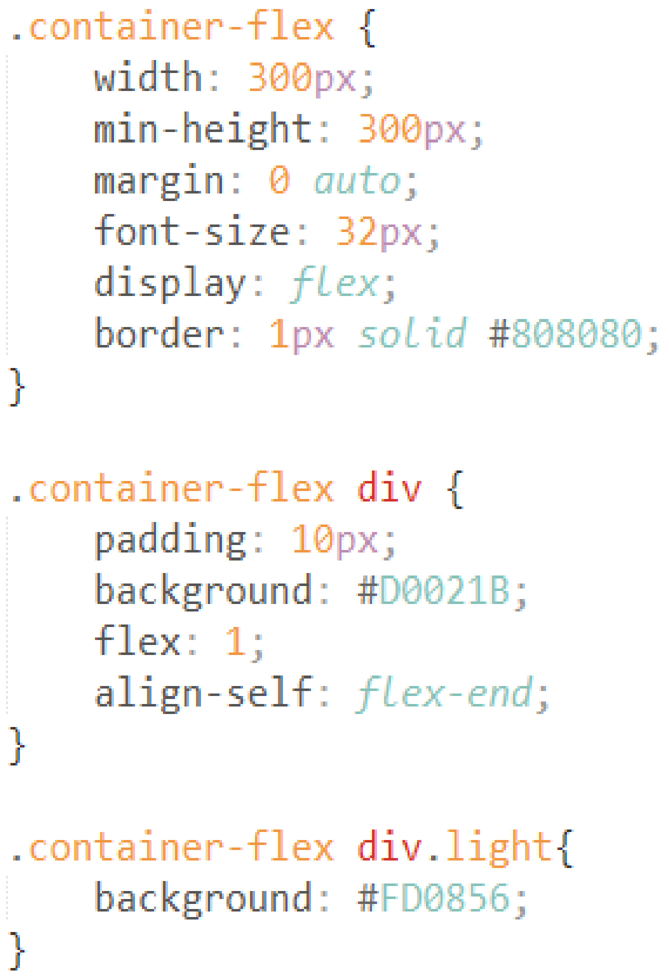
```
.container-flex {
    width: 300px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
    align-items: center;
}

.container-flex div {
    padding: 10px;
    background: #D0021B;
    flex: 1;
}

.container-flex div.light{
    background: #FD0856;
}
```



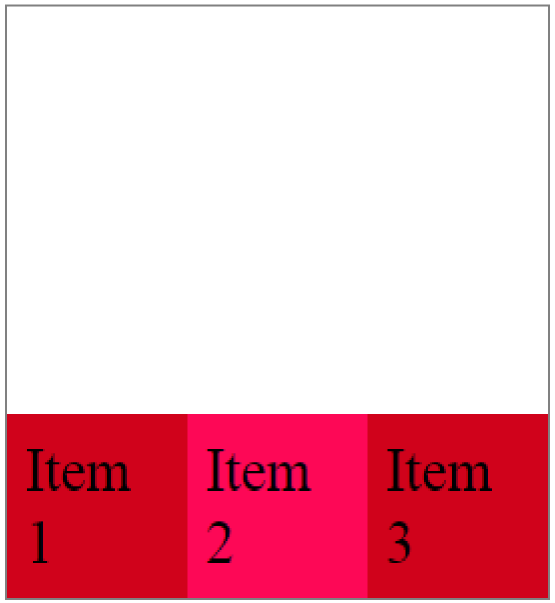
Flexible Box Layout - Properties

- **align-self**
  - specifies the alignment for the selected item inside the flexible container
  - **Values**
    - flex-start
    - flex-end
    - center
    - baseline
    - stretch

Flexible Box Layout – align-self



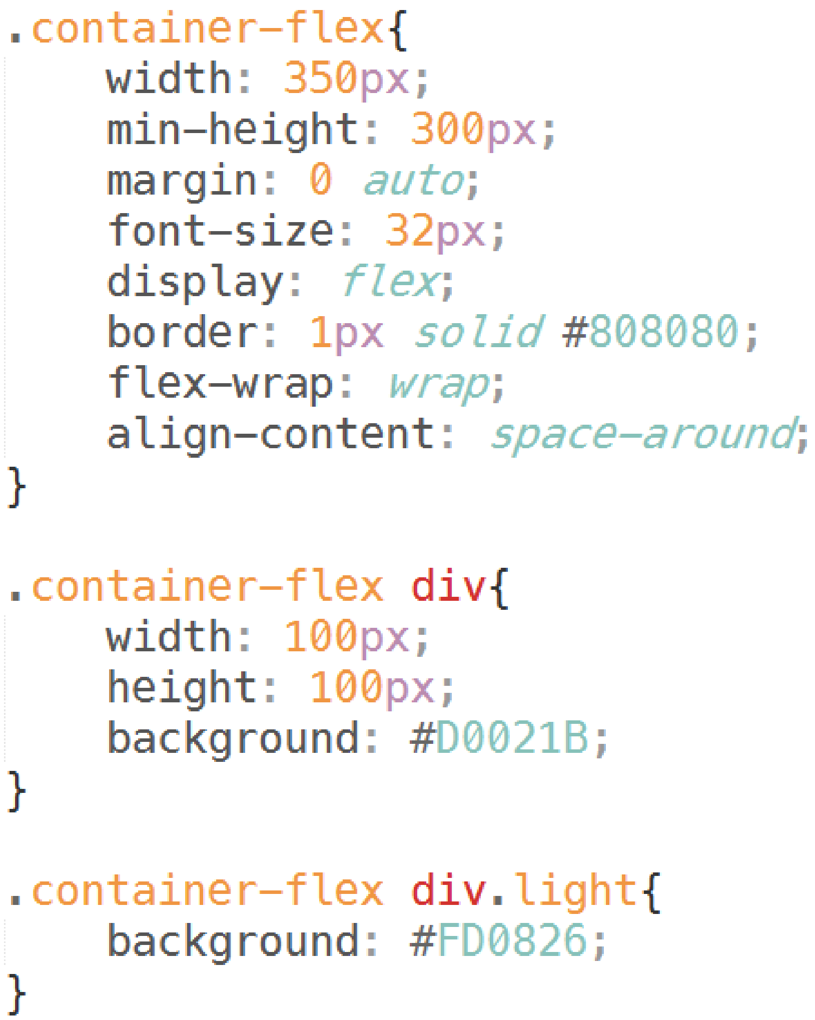
```css
.container-flex {
    width: 300px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
}

.container-flex div {
    padding: 10px;
    background: #D0021B;
    flex: 1;
    align-self: flex-end;
}

.container-flex div.light{
    background: #FD0856;
}
```



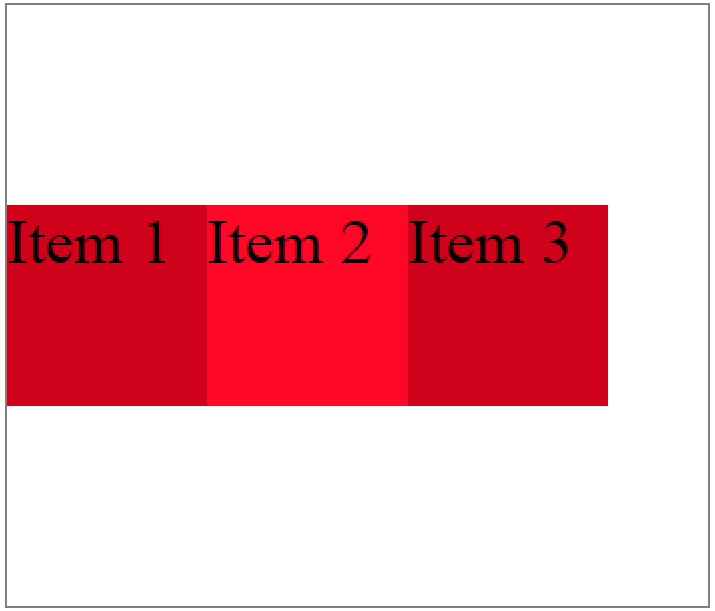
Flexible Box Layout - Properties

- **align-content**
  - Helps to align flex-containers lines within it when there is an extra space in cross-axis
  - Takes similar values as justify-content, but applies them to cross-axis rather than main-axis
  - **Accepts one more value**
    - stretch

Flexible Box Layout – align-content

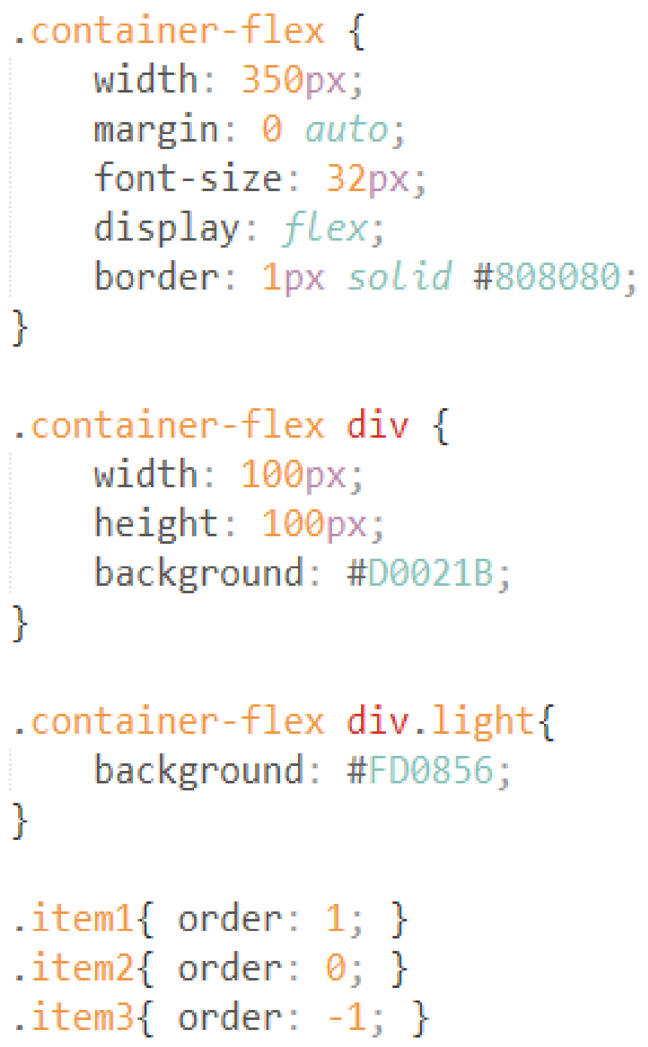


```css
.container-flex{
    width: 350px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
    flex-wrap: wrap;
    align-content: space-around;
}

.container-flex div{
    width: 100px;
    height: 100px;
    background: #D0021B;
}

.container-flex div.light{
    background: #FD0826;
}
```

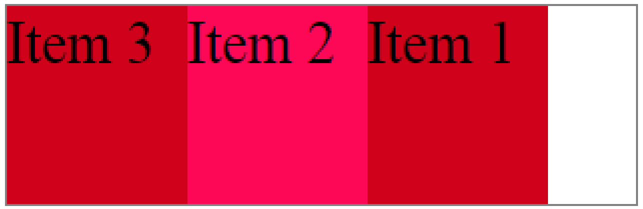


Flexible Box Layout - Properties

- **order**
  - Can change order of flex item
  - Accepts positive and negative values
  - Default value is 0

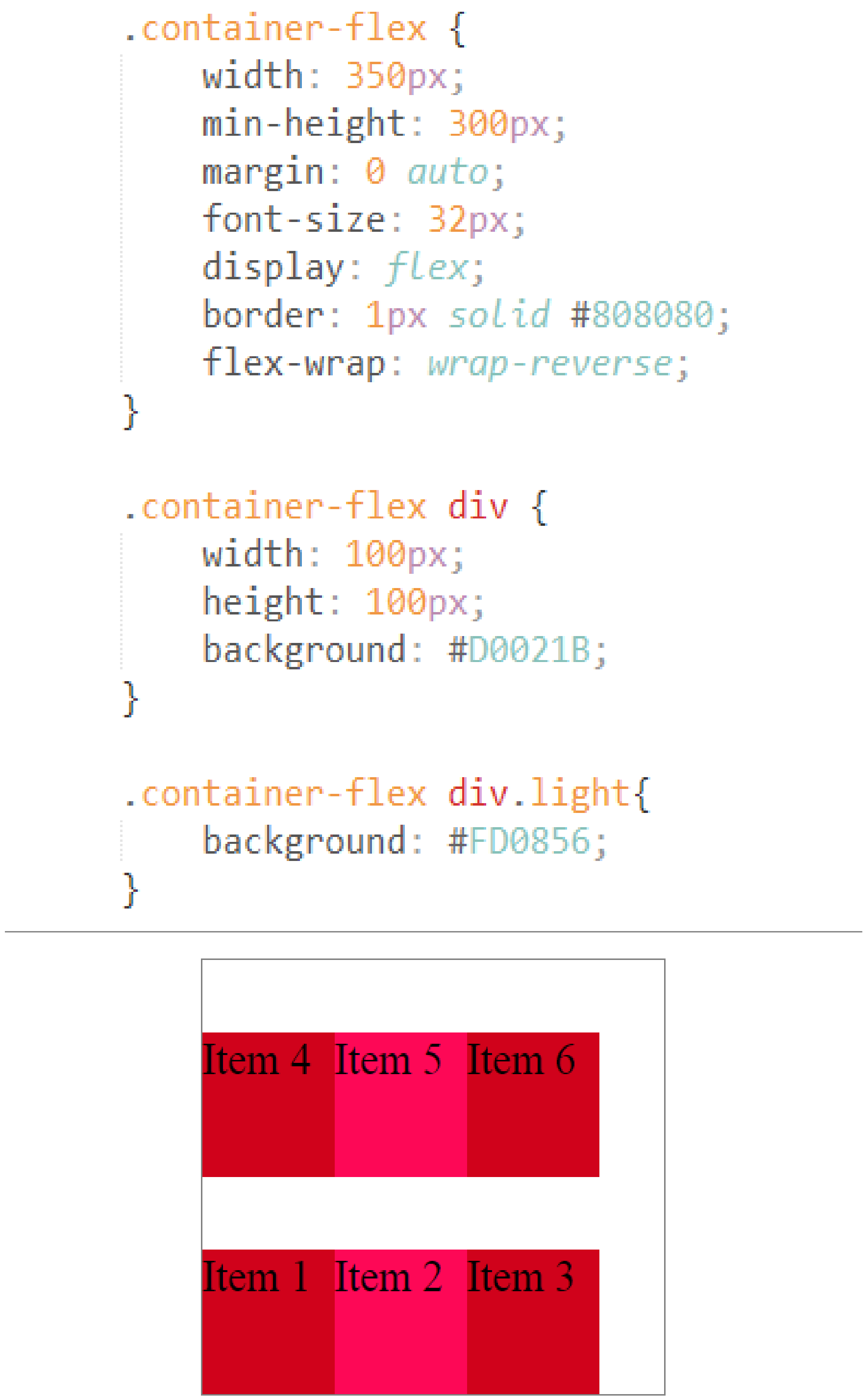


```
.container-flex {
    width: 350px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
}

.container-flex div {
    width: 100px;
    height: 100px;
    background: #D0021B;
}

.container-flex div.light{
    background: #FD0856;
}

.item1{ order: 1; }
.item2{ order: 0; }
.item3{ order: -1; }
```



Flexible Box Layout - Properties

- **flex-wrap**
  - Wraps flex items into multiple lines if no space in flex line
  - **Values**
    - nowrap
    - wrap
    - wrap-reverse

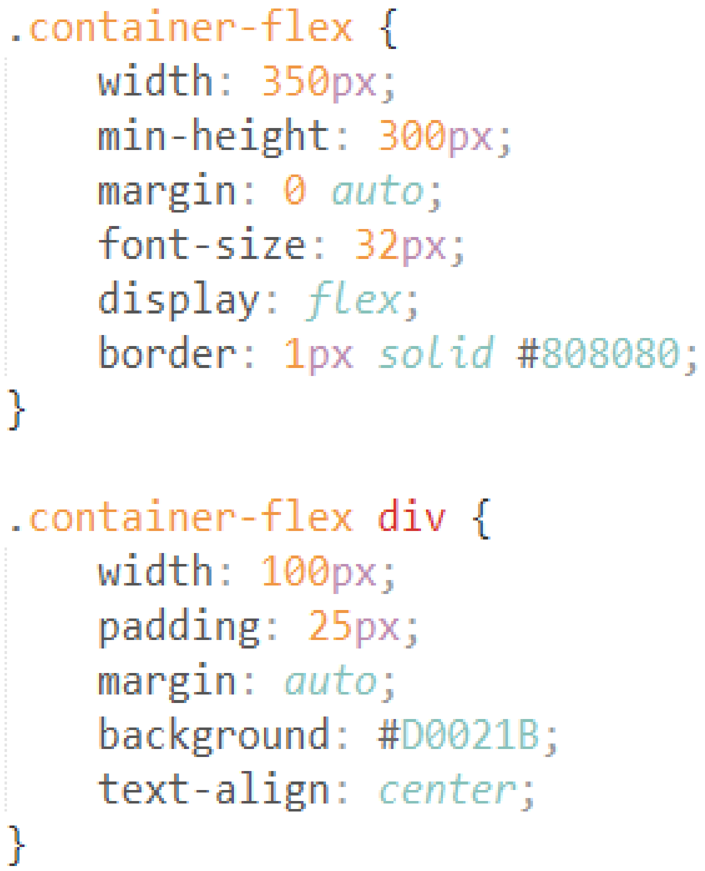


```
.container-flex {
    width: 350px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
    flex-wrap: wrap-reverse;
}

.container-flex div {
    width: 100px;
    height: 100px;
    background: #D0021B;
}

.container-flex div.light{
    background: #FD0856;
}
```

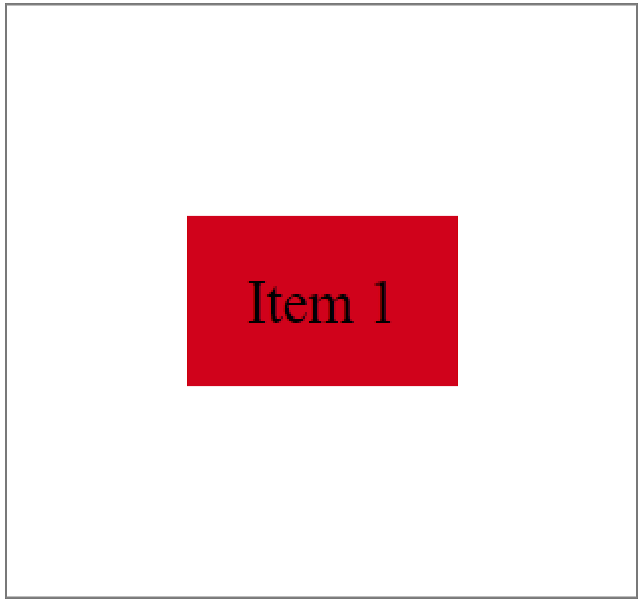
```
Item 4  Item 5  Item 6

Item 1  Item 2  Item 3
```

Flexible Box Layout - Properties

- **Horizontal and Vertical Center**



```
.container-flex {
    width: 350px;
    min-height: 300px;
    margin: 0 auto;
    font-size: 32px;
    display: flex;
    border: 1px solid #808080;
}

.container-flex div {
    width: 100px;
    padding: 25px;
    margin: auto;
    background: #D0021B;
    text-align: center;
}
```



Filters

CSS3 by Prashant Chaudhari

Filters

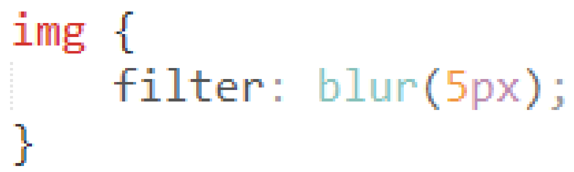
- Applies visual effects on graphical elements
- Filter effects applied to element using **filter** property
- **Filter functions**

  blur(), brightness(), contrast(), drop-shadow(), grayscale(), hue-rotate(), invert(),

  opacity(), sepia(), saturate(), url()

Filter - Functions

- **blur()**
  - Adds blur effect to element
  - Takes length value which defines blur radius
  - Larger value will create more blur

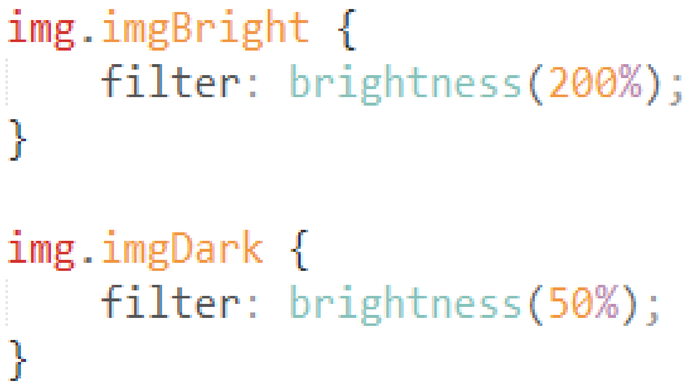


```css
img {
    filter: blur(5px);
}
```

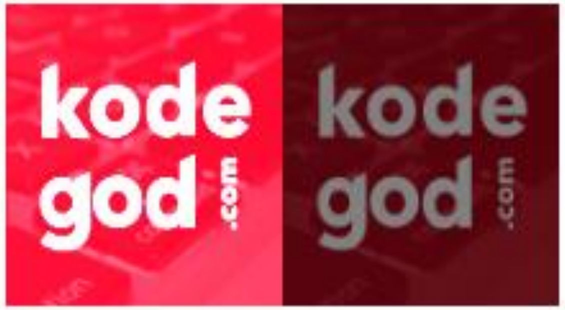
Filter - Functions

- **brightness()**
  - Sets brightness of an image
  - Value 0% makes image completely black and value

    100% or 1 leaves image unchanged
  - Value grater than 100% makes image more brighter

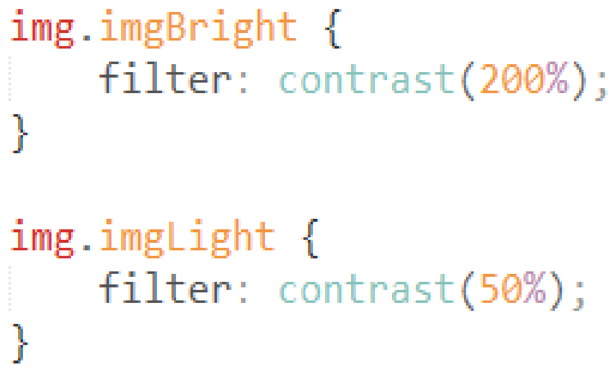


```
img.imgBright {
    filter: brightness(200%);
}

img.imgDark {
    filter: brightness(50%);
}
```

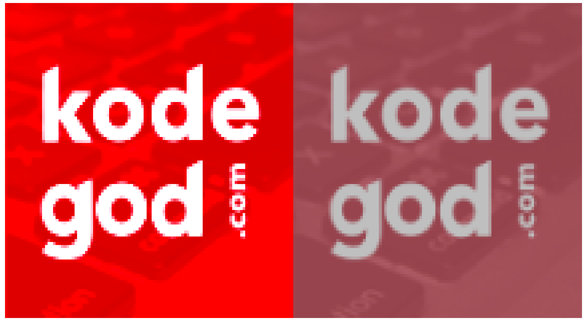


Filter - Functions

- **contrast()**
  - Adjusts contrast of an image
  - Value 0% makes image completely black and value 100% or 1 leaves image unchanged
  - Value grater than 100% provides result with less contrast

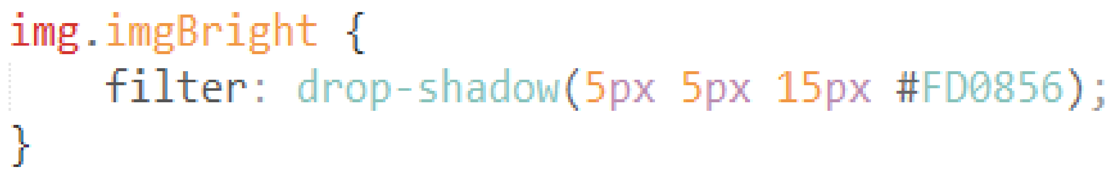


```
img.imgBright {
    filter: contrast(200%);
}

img.imgLight {
    filter: contrast(50%);
}
```

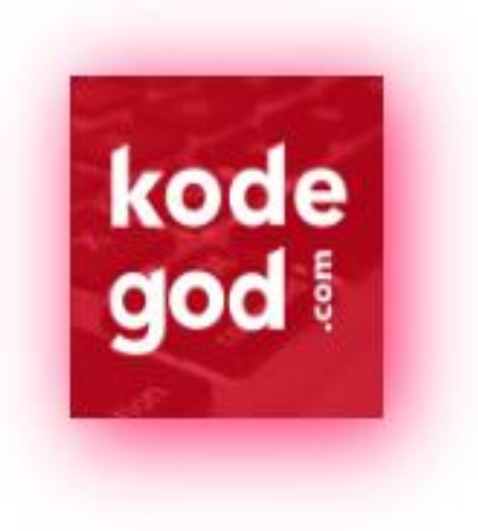


Filter - Functions

- **drop-shadow()**
  - Applies drop shadow effect to image
  - Similar to box-shadow property

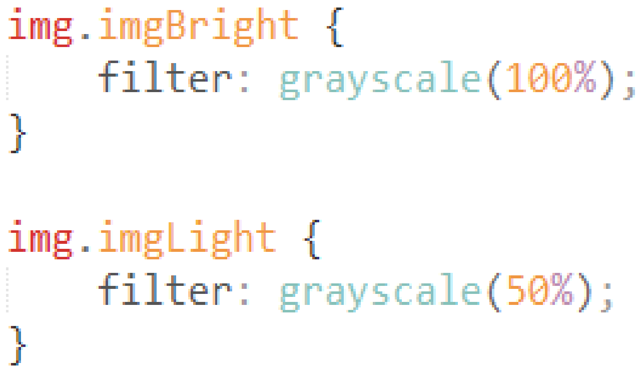


```css
img.imgBright {
    filter: drop-shadow(5px 5px 15px #FD0856);
}
```

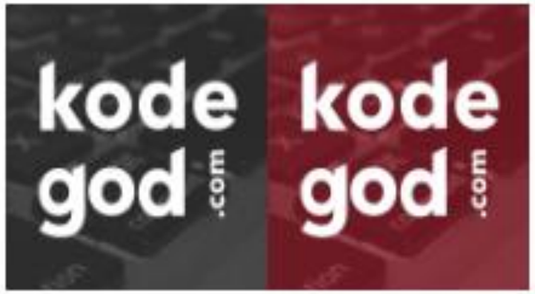


Filter - Functions

- **grayscale()**
  - Images converted to grayscale
  - Value 100% makes image completely grayscale and value 0% leaves image unchanged

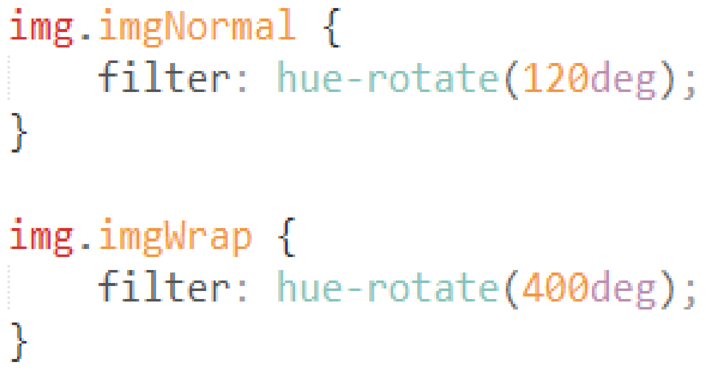


```
img.imgBright {
    filter: grayscale(100%);
}

img.imgLight {
    filter: grayscale(50%);
}
```

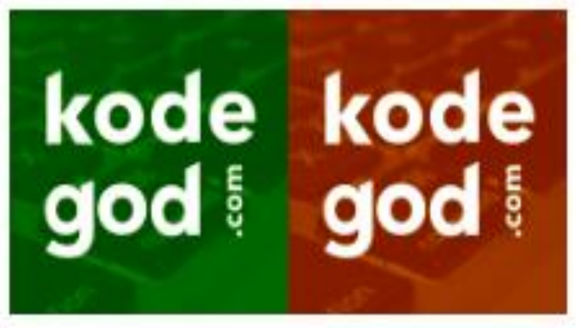


Filter - Functions

- **hue-rotate()**
  - Applies hue rotation on image
  - Value 0deg leaves image unchanged
  - No maximum value, the effect of values above 360deg wraps around



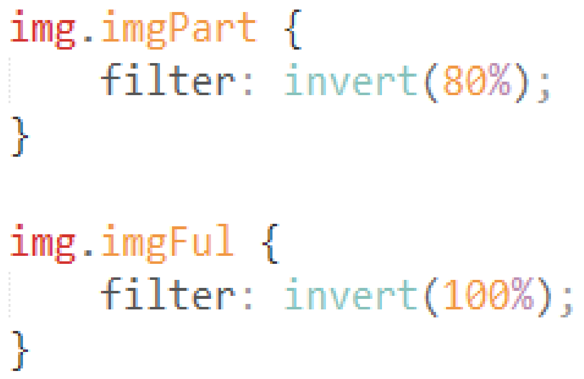
```
img.imgNormal {
    filter: hue-rotate(120deg);
}

img.imgWrap {
    filter: hue-rotate(400deg);
}
```



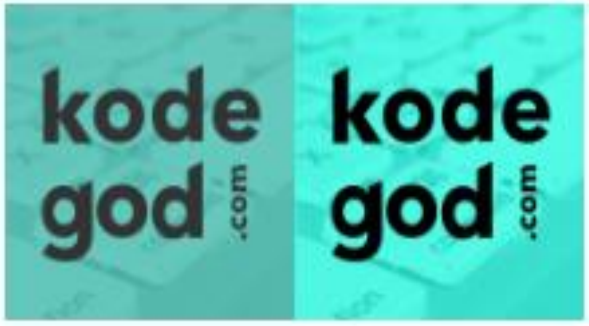
Filter - Functions

- **invert()**
  - Applies invert effect on image
  - Value 100% or 1completely inverted, value 0% leaves

    image unchanged
  - Negative values are not allowed

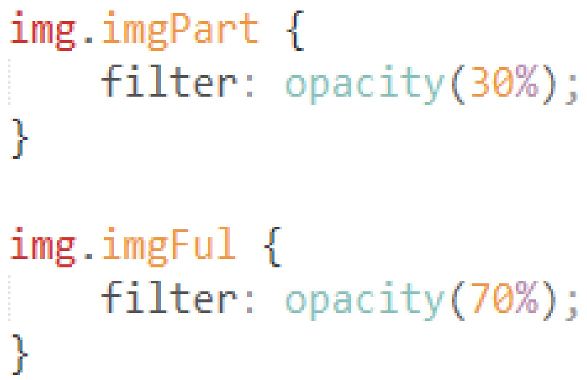


```
img.imgPart {
    filter: invert(80%);
}

img.imgFul {
    filter: invert(100%);
}
```

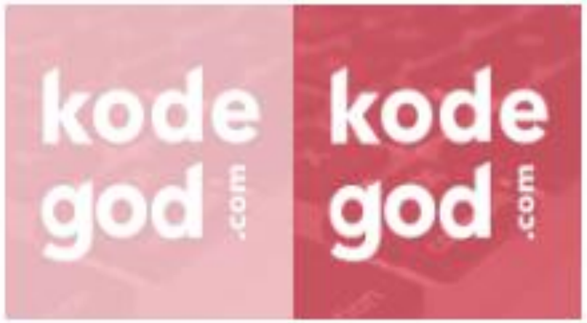


Filter - Functions

- **opacity()**
  - Applies transparency to image
  - Value 0% is completely transparent, value 100% or 1 leaves image unchanged

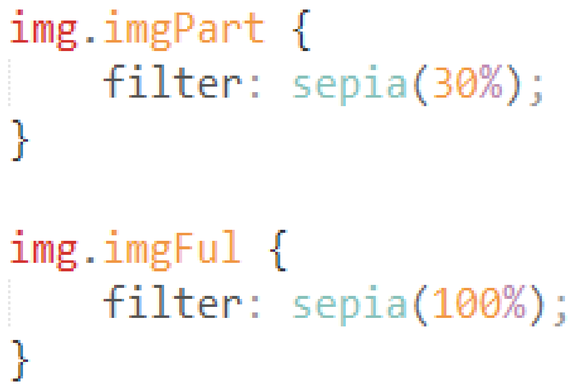


```
img.imgPart {
    filter: opacity(30%);
}

img.imgFul {
    filter: opacity(70%);
}
```

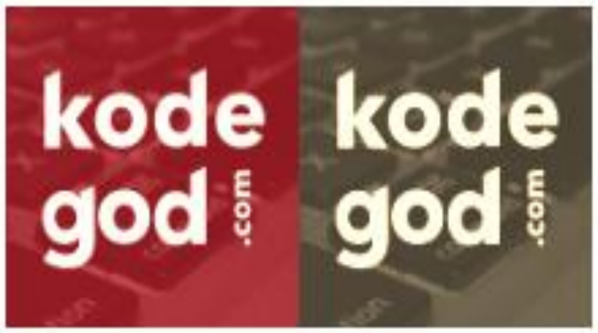


Filter - Functions

- **sepia()**
  - Converts image to sepia
  - Value 100% or 1 is completely sepia, value 0% leaves image unchanged



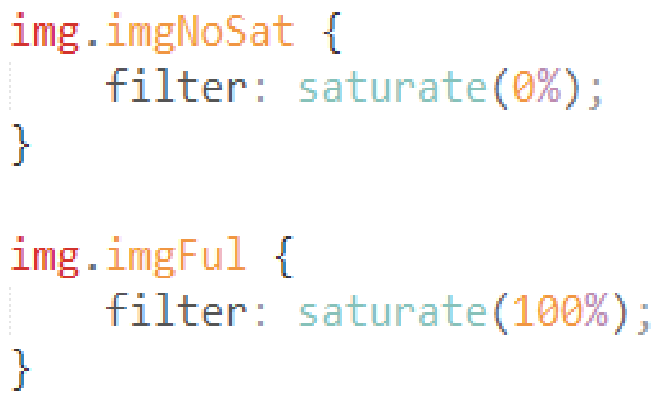
```css
img.imgPart {
    filter: sepia(30%);
}

img.imgFul {
    filter: sepia(100%);
}
```



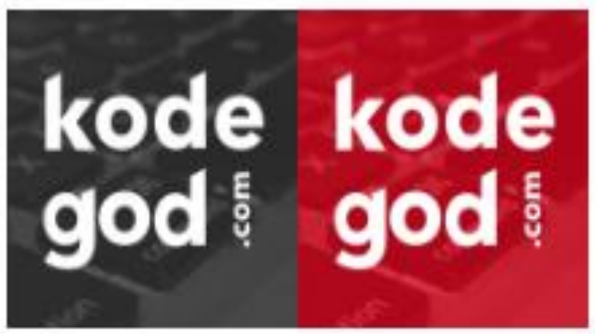
Filter - Functions

- **saturation()**
  - Adjusts saturation of the image
  - Value 0% is completely un-saturated, value 100% or 1

    leaves image unchanged



```
img.imgNoSat {
    filter: saturate(0%);
}

img.imgFul {
    filter: saturate(100%);
}
```



Media Types

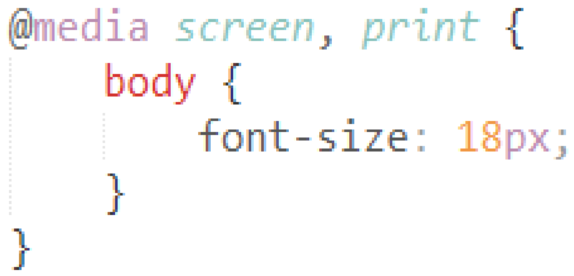
CSS3 by Prashant Chaudhari

Media Types

- Allows to format document to be presented correctly in various types of media such as screen, print, etc.
- **Methods to specify media dependencies for style sheets**
  - **@media**
  - **@import**
  - **<link>**

Media Types

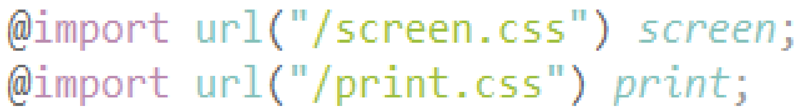
- **@media**
  - Used to define different style rules for different media types
  - @media followed by comma separated list of media types



```
@media screen, print {
    body {
        font-size: 18px;
    }
}
```

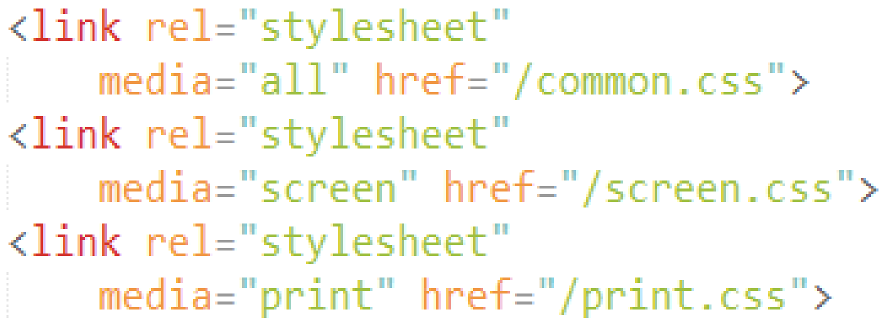
Media Types

- **@import**
  - Used to style information for specific target media
  - @import followed by url of imported stylesheets and comma separated list of media types



```
@import url("/screen.css") screen;
@import url("/print.css") print;
```

- **<link>** element
  - **Media** attribute in link element is used to specify target media



```
<link rel="stylesheet"
    media="all" href="/common.css">
<link rel="stylesheet"
    media="screen" href="/screen.css">
<link rel="stylesheet"
    media="print" href="/print.css">
```

Media Types

- **Media Types are**
  - **all** for all media type devices
  - **aural** for speech and sound synthesizers
  - **braille** for braille tactile feedback devices
  - **embossed** for paged braille printers

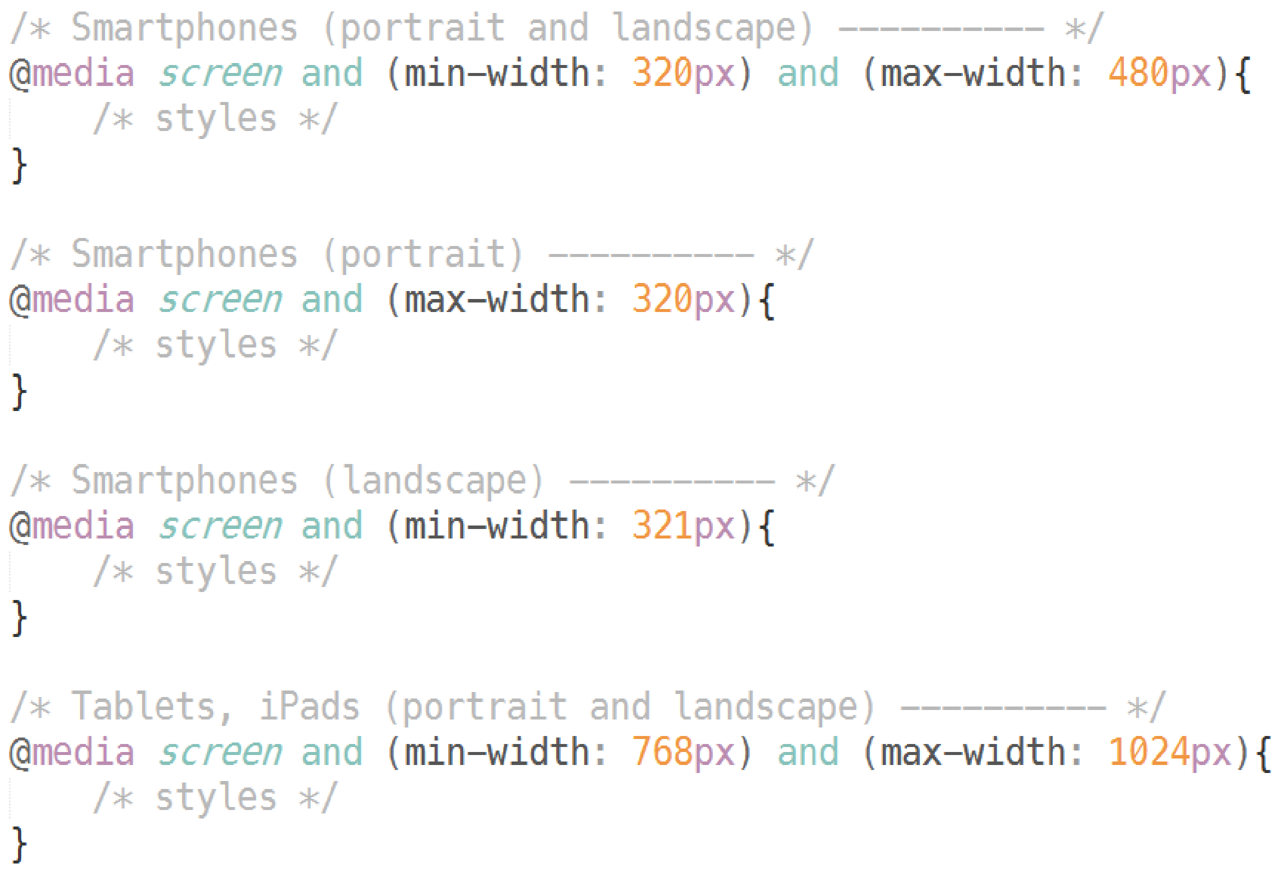
- **handheld** small or handheld devices
- **print** used for printers
- **projection** for projectors
- **screen** for color computer screens
- **tty** for teletypes, terminals, portable devices with limited display capabilities
- **tv** for television type devices

Media Queries

CSS3 by Prashant Chaudhari

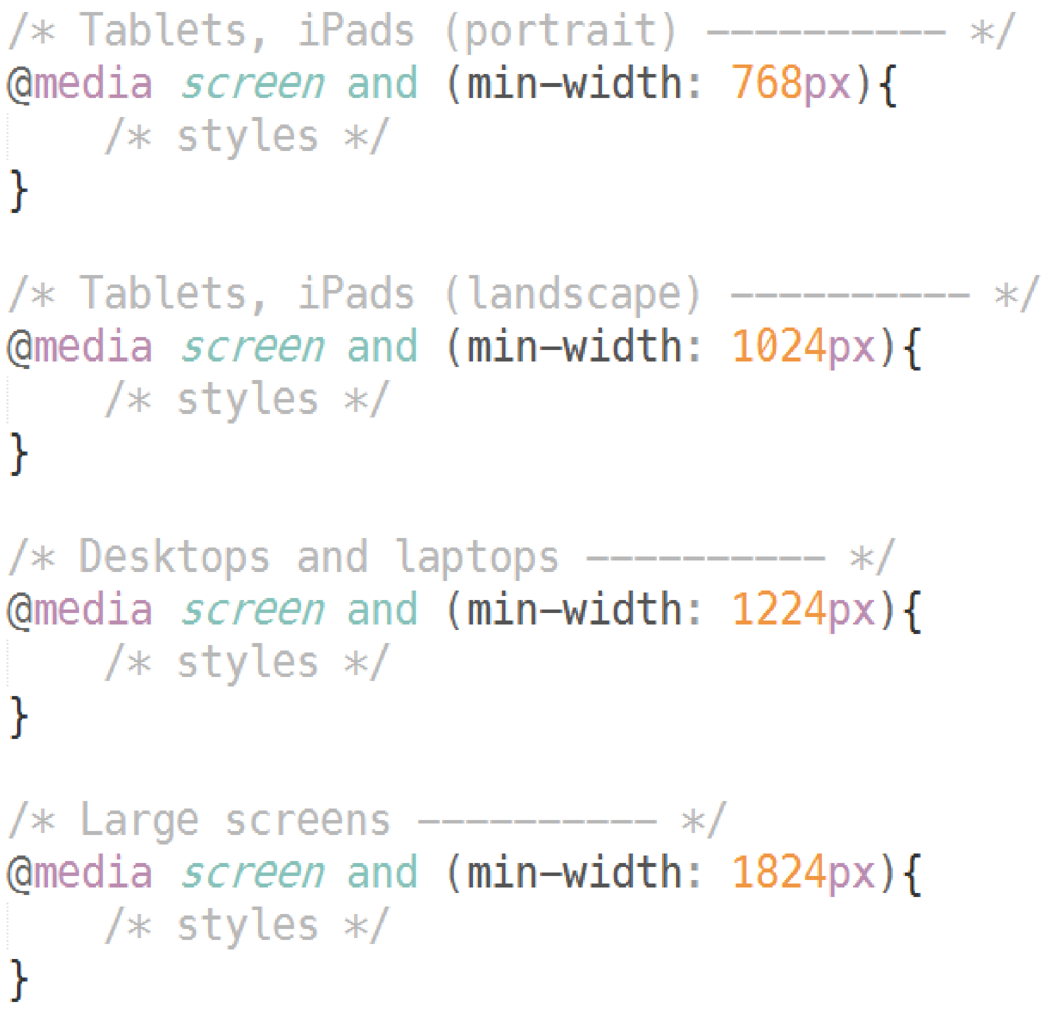
Media Queries

- Used to customize the presentation of web pages for specific range of devices



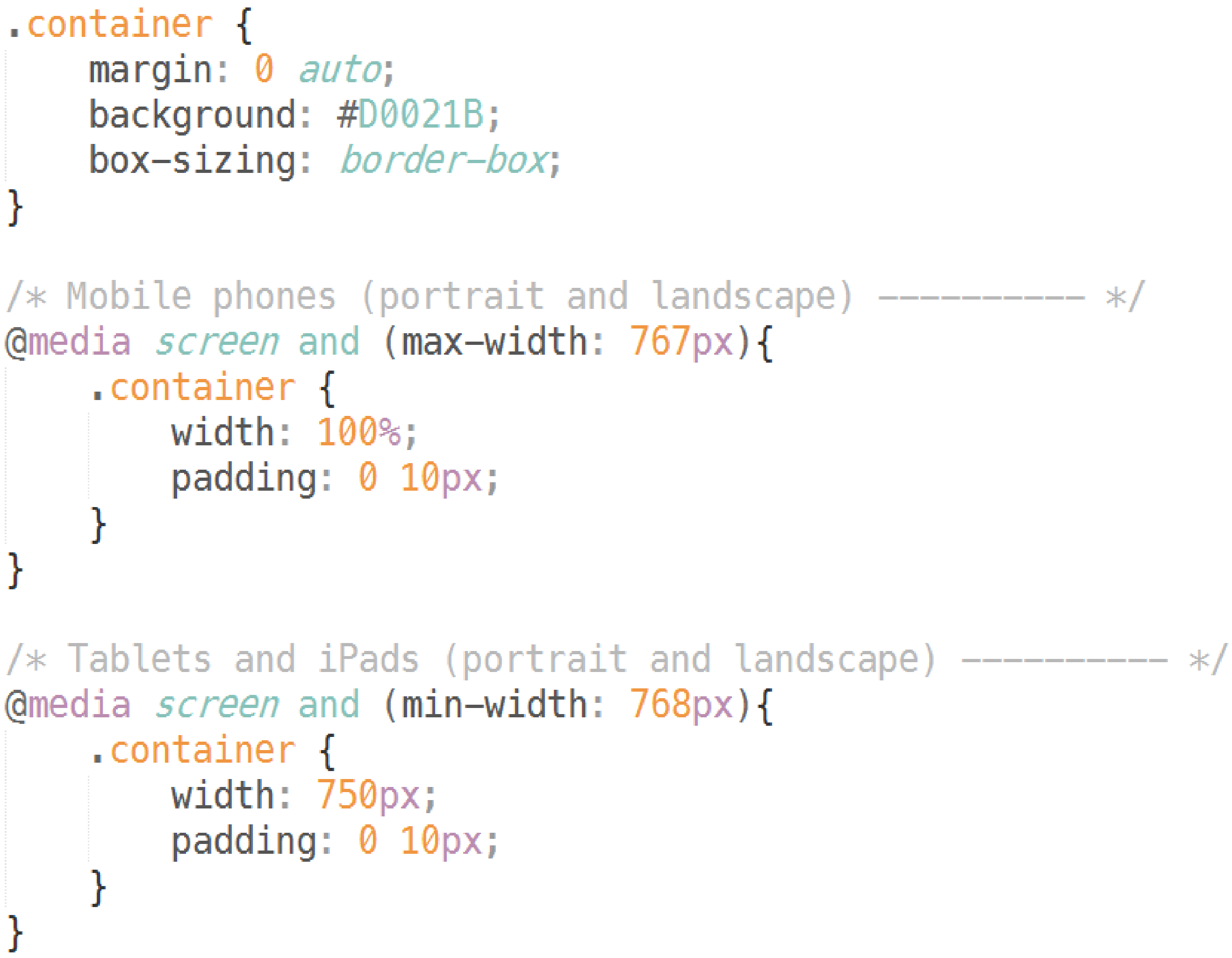
```
/* Smartphones (portrait and landscape) ---------- */
@media screen and (min-width: 320px) and (max-width: 480px){
    /* styles */
}

/* Smartphones (portrait) ---------- */
@media screen and (max-width: 320px){
    /* styles */
}

/* Smartphones (landscape) ---------- */
@media screen and (min-width: 321px){
    /* styles */
}

/* Tablets, iPads (portrait and landscape) ---------- */
@media screen and (min-width: 768px) and (max-width: 1024px){
    /* styles */
}
```

Media Queries



```css
/* Tablets, iPads (portrait) ---------- */
@media screen and (min-width: 768px){
    /* styles */
}

/* Tablets, iPads (landscape) ---------- */
@media screen and (min-width: 1024px){
    /* styles */
}

/* Desktops and laptops ---------- */
@media screen and (min-width: 1224px){
    /* styles */
}

/* Large screens ---------- */
@media screen and (min-width: 1824px){
    /* styles */
}
```

Media Queries - Example



```css
.container {
    margin: 0 auto;
    background: #D0021B;
    box-sizing: border-box;
}

/* Mobile phones (portrait and landscape) ---------- */
@media screen and (max-width: 767px){
    .container {
        width: 100%;
        padding: 0 10px;
    }
}

/* Tablets and iPads (portrait and landscape) ---------- */
@media screen and (min-width: 768px){
    .container {
        width: 750px;
        padding: 0 10px;
    }
}
```

References

- https://www.w3schools.com/css/
- https://www.tutorialspoint.com/css/index.htm