

# Web Programming

## CSS3 – Box, Formatting, Layout

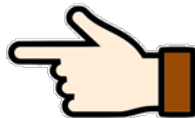
---



# Roadmap

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- **Formatting Elements**
- **Box**
- **Layout**



# HTML Document Tree (1/2)

## ● Element hierarchy

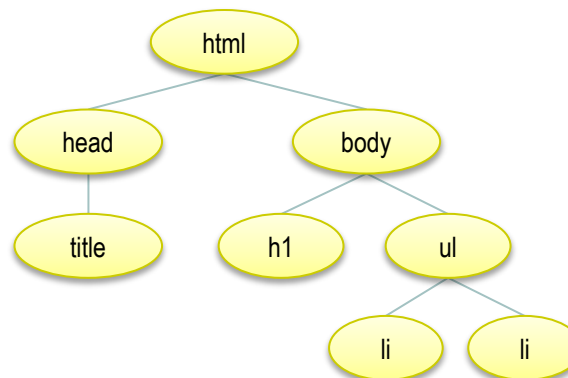
- A hierarchical representation of the HTML document contents generated by the browser

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>HTML tree</title>
5   </head>
6   <body>
7     <h1>Page heading</h1>
8     <ul>
9       <li>item 1</li>
10      <li>item 2</li>
11    </ul>
12  </body>
13 </html>
```



Page heading

- item 1
- item 2



# HTML Document Tree (2/2)

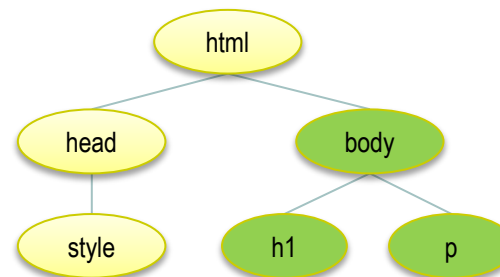
## ● Inheritance

- Some property values of an element are inherited by its descendants, unless specified otherwise
- Below, **color** property is inherited, so all descendants of the *body* element will inherit the color “**green**”

```

1 <html>
2   <head>
3     <style type="text/css">
4       body { color: green; }
5     </style>
6   </head>
7   <body>
8     <h1>Section 1</h1>
9     <p>This is a paragraph in Section 1.</p>
10  </body>
11 </html>

```



**Section 1**

This is a paragraph in Section 1.

# Formatting Elements (1/3)

## ● Text properties

- **text-align** : specifies the horizontal alignment of text
  - e.g., left, right, center, justified
- **text-decoration** : specifies the decoration added to text
  - e.g., underline, overline, ~~line-through~~
- **text-transform** : controls the capitalization of text
  - e.g., capitalize, uppercase, lowercase

`<p style="font-variant: small-caps"> abcdEFG </p>`  ABCDEFG

# Illustration

Capitalize, UPPERCASE, lowercase

This is text-transform.

This Is Text-Transform **Ca.**

THIS IS TEXT-TRANSFORM **UP.**

this is text-transform **lo.**

THIS IS TEXT-TRANSFORM **VA.**

```

1  <!doctype html>
2  <html>
3  <head>
4    <title>text-transform</title>
5    <style>
6      .ca {text-transform: capitalize;}
7      .up {text-transform: uppercase;}
8      .lo {text-transform: lowercase;}
9      .va {font-variant: small-caps;}
10   </style>
11 </head>
12 <body>
13   <p>This is text-transform.</p>
14   <p class="ca">This is text-transform ca.</p>
15   <p class="up">This is text-transform up.</p>
16   <p class="lo">This is text-transform lo.</p>
17   <p class="va">This is text-transform va.</p>
18 </body>
19 </html>

```

save after editing ex5-1.html.

# Formatting Elements (2/3)

## ● Font property

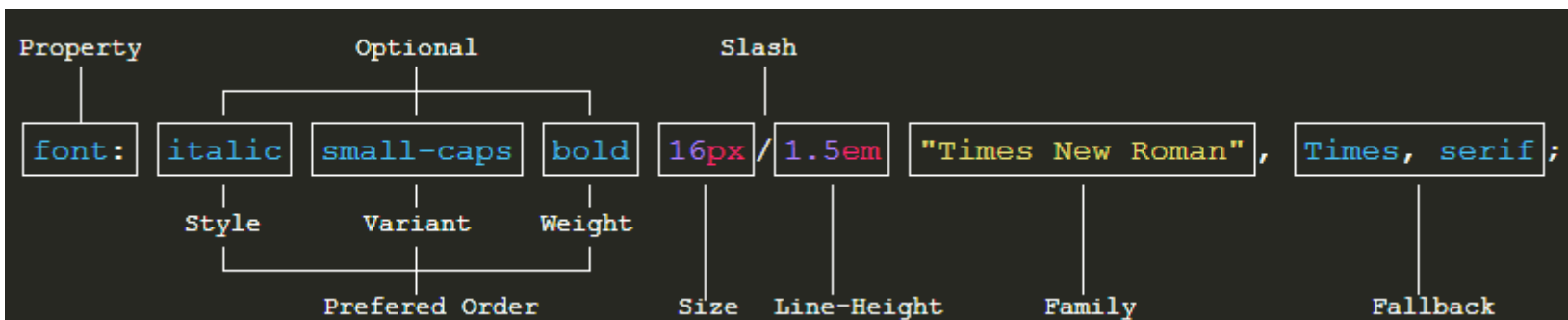
- Sets all the font properties in one declaration

```
p {
  font-style: italic;
  font-size: 15px;
  font-family: arial;
}
```



```
p { font: italic 15px arial; }
```

Property	Description
<b>font-style</b>	Specifies the font style, e.g., normal, italic
<b>font-variant</b>	Specifies the font variant, e.g., normal, small-caps
<b>font-weight</b>	Specifies the font weight, e.g., normal, bold, 100~900
<b>font-size*</b>	Specifies the font size, e.g., medium, small, x-large, 12px, 120%
<b>font-family*</b>	Specifies the font family, e.g., "Times New Roman", Georgia, Serif



# Formatting Elements (2/3)

## ● Font property [cont.]

- The properties that can be set, are (in order): “font-style font-variant font-weight font-size font-family”
- NOTE: **font-size** and **font-family** values are required

```
<div style="font-family: Nofont,'Malgun Gothic', 굴림, 돋움;">
```

```
<div style="font-size: 16px">
```

```
<div style="font-size: xx-large">
```

xx-large	32px
x-large	24px
large	18px
medium	16px
small	13px
x-small	10px
xx-small	9px



# Formatting Elements (3/3)

## ● Units

$$100\% = 1\text{em} = 16\text{px} = 12\text{pt}$$

Property	Description
<b>em</b>	The “em” is a scalable unit that is used in web document media. <b>default size 1em= 16px</b> (2em means 2 times the size of the current font)
<b>px</b>	Pixels are fixed-size units that are used in screen media
<b>pt</b>	Points are traditionally used in print media. <b>1em = 12pt</b>
<b>%</b>	The percent unit is much like the “em” unit, the current font-size is equal to 100% (i.e. <b>12pt = 100%</b> )

em:element

px:pixel

px:point

```
<div style="font-size: 20px">
  <p> 20px </p>
  <p style="font-size: 50%"> 50% of 20px </P>
  <p style="font-size: 1.2em"> 1.2 times 20px </P>
</div>
```



20px

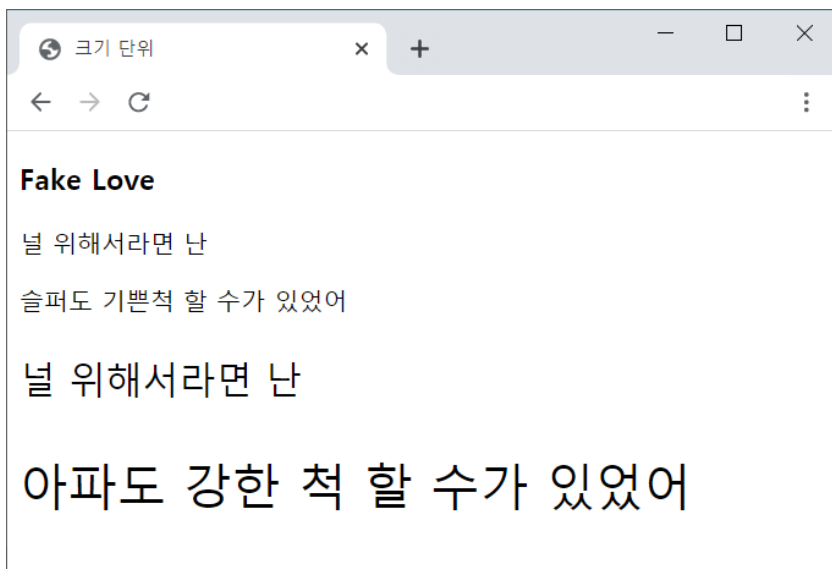
50% of 20px

1.2 times 20px

# Example: %

## Fake Love ( ex5-2.html )

널 위해서라면 난  
슬퍼도 기쁜척 할 수가 있었어  
널 위해서라면 난  
아파도 강한 척 할 수가 있었어



```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="utf-8">
5   <title>크기 단위</title>
6 <style>
7   .c1 { font-size: 100%; }
8   .c2 { font-size: 150%; }
9   .c3 { font-size: 200%; }
10 </style>
11 </head>
12 <body>
13   <h3>Fake Love</h3>
14   <p>널 위해서라면 난</p>
15   <p class="c1">슬퍼도 기쁜척 할 수가 있었어</p>
16   <p class="c2">널 위해서라면 난</p>
17   <p class="c3">아파도 강한 척 할 수가 있었어</p>
18 </body>
19 </html>

```



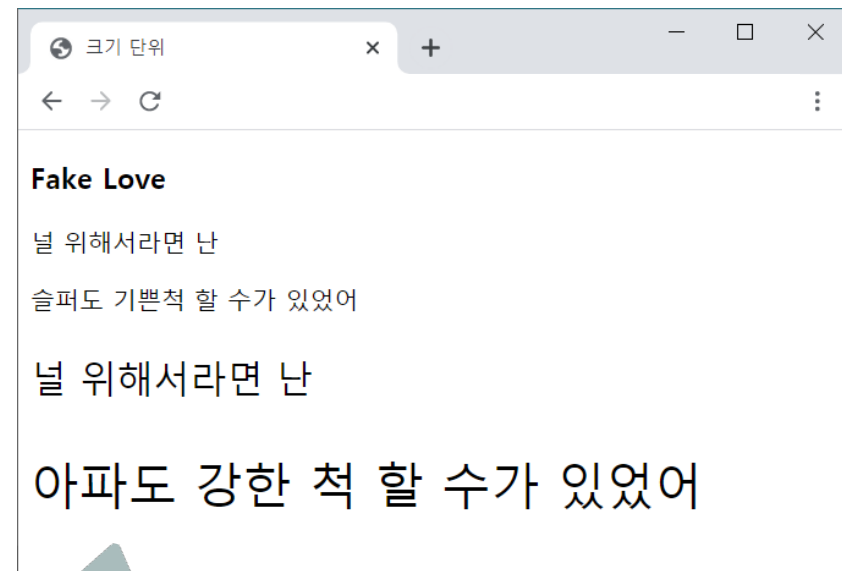
( After editing ex5-2.html, save it as ex5-2-1.html )

# Example: em

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="utf-8">
5   <title>크기 단위</title>
6   <style>
7     .c1 { font-size: 1em; }
8     .c2 { font-size: 1.5em; }
9     .c3 { font-size: 2em; }
10  </style>
11 </head>
12 <body>
13   <h3>Fake Love</h3>
14   <p>널 위해서라면 난</p>
15   <p class="c1">슬퍼도 기쁜척 할 수가 있었어</p>
16   <p class="c2">널 위해서라면 난</p>
17   <p class="c3">아파도 강한 척 할 수가 있었어</p>
18 </body>
19 </html>

```



( ex5-2-2.html )

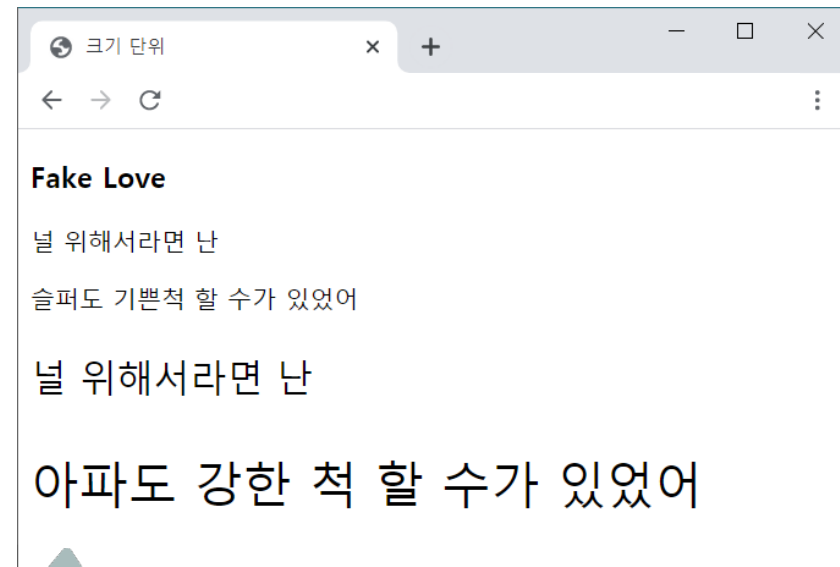
( After editing ex5-2-1.html, save it as ex5-2-2.html

# Example: px

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="utf-8">
5   <title>크기 단위</title>
6 </head>
7   .c1 { font-size: 16px; }
8   .c2 { font-size: 24px; }
9   .c3 { font-size: 32px; }
10 </style>
11 </head>
12 <body>
13   <h3>Fake Love</h3>
14   <p>널 위해서라면 난</p>
15   <p class="c1">슬퍼도 기쁜척 할 수가 있었어</p>
16   <p class="c2">널 위해서라면 난</p>
17   <p class="c3">아파도 강한 척 할 수가 있었어</p>
18 </body>
19 </html>

```



( ex5-2-3.html )

( After editing ex5-2-2.html, save it as ex5-2-3.html )

# CSS Legal Color Values

---

- Colors in CSS can be specified by the following methods:

- Hexadecimal colors

- Hexadecimal colors with transparency

```
/* red transparency */  
#p1a {background-color: #ff000080;}
```

- RGB colors

- RGBA colors

```
/* red with opacity */  
#p1 {background-color: rgba(255, 0, 0, 0.3);}
```

- HSL colors

- HSLA colors


- Predefined/Cross-browser color names (blue, red ...)

reference site

[https://www.w3schools.com/cssref/css\\_colors\\_legal.asp](https://www.w3schools.com/cssref/css_colors_legal.asp)

# Hexadecimal Notation

- Hexadecimal color values are also supported in all browsers.
- A hexadecimal color is specified with: #RRGGBB.
- RR (red), GG (green) and BB (blue) are hexadecimal integers between 00 and FF specifying the intensity of the color.
- For example, #0000FF is displayed as blue, because the blue component is set to its highest value (FF) and the others are set to 00.

red green blue  
 # 8 A 2 B E 2 ↔   
blueviolet

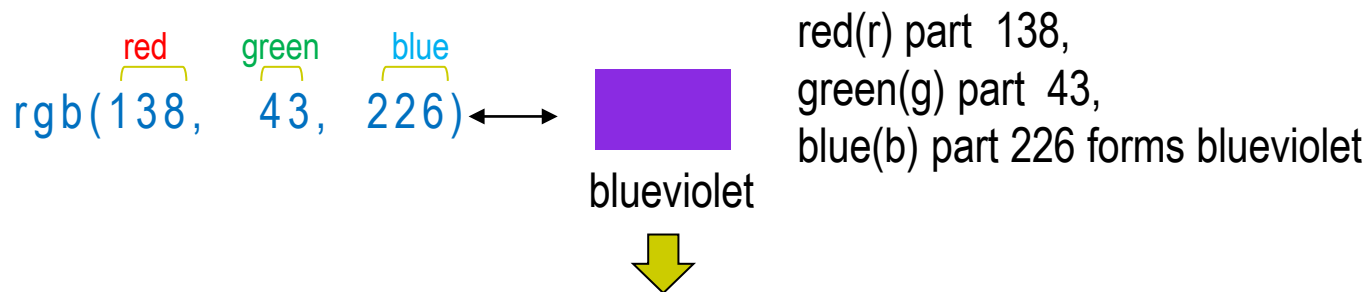
red(r) part 0x8A(decimal 138 =  $16 \cdot 8 + 1 \cdot 10$ ),  
 green(g) part 0x2B(decimal 43),  
 blue(b) part 0xE2(decimal 226) forms blueviolet



```
p { color: #8A2BE2; }
```

# RGB Values with Decimal Codes

- RGB color values are supported in all browsers.
- An RGB color value is specified with: `rgb(red, green, blue)`.
- Each parameter (red, green, and blue) defines the intensity of the color as an integer between 0 and 255.
- For example, `rgb(0, 0, 255)` is rendered as blue, because the blue parameter is set to its highest value (255) and the others are set to 0.



```
p { color: rgb(138, 43, 226); }
```

# Color Name

---

- All modern browsers support 140 color names.
  - example: display the color of the p tag in blueviolet

```
p { color: blueviolet; }
```



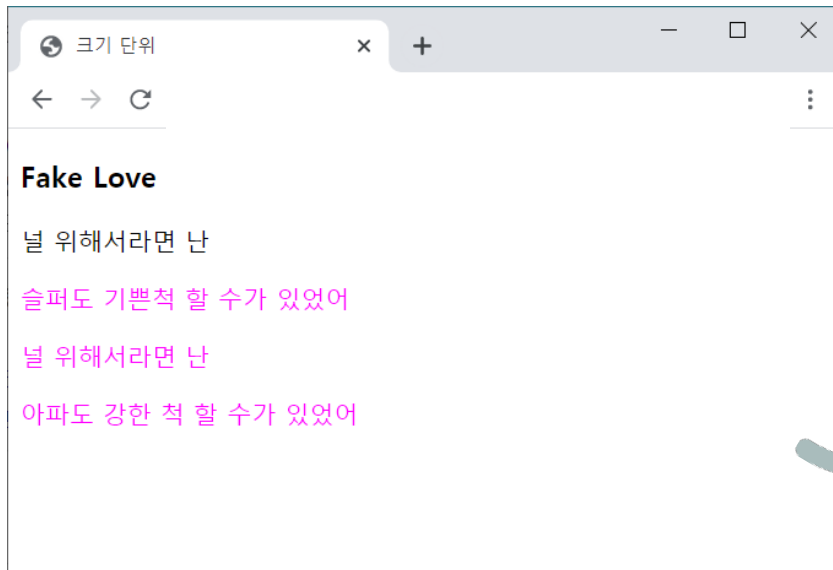
# Some Colors, Names, Codes

<b>AliceBlue</b> #F0F8FF	<b>AntiqueWhite</b> #FAEBD7	<b>Aqua</b> #00FFFF
<b>Aquamarine</b> #7FFFD4	<b>Azure</b> #F0FFFF	<b>Beige</b> #F5F5DC
<b>Bisque</b> #FFE4C4	<b>Black</b> #000000	<b>BlanchedAlmond</b> #FFEBCD
<b>Blue</b> #0000FF	<b>BlueViolet</b> #8A2BE2	<b>Brown</b> #A52A2A
<b>BurlyWood</b> #DEB887	<b>CadetBlue</b> #5F9EA0	<b>Chartreuse</b> #7FFF00
<b>Chocolate</b> #D2691E	<b>Coral</b> #FF7F50	<b>CornflowerBlue</b> #6495ED

# Example

## Fake Love ( ex5-2.html )

널 위해서라면 난  
슬퍼도 기쁜척 할 수가 있었어  
널 위해서라면 난  
아파도 강한 척 할 수가 있었어



## ● Using all 3 notations

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="utf-8">
5   <title>크기 단위</title>
6   <style>
7     .c1 { color: #ff00ff; }
8     .c2 { color: rgb(255, 0, 255); }
9     .c3 { color: magenta; }
10  </style>
11 </head>
12 <body>
13   <h3>Fake Love</h3>
14   <p>널 위해서라면 난</p>
15   <p class="c1">슬퍼도 기쁜척 할 수가 있었어</p>
16   <p class="c2">널 위해서라면 난</p>
17   <p class="c3">아파도 강한 척 할 수가 있었어</p>
18 </body>
19 </html>

```



( After editing ex5-2.html, save it as ex5-3.html )