

CSS

Front-End 개발자 양성 과정



목 차

- ✓ CSS 개요
- ✓ CSS 선택자(Selector)
- ✓ CSS 속성(Property)
- ✓ 주요 개념
- ✓ 실습

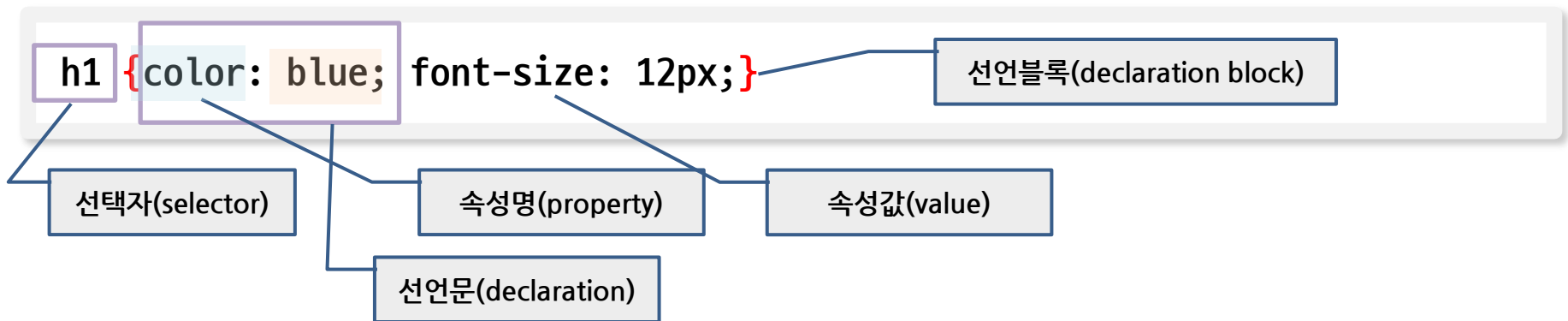
CSS 개요

- CSS 개요
 - CSS Color
 - CSS Unit
- 

➤ CSS

- Cascading Style Sheets
- HTML 요소가 스크린(screen), 출력물(print) 등에서 어떻게 표현되는지를 정의

➤ CSS 문법



➤ CSS 연결

- 외부 스타일시트
- 내부 스타일시트
- 인라인(Inline) 스타일

```
<!DOCTYPE html>
<html lang="ko">
  <head>
    <title>하이셈(주)</title>
    <!-- 외부 스타일시트 -->
    <link rel="stylesheet" href="mystyle.css" />
    <!-- 내부 스타일시트 -->
    <style>
      body {background: #ffffff;}
    </style>
  </head>
  <body>
    <!-- 인라인 스타일 -->
    <h1 sytle="color: red; font-size: 20px;">CEO 인사말</h1>
    <p>안녕하세요? 하이셈 대표이사 000 입니다.</p>
  </body>
</html>
```

➤ Color Names

- red, green, blue, orange

➤ RGB(Red, Green, Blue)

- `rgb(255, 0, 0)`

➤ Hexadecimal Colors

- `#FF0000`, `#FFA500` 등

➤ RGBA Colors

- `rgba(255, 0, 0, 0.2)`

➤ HLS Colors

- `hsl(0, 100%, 30%)`
- 첫 요소는 각도 : 0 ~ 360

➤ HSLA Colors

- hsla(120, 100%, 30%, 0.5)

➤ Opacity

- opacity: 0.5 (0이상 1이하의 값 사용)

➤ RGBA, HLS, HSLA, Opacity는 IE9 이상만 지원

```
#p1 {background-color: red;}
#p1 {background-color: rgb(255, 128, 135);}
#p1 {background-color: #ff0000;}
#p1 {background-color: rgba(0, 0, 0, 0.5);
    filter:progid:DXImageTransform.Microsoft.gradient(startColorstr=#50000000,endColorstr=#50000000);}
#p1 {background-color: hls(120, 100%, 30%);}
#p1 {background-color: hlsa(120, 100%, 30%, 0.5);}
#p1 {background-color: rgba(255, 128, 135); opacity: 0.4; filter: alpha(opacity=40);}
```

➤ 상대길이

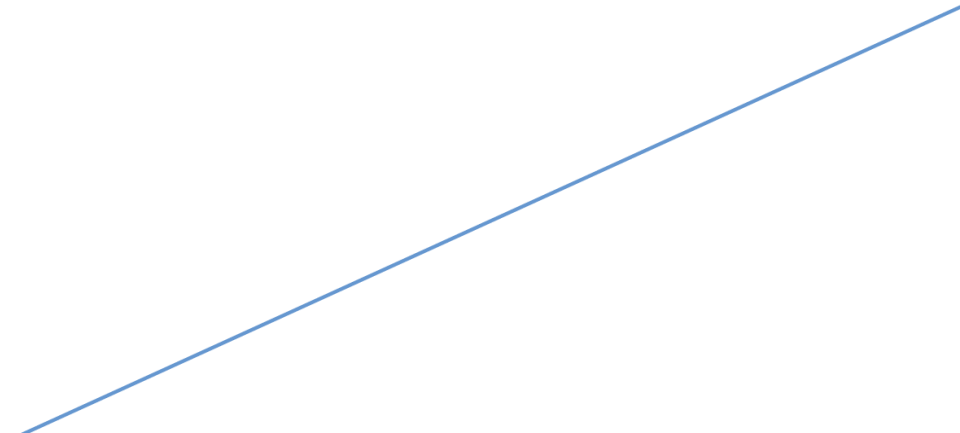
| 단위(Unit) | 설명(Description) | 비고 |
|-------------|---|-------------------------|
| em | Relative to the font-size of the element (2em means 2 times the size of the current font) | |
| ex | Relative to the x-height of the current font (rarely used) | |
| ch | Relative to width of the "0" | IE9+ |
| rem | Relative to font-size of the root element(html) | IE9+ |
| vw | Relative to 1 % of the width of the viewport(browser window size) | IE9+ |
| vh | Relative to 1 % of the height of the viewport(browser window size) | IE9+ |
| vmin | Relative to 1 % of viewport's smaller dimension (폭과 높이 중 작은 값) | IE9+ IE9에서 vm |
| vmax | Relative to 1 % of viewport's larger dimension (폭과 높이 중 큰 값) | Not Supported |
| % | | |

➤ 절대길이

| 단위(Unit) | 설명(Description) | 비고 |
|----------|------------------------------|--------------------|
| cm | centimeters | |
| mm | millimeters | |
| in | inches (1in = 96px = 2.54cm) | |
| px | pixels (1px = 1/96th of 1in) | 실제크기는 기기에 따라 다름 |
| pt | points (1pt = 1/72 of 1in) | |
| pc | picas (1pc = 12 pt) | |

※ 참조 : https://www.w3schools.com/cssref/css_units.asp

CSS 선택자(Selector)

- CSS 선택자
 - 우선순위 식별
- 

| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|-----------------------------|-------------|---|-----|
| .class | .intro | Selects all elements with class="intro" | 1 |
| #id | #firstname | Selects the element with id="firstname" | 1 |
| * | * | Selects all elements | 2 |
| element | p | Selects all <p> elements | 1 |
| element, element | div, p | Selects all <div> elements and all <p> elements | 1 |
| element element | div p | Selects all <p> elements inside <div> elements | 1 |
| element > element | div > p | Selects all <p> elements where the parent is a <div> element | 2 |
| element + element | div + p | Selects all <p> elements that are placed immediately after <div> elements (형제요소만) | 2 |
| element1 ~ element2 | p ~ ul | Selects every element that are preceded by a <p> element (<p>이후에 나오는 모든 형제요소인) | 3 |

| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|----------------------------|----------------------|---|-----|
| [attribute] | [target] | Selects all elements with a target attribute | 2 |
| [attribute=value] | [target='blank'] | Selects all elements with target="_blank" | 2 |
| [attribute~=value] | [title~='flower'] | Selects all elements with a title attribute containing the word "flower" (단어 단위로 체크) | 2 |
| [attribute =value] | [lang ='en'] | Selects all elements with a lang attribute value starting with "en" (단어 단위로 체크, - 로 연결된 경우 다른 단어로 구분) | 2 |
| [attribute^=value] | a[href^='https'] | Selects every <a> element whose href attribute value begins with "https" (글자 단위로 체크) | 3 |
| [attribute\$=value] | a[href\$='.pdf'] | every <a> element whose href attribute value ends with ".pdf" (글자 단위로 체크) | 3 |
| [attribute*=value] | a[href*='w3schools'] | Selects every <a> element whose href attribute value contains the substring "w3schools" (글자 단위) | 3 |
| :active | a:active | Selects the active link | 1 |
| ::after(:after) | p::after | Insert something after the content of each <p> element | 2 |
| ::before(:before) | p::before | Insert something before the content of each <p> element | 2 |

| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|-----------------------|-----------------|--|-----|
| :checked | input:checked | Selects every checked <input> element | 3 |
| :disabled | input:disabled | Selects every disabled <input> element | 3 |
| :empty | p:empty | Selects every <p> element that has no children (including text nodes) | 3 |
| :enabled | input:enabled | Selects every enabled <input> element (disabled가 아닌 요소) | 3 |
| :first-child | p:first-child | Selects every <p> element that is the first child of its parent | 2 |
| ::first-letter | p::first-letter | Selects the first letter of every <p> element | 1 |
| ::first-line | p::first-line | Selects the first line of every <p> element | 1 |
| :first-of-type | p:first-of-type | Selects every <p> element that is the first <p> element of its parent | 3 |
| :focus | input:focus | Selects the input element which has focus | 2 |
| :hover | a:hover | Selects links on mouse over | 1 |

| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|-----------------------------|-----------------------|---|-----|
| :in-range | input:in-range | Selects input elements with a value within a specified range 예: <input type="number" min="5" max="10" value="7" /> | 3 |
| :invalid | input:invalid | Selects all input elements with an invalid value | 3 |
| :lang(language) | p:lang(en) | Selects every <p> element with a lang attribute equal to "en" | 2 |
| :last-child | p:last-child | Selects every <p> element that is the last child of its parent | 3 |
| :last-of-type | p:last-of-type | Selects every <p> element that is the last <p> element of its parent | 3 |
| :link | a:link | Selects all unvisited links | 1 |
| :not(selector) | :not(p) | Selects every element that is not a <p> element | 3 |
| :nth-child(n) | p:nth-child(2) | Selects every <p> element that is the second child of its parent | 3 |
| :nth-last-child(n) | p:nth-last-child(2) | Selects every <p> element that is the second child of its parent, counting from the last child | 3 |
| :nth-last-of-type(n) | p:nth-last-of-type(2) | Selects every <p> element that is the second <p> element of its parent, counting from the last child | 3 |

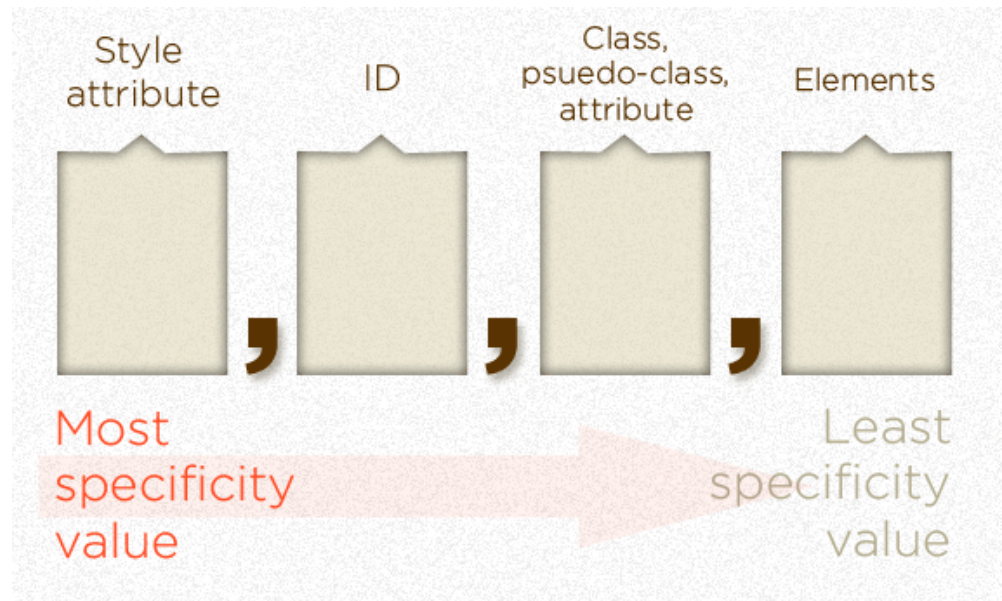
| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|------------------------|--------------------|---|----------------|
| :nth-of-type(n) | p:nth-of-type(2) | Selects every <p> element that is the second <p> element of its parent | 3 |
| :only-of-type | p:only-of-type | Selects every <p> element that is the only <p> element of its parent | 3 |
| :only-child | p:only-child | Selects every <p> element that is the only child of its parent | 3 |
| :optional | input:optional | Selects input elements with no "required" attribute | 3 |
| :out-of-range | input:out-of-range | Selects input elements with a value outside a specified range | 3 |
| :read-only | input:read-only | Selects input elements with the "readonly" attribute specified | 3 |
| :read-write | input:read-write | Selects input elements with the "readonly" attribute NOT specified | 3 |
| :required | :required | Selects input elements with the "required" attribute specified | 3 |
| :root | :root | Selects the document's root element (<html>) | 3 |
| ::selection | ::selection | Selects the portion of an element that is selected by a user (마우스로 선택한 영역) | 3 (removed) |

| 선택자(Selector) | 예시(Example) | 예시설명(Example Description) | CSS |
|-----------------|---------------------------|---|-----|
| :target | <code>#news:target</code> | Selects the current active #news element (clicked on a URL containing that anchor name) | 3 |
| :valid | <code>input:valid</code> | Selects all input elements with a valid value | 3 |
| :visited | <code>a:visited</code> | Selects all visited links | 1 |

※ 참조 : https://www.w3schools.com/cssref/css_selectors.asp

➤ 순위

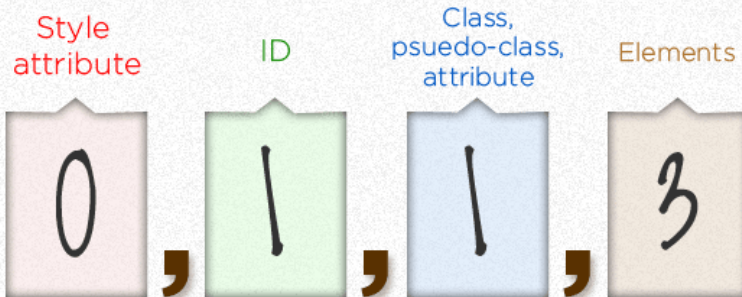
- 1 : !important
- 2 : inline-style (HTML style 속성)
- 3 : ID(#) 선택자
- 4 : Class(.) 선택자, 가상(:) 선택자, 속성([]) 선택자
- 5 : 요소(태그) 선택자
- 동률 : 나중에 사용한 선택자



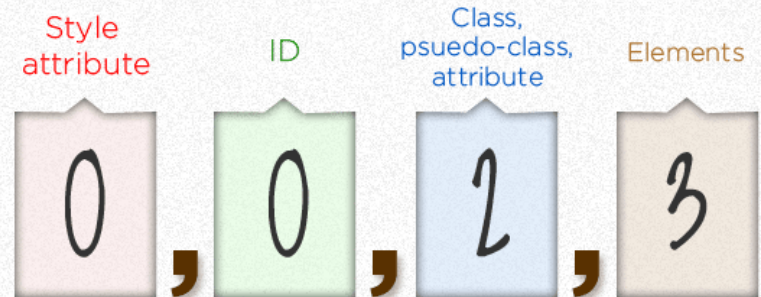
우선순위 식별

CSS 선택자

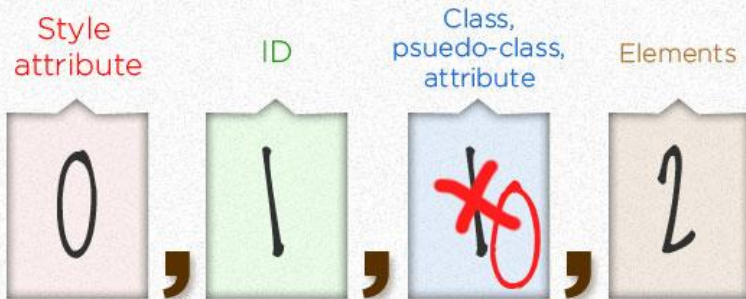
ul#nav li.active a



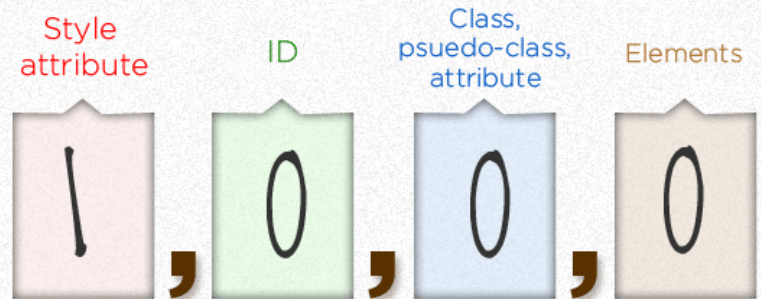
body.ie7 .col_3 h2 ~ h2

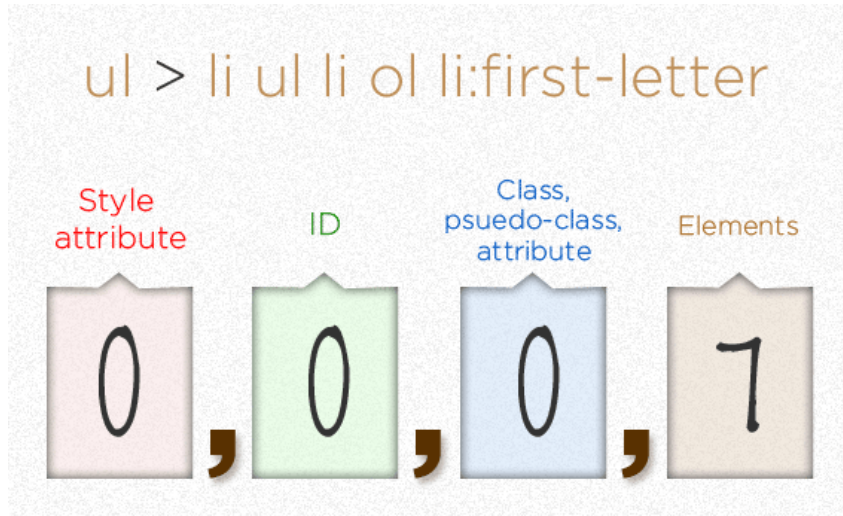


#footer *:not(nav) li



<li style="color: red;">





➤ 점수화

- 10,000 : !important
- 1,000 : inline-style (HTML style 속성)
- 100 : ID(#) 선택자
- 10 : Class(.) 선택자, 가상(:) 선택자, 속성([]) 선택자
- 1 : 요소(태그) 선택자
- 0 : 기타 선택자

CSS 속성(property)

- Color 속성
- Background and Border 속성
- Basic Box 속성
- Flex Box Layout
- Text 속성
- Text Decoration 속성
- Font 속성
- Writing Mode 속성
- Table 속성
- List and Counters 속성
- Animation 속성
- Transform 속성
- Transition 속성
- Basic User 속성
- Multi-column Layout 속성
- Paged Media
- Generated Counter for Paged Media
- Filter Effect 속성
- Masking 속성
- Speech 속성
- Marquee 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------|---|--|-----|
| color | <i>color</i> <i>initial</i> <i>inherit</i> (default : 미지정) | Sets the color of text | 1 |
| opacity | <i>number</i> <i>initial</i> <i>inherit</i> (default : 1) | Sets the opacity level for an element (범위: 0.0 ~ 1.0) | 3 |

- ※ initial : 기본 설정값(default)으로 돌림 (IE12 부터 지원)
- ※ inherit : 자신의 부모의 값을 상속 받음 (IE8 부터 지원)
- ※ initial, inherit 값은 모든 HTML 요소와 모든 CSS 속성값으로 사용 가능 (이후 표에서 생략)

Background and Border 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------|--|--|-----|
| background | <i>color image position/size repeat origin clip attachment</i> | A shorthand property for setting all the background properties in one declaration | 1 |
| background-attachment | scroll fixed local | Sets whether a background image is fixed or scrolls with the rest of the page | 1 |
| background-blend-mode | normal multiply screen overlay darken lighten color-dodge saturation color luminosity | Specifies the blending mode of each background layer (color/image) | 3 |
| background-color | transparent <i>color</i> | Specifies the background color of an element | 1 |
| background-image | none <i>url</i> | Specifies one or more background images for an element | 1 |
| background-position | <i>value</i> (default : 0% 0%) | Specifies the position of a background image | 1 |
| background-repeat | repeat repeat-x repeat-y no-repeat | Sets how a background image will be repeated | 1 |
| background-clip | border-box padding-box content-box | Specifies the painting area of the background | 3 |
| background-origin | padding-box border-box content-box | Specifies where the background image(s) is/are positioned | 3 |
| background-size | auto <i>length</i> % cover contain | Specifies the size of the background image(s) | 3 |

Background and Border 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--|--|--|-----|
| border | <i>width style color</i> (default : medium none color) | Sets all the border properties in one declaration | 1 |
| border-top (right, bottom, left) | <i>width style color</i> (default : medium none color) | Sets all the top(right, bottom, left) border properties in one declaration | 1 |
| border-top-width (right, bottom, left) | medium thin thick <i>length</i> | Sets the width of the top(right, bottom, left) border | 1 |
| border-top-style (right, bottom, left) | none hidden dotted dashed solid double groove ridge inset outset | Sets the style of the top(right, bottom, left) border | 1 |
| border-top-color (right, bottom, left) | <i>color</i> transparent (default : 해당 요소의 컬러) | Sets the color of the top(right, bottom, left) border | 1 |
| border-width | 1-4 medium thin thick <i>length</i> | Sets the width of the four borders | 1 |
| border-style | 1-4 none hidden dotted dashed solid double groove ridge inset outset | Sets the style of the four borders | 1 |
| border-color | 1-4 <i>color</i> transparent | Sets the color of the four borders | 1 |
| border-radius | 1-4 <i>length, %</i> [/ <i>length, %</i>] (default : 0) | A shorthand property for setting all the four border-* radius properties | 3 |
| border-top-left-radius (top bottom-left right) | 1-4 <i>length, %</i> [<i>length, %</i>] (default : 0) | Defines the shape of the border of the top-left corner (bottom-right 등) | 3 |

Background and Border 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------------|--|---|-----|
| box-decoration-break | | Sets the behaviour of the background and border of an element at page-break, or, for in-line elements, at line-break. | 3 |
| box-shadow | none <i>h-shadow v-shadow blur spread color</i> inset | Attaches one or more drop-shadows to the box | 3 |

Basic Box 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---|---|---|-----|
| bottom (left, right, top) | auto <i>length</i> % | Specifies the bottom(left, right, top) position of a positioned element | 2 |
| clear | none left right both | Specifies which sides of an element where other floating elements are not allowed | 1 |
| clip | auto shape shape → rect(<i>top</i> , <i>right</i> , <i>bottom</i> , <i>left</i>) | Clips an absolutely positioned element (예시: clip: rect(0, 60px, 200px, 0);) | 2 |
| display | inline block flex inline-block inline-flex inline-table list-item run-in table table-caption table-column-group table-header-group table-footer-group table-row-group table-cell table-column table-row none | Specifies how a certain HTML element should be displayed | 1 |
| float | none left right | Specifies whether or not a box should float | 1 |
| height (width) | auto <i>length</i> % | Sets the height of an element | 1 |
| margin | 1-4 <i>length</i> (0) % auto | Sets all the margin properties in one declaration | 1 |
| margin-bottom (-left, -right, -top) | <i>length</i> (0) % auto | Sets the bottom(left, right, top) margin of an element | 1 |

Basic Box 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---|--|--|-----|
| max-height (max-width) | none <i>length</i> % | Sets the maximum height(width) of an element | 2 |
| min-height (min-width) | none <i>length</i> % | Sets the minimum height(width) of an element | 2 |
| overflow | visible hidden scroll auto | Specifies what happens if content overflows an element's box | 2 |
| overflow-x (overflow-y) | visible hidden scroll auto | Specifies whether or not to clip the left/right(top/bottom) edges of the content, if it overflows the element's content area | 3 |
| padding | 1-4 <i>length</i> (0) % | Sets all the padding properties in one declaration | 1 |
| padding-bottom (-left, -right, -top) | <i>length</i> (0) % | Sets the bottom(left, right, top) padding of an element | 1 |
| position | static absolute fixed relative | Specifies the type of positioning method used for an element (static, relative, absolute or fixed) | 2 |
| visibility | visible hidden collapse | Specifies whether or not an element is visible | 2 |
| vertical-align | baseline <i>length</i> % sub super top text-top middle bottom text-bottom | Sets the vertical alignment of an element | 1 |
| z-index | auto <i>number</i> | Sets the stack order of a positioned element | 2 |

Flexible Box Layout

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------|---|---|-----|
| align-content | stretch center flex-start flex-end space-between space-around | Specifies the alignment between the lines inside a flexible container when the items do not use all available space | 3 |
| align-items | stretch center flex-start flex-end baseline | Specifies the alignment for items inside a flexible container | 3 |
| align-self | auto stretch center flex-start flex-end baseline | Specifies the alignment for selected items inside a flexible container | 3 |
| flex | <i>grow shrink basis</i> auto none (default : 0 1 auto) | Specifies the length of the item, relative to the rest | 3 |
| flex-basis | auto <i>number</i> | Specifies the initial length of a flexible item | 3 |
| flex-direction | row row-reverse column column-reverse | Specifies the direction of the flexible items | 3 |
| flex-flow | <i>direction wrap</i> (default : row nowrap) | A shorthand property for the flex-direction and the flex-wrap properties | 3 |
| flex-grow | <i>number</i> (default : 0) | Specifies how much the item will grow relative to the rest | 3 |
| flex-shrink | <i>number</i> (default : 1) | Specifies how the item will shrink relative to the rest | 3 |
| flex-wrap | nowrap wrap wrap-reverse | Specifies whether the flexible items should wrap or not | 3 |

Flexible Box Layout

| 속성(property) | 값(value) | 설명(Description) | CSS |
|------------------------|---|---|-----|
| justify-content | flex-start flex-end center space-between space-around | Specifies the alignment between the items inside a flexible container when the items do not use all available space | 3 |
| order | <i>number</i> (default : 0) | Sets the order of the flexible item, relative to the rest | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|----------------------|--|--|-----|
| hanging-punctuation | none first last allow-end force-end | Specifies whether a punctuation character may be placed outside the line box | 3 |
| hyphens | | Sets how to split words to improve the layout of paragraphs | 3 |
| letter-spacing | normal <i>length</i> | Increases or decreases the space between characters in a text | 1 |
| line-break | | Specifies how/if to break lines | 3 |
| line-height | normal <i>number</i> <i>length</i> % | Sets the line height (normal 값은 브라우저에 따라 110% ~ 120%) | 1 |
| overflow-wrap | | Specifies whether or not the browser may break lines within words in order to prevent overflow (when a string is too long to fit its containing box) | 3 |
| tab-size | <i>number</i> <i>length</i> (default : 8) | Specifies the length of the tab-character | 3 |
| text-align | left right center justify | Specifies the horizontal alignment of text | 1 |
| text-align-last | auto left right center justify start end | Describes how the last line of a block or a line right before a forced line break is aligned when text-align is "justify" | 3 |
| text-combine-upright | | Specifies the combination of multiple characters into the space of a single character | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------|--|---|-----|
| text-indent | <i>length</i> % (default: 0) | Specifies the indentation of the first line in a text-block | 1 |
| text-justify | auto inter-word inter-ideograph inter-cluster distribute kashida trim none | Specifies the justification method used when text-align is "justify" | 3 |
| text-transform | none capitalize uppercase lowercase | Controls the capitalization of text | 1 |
| white-space | normal nowrap pre pre-line pre-wrap | Specifies how white-space inside an element is handled | 1 |
| word-break | normal break-all keep-all | Specifies line breaking rules for non-CJK scripts | 3 |
| word-spacing | normal <i>length</i> | Increases or decreases the space between words in a text | 1 |
| word-wrap | normal break-word | Allows long, unbreakable words to be broken and wrap to the next line | 3 |

Text Decoration 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------------------------|--|---|-----|
| text-decoration | none underline overline line-through | Specifies the decoration added to text | 1 |
| text-decoration-color | <i>color</i> (default : 현재 컬러) | Specifies the color of the text-decoration | 3 |
| text-decoration-line | none underline overline line-through | Specifies the type of line in a text-decoration | 3 |
| text-decoration-style | solid double dotted dashed wavy | Specifies the style of the line in a text decoration | 3 |
| text-shadow | none <i>h-shadow v-shadow blur-radius color</i> | Adds shadow to text | 3 |
| text-underline-position | | Specifies the position of the underline which is set using the text-decoration property | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|------------------------|--|---|-----|
| @font-face | font-family, src, font-stretch, font-style, font-weight, unicode-range | A rule that allows websites to download and use fonts other than the "web-safe" fonts | 3 |
| @font-feature-values | | Allows authors to use a common name in font-variant-alternate for feature activated differently in OpenType | 3 |
| font | <i>style variant weight size/line-height family</i> caption icon menu message-box small-caption status-bar | Sets all the font properties in one declaration | 1 |
| font-family | <i>family-name</i> <i>generic-family</i> | Specifies the font family for text | 1 |
| font-feature-settings | | Allows control over advanced typographic features in OpenType fonts | 3 |
| font-kerning | | Controls the usage of the kerning information (how letters are spaced) | 3 |
| font-language-override | | Controls the usage of language-specific glyphs in a typeface | 3 |
| font-size | medium xx-small x-small small large x-large xx-large smaller larger length % | Specifies the font size of text | 1 |
| font-size-adjust | none number | Preserves the readability of text when font fallback occurs | 3 |
| font-stretch | normal ultra-condensed extra-condensed condensed semi-condensed semi-expanded expanded extra-expanded ultra-expanded | Selects a normal, condensed, or expanded face from a font family | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-------------------------|---|--|-----|
| font-style | normal italic oblique | Specifies the font style for text | 1 |
| font-synthesis | | Controls which missing typefaces (bold or italic) may be synthesized by the browser | 3 |
| font-variant | normal small-caps | Specifies whether or not a text should be displayed in a small-caps font | 1 |
| font-variant-alternates | | Controls the usage of alternate glyphs associated to alternative names defined in @font-feature-values | 3 |
| font-variant-caps | | Controls the usage of alternate glyphs for capital letters | 3 |
| font-variant-east-asian | | Controls the usage of alternate glyphs for East Asian scripts (e.g Japanese and Chinese) | 3 |
| font-variant-ligatures | | Controls which ligatures and contextual forms are used in textual content of the elements it applies to | 3 |
| font-variant-numeric | | Controls the usage of alternate glyphs for numbers, fractions, and ordinal markers | 3 |
| font-variant-position | | Controls the usage of alternate glyphs of smaller size positioned as superscript or subscript regarding the baseline of the font | 3 |
| font-weight | normal bold bolder lighter <i>number</i> | Specifies the weight of a font (number: 100, 200, ..., 900) | 1 |

Writing Modes 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------------|---|---|-----|
| direction | ltr rtl | Specifies the text direction/writing direction | 2 |
| text-orientation | | Defines the orientation of the text in a line | 3 |
| text-combine-upright | | Specifies the combination of multiple characters into the space of a single character | 3 |
| unicode-bidi | normal embed bidi-override | Used together with the direction property to set or return whether the text should be overridden to support multiple languages in the same document | 2 |
| user-select | auto none text all (initial, inherit 없음) | Specifies whether the text of an element can be selected | 3 |
| writing-mode | | | 3 |

Table 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|------------------------|---|--|-----|
| border-collapse | separate collapse | Specifies whether or not table borders should be collapsed | |
| border-spacing | <i>length [length]</i> (default: 2px) | Specifies the distance between the borders of adjacent cells | |
| caption-side | top bottom | Specifies the placement of a table caption | |
| empty-cells | show hide | Specifies whether or not to display borders and background on empty cells in a table | |
| table-layout | auto fixed | Sets the layout algorithm to be used for a table | |

List and Counters 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---------------------|--|---|-----|
| counter-increment | none <i>id</i> | Increments one or more counters | 2 |
| counter-reset | none <i>name number</i> | Creates or resets one or more counters | 2 |
| list-style | <i>type position image</i> | Sets all the properties for a list in one declaration | 1 |
| list-style-image | none <i>url</i> | Specifies an image as the list-item marker | 1 |
| list-style-position | outside <i>inside</i> | Specifies if the list-item markers should appear inside or outside the content flow | 1 |
| list-style-type | <i>value</i> (default : disc) | Specifies the type of list-item marker | 1 |

Animation 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---------------------------|---|--|-----|
| @keyframes | <i>animationname</i> { <i>keyframes-selector</i> { <i>css-styles</i> ;} } | Specifies the animation code (keyframe-selector → 0~100%, from, to) | 3 |
| animation | <i>name duration timing-function delay iteration-count direction fill-mode play-state</i> ; | A shorthand property for all the animation properties (except animation-play-state and animation-fill-mode) | 3 |
| animation-delay | <i>time</i> (default : 0s) | Specifies a delay for the start of an animation | 3 |
| animation-direction | normal reverse alternate alternate-reverse | Specifies whether or not the animation should play in reverse on alternate cycles | 3 |
| animation-duration | <i>time</i> (default : 0s) | Specifies how many seconds or milliseconds an animation takes to complete one cycle | 3 |
| animation-fill-mode | none forwards backwards both | Specifies a style for the element when the animation is not playing (when it is finished, or when it has a delay) | 3 |
| animation-iteration-count | <i>number</i> infinite (default : 1) | Specifies the number of times an animation should be played | 3 |
| animation-name | none <i>keyframename</i> | Specifies the name of the @keyframes animation | 3 |
| animation-play-state | running paused | Specifies whether the animation is running or paused | 3 |
| animation-timing-function | ease linear ease-in ease-out ease-in-out step-start step-end steps(int, start end) cubic-bezier(n,n,n,n) | Specifies the speed curve of an animation | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|----------------------------|--|--|-----|
| backface-visibility | visible hidden | Defines whether or not an element should be visible when not facing the screen | 3 |
| perspective | none <i>length</i> | Specifies the perspective on how 3D elements are viewed | 3 |
| perspective-origin | <i>x-axis y-axis</i> (default : 50% 50%) | Specifies the bottom position of 3D elements | 3 |
| transform | none <i>transform-functions</i> | Applies a 2D or 3D transformation to an element | 3 |
| transform-origin | <i>x-axis y-axis z-axis</i> (default : 50% 50% 0) | Allows you to change the position on transformed elements | 3 |
| transform-style | flat preserve-3d | Specifies how nested elements are rendered in 3D space | 3 |

➤ Transform Functions

- 2D: matrix(n, n, n, n, n, n), translate(x, y), translateX(x), translateY(Y), scale(x, y), scaleX(x), scaleY(y), rotate(angle), skew(x-angle, y-angle), skewX(angle), skewY(angle)
- 3D: matrix(n, n, n, n, n, n, n, n, n, n, n, n, n, n, n), translate3d(x, y, z), translateZ(x), scale3d(x, y, z), scaleZ(z), rotate(x, y, z, angle), rotateX(angle), rotateY(angle), rotateZ(angle), perspective(n)

Transition 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------------------|---|--|-----|
| transition | <i>property duration timing-function delay</i> (default: all 0s ease 0s) | A shorthand property for setting the four transition properties | 3 |
| transition-property | all none <i>property</i> | Specifies the name of the CSS property the transition effect is for | 3 |
| transition-duration | <i>time</i> (default : 0s) | Specifies how many seconds or milliseconds a transition effect takes to complete | 3 |
| transition-timing-function | ease linear ease-in ease-out ease-in-out step-start step-end steps(int,start end) cubic-bezier(n,n,n,n) | Specifies the speed curve of the transition effect | 3 |
| transition-delay | <i>time</i> (default : 0s) | Specifies when the transition effect will start | 3 |

Basic User Interface 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------|--|--|-----|
| box-sizing | content-box border-box | Tells the browser what the sizing properties (width and height) should include | 3 |
| content | normal none counter attr <i>string</i> open-quote close-quote no-open-quote no-close-quote <i>url</i> | Used with the :before and :after pseudo-elements, to insert generated content | 2 |
| cursor | <i>value</i> (default : auto) | Specifies the type of cursor to be displayed | 2 |
| ime-mode | | Controls the state of the input method editor for text fields | 3 |
| nav-down | auto <i>id</i> <i>target-name</i> | Specifies where to navigate when using the arrow-down navigation key | 3 |
| nav-index | auto <i>number</i> | Specifies the tabbing order for an element | 3 |
| nav-left | auto <i>id</i> <i>target-name</i> | Specifies where to navigate when using the arrow-left navigation key | 3 |
| nav-right | auto <i>id</i> <i>target-name</i> | Specifies where to navigate when using the arrow-right navigation key | 3 |
| nav-up | auto <i>id</i> <i>target-name</i> | Specifies where to navigate when using the arrow-up navigation key | 3 |

Basic User Interface 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------|--|---|-----|
| outline | <i>color style width</i> (default: invert none medium) | Sets all the outline properties in one declaration | 2 |
| outline-color | invert color | Sets the color of an outline | 2 |
| outline-offset | length (default: 0) | Offsets an outline, and draws it beyond the border edge | 3 |
| outline-style | none hidden dotted dashed solid double groove ridge inset outset | Sets the style of an outline | 2 |
| outline-width | medium thin thick length | Sets the width of an outline | 2 |
| resize | none both horizontal vertical | Specifies whether or not an element is resizable by the user | 3 |
| text-overflow | clip ellipsis string | Specifies what should happen when text overflows the containing element | 3 |

Multi-column Layout 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-------------------|--|---|-----|
| break-after | | Specifies the page-, column-, or region-break behavior after the generated box | 3 |
| break-before | | Specifies the page-, column-, or region-break behavior before the generated box | 3 |
| break-inside | | Specifies the page-, column-, or region-break behavior inside the generated box | 3 |
| column-count | auto <i>number</i> | Specifies the number of columns an element should be divided into | 3 |
| column-fill | balance auto | Specifies how to fill columns | 3 |
| column-gap | normal <i>length</i> | Specifies the gap between the columns | 3 |
| column-rule | <i>width style color</i> (default : medium none <i>color</i>) | A shorthand property for setting all the column-rule-* properties | 3 |
| column-rule-color | <i>color</i> (default : 현재 컬러) | Specifies the color of the rule between columns | 3 |
| column-rule-style | none hidden dotted dashed solid double groove ridge inset outset | Specifies the style of the rule between columns | 3 |
| column-rule-width | medium thin thick <i>length</i> | Specifies the width of the rule between columns | 3 |

Multi-column Layout 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------|---|--|-----|
| column-span | none 1 all | Specifies how many columns an element should span across | 3 |
| column-width | auto <i>length</i> | Specifies the width of the columns | 3 |
| columns | auto <i>width count</i> (default : auto auto) | A shorthand property for setting column-width and column-count | 3 |
| widows | | Sets the minimum number of lines that must be left at the top of a page when a page break occurs inside an element | 2 |

Paged Media

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------------------|--------------------------------------|---|-----|
| orphans | | Sets the minimum number of lines that must be left at the bottom of a page when a page break occurs inside an element | 2 |
| page-break-after | auto always avoid left right | Sets the page-breaking behavior after an element | 2 |
| page-break-before | auto always avoid left right | Sets the page-breaking behavior before an element | 2 |
| page-break-inside | auto avoid | Sets the page-breaking behavior inside an element | 2 |

Generated Content for Paged Media

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---------------|-----------------------------|--|-----|
| marks | | Adds crop and/or cross marks to the document | 3 |
| quotes | none <i>string</i> | Sets the type of quotation marks for embedded quotations | 2 |

Filter Effect 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---------------|--|---|-----|
| filter | <code>none blur(px) brightness(%) contrast(%) drop-shadow(<i>h-shadow v-shadow blur spread color</i>) grayscale(%) hue-rotate(deg) invert(%) opacity(%) saturate(%) sepia(%) url()</code> | Defines effects (e.g. blurring or color shifting) on an element before the element is displayed | 3 |

Image Values and Replaced Content

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------------------|----------|---|-----|
| image-orientation | | Specifies a rotation in the right or clockwise direction that a user agent applies to an image (This property is likely going to be deprecated and its functionality moved to HTML) | 3 |
| image-rendering | | Gives a hint to the browser about what aspects of an image are most important to preserve when the image is scaled | 3 |
| image-resolution | | Specifies the intrinsic resolution of all raster images used in/on the element | 3 |
| object-fit | | Specifies how the contents of a replaced element should be fitted to the box established by its used height and width | 3 |
| object-position | | object-position Specifies the alignment of the replaced element inside its box | 3 |

Masking 속성

CSS 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------|----------|-----------------|-----|
| mask | | | 3 |
| mask-type | | | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|-----------------------|----------|---|-----|
| mark | | A shorthand property for setting the mark-before and mark-after properties | 3 |
| mark-after | | Allows named markers to be attached to the audio stream | 3 |
| mark-before | | Allows named markers to be attached to the audio stream | 3 |
| phonemes | | Specifies a phonetic pronunciation for the text contained by the corresponding element | 3 |
| rest | | A shorthand property for setting the rest-before and rest-after properties | 3 |
| rest-after | | Specifies a rest or prosodic boundary to be observed after speaking an element's content | 3 |
| rest-before | | Specifies a rest or prosodic boundary to be observed before speaking an element's content | 3 |
| voice-balance | | Specifies the balance between left and right channels | 3 |
| voice-duration | | Specifies how long it should take to render the selected element's content | 3 |
| voice-pitch | | Specifies the average pitch (a frequency) of the speaking voice | 3 |

| 속성(property) | 값(value) | 설명(Description) | CSS |
|--------------------------|----------|--|-----|
| voice-pitch-range | | Specifies variation in average pitch | 3 |
| voice-rate | | Controls the speaking rate | 3 |
| voice-stress | | Indicates the strength of emphasis to be applied | 3 |
| voice-volume | | Refers to the amplitude of the waveform output by the speech synthesises | 3 |

Marquee 속성

| 속성(property) | 값(value) | 설명(Description) | CSS |
|---------------------------|----------|--|-----|
| marquee-direction | | Sets the direction of the moving content | 3 |
| marquee-play-count | | Sets how many times the content move | 3 |
| marquee-speed | | Sets how fast the content scrolls | 3 |
| marquee-style | | Sets the style of the moving content | 3 |

주요 개념

➤ Box Model

➤ Positioning

➤ Box Model



➤ 관련 속성

- width, height, max-width, max-height, min-width, min-height, box-sizing
- margin, padding, border, outline, display, visibility
- overflow

➤ position

- static
- relative
- absolute
- fixed

➤ left, right, top, bottom

➤ float, clear

➤ z-index