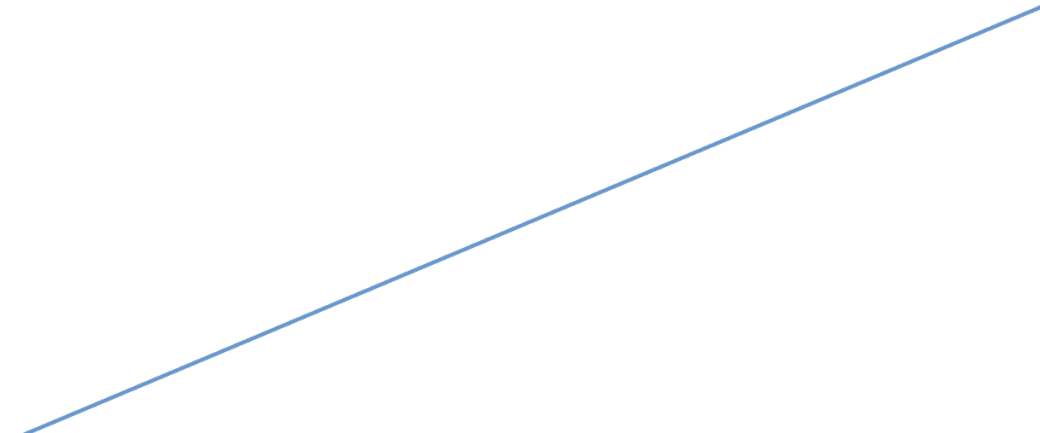


프론트엔드 개발 실무

[4장] CSS

디노웍스
이 시 영

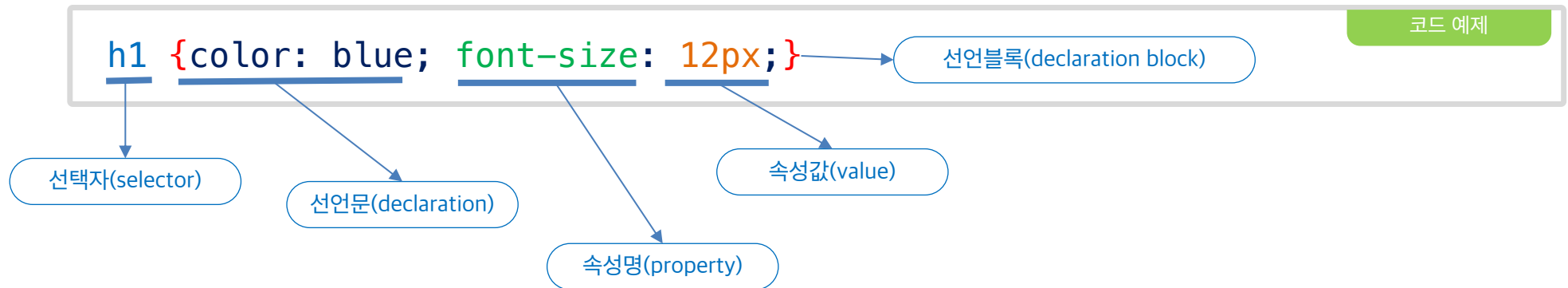
목 차

- CSS 개요
 - CSS 선택자 (Selector)
 - CSS 속성
 - CSS 주요 개념
 - Box Model
 - Positioning
 - Flexbox / Grid
 - CSS 실습
- 

➤ CSS

- CSS : Cascading Style Sheets
- 웹 콘텐츠의 **표현(디자인)**을 담당
- HTML 요소가 스크린(screen), 출력물(print) 등에서 어떻게 표현되는지를 정의

➤ CSS 문법



➤ CSS의 사용 위치

- 외부(External) CSS
- 내부(Internal) CSS
- 인라인(Inline) CSS

코드 예제

```
<!DOCTYPE html>
<html lang="ko">
  <head>
    <link rel="stylesheet" href="../css/mystyle.css">
    <style>
      body {font: 'NanumGothic';}
      h1 {color: red; margin-right: 30px;}
    </style>
  </head>
  <body>
    <h1 style="color: red;">This is a heading</h1>
  </body>
</html>
```

외부 CSS

연결된 HTML 문서에 모두 적용

내부 CSS

현재 HTML 문서에만 적용

인라인 CSS

작성된 HTML 요소에만 적용

➤ CSS의 주석

- /* */ 만 사용
- 한 줄 주석 없음 (//, # 등)

코드 예제

```
/* This is a single-line comment */  
p {  
  color: red;  
}  
  
/*  
  This is  
  a multi-line  
  comment  
*/  
p {  
  color: red;  
}
```

➤ CSS Color

- Color Name
 - 140 개의 컬러명 지원 (https://www.w3schools.com/colors/colors_names.asp)
- RGB, RGBA
 - `rgb(red, green, blue)`
 - `rgba(red, green, blue, alpha)`
- HEX
 - `#ff0000` 등 16진수의 코드로 표현 : rgb와 동일한 컬러 범위를 가짐 (00 ~ ff = 0 ~ 255)
- HSL
 - `hsl(hue, saturation, lightness)`

➤ CSS Color

코드 예제

```
<h1 style="background-color: DodgerBlue;">Hello World</h1>
<p style="background-color: Tomato;">Lorem ipsum...</p>

<h2 style="background-color: rgba(255, 99, 71);">rgba(255, 99, 71)</h2>
<h2 style="background-color: rgba(255, 99, 71, 0.2);">rgba(255, 99, 71, 0.2)</h2>

<h1 style="background-color: #ffcc99;">Hello World</h1>
<p style="background-color: #ff6347;">Lorem ipsum...</p>

<h2 style="background-color: hsl(0, 100%, 75);">hsl(0, 100%, 75%)</h2>
<h2 style="background-color: hsl(0, 100%, 90);">hsl(0, 100%, 90%)</h2>
```

➤ CSS 단위(unit)

○ 절대(Absolute) 길이

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)	

➤ CSS 단위(unit)

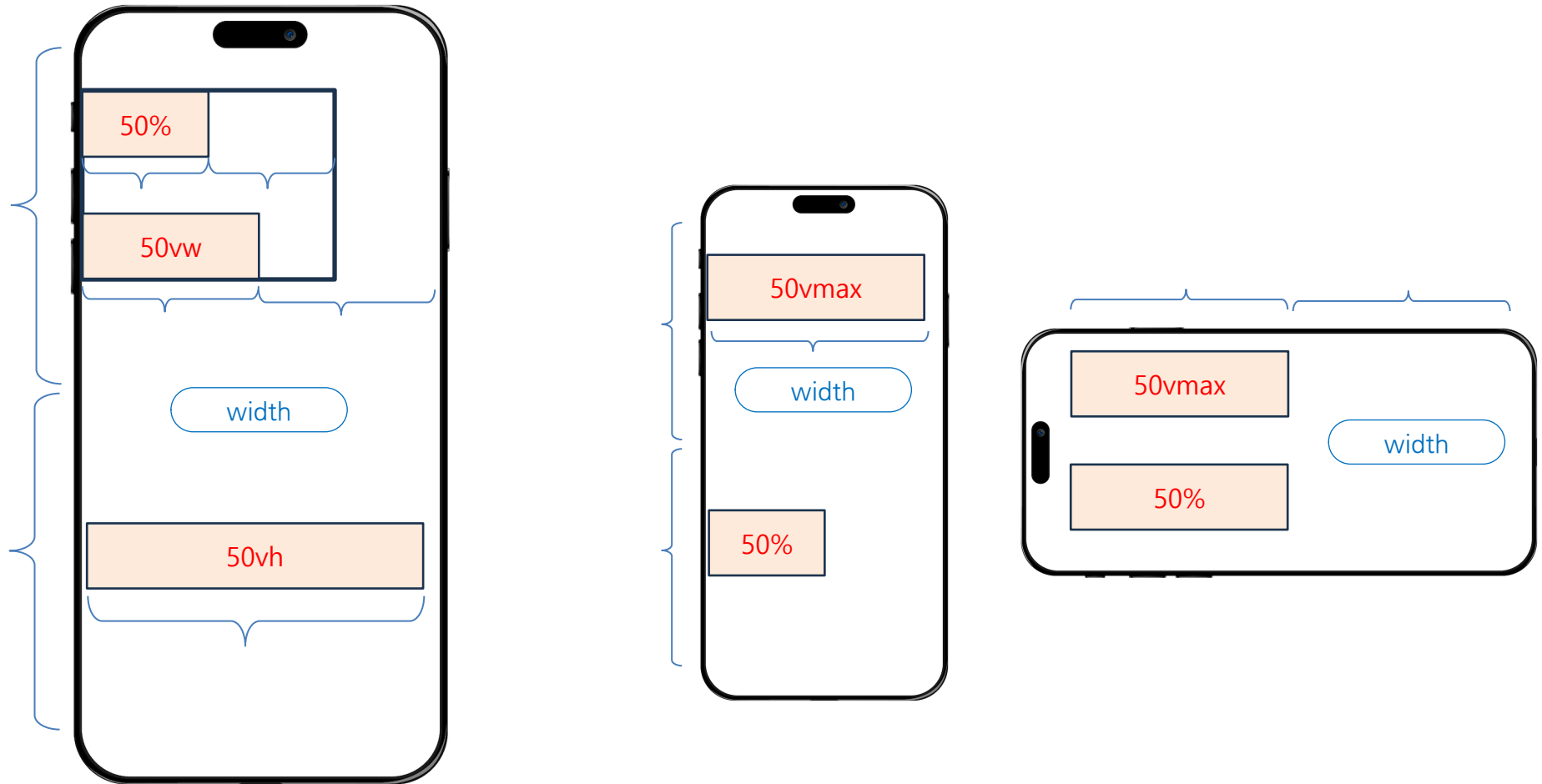
○ 상대(Relative) 길이

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" (zero)	
rem	Relative to font-size of the root element	root element = <html>
vw	Relative to 1 % of the width of the viewport*	
vh	Relative to 1 % of the height of the viewport*	
vmin	Relative to 1 % of viewport's* smaller dimension	
vmax	Relative to 1 % of viewport's* larger dimension	
%	Relative to the parent element	

※ viewport : the browser window size. If the viewport is 50cm wide, 1vw = 0.5cm.

➤ CSS 단위(unit)

- 다양한 상황에서 폭(width) 지정 예시



➤ CSS 선택자 (Selector)

- 스타일을 적용하고자 하는 HTML 요소를 선택하기 위한 문법
- 선택자의 종류
 - 단순 선택자(Simple selector) : 요소명, id, class 기반 선택
 - 결합 선택자(Combinator selector) : 요소 사이의 관계에 의해 선택
 - 유사클래스 선택자(Pseudo-class selector) : 요소의 특정 상태에 따라 선택
 - 유사요소 선택자(Pseudo-element selector) : 선택된 요소의 일부분을 선택
 - 속성 선택자(Attribute selector) : 요소의 속성명, 속성값된 기반으로 선택

```
p { ... }  
#para1 { ... }  
.center { ... }  
h1, h2, p { ... }  
* { ... }  
div p { ... }  
ul > li { ... }
```

코드 예제

```
a:active { ... }  
a:nth-child(3) { ... }  
input:checked { ... }  
:scope { ... }  
:where(ol, ul) { ... }  
li::after { ... }  
input[type="text"] { ... }
```

코드 예제

➤ 단순(Simple) 선택자

Selector	예시(Example)	예시 설명(Exampelen Description)	비고
<i>element</i>	p	Selects all <p> elements	
#id	#firstname	Selects the element with id="firstname"	
*	*	Selects all elements	
.class	.intro p.intro	Selects all elements with class="intro" Selects all <p> elements with class="intro"	

➤ 중첩(Nesting) 선택자

Selector	예시(Example)	예시 설명(Exampelen Description)	비고
&	&	Applies styles for an element within the context of another element	

➤ 결합(Combinators) 선택자

Selector(Sign)	예시(Example)	예시 설명(Exampen Description)	비고
>	div > p	Selects every <p> element that are direct children of a <div> element	
(single space)	div p	Selects all <p> elements inside <div> elements	
	ns h2	Selects all <h2> elements in namespace ns	
+	div + p	Selects the first <p> element that is placed immediately after <div> elements	
,	div, p	Selects all <div> elements and all <p> elements	
~	p ~ ul	Selects all elements that are preceded by a <p> element	

➤ 유사 클래스(Pseudo-classes) 선택자

Pseudo-class	예시(Example)	예시 설명(Exampen Description)	비고
:active	a:active	Selects the active link	
:checked	input:checked option:checked	Matches any <input> or <option> element that is checked	
:disabled	:disabled input:disabled option:disabled	Selects any element that is disabled. Most used for form elements	
:enabled	:enabled input:enabled	Selects any element that is enabled. Most used for form elements	
:first-child	p:first-child li:first-child	Selects the element that is the first child of its parent (among a group of sibling elements)	
:first-of-type	p:first-of-type li:first-of-type	Selects the first element of its type among a group of sibling elements	
:focus	input:focus select:focus	Selects the element that gets focus. Most used for form elements	
:hover	a:hover p:hover	Selects element on mouse over	

➤ 유사 클래스(Pseudo-classes) 선택자

Pseudo-class	예시(Example)	예시 설명(Exampen Description)	비고
:is()	<code>:is(ul, ol)</code>	Selects all and elements	
:last-child	<code>li:last-child</code>	Selects any element that is the last child of its parent	
:last-of-type	<code>p:last-of-type</code>	Selects any <p> element that is the last <p> element of its parent	
:not()	<code>:not(p)</code>	Selects any element that is not a <p> element	
:nth-child()	<code>p:nth-child(2)</code>	Selects any <p> element that is the second child of its parent	
:nth-of-type()	<code>p:nth-of-type(2)</code>	Selects any <p> element that is the second <p> element of its parent	
:root	<code>:root</code>	Selects the document's root element	
:scope	<code>:scope</code>	Selects elements that are a reference point, or scope, for selectors to match against	
:visited	<code>a:visited</code> <code>area:visited</code>	Selects all visited links	
:where()	<code>:where(ol, ul)</code>	Selects all and elements	

➤ 유사 요소(Pseudo-elements) 선택자

Pseudo-element	예시(Example)	예시 설명(Exampelen Description)	비고
::after	p::after div::after	Inserts something after the content of the specified element	
::before	p::before div::before	Inserts something before the content of the specified element	
::first-letter	p::first-letter	Selects the first letter of every <p> element	
::first-line	p::first-line	Selects the first line of every <p> element	
::placeholder	input::placeholder textarea::placeholder	Styles the placeholder text of <input> or <textarea> elements	
::selection	::selection	Styles the user-selected text	

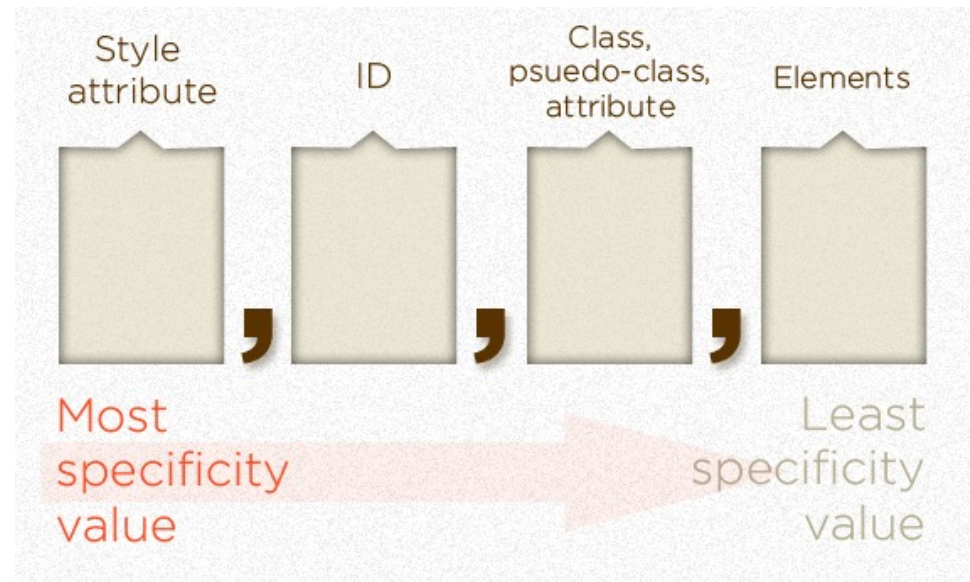
➤ 속성(Attribute) 선택자

Selector	예시(Example)	예시 설명(Exampelen Description)	비고
[<i>attribute</i>]	[lang]	Selects all elements with a lang attribute	
[<i>attribute</i>=<i>value</i>]	[lang="it"]	Selects all elements with lang="it"	
[<i>attribute</i>~=<i>value</i>]	[title~="flower"]	Selects all elements with a title attribute containing the word "flower"	
[<i>attribute</i> =<i>value</i>]	[lang ="en"]	Selects all elements with a lang attribute value equal to "en" or starting with "en-"	
[<i>attribute</i>^=<i>value</i>]	[href^="https"]	Selects all elements with a href attribute value that begins with "https"	
[<i>attribute</i>\$=<i>value</i>]	[href\$=".pdf"]	Selects all elements with a href attribute value ends with ".pdf"	
[<i>attribute</i>*=<i>value</i>]	[href*="w3schools"]	Selects all elements with a href attribute value containing the substring "w3schools"	

➤ 우선순위 식별

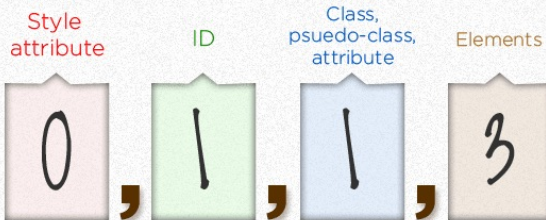
- 1 (10,000점) : **!important**
- 2 (1,000점) : inline-style (HTML style 속성)
- 3 (100점) : ID(#) 선택자
- 4 (10점) : Class(.) 선택자, 가상(:) 선택자, 속성([]) 선택자
- 5 (1점) : 요소(태그) 선택자
- 동물 : 나중에 사용한 선택자

같은 요소에
여러 디자인 속성 적용시

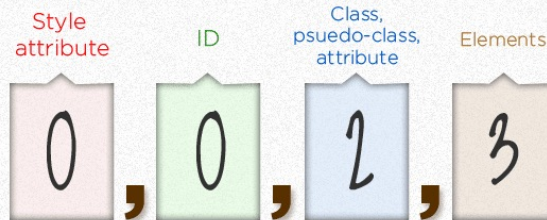


➤ 우선순위 식별

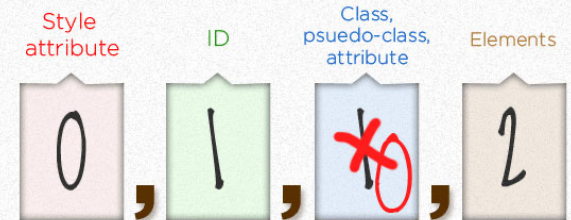
`ul#nav li.active a`



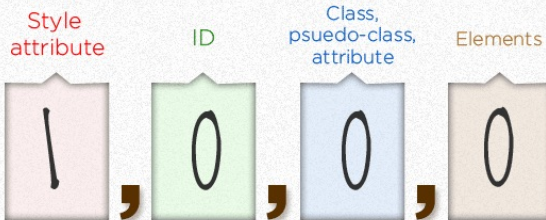
`body.ie7 .col_3 h2 ~ h2`



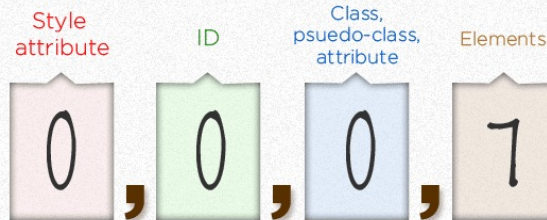
`#footer *:not(nav) li`



`<li style="color: red;">`



`ul > li ul li ol li:first-letter`



➤ Background, Border

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

➤ Background, Border

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

➤ Background, Border

속성(property)	값(Value)	설명(Description)	비고
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.	
box-shadow	<i>none h-shadow v-shadow blur spread color inset</i>	Attaches one or more drop-shadows to the box	

➤ Basic Box

속성(property)	값(Value)	설명(Description)	비고
bottom (left, right, top)	auto <i>length</i> %	Specifies the bottom(left, right, top) position of a positioned element	
clear	none left right both	Specifies which sides of an element where other floating elements are not allowed	
clip	auto shape shape → <i>rect(top, right, bottom, left)</i>	Clips an absolutely positioned element (예시: clip: rect(0, 60px, 200px, 0);)	
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	
float	none left right	Specifies whether or not a box should float	
height (width)	auto <i>length</i> %	Sets the height of an element	
margin	1-4 <i>length(0)</i> % auto	Sets all the margin properties in one declaration	
margin-bottom (-left, -right, -top)	<i>length(0)</i> % auto	Sets the bottom(left, right, top) margin of an element	

➤ Basic Box

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

➤ Flexible Box Layout

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

➤ Flexible Box Layout

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

➤ Text

속성(property)	값(Value)	설명(Description)	비고
hanging-punctuation	none first last allow-end force-end	Specifies whether a punctuation character may be placed outside the line box	
hyphens		Sets how to split words to improve the layout of paragraphs	
letter-spacing	normal length	Increases or decreases the space between characters in a text	
line-break		Specifies how/if to break lines	
line-height	normal number length %	Sets the line height (normal 값은 브라우저에 따라 110% ~ 120%)	
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)	
tab-size	number length (default: 8)	Specifies the length of the tab-character	
text-align	left right center justify	Specifies the horizontal alignment of text	
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"	
text-combine-upright		Specifies the combination of multiple characters into the space of a single character	

➤ Text

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

➤ Text Decoration

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

Font

속성(property)	값(Value)	설명(Description)	비고
@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	
@font-feature-values		Allows authors to use a common name in font-variant-alternate for feature activated differently in OpenType	
font	style variant weight size/line-height family caption icon menu message-box small-caption status-bar	Sets all the font properties in one declaration	
font-family	family-name generic-family	Specifies the font family for text	
font-feature-settings		Allows control over advanced typographic features in OpenType fonts	
font-kerning		Controls the usage of the kerning information (how letters are spaced)	
font-language-override		Controls the usage of language-specific glyphs in a typeface	
font-size	medium xx-small x-small small large x-large xx-large smaller larger length %	Specifies the font size of text	
font-size-adjust	none number	Preserves the readability of text when font fallback occurs	
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	

Font

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

➤ Table

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

➤ Animation

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

➤ Transform

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

○ 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, 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(property)	값(Value)	설명(Description)	비고
transition	<i>property duration timing-function delay</i> (default: all 0s ease 0s)	A shorthand property for setting the four transition properties	
transition-property	all none <i>property</i>	Specifies the name of the CSS property the transition effect is for	
transition-duration	<i>time</i> (default : 0s)	Specifies how many seconds or milliseconds a transition effect takes to complete	
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	
transition-delay	<i>time</i> (default : 0s)	Specifies when the transition effect will start	

➤ Basic User Interface

속성(property)	값(Value)	설명(Description)	비고
box-sizing	content-box border-box	Tells the browser what the sizing properties (width and height) should include	
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	
cursor	<i>value</i> (default : auto)	Specifies the type of cursor to be displayed	
ime-mode		Controls the state of the input method editor for text fields	
nav-down	auto <i>id</i> <i>target-name</i>	Specifies where to navigate when using the arrow-down navigation key	
nav-index	auto <i>number</i>	Specifies the tabbing order for an element	
nav-left	auto <i>id</i> <i>target-name</i>	Specifies where to navigate when using the arrow-left navigation key	
nav-right	auto <i>id</i> <i>target-name</i>	Specifies where to navigate when using the arrow-right navigation key	
nav-up	auto <i>id</i> <i>target-name</i>	Specifies where to navigate when using the arrow-up navigation key	

➤ Basic User Interface

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

➤ Filter Effect

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

➤ Image Values and Replaced Content

속성(property)	값(Value)	설명(Description)	비고
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)	
image-rendering		Gives a hint to the browser about what aspects of an image are most important to preserve when the image is scaled	
image-resolution		Specifies the intrinsic resolution of all raster images used in/on the element	
object-fit		Specifies how the contents of a replaced element should be fitted to the box established by its used height and width	
object-position		object-position Specifies the alignment of the replaced element inside its box	

➤ Box Model

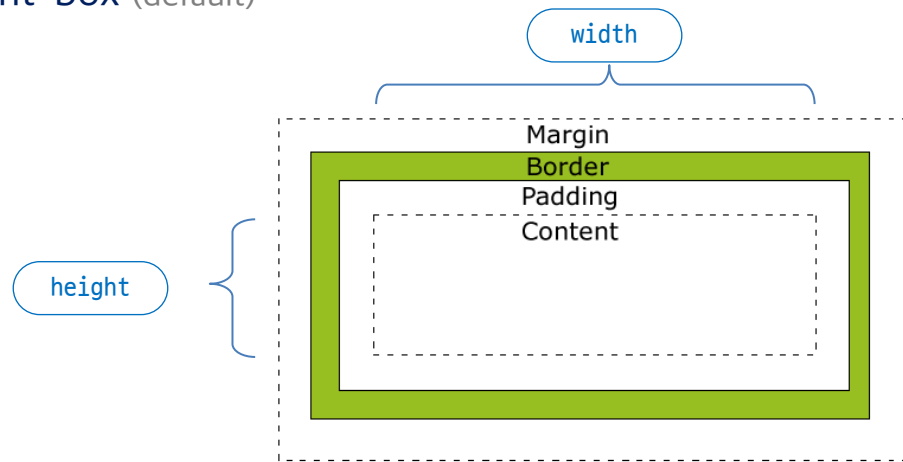


○ 관련 속성

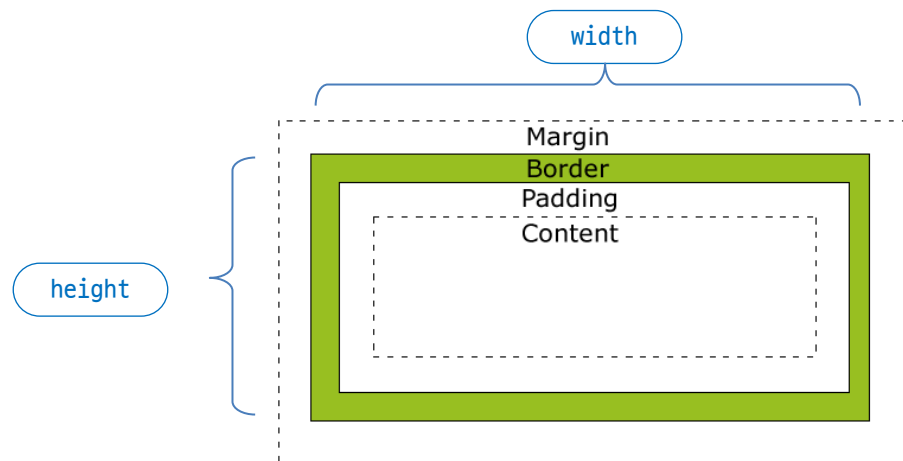
- width, height, max-width, max-height, min-width, min-height, box-sizing
- margin, padding, border, outline, display, visibility
- overflow

➤ box-sizing

- content-box (default)



- border-box

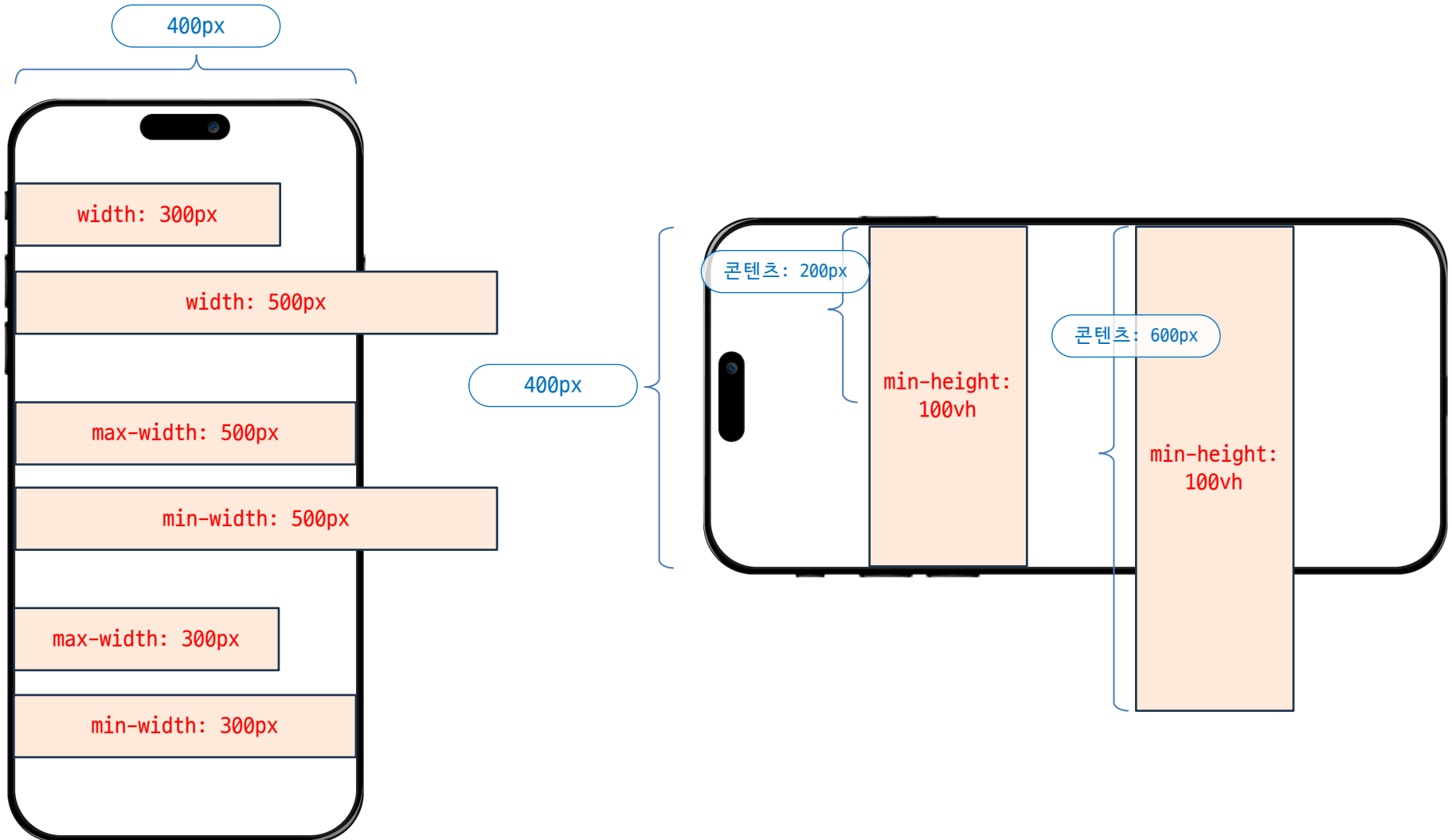


실습 코드

```
div {  
  width: 300px;  
  border: 10px solid green;  
  padding: 20px;  
}
```

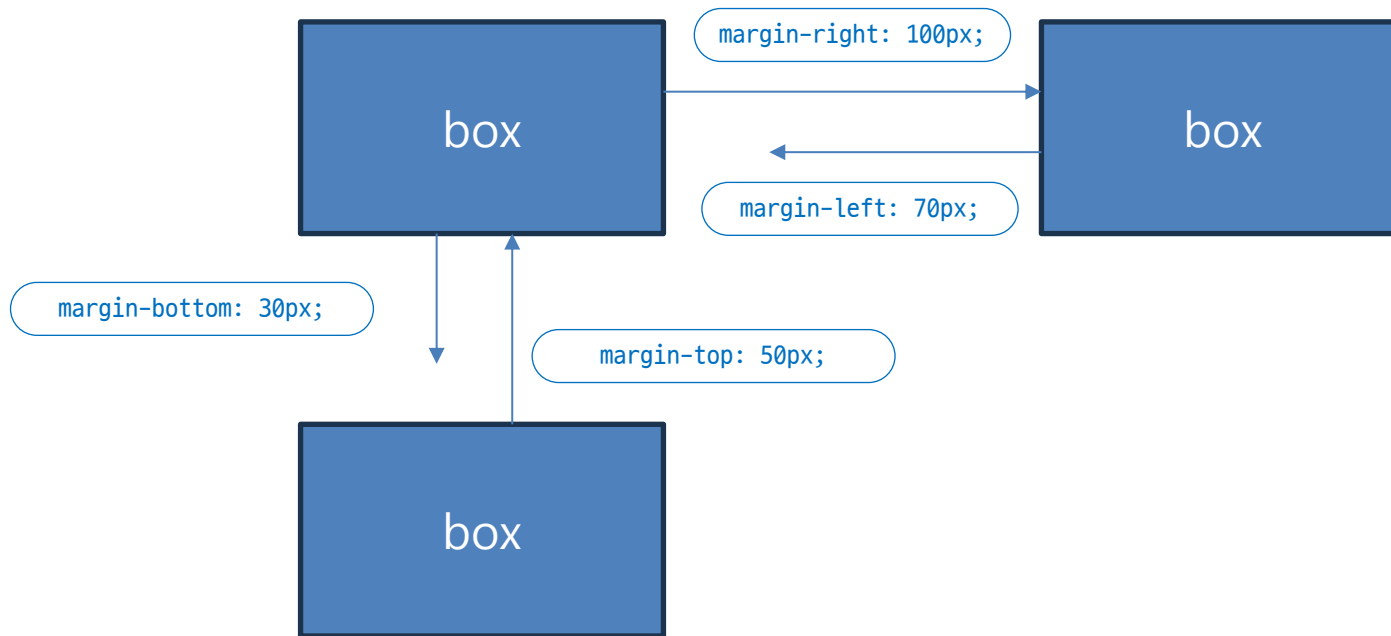
```
div {  
  box-sizing: border-box;  
  width: 300px;  
  border: 10px solid green;  
  padding: 20px;  
}
```

➤ min, max



➤ margin

○ 마진통합



➤ Position

- static
- relative
- absolute
- fixed
- sticky

➤ offset

- left, right, top, bottom

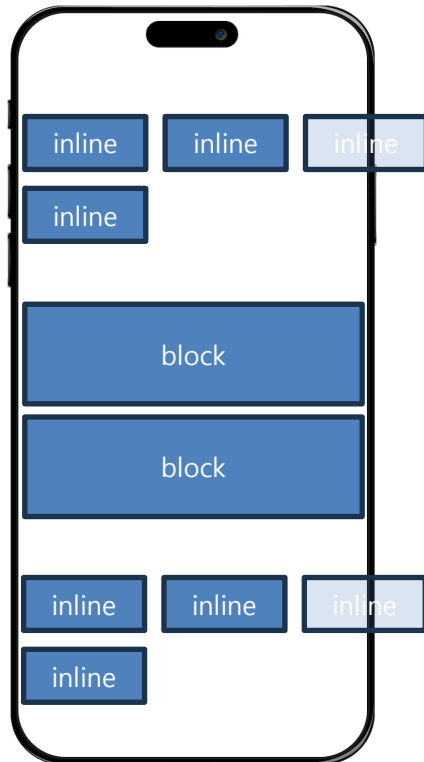
➤ z-index

➤ float, clear

➤ Position

○ static

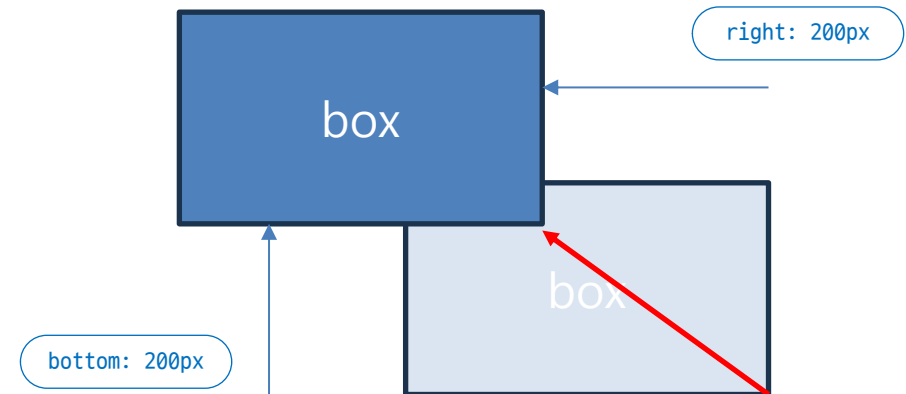
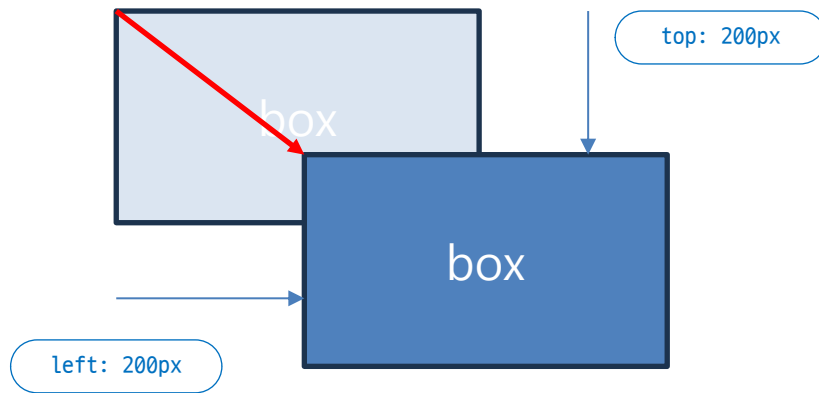
- position 미지정시 기본값 : inline, block 기본 position 룰 적용
- left, top 등 위치 지정(offset) 명령, z-index 미동작



➤ Position

○ relative

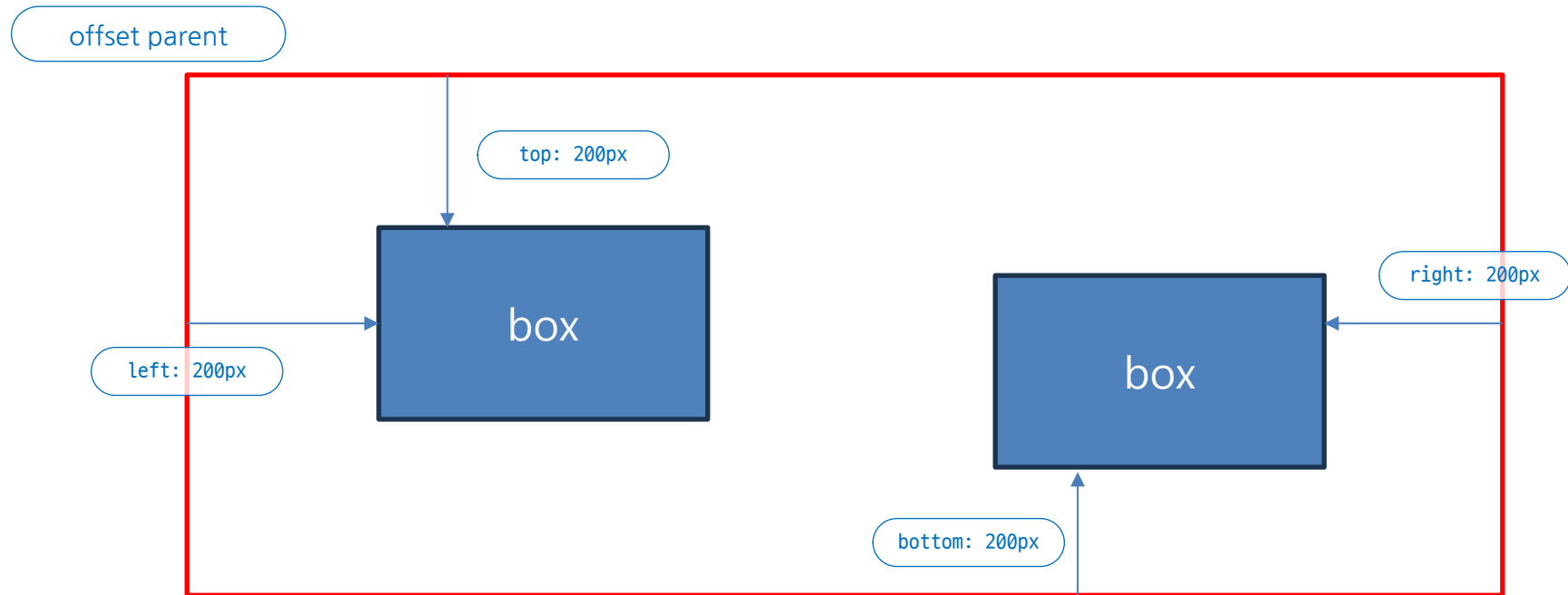
- box가 원래 위치하고 있던 곳을 기준으로 이동
- 주변 box의 레이아웃에 영향을 주지 않으며, 원래 box의 위치에 그대로 있는 것으로 간주



➤ Position

○ absolute

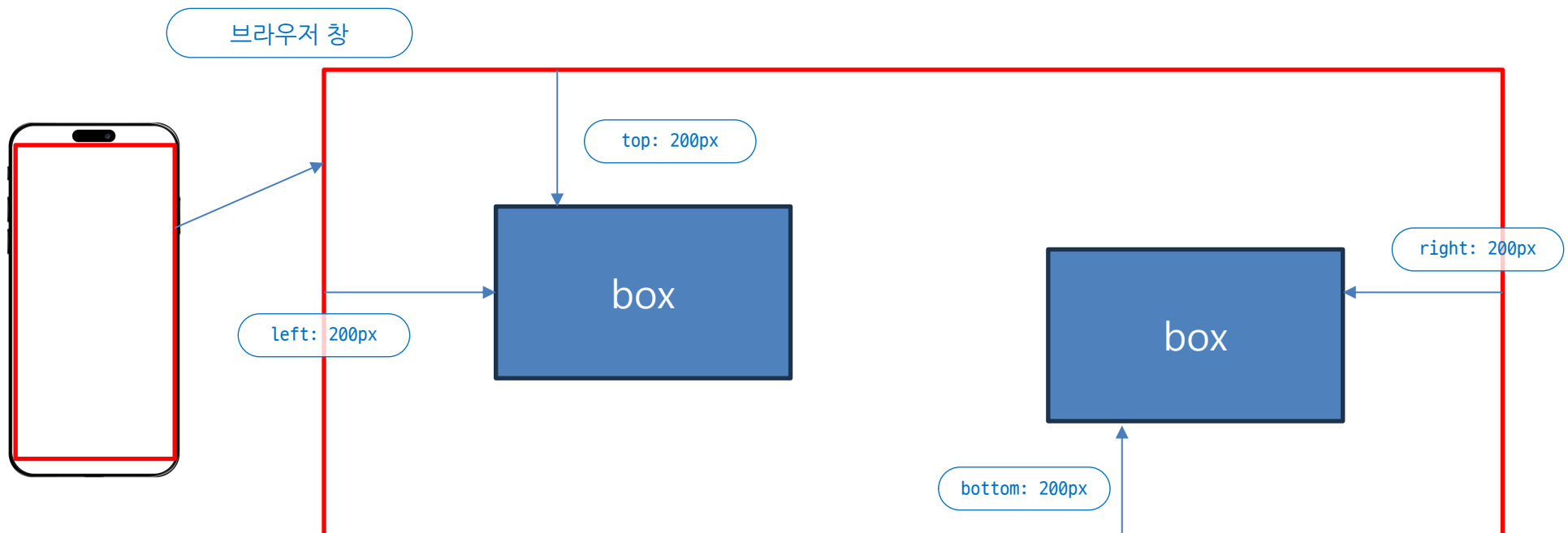
- offset parent를 기준으로 이동
- offset parent 부모 요소 중에 static 이 아닌 가장 가까운 부모 요소
- **주변 box의 레이아웃으로 부터 분리**, 원래 box의 위치에 요소가 없는 것으로 간주하여 주변 요소 재정렬



➤ Position

○ fixed

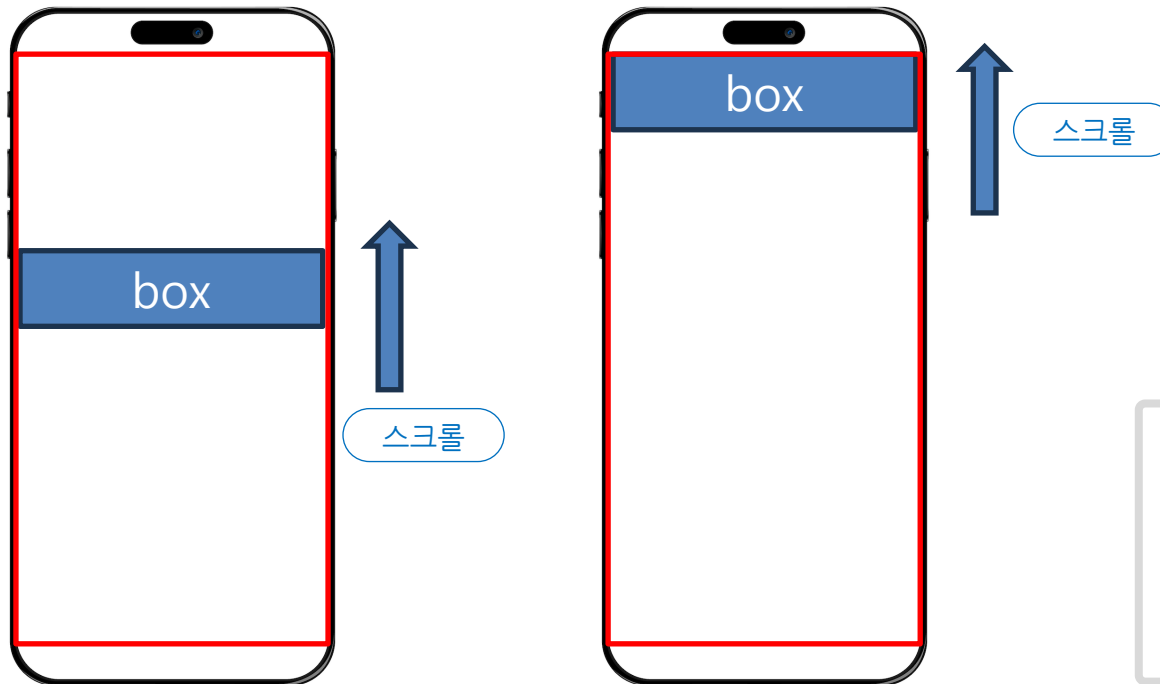
- 브라우저 창(viewport)을 기준으로 이동
- 문서가 스크롤되어도 움직이지 않으며, 브라우저 창의 크기 변경시 위치 변화
- **주변 box의 레이아웃으로 부터 분리**, 원래 box의 위치에 요소가 없는 것으로 간주하여 주변 요소 재정렬



➤ Position

○ sticky

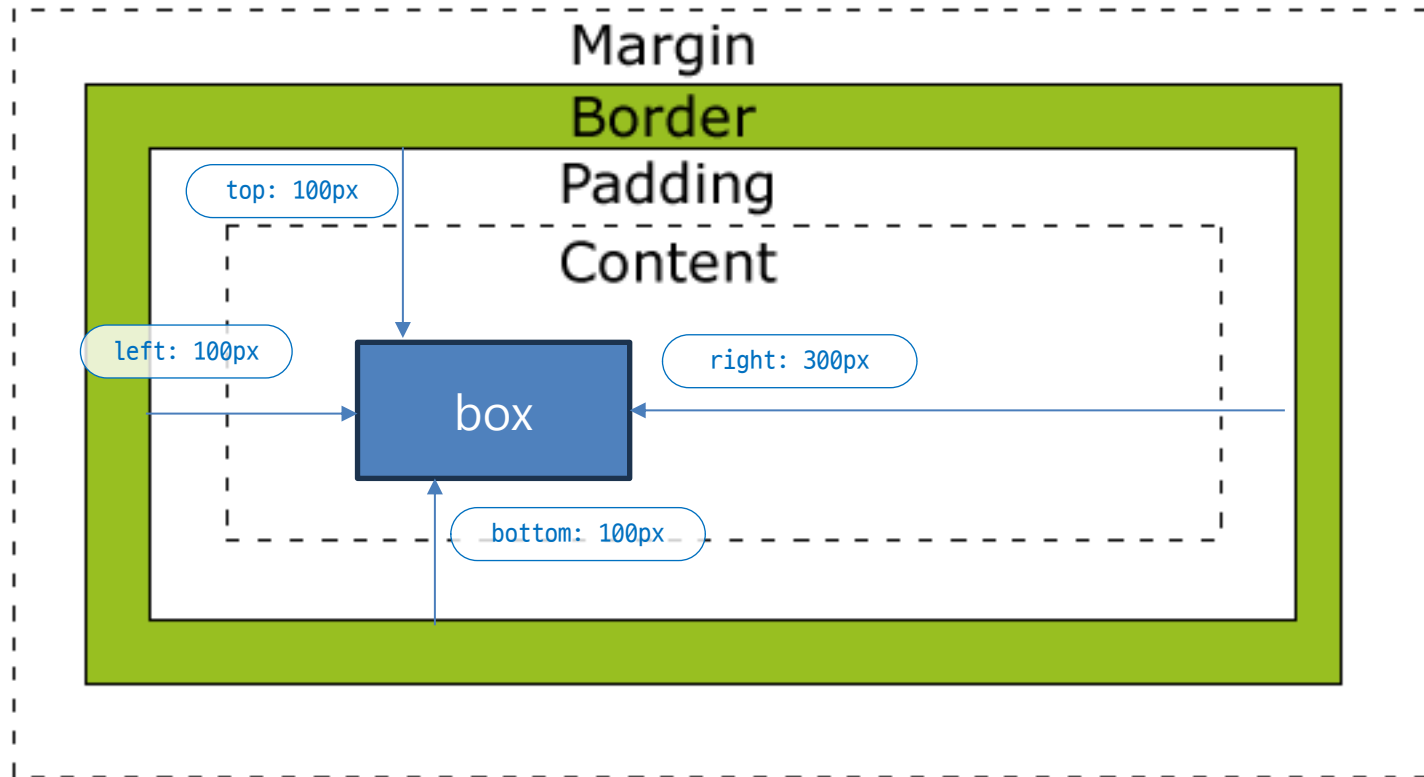
- relative 와 fixed 의 혼합된 형태
- 해당 요소가 지정된 위치에 도달하기 전에는 relative, 해당 위치에서 viewport 밖으로 이동시 fixed 적용



실습 코드

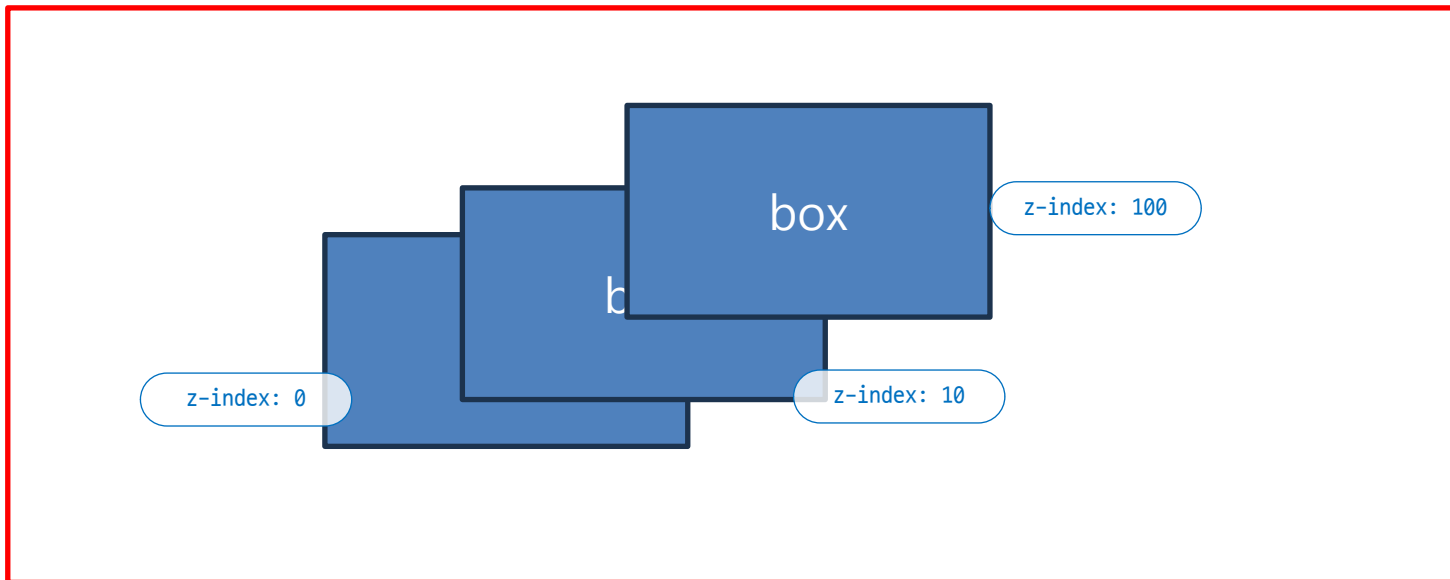
```
div {  
  position: sticky;  
  top: 0;  
}
```

➤ offset



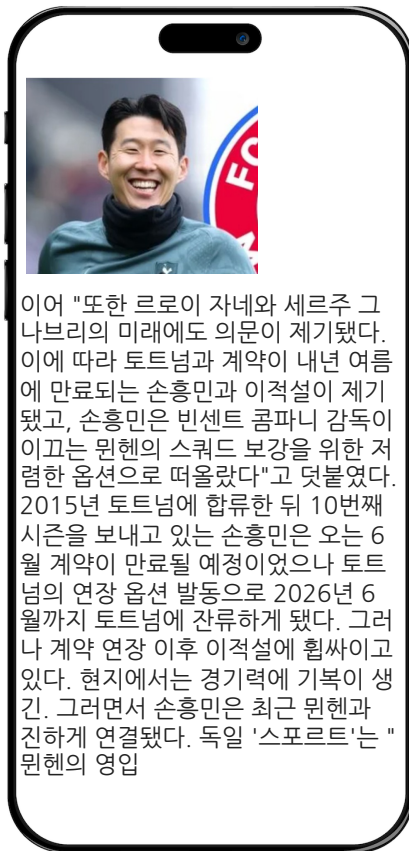
➤ z-index

- box 들이 이동하여 중첩되는 경우 어떤 요소가 위에 표시될지를 정하는 명령
- 적용 규칙
 - static 요소는 z-index 가 적용되지 않으며, 다른 모든 요소(relative, absolute, fixed, sticky) 아래에 위치
 - z-index 가 적용되는 요소 간에는 해당 값이 높은 것이 위에 위치
 - z-index 값이 동일한 경우 html 상에서 뒤에 작성한 요소가 위에 위치



➤ float

- box 와 내부의 콘텐츠를 분리하여 위치를 지정할 수 있는 명령



block



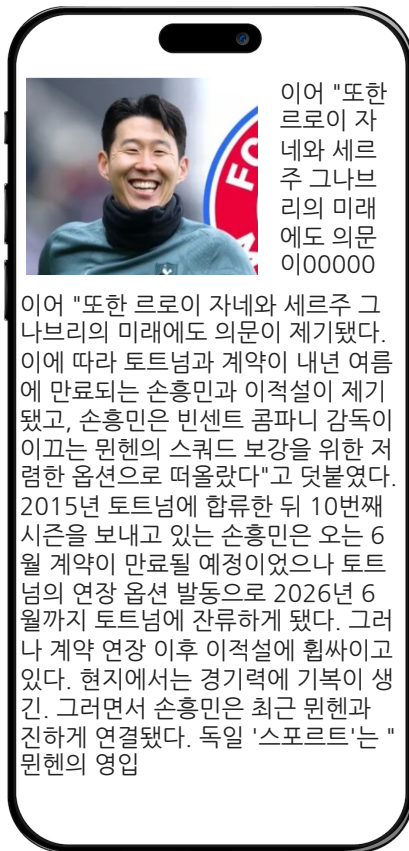
inline



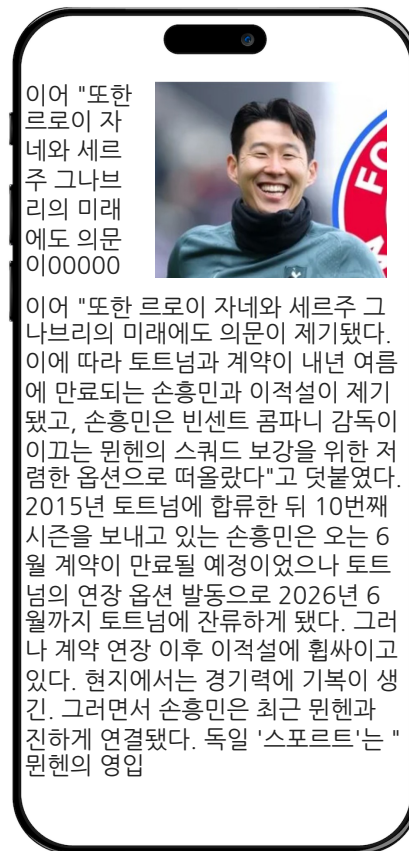
absolute

➤ float

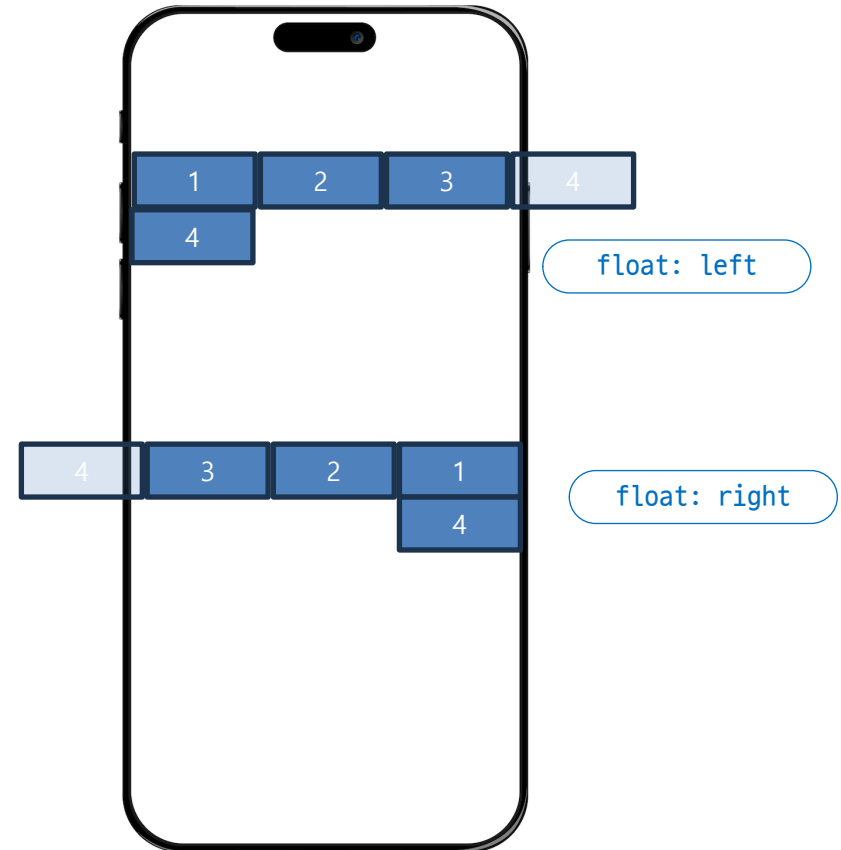
- box 와 내부의 콘텐츠를 분리하여 위치를 지정할 수 있는 명령



float: left



float: right



강사 연락처

➤ 디노웍스 대표 이시영

➤ 문의

- E-mail : lsy@dinoworks.kr
 - Mobile : 010-5179-6455
- 