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# CSS INTRODUCTION

|  |  |  |
| --- | --- | --- |
| About CSS | CSS stands for Cascading Style Sheets and defines the visual presentation of HTML elements. Every CSS document is a collection of CSS rules. Every rule contains a selector (an identifier of the HTML element/s to be styled) and one or more declarations separated by semicolon. "Cascading" means that every rule for an HTML element will also be applied to all its child elements. | |
| A Web Page with/without CSS |  |  |
| CSS Syntax | selector {  property: value; } | |

# USEFUL TOOLS AND PLATFORMS

|  |  |
| --- | --- |
| View CSS in the Browser | CSS Viewer extension for Chrome |
| Check Actual CSS Properties in Browser | right click > Inspect > Computed |
| Online Code Editor for HTML, CSS and JS | codepen.io |
| Make a Screenshot of an Entire Web Page | GoFullPage extension for Chrome |
| Create Design | Figma |
| Pick Exact Color | Just Color Picker |
| Color Palettes | <https://colorhunt.co/> |
| Crop an Image as a Circle | <https://crop-circle.imageonline.co/> |
| CSS Gradient Generator | cssgradient.io |
| Check Browser Support for a Selector/Element | caniuse.com |
| CSS Selector Game | https://flukeout.github.io/ |
| Free Pictures | pixabay.com |
| Random Images | Lorem Picsum (picsum.photos) |
| CSS Tricks Articles | css-tricks.com |
| Design | canva.com |

# ADD CSS TO AN HTML PAGE

|  |  |
| --- | --- |
| External Style Sheet (in <head>) | <link rel="stylesheet" type="text/css" href="site.css"> <!-- recommended --> |
| Internal Style Sheet  (in <head>) | <style>...</style> <!-- when a single document has a unique style --> |
| Inline Style | <p *style*="color:red">Some red text</p> |
| Style Inheritance  CSS Specificity | When the same element is styled differently, the last style overwrites the previous ones. In increasing order of priority: external styles; internal styles (if declared after the external ones); inline styles; **!important**.  <https://blogs.halodoc.io/best-practices-that-we-follow-to-avoid-specificity-issues/> |
|  | Set a background color for the same element in the four ways and tick/untick in Chrome DevTools to see order of precedence.  Also, the same with tag/class/id selectors.  display: block – takes the whole line, has width  inline: takes only what needed, does not have width  inline-block: does not take the whole line, does have width  none: removed (vs. visibility: hidden; which hides but keeps the space)  position: static; - default, goes with the HTML flow  relative – relative to the position of the element had it been positioned staticly; does not affect any other elements on the screen. right: 100px is the right border of the element going 100px to the left of where it used to be.  absolute: relative to the element’s parent; the element is no longer part of the natural flow of the document  fixed: stays where it is when you scroll  rem recommended!  Make a container with relative position and see how absolute children are pushed down.  text-align: center – added to the parent, centers all elements that don’t have any width set  for block elements with fixed width: margin: 0 auto; |
|  | <https://emojipedia.org/>  favicon.cc  <https://www.cssfontstack.com/>  fonts.google.com  loremipsumgenerator.com  flaticon.com  giphy.com  <https://css3buttongenerator.com/> |

# CSS UNITS, NUMBERS, AND MATH FUNCTIONS

|  |  |  |
| --- | --- | --- |
| Absolute Lengths | div { width: 2.54cm; } /\* centimeters \*/ |  |
| div { width: 25.4mm; } /\* millimeters \*/ |
| div { width: 1in; } /\* inch \*/ |
| div { width: 96px; } /\* pixels \*/ |
| div { width: 72pt; } /\* points \*/ |
| div { width: 6pc; } /\* picas \*/ |
| Lengths Relative to Current Font Size | div { width: 6em; }  /\* if current font size is 16px,  width = 6 \* 16 = 96px \*/ |  |
| div { width: 11ex; }  /\* width = 11 \* x-height of current font;  if font-size: 16px, width: 96px \*/ |
| div { width: 9.45ch; }  /\* width = 9.45 \* width of "0";  if font-size: 16px, width: 96px \*/ |
| Length Relative to Root's Font Size | div { width: 6rem; }  /\* if font size of <html> is 16px,  width = 6 \* 16 = 96px \*/ |  |
| Length Relative to Parent's Size | div { width: 50%; }  /\* 50% of the parent's width \*/ |  |
| Lengths Relative to Viewport's Width | div { width: 30vw; }  /\* 30% of the screen's width \*/ |  |
| div { width: 30vmax; }  /\* if the screen is more wide than tall \*/ |
| Lengths Relative to Viewport's Height | div { height: 34vh; }  /\* 30% of the screen's height \*/ |  |
| div { height: 34vmin; }  /\* if the screen is more wide than tall \*/ |
| Leading 0 | line-height: 0.7em; /\* the value has the potential to exceed 1.0 \*/  opacity: 0.5 | .5; /\* the value can never exceed 1.0 \*/ | |
| Math Functions | width: calc(100% - 20px);  /\* 100% of the parent's width - 20px \*/ |  |
| width: max(50%, 200px);  /\* whichever is larger, 50% or 200px \*/ |  |
| width: min(50%, 200px);  /\* whichever is smaller \*/ |  |

# CSS SELECTORS

## PRIMARY SELECTORS

|  |  |  |
| --- | --- | --- |
| All HTML Elements | \* { ... } |  |
| Tag | h1 { ... } |  |
| ID  (NOT Recommended) | #a { ... } |  |
| Tag and ID  (NOT Recommended) | p#a { ... } |  |
| Class | .b { ... } |  |
| Tag and Class | p.b { ... } |  |
| Multiple Classes | .b.c { ... } |  |
| Multiple Selectors | h1, p { ... } |  |

## ATTRIBUTE SELECTORS

|  |  |  |
| --- | --- | --- |
| Attribute | [title] { ... } |  |
| Attribute with a Specified Value | [title="a"] { ... } |  |
| Attribute with Value Containing a Specified String as a Whole Word | [title~="a"] { ... } |  |
| Attribute with a Specified Value  (+ Hyphen) | [title|="a"] { ... } |  |
| Attribute with Value Starting with a Specified String | [title^="a"] { ... } |  |
| Attribute with Value Ending with a Specified String | [title$="a"] { ... } |  |
| Attribute with Value Containing a Specified String | [title\*="a"] { ... } |  |

## COMBINATORS (NESTED SELECTORS)

|  |  |  |
| --- | --- | --- |
| Descendant | .a p { ... } |  |
| Direct Child | .a > p { ... }  /\* no <p> is a direct clild of an element with class "a" \*/ |  |
| Adjacent Sibling | h1 + p { ... } |  |
| General Next Sibling | h1 ~ p { ... } |  |

## PSEUDO-CLASSES

### ORDER-RELATED PSEUDO-CLASSES

|  |  |  |
| --- | --- | --- |
| First Child | h1:first-child { ... } |  |
| p:first-child { ... }  /\* no <p> is the first clild of its parent \*/ |  |
| Last Child | p:last-child { ... } |  |
| h1:last-child { ... }  /\* no <h1> is thelast clild of its parent \*/ |  |
| First of Type | p:first-of-type { ... } |  |
| Last of Type | div:last-of-type { ... } |  |
| Nth of Type | p:nth-of-type(2) { ... } |  |
| Nth Child | p:nth-child(2) { ... } |  |
| Even Elements | p:nth-child(even) { ... }  /\* every second <p> starting from #2 \*/ |  |
| p:nth-child(2n) { ... } |
| p:nth-child(2n + 2) { ... } |
| Odd Elements | p:nth-child(odd) { ... }  /\* every second <p> starting from #1 \*/ |  |
| p:nth-child(2n + 1) { ... } |
| Odd Elements Starting from the Third | p:nth-child(2n + 3) { ... }  /\* every second <p> starting from #3 \*/ |  |
| Every Third Element | p:nth-child(3n) { ... } |  |
| Every Third Element Starting from the Second | p:nth-child(3n - 1) { ... } |  |
| Nth Child from the End | p:nth-last-child(2) { ... } |  |

### CHILD-PARENT PSEUDO-CLASSES

|  |  |  |
| --- | --- | --- |
| Only of Type | div:only-of-type { ... }  /\* the only <div> child of its parent \*/ |  |
| Only Child | p:only-child { ... }  /\* the only child of their parent \*/ |  |
| Empty | div:empty { ... }  /\* <div> with no children nor text content \*/ |  |

### LINK-RELATED PSEUDO-CLASSES

|  |  |  |
| --- | --- | --- |
| Target | :target { ... } |  |
| Visited & Unvisited Links | a:link { ... } /\* unvisited links \*/  a:visited { ... } /\* visited links \*/ |  |
| Hover | a:hover { ... } |  |
| Active Links | a:active { ... } |  |

### INPUT-RELATED PSEUDO-CLASSES

|  |  |  |
| --- | --- | --- |
| Focused Input | input:focus { ... } |  |
| Disabled Input | input:disabled { ... }  /\* attribute "disabled" \*/ |  |
| Enabled Input | input:enabled { ... }  /\* no attribute "disabled" \*/ |  |
| Required Input | input:required { ... }  /\* attribute "required" \*/ |  |
| Optional Input | input:optional { ... }  /\* no attribute "required" \*/ |  |
| Invalid Input | input:invalid { ... } |  |
| Valid Input | input:valid { ... } |  |
| Number Input with Value in Range | input:in-range { ... } |  |
| Number Input with Value out of Range | input:out-of-range { ... } |  |
| Read-Only Input | input:read-only { ... }  /\* attribute "readonly" or "disabled" \*/ |  |
| Read-Write Input | input:read-write { ... }  /\* no attribute "readonly" nor "disabled" \*/ |  |
| Checked Input | input:checked + label { ... }  /\* when input is checked, label is selected \*/ |  |

### GENERAL PSEUDO-CLASSES

|  |  |  |
| --- | --- | --- |
| Root | :root { ... }  /\* same as \* if nothing specified for the children \*/ |  |
| html { ... } |
| Not | :not(p) { ... } |  |
| Language | :lang(fr) { ... } |  |
| Use Several Pseudo-Classes at Once | div:nth-child(2):not(:hover) p { ... }  /\* all <p> in the 2nd <div> when the user's mouse is NOT over the <div> \*/ |  |

## PSEUDO-ELEMENTS

|  |  |  |
| --- | --- | --- |
| Insert Content After an Element | ::after  /\* always with property "content" \*/ |  |
| Insert Content Before an Element | ::before  /\* always with property "content" \*/ |  |
| First Letter of a Text | ::first-letter  /\* only applied to block-level elements \*/ |  |
| First Line of a Text | ::first-line  /\* only applied to block-level elements \*/ |  |
| Bullet/Number of a List | ::marker  /\* selects the markers of list items \*/ |  |
| Portion of an Element Selected by the User | ::selection  /\* matches the portion of an element that is selected by a user \*/ |  |

## SELECTOR SPECIFICITY

|  |  |  |
| --- | --- | --- |
| Order of Declaration | p { background: lightgray; }  p { background: lightblue; } |  |
| Tag vs. Class/Attribute/ Pseudo-Class | p { background: lightgray; }  .a { background: lightblue; } |  |
| Tag vs. Class vs. ID | p { background: lightgray; }  .a { background: lightblue; }  #b { background: darkerblue; } |  |
| Tag vs. ID vs. Important | p { background: lightgray; }  .a { background: lightblue **!important**; }  #b { background: darkerblue; } |  |

# CSS SHORTHAND PROPERTIES

## INTRODUCTION & EXAMPLES

|  |  |  |
| --- | --- | --- |
| About Shorthand Properties | They let you set the values of multiple CSS properties simultaneously. A value which is not specified is set to its default value, so it will override previously set values. | |
| Background | background: url('i.jpg') center/80%  no-repeat fixed border-box border-box green; | background-image: url('i.jpg');  background-position: center;  background-size: 80%;  background-repeat: no-repeat;  background-attachment: fixed;  background-origin: border-box;  background-clip: border-box;  background-color: gray; |
| Font | font: italic small-caps bold 12px/30px  Georgia, serif; | font-style: italic;  font-variant: small-caps;  font-weight: bold;  font-size: 12px;  line-height: 30px;  font-family: Georgia, serif; |
| List Style | list-style: disc inside url('sq.jpg'); | list-style-type: disc; /\* backup \*/  list-style-position: inside;  list-style-image: url('sq.jpg'); |

## 1-TO-4-VALUE SYNTAX FOR EDGES

|  |  |  |  |
| --- | --- | --- | --- |
| 1 Value | border-style: dashed; | border-top-style: dashed;  border-right-style: dashed;  border-bottom-style: dashed;  border-left-style: dashed; |  |
| 2 Values | margin: 20px 10px; | margin-top: 20px;  margin-right: 10px;  margin-bottom: 20px;  margin-left: 10px; |  |
| 3 Values | padding: 20px 5px 10px; | padding-top: 20px;  padding-right: 5px;  padding-bottom: 10px;  padding-left: 5px; |  |
| 4 Values | border-width: 2px 5px 3px 1px; | border-top-width: 2px;  border-right-width: 5px;  border-bottom-width: 3px;  border-left-width: 1px; |  |

## 1-TO-4-VALUE SYNTAX FOR CORNERS

|  |  |  |  |
| --- | --- | --- | --- |
| 1 Value | border-radius: 1em; | border-top-left-radius: 1em;  border-top-right-radius: 1em;  border-bottom-right-radius: 1em;  border-bottom-left-radius: 1em; |  |
| 2 Values | border-radius: 1em 2em; | border-top-left-radius: 1em;  border-top-right-radius: 2em;  border-bottom-right-radius: 1em;  border-bottom-left-radius: 2em; |  |
| 3 Values | border-radius: 1em 3em 2em; | border-top-left-radius: 1em;  border-top-right-radius: 3em;  border-bottom-right-radius: 2em;  border-bottom-left-radius: 3em; |  |
| 4 Values | border-radius: 1px 3px 2px 4px; | border-top-left-radius: 1px;  border-top-right-radius: 3px;  border-bottom-right-radius: 2px;  border-bottom-left-radius: 4px; |  |

# CSS TEXT

## FONT FORMATTING

### FONT FAMILY

|  |  |  |
| --- | --- | --- |
| Times New Roman | font-family: 'Times New Roman';  /\* default for Chrome \*/ |  |
| Verdana | font-family: Verdana, Arial, sans-serif; /\* the first one the browser has: Verdana, Arial or default non-serif font \*/ |  |
| Serif Font Family | font-family: serif; /\* default serif font, Times New Roman for Chrome \*/ |  |
| Non-Serif Font Family | font-family: sans-serif; /\* default sans-serif font, Arial for Chrome \*/ |  |
| Cursive Font Family | font-family: cursive; /\* default cursive font,  Comic Sans MS for Chrome \*/ |  |
| Monospace Font Family | font-family: monospace; /\* default monospace font, Consolas for Chrome \*/ |  |
| Fantasy Font Family | font-family: fantasy; /\* default fantasy font, Impact for Chrome \*/ |  |

### FONT STYLE & DECORATION

|  |  |  |
| --- | --- | --- |
| Font Style | font-style: italic; /\* default: normal \*/ |  |
| Font Weight | font-weight: bold | 600; /\* default: normal or 400 \*/ |  |
| Font Variant | font-variant: small-caps; /\* default: normal \*/ |  |
| Lower/Upper Case or Capitalized Words | .first-line { text-transform: lowercase; }  .second-line { text-transform: uppercase; }  .third-line { text-transform: capitalize; }  /\* default: none \*/ |  |
| Line under, over or through Text | .first-line { text-decoration: overline; }  .second-line { text-decoration: underline; }  .third-line { text-decoration: line-through; }  .fourth-line { text-decoration: none; }  /\* default: none; for links: underline \*/ |  |

### FONT SIZE

|  |  |  |
| --- | --- | --- |
| Default Text Size | font-size: 16px | normal | 1em | 100%;  /\* default for Chrome \*/ |  |
| Larger Text | font-size: 19.2px | larger; |  |
| Smaller Text | font-size: 13.333px | smaller; |  |
| Relative Text Size | font-size: 2em;  /\* 32px if parent's font size is 16px \*/ |  |
| font-size: 2rem;  /\* 32px if <html>'s font size is 16px \*/ |
| Responsive Text Size | font-size: 5vw;  /\* responsive: 5% of the screen width \*/ |  |

### LINE HEIGHT & LETTER SPACING

|  |  |  |
| --- | --- | --- |
| Normal Line Height | line-height: 1.15(em) | normal;  /\* default for Chrome \*/ |  |
| Smaller Line Height | line-height: 0.5 | 8px; |  |
| Larger Line Height | line-height: 2 | 32px; |  |
| Normal Letter Spacing | letter-spacing: normal | 0.01px;  /\* default for Chrome \*/ |  |
| Larger Letter Spacing | letter-spacing: 2px; |  |

### FONT SHORTHAND PROPERTY

|  |  |
| --- | --- |
| Separate Font Properties | font-style: italic;  font-variant: small-caps;  font-weight: bold;  font-size: 12px;  line-height: 30px;  font-family: Georgia, serif; |
| Font Shorthand Property | font: italic small-caps bold 12px/30px Georgia, serif; |

### QUOTATION MARKS

|  |  |  |
| --- | --- | --- |
| Default Quotation Marks | q {  quotes: default;  } |  |
| Custom Quotation Marks | q {  quotes: '%' '%';  } |  |

### TEXT COLOR AND SHADOW

|  |  |  |
| --- | --- | --- |
| Text Color | (text-)color: rgb(46, 116, 181);  /\* default: black \*/ |  |
| Simple Shadow | text-shadow: 2px 2px lightblue;  /\* horizontal, vertical, color \*/ |  |
| Blurred Shadow | text-shadow: 2px 2px 4px black;  /\* horizontal, vertical, blur, color \*/ |  |
| Neon Glow | text-shadow: 0 0 3px blue;  /\* horizontal, vertical, blur, color \*/ |  |
| Multiple Shadows | text-shadow: 0 0 3px red, 0 0 5px yellow;  /\* horizontal, vertical, blur, color \*/ |  |
| Outlined Text | text-shadow: -1px 0 gray, 0 -1px gray, 1px 0 gray, 0 1px gray; |  |

### FONT PAIRINGS

|  |  |
| --- | --- |
| Heading: Georgia,  Text: Verdana |  |
| Heading: Merriweather,  Text: Open Sans |  |
| Heading: Abril Fatface,  Text: Poppins |  |
| Heading: Spectral,  Text: Rubik |  |

### GOOGLE FONTS

|  |  |  |
| --- | --- | --- |
| About Google Fonts | Google Fonts is a place where we can check and download a font. Not all fonts have Cyrillic, it must be checked if needed. | |
| Import Google Font in the HTML File | <link *rel*="stylesheet" *href*="https://fonts.googleapis.com/css?family=Sofia"> | |
| Import Multiple Fonts in the HTML File | <link *rel*="stylesheet"  *href*="https://fonts.googleapis.com/css?family=Sofia|Trirong|Audiowide"> | |
| Import Font Effects in HTML File | <link *rel*="stylesheet"  *href*="https://fonts.googleapis.com/css?family=Sofia&effect=fire"> | |
| Use Imported Font Effects | <p *class*="font-effect-fire">Sofia on fire</p> |  |
| Import Google Font in the CSS File with @import (for JudgeW) | @import url('https://fonts.googleapis.com/css2?family=Roboto&display=swap');  /\* Google Fonts > Search "Roboto" > Select this style > @import \*/ | |
| Import Google Font in the CSS File with @font-face | @font-face {  font-family: "Gret";  src: url("./Gret/Gret-bold.woff") format("woff"); /\* .ttf > format("truetype") \*/  (font-weight: bold;)  } | |

### FONT AWSOME ICONS

|  |  |  |  |
| --- | --- | --- | --- |
| Import Font Awsome in the HTML File | <head>  *Font Awsome > Sign In > Profile Pic > Font Awsome CDN > copy <link>*  </head> | | |
| Import Font Awsome in the CSS File | @import url("*Font Awsome > Sign In > Profile Pic > Font Awsome CDN > get href value from <link>*"); | | |
| Use Font Awsome Icons | <i *class*="fas fa-star">  </i> | color: gold;  font-size: 20px; |  |
| <i *class*="fab fa-facebook-square">  </i> | color: #2E74B5;  font-size: 26px; |  |

## TEXT LAYOUT

### TEXT ALIGNMENT

|  |  |  |
| --- | --- | --- |
| Left | (text-align: left | start;)  /\* default \*/ |  |
| Right | text-align: right | end; |  |
| Center | text-align: center; |  |
| Justify | text-align: justify; |  |
| Vertical Alignment of an Inline Element in a Text or a Text in a Table | .first img { vertical-align: baseline; } /\* default \*/  .second img { vertical-align: text-top; }  .third img { vertical-align: text-bottom; }  .fourth img { vertical-align: super; }  .fifth img { vertical-align: sub; } |  |

### LINE LAYOUT & WORD BREAKING

|  |  |  |
| --- | --- | --- |
| Text with Words Longer than Container | (word-wrap: normal;) /\* default \*/ |  |
| Break Long Words | word-wrap: break-word; |  |
| Break All Words | word-break: break-all; /\* default: normal \*/ |  |
| Force Text to Stay on the Same Line | white-space: nowrap; /\* default: normal \*/ |  |
| Force Text to Stay on the Same Line & Hide Overflow | white-space: nowrap;  overflow: hidden; /\* default: visible \*/ |  |
| Force Text to Stay on the Same Line & Indicate Overflow with Ellipsis | white-space: nowrap;  overflow: hidden;  text-overflow: ellipsis; /\* default: clip \*/ |  |
| Set Indentation for the First Line | text-indent: 20px;  /\* default: 0 \*/ |  |
| Add a Scrollbar | overflow: scroll; /\* adds a scrollbar \*/ |  |
| overflow: auto; /\* adds a scrollbar wher needed \*/  overflow-y: scroll; /\* adds a vertical scrollbar \*/ |
| Set Space between Words | word-spacing: 10px;  /\* default: 0 \*/ |  |

### TEXT DIRECTION

|  |  |  |
| --- | --- | --- |
| Vertical with Rows Right to Left | writing-mode: vertical-rl; /\* default: horizontal-tb \*/ |  |
| Vertical with Rows Left to Right | writing-mode: vertical-lr; /\* default: horizontal-tb \*/ |  |
| Horizontal Right to Left | direction: rtl;  unicode-bidi: bidi-override; |  |

# COMMON CSS PROPERTIES

## BACKGROUND

### SOLID COLOR AND GRADIENT

|  |  |  |
| --- | --- | --- |
| Solid Color Background | background-color: #2E74B5; /\* default: transparent \*/ |  |
| background-color: rgb(46, 116, 181); |
| Semi-Transparent Background | background-color: #2E74B5;  opacity: 0.5; |  |
| background-color: rgba(46, 116, 181, 0.5); |
| Gradient Background | background-image: linear-gradient(#2E74B5, gray); |  |
| Background Shorthand Property | background: #fff url('image.png') no-repeat fixed -47px 0;  /\* color, image, repeat, attachment, position \*/ | |

### IMAGE BACKGROUND

|  |  |  |
| --- | --- | --- |
| Image Background | background-image: url('tree.jpg');  (opacity: 1;) /\* default; fully opaque \*/  (background-position: left top;) /\* default \*/  (background-size: auto;) /\* default \*/  (background-attachment: scroll;) /\* default \*/ |  |
| Semi-Transparent Image Background | background-image: url('tree.jpg');  opacity: 0.5; /\* inherited by children, affects text \*/ |  |
| background-image: linear-gradient(rgba(255, 255, 255, 0.5),  rgba(255, 255, 255, 0.5)), url('tree.jpg');  /\* does not affect text \*/ |  |
| Image Starting 20px Down from the Top | background-position: left -20px; |  |
| Image Starting at the Bottom of the Element | background-position: bottom (center); |  |
| background-position: center bottom; |
| background-position: 50% 100%; |
| Image Starting in the Middle of the Element | background-position: center; |  |
| background-position: 50%; |
| Image to Cover 100% of the Element | background-size: 100%; |  |
| background-size: cover; |
| Centered Image to Cover 100% of the Element | background-size: cover;  background-position: center; |  |
| Image to Cover 100% of the Element's Height | background-size: auto 100%;  (background-repeat: repeat;) /\* default \*/ |  |
| Image Displayed as Large as Possible | background-size: contain; |
| Image to Stretch over the Whole Element | background-size: 100% 100%; |  |
| Image to Cover 34% of the Element's Width | background-size: 34%; |  |
| Non-Repeated Image to Cover 34% of the Element's Width | background-size: 34%;  background-repeat: no-repeat; |  |
| Image 34% of the Element's Width & Repeated on the X-Axis | background-size: 34%;  background-repeat: repeat-x; |  |
| Image 34% of the Element's Width & Repeated on the Y-Axis | background-size: 34%;  background-repeat: repeat-y; |  |
| Single Image Centered | background-size: contain;  background-repeat: no-repeat;  background-position: center; |  |
| Image to Cover 34% of the Element in Width & the Whole in Height | background-size: 34% 100%; |  |
| Image to Cover 34% of the Element in Height & the Whole in Width | background-size: 100% 34%; |  |
| Image to Remain Fixed by Scrolling | background-attachment: fixed; |  |
| Several Image Backgrounds | background: url('tree.png') no-repeat bottom left,  url('texture.jpg'); /\* first one is displayed on top \*/  background-size: 30%, auto; /\* tree: 30%, texture: auto \*/ |  |

### BACKGROUND STARTING POINT

|  |  |  |
| --- | --- | --- |
| Image Starting from the Upper Left Corner of the Padding Edge | background-origin: padding-box; /\* default \*/ |  |
| Image Starting from the Upper Left Corner of the Border | background-origin: border-box; |  |
| Image Starting from the Upper Left Corner of the Content | background-origin: content-box; |  |
| Image Painted to the Outside Edge of the Border | background-clip: border-box; /\* default \*/ |  |
| Image Painted to the Outside Edge of the Padding | background-clip: padding-box; |  |
| Image Painted within the Content Box | background-clip: content-box; |  |

## BORDER

### DRAW BORDER

|  |  |  |
| --- | --- | --- |
| Solid Color Border | border-style: solid;  (border-color: black;) /\* default \*/  (border-width: 3px;) /\* default \*/ |  |
| Border Color | border-style: solid;  border-color: gray; |  |
| Border Width | border-style: solid;  border-width: 5px; or border-width: thick; /\* thin | medium \*/ |  |
| Dotted Border | border-style: dotted; |  |
| Dashed Border | border-style: dashed; |  |
| Double Border | border-style: double; |  |
| Carved Border | border-style: groove; |  |
| 3D Inset Border | border-style: inset; |  |
| 3D Outset Border | border-style: outset; |  |
| No Border | border-style: hidden;  /\* border included in the width \*/ |  |
| border-style: none;  /\* no border at all \*/ |
| Only Style One Side of the Border | border-left-style: solid; |  |
| border-style: none none none solid; /\* top, right, bottom, left \*/ |
| border-left: 3px solid gray; /\* width, style, color \*/ |
| Style Two Sides of the Border Differently | border-top-width: 5px;  border-right-width: 2px;  border-bottom-width: 5px;  border-left-width: 2px; |  |
| border-width: 5px 2px 5px 2px; /\* top, right, bottom, left \*/ |
| border-width: 5px 2px; /\* top & bottom, right & left \*/ |
| Style Three Sides of the Border Differently | border-top-color: pink;  border-right-color: #2E74B5;  border-bottom-color: gray;  border-left-color: #2E74B5; |  |
| border-color: pink #2E74B5 gray; /\* top, right & left, bottom \*/ |
| Border Shorthand Property | border: 2px solid black; /\* width, style, color \*/ | |

### USE IMAGE

|  |  |  |
| --- | --- | --- |
| Border Image | border-image-source: url('tree.jpg');  border-image-width: 20px;  border-image-slice: 10%;  (border-image-repeat: stretch;) /\* default \*/ |  |
| 30% of the Image Displayed in the Border | border-image-slice: 30%; /\* all sides \*/ |  |
| 30% of the Image Displayed in the Border & Rescaled to Fit | border-image-slice: 30%; /\* all sides \*/  border-image-repeat: round; |  |
| 30% of the Image Displayed Repeatedly | border-image-slice: 30%; /\* all sides \*/  border-image-repeat: repeat; |  |
| 30% of the Image Displayed, Extra Space Distributed Around | border-image-slice: 30%; /\* all sides \*/  border-image-repeat: space; |  |
| 30% of the Image Displayed, Inside of the Border Filled | border-image-slice: 30% fill; /\* all sides + inside \*/  border-image-repeat: round; |  |
| 30% of the Image's Height & 50% of the Image's Width | border-image-slice: 30% 50%; /\* vertical, horizontal \*/  border-image-repeat: round; |  |
| 30% of the Image's Width & 50% of the Image's Height | border-image-slice: 50% 30%; /\* vertical, horizontal \*/  border-image-repeat: round; |  |
| 50% of the Image Displayed | border-image-slice: 50%; /\* all sides \*/ |  |
| Border Image Shorthand Property | border-image: url('border.png') 30% round; /\* source, slice, repeat \*/ | |

### ROUNDED CORNERS

|  |  |  |
| --- | --- | --- |
| Rounded Corners | border-radius: 15px;  /\* works with no border \*/ |  |
| Only Round Two Corners | border-top-right-radius: 15px;  border-bottom-right-radius: 15px; |  |
| border-radius: 0 15px 15px 0;  /\* top left, top right, bottom right, bottom left \*/ |
| Ellipse or Circle | border-radius: 50%;  /\* if width and height are equal: a circle \*/ |  |

### TABLE BORDER

|  |  |  |
| --- | --- | --- |
| Separate Borders for Table and Cells | border-collapse: separate; /\* default \*/ |  |
| Set Spacing between Table and Cell Borders | border-collapse: separate;  border-spacing: 10px; |  |
| Single Border for Table and Cells | border-collapse: collapse; |  |
| Rounded Corners for Table with Collapsed Border | border-collapse: collapse;  border-radius: 15px;  overflow: hidden; |  |

## SHADOW

|  |  |  |
| --- | --- | --- |
| Simple Text Shadow | text-shadow: 2px 2px lightblue;  /\* horizontal, vertical, color \*/ |  |
| Blurred Text Shadow | text-shadow: 2px 2px 4px black;  /\* horizontal, vertical, blur, color \*/ |  |
| Neon Glow Text | text-shadow: 0 0 3px blue;  /\* horizontal, vertical, blur, color \*/ |  |
| Multiple Text Shadows | text-shadow: 0 0 3px red, 0 0 5px yellow;  /\* horizontal, vertical, blur, color \*/ |  |
| Outlined Text | text-shadow: -1px 0 gray, 0 -1px gray, 1px 0 gray, 0 1px gray; |  |
| Simple Box Shadow | box-shadow: 10px 10px gray;  /\* horizontal, vertical, color \*/ |  |
| Multiple Box Shadows | box-shadow: 2px 2px 8px black, 8px 8px 5px 2px gray;  /\* horizontal, vertical, blur, spread, color \*/ |  |
| Card Effect | box-shadow: 0 4px 8px 0 rgba(0, 0, 0, .2),  0 6px 20px 0 rgba(0, 0, 0, .19);  /\* horizontal, vertical, blur, spread, color + opacity \*/ |  |

## LIST STYLING

### UNORDERED LISTS

|  |  |  |
| --- | --- | --- |
| No Bullet | ul { list-style-type: none; }  /\* to remove default settings add margin: 0; padding: 0; \*/ |  |
| Circle Bullets | ul { list-style-type: disc; } /\* default \*/ |  |
| Outlined Circle Bullets | ul { list-style-type: circle; } |  |
| Square Bullets | ul { list-style-type: square; } |  |
| Image Bullets | ul { list-style-image: url('sqpurple.jpg'); } |  |

### ORDERED LISTS

|  |  |  |
| --- | --- | --- |
| Numbers | ol { list-style-type: decimal; } /\* default \*/ |  |
| Numbers with Leading Zeros | ol { list-style-type: decimal-leading-zero; } |  |
| Alphabetically Ordered  (Latin Lower Case) | ol { list-style-type: lower-alpha; } |  |
| ol { list-style-type: lower-latin; } |
| Alphabetically Ordered  (Latin Upper Case) | ol { list-style-type: upper-alpha; } |  |
| ol { list-style-type: upper-latin; } |
| Alphabetically Ordered  (Greek Lower Case) | ol { list-style-type: lower-greek; } |  |
| Roman Numbers | ol { list-style-type: upper-roman; } |  |

### GENERAL LIST STYLE

|  |  |  |
| --- | --- | --- |
| List Bullet/Number Position | ol { list-style-position: outside; } /\* default \*/ |  |
| ol { list-style-position: inside; } |  |
| List Style Shorthand Property | list-style: square inside url('sqpurple.jpg');  /\* backup type, position, image \*/ | |

## RESIZING

|  |  |  |
| --- | --- | --- |
| Non-Resizable Elements | resize: none; /\* default \*/  overflow: hidden; /\* auto | scroll \*/ |  |
| Resizable Width | resize: horizontal;  overflow: hidden; /\* auto | scroll \*/ |  |
| Resizable Height | resize: vertical;  overflow: hidden; /\* auto | scroll \*/ |  |
| Resizable Width and Height | resize: both; /\* often default for <textarea> \*/  overflow: hidden; /\* auto | scroll \*/ |  |

## CURSOR

### GENERAL CURSORS

|  |  |  |
| --- | --- | --- |
| Auto | cursor: auto;  /\* default; cursor based on the current context \*/ |  |
| Default | cursor: default;  /\* the platform default cursor \*/ |  |
| No Cursor | cursor: none; |  |

### LINKS & STATUS CURSORS

|  |  |  |
| --- | --- | --- |
| Pointer | cursor: pointer;  /\* indicates a link \*/ |  |
| Help | cursor: help;  /\* help information is available \*/ |  |
| Progress | cursor: progress;  /\* program busy in the background, but the user can still interact with the interface \*/ |  |
| Wait | cursor: wait;  /\* program busy and the user cannot interact with the interface \*/ |  |

### SELECTION CURSORS

|  |  |  |
| --- | --- | --- |
| Text | cursor: text;  /\* text can be selected \*/ |  |
| Vertical Text | cursor: vertical-text;  /\* vertical text can be selected \*/ |  |
| Crosshair | cursor: crosshair; |  |
| Cell | cursor: cell; |  |

### DRAG & DROP CURSORS

|  |  |  |
| --- | --- | --- |
| Grab | cursor: grab; |  |
| Grabbing | cursor: grabbing; |  |
| Move | cursor: move;  /\* all-scroll is the same in Windows \*/ |  |
| Copy | cursor: copy; |  |
| Alias | cursor: alias; |  |
| Not Allowed | cursor: not-allowed; |  |

### RESIZING & SCROLLING CURSORS

|  |  |  |
| --- | --- | --- |
| Resize Horizontally | cursor: ew-resize; |  |
| Resize Vertically | cursor: ns-resize; |  |
| Resize Diagonally (Bottom Left ‒ Top Right) | cursor: ne-resize; |  |
| Resize Diagonally Top Left ‒ Bottom Right) | cursor: nw-resize; |  |
| Resize Table Columns | cursor: col-resize; |  |
| Resize Table Rows | cursor: row-resize; |  |

### ZOOMING CURSORS

|  |  |  |
| --- | --- | --- |
| Zoom In | cursor: zoom-in; |  |
| Zoom Out | cursor: zoom-out; |  |

### ENABLE/DISABLE POINTER EVENTS

|  |  |  |
| --- | --- | --- |
| Enable Pointer Events | pointer-events: auto;  /\* default; the element reacts to events like hover and click \*/ |  |
| Disable Pointer Events | pointer-events: none;  /\* the element does not react to pointer events \*/ |  |

# CSS COLORS

## COLORABLE PARTS OF AN ELEMENT

|  |  |  |
| --- | --- | --- |
| Background | background-color: gray; |  |
| Text | color: white; |  |
| Border | border-color: lightskyblue; |  |

## SOLID COLORS: GRAYSCALE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Color Name | Red, Green, Blue | Hex Value | Hue, Saturation, Lightness |  |
| white | rgb(255, 255, 255) | #ffffff /\* #fff \*/ | hsl(0, 0%, 100%) |  |
| /\* 100% red, 100% green, 100% blue \*/ | | /\* red hue, 100% gray,  50% lighter \*/ |
| black | rgb(0, 0, 0) | #000000 /\* #000 \*/ | hsl(0, 0%, 0%) |  |
| /\* 0% red, 0% green, 0% blue \*/ | | /\* red hue, 100% gray, 50% darker \*/ |
| lightgray | rgb(211, 211, 211) | #d3d3d3 | hsl(0, 0%, 83%) |  |
| /\* 82.8% red, 82.8% green, 82.8% blue \*/ | | /\* red hue, 100% gray,  33% lighter \*/ |
| gray | rgb(128, 128, 128) | #808080 | hsl(0, 0%, 50%) |  |
| /\* 50% red, 50% green, 50% blue \*/ | | /\* red hue, 100% gray,  neutral lightness \*/ |

## SOLID COLORS: RED, GREEN, BLUE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Color Name | Red, Green, Blue | Hex Value | Hue, Saturation, Lightness |  |
| red | rgb(255, 0, 0) | #ff0000 /\* #f00 \*/ | hsl(0 | 360, 100%, 50%) |  |
| /\* 100% red, 0% green, 0% blue \*/ | | /\* red hue, no gray,  neutral lightness \*/ |
| green | rgb(0, 255, 0) | #00ff00 /\* #0f0 \*/ | hsl(120, 100%, 50%) |  |
| /\* 0% red, 100% green, 0% blue \*/ | | /\* green hue, no gray,  neutral lightness \*/ |
| blue | rgb(0, 0, 255) | #0000ff /\* #00f \*/ | hsl(240, 100%, 50%) |  |
| /\* 0% red, 0% green, 100% blue \*/ | | /\* blue hue, no gray,  neutral lightness \*/ |

## SOLID COLORS: OTHER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Color Name | Red, Green, Blue | Hex Value | Hue, Saturation, Lightness |  |
| yellow | rgb(255, 255, 0) | #ffff00 /\* #ff0 \*/ | hsl(60, 100%, 50%) |  |
| /\* 100% red, 100% green, 0% blue \*/ | | /\* yellow hue (red + 60),  no gray, neutral lightness \*/ |
| orange | rgb(255, 165, 0) | #ffa500 | hsl(39, 100%, 50%) |  |
| /\* 100% red, 64.7% green, 0% blue \*/ | | /\* orange hue (red + 39),  no gray, neutral lightness \*/ |
| tomato | rgb(255, 99, 71) | #ff6347 | hsl(9, 100%, 64%) |  |
| /\* 100% red, 38.8% green, 27.8% blue \*/ | | /\* reddish hue (+ 9),  no gray, 14% lighter \*/ |
| brown | rgb(165, 42, 42) | #a52a2a | hsl(0, 59%, 41%) |  |
| /\* 64.7% red, 16.5% green, 16.5% blue \*/ | | /\* red hue, 41% gray,  59% darker \*/ |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pink | rgb(255, 192, 203) | #ffc0cb | hsl(350, 100%, 88%) |  |
| /\* 100% red, 75.3% green, 79.6% blue \*/ | | /\* almost red hue (- 10),  no gray, 38% lighter \*/ |
| magenta | rgb(255, 0, 255) | #ff00ff /\* #f0f \*/ | hsl(300, 100%, 50%) |  |
| /\* 100% red, 0% green, 100% blue \*/ | | /\* magenta hue (blue + 60),  no gray, neutral lightness \*/ |
| mediumseagreen | rgb(60, 179, 113) | #3cb371 | hsl(147, 50%, 47%) |  |
| /\* 23.5% red, 70.2% green, 44.3% blue \*/ | | /\* greenish hue (+ 27),  50% gray, 3% darker \*/ |

## COLORS & OPACITY

|  |  |  |  |
| --- | --- | --- | --- |
| Fully Opaque | rgba(255, 0, 0, 1) | hsla(0, 100%, 50%, 1) |  |
| /\* 100% red, 0% green,  0% blue, 100% alpha \*/ | /\* red hue, no gray,  neutral lightness, 100% alpha \*/ |
| 30% Transparent | rgba(255, 0, 0, .7) | hsla(0, 100%, 50%, .7) |  |
| /\* 100% red, 0% green,  0% blue, 70% alpha \*/ | /\* red hue, no gray,  neutral lightness, 70% alpha \*/ |
| 50% Transparent | rgba(255, 0, 0, .5) | hsla(0, 100%, 50%, .5) |  |
| /\* 100% red, 0% green,  0% blue, 50% alpha \*/ | /\* red hue, no gray,  neutral lightness, 50% alpha \*/ |
| 80% Transparent | rgba(255, 0, 0, .2) | hsla(0, 100%, 50%, .2) |  |
| /\* 100% red, 0% green,  0% blue, 20% alpha \*/ | /\* red hue, no gray,  neutral lightness, 20% alpha \*/ |
| Fully Transparent | rgba(255, 0, 0, 0) | hsla(0, 100%, 50%, 0) |  |
| /\* 100% red, 0% green,  0% blue, 0% alpha \*/ | /\* red hue, no gray,  neutral lightness, 0% alpha \*/ |

## CURRENT COLOR

|  |  |  |
| --- | --- | --- |
| Use the Current Value of the Element's Color Property | div {  color: gray;  border: 10px solid currentColor;  } |  |
| Use the Current Value of the Parent's Color Property | body { color: gray; }  div { background-color: currentColor; } |  |

# CSS GRADIENTS

## LINEAR GRADIENTS

|  |  |  |
| --- | --- | --- |
| Top to Bottom | linear-gradient((to bottom), #2E74B5, gray);  linear-gradient(180deg, #2E74B5, gray);  /\* direction, first color, second color \*/ |  |
| Left to Right | linear-gradient(to right, #2E74B5, gray);  linear-gradient(90deg, #2E74B5, gray); |  |
| Three Colors, Diagonally | linear-gradient(to bottom right,  #2E74B5 50%, lightgray, gray);  /\* direction, first color + stop point, second, third color \*/ |  |
| Repeating Stripes | repeating-linear-gradient(#2E74B5,  lightgray 25%, gray 25%); |  |

## RADIAL GRADIENTS

|  |  |  |
| --- | --- | --- |
| Centered Ellipse | radial-gradient((ellipse) (at center),  gray 10%, lightgray, #2E74B5);  /\* shape, position, first color + stop point, second, third color \*/ |  |
| Circle Reaching the Farthest Corner | radial-gradient((farthest-corner) circle at 70% 20%,  gray 10%, lightgray 30%, #2E74B5); |  |
| Circle Reaching the Closest Edge | radial-gradient(closest-side at 20% 30%,  gray 10%, lightgray 30%, #2E74B5); |  |
| Repeating Concentric Circles | repeating-radial-gradient(closest-side at 20% 30%,  gray 10%, lightgray 30%, #2E74B5); |  |
| Two Circles in an Opacity Gradient | radial-gradient(at top,  rgba(46, 116, 181, 1), rgba(46, 116, 181, 0)),  radial-gradient(at bottom,  rgba(150, 150, 150, 1), rgba(150, 150, 150, 0)); |  |
| Sphere Effect | radial-gradient(circle at 20px 20px,  #2E74B5, rgba(0, 0, 0, 0.7)); |  |

## CONIC GRADIENTS

|  |  |  |
| --- | --- | --- |
| Colors Changing Gradually | conic-gradient(gray 45deg, lightgray 90deg,  #2E74B5 270deg);  /\* color + stop point \*/ |  |
| Pie Chart | conic-gradient(gray 0deg 90deg, lightgray 90deg 180deg, #2E74B5 180deg);  /\* color + start & stop point \*/ |  |
| Cone with Gradually Changing Colors | conic-gradient(from 90deg at 60% 70%,  gray 90deg, lightgray 180deg, #2E74B5 270deg);  /\* start point, position, color + stop point \*/ |  |
| Pie Chart with Gradually Changing Repeating Pieces | repeating-conic-gradient(gray 10%, lightgray 10%,  #2E74B5 20%); |  |
| Pie Chart with Repeating Pieces | repeating-conic-gradient(gray 0deg 10deg,  lightgray 10deg 20deg, #2E74B5 20deg 30deg; |  |

# CSS IMAGES

## GENERAL IMAGE POSITIONING

|  |  |  |
| --- | --- | --- |
| Image to Fill the Whole Area | width: 150px;  height: 100px;  (object-fit: fill;) /\* default \*/  (object-position: center;) /\* default; 50% 50% \*/ |  |
| background-size: 100% 100%; |
| Image to Cover the Whole Area (Cropped if Necessary) | object-fit: cover; |  |
| background-size: cover;  background-position: center; |
| Image to Appear Whole in the Area (Parts May Remain Uncovered) | object-fit: contain; |  |
| background-size: contain;  background-repeat: no-repeat;  background-position: center; |
| Image to Cover Area Starting from the Center | object-fit: none; |  |
| background-position: center; |
| Vertically Centered Image, 50px to the Right | object-fit: none;  object-position: 50px 50%; |  |
| background-repeat: no-repeat;  background-position: 50px 50%; |
| The Smallest of None and Contain | object-fit: scale-down;  /\* the smallest version of none and contain \*/ |  |
| Responsive Images | div {  resize: both;  overflow: hidden;  }  div img { width: 100%; } |  |
| Responsive Images Not Stretching above Their Width | div img { max-width: 100%; } |  |

## IMAGE FILTERS AND MASKS

|  |  |  |
| --- | --- | --- |
| No Filter | filter: none; |  |
| Blurred Image | filter: blur(4px); |  |
| Set Image Brightness | filter: brightness(150%); |  |
| Set Image Contrast | filter: contrast(150%); |  |
| Make Image Black & White | filter: grayscale(100%); |  |
| Rotate Image Hue | filter: hue-rotate(180deg); |  |
| Invert Image Colors | filter: invert(100%); |  |
| Set Image Opacity | filter: opacity(50%); |  |
| Set Image Saturation | filter: saturate(7); |  |
| Apply Sepia Effect | filter: sepia(70%); |  |
| Add Shadow | filter: drop-shadow(8px 8px 5px gray); |  |
| Apply Masking Layer | -webkit-mask-image: radial-gradient(circle at center,  black 40%, rgba(0, 0, 0, .5) 0);  mask-image: radial-gradient(circle at center,  black 40%, rgba(0, 0, 0, .5) 0)); |  |

## IMAGE REFLECTION

|  |  |  |
| --- | --- | --- |
| Reflection to the Right | -webkit-box-reflex: right (0px); /\* above | below | left \*/ |  |
| .second-img { transform: rotateY(180deg); } |
| Reflection Fading out under Image | -webkit-box-reflex: below 0 linear-gradient(to bottom,  transparent, rgba(0, 0, 0, .3)); |  |
| .second-img {  transform: rotateY(180deg);  -webkit-mask-image: linear-gradient(to bottom,  transparent, rgba(0, 0, 0, .3));  mask-image: linear-gradient(to bottom,  transparent, rgba(0, 0, 0, .3));  } |

## IMAGE SPRITES

|  |  |  |
| --- | --- | --- |
| About Image Sprites | An image sprite is a collection of images put into a single image. Using CSS to show only the part of the image we need reduces the number of server requests and save bandwidth. |  |
| Hover Effect | div {  width: 200px;  position: relative;  }  div img {  position: absolute;  left: 0;  }  div img:hover { left: -200px; } |  |

# TRANSFORMATIONS

## 2D TRANSFORMATIONS

|  |  |  |
| --- | --- | --- |
| Move an Element | transform: translate(20px, 40px);  /\* horizontal, vertical \*/ |  |
| Rotate an Element | transform: rotate(20deg);  /\* -20deg: counterclockwise \*/ |  |
| Make an Element Bigger/Smaller | transform: scale(2, 0.5);  /\* twice as wide, half as high \*/ |  |
| Make an Element More/Less Wide | transform: scaleX(2); /\* twice as wide \*/ |  |
| transform: scale(2, 1); /\* twice as wide \*/ |
| Make an Element More/Less Tall | transform: scaleY(0.5); /\* half as high \*/ |  |
| transform: scale(1, 0.5); /\* half as high \*/ |
| Flip an Element Horizontally | transform: scale(-1, 0.5);  /\* flipped, half as high \*/ |  |
| Skew an Element Horizontally | transform: skewX(20deg); |  |
| transform: skew(20deg, (0)); |
| Skew an Element Vertically | transform: skewY(20deg); |  |
| transform: skew(0, 20deg); |
| Apply All 2D Transformations at Once | transform: matrix(1.5, -0.2, 0.1, 1, 0, 20);  /\* scaleX, skewX, skewY, scaleY, translateX, translateY \*/ |  |

## 3D TRANSFORMATIONS

|  |  |  |
| --- | --- | --- |
| Rotate an Element around the X-Axis | transform: rotateX(130deg); |  |
| Rotate an Element around the Y-Axis | transform: rotateY(130deg); |  |
| Rotate an Element around the Z-Axis | transform: rotateZ(130deg); |  |
| transform: rotate(130deg); |

# TRANSITIONS & ANIMATIONS

## TRANSITIONS

|  |  |  |
| --- | --- | --- |
| Change an Element's Width | div { width: 100px; height: 100px; }  transition-property: width;  transition-duration: 2s; /\* default: 0s \*/  (transition-timing-function: ease;) /\* default \*/  (transition-delay: 0;) /\* default \*/  }  div:hover { width: 200px; } |  |
| Rotate an Element while Changing Its Opacity | div {  transition: transform 2s linear 1s, opacity 4s;  /\* property, duration, timing function, delay \*/  }  div:hover {  transform: rotate(90deg);  opacity: 0.5;  } |  |
| Square to Circle | div {  transition: borded-radius 1s ease-in;  }  div:hover { border-radius: 50%; } |  |
| Flip Effect | div {  transition: background-color 0s linear 1s,  transform 2s linear;  }  div:hover {  background-color: gray;  transform: rotateY(180deg);  } |  |
| Move an Element while Changing Its Dimensions | div { transition: transform 1s ease-in-out; }  div:hover {  transform: translate(50px -50px) scale(1.5);  } |  |
| Add a Tooltip | .tooltip .tooltiptext {  opacity: 0;  transition: opacity 1s;  }  .tooltip:hover .tooltiptext {  opacity: 1;  } |  |
| Make an Overlay Layer Appear in Front of Image | .tree { position: relative; }  .overlay {  position: absolute;  top: 0; right: 0; bottom: 0; left: 0;  opacity: 0;  transition: opacity 1s;  }  .overlay:hover { opacity: 1; } |  |
| Make an Overlay Layer Drop down in Front of Image | .tree { position: relative; }  .overlay {  position: absolute;  top: 0; right: 0; bottom: 100%; left: 0;  overflow: hidden;  transition: bottom .5s;  }  .overlay:hover { bottom: 0; } |  |
| Make a Close Button Hoverable | .btn {  position: absolute;  top: 5px; right: 10px;  transition: .3s;  }  .btn:hover {  opacity: .5;  cursor: pointer;  } |  |

## ANIMATIONS

|  |  |  |  |
| --- | --- | --- | --- |
| Change an Element's Color | div {  background-color: #2E74B5;  animation-name: color-change;  animation-duration: 2s; /\* default: 0s \*/  (animation-timing-function: ease;) /\* default \*/  (animation-delay: 0;) /\* default; takes negative values \*/  (animation-iteration-count: 1;) /\* default \*/  (animation-direction: normal;) /\* default \*/  (animation-fill-mode: none;) /\* default \*/  }  @keyframes color-change {  from { background-color: #2E74B5; } /\* 0%, start \*/  to { background-color: gray; } /\* 100%, complete \*/  } | |  |
| Move an Element while Changing Its Opacity | div {  background-color: #2E74B5;  animation: move 6s ease-out 1s infinite;  /\* name, duration, timing function, delay, iteration \*/  }  @keyframes move {  0% { background: rgb(46, 116, 181); left: 0; top: 0; }  25% { background: rgba(46, 116, 181, 0.7);  left: 0; top: 50px; }  50% { background: rgba(46, 116, 181, 0.5);  left: 50px; top: 50px; }  75% { background: rgba(46, 116, 181, 0.7);  left: 0; top: 50px; }  100% { background: rgb(46, 116, 181); left: 0; top: 0; }  } | |  |
| Move an Element in Alternate Directions | animation: move 6s 2 alternate;  /\* name, duration, iteration, direction \*/ | |  |
| Zoom In | div { animation: zoom .6s; }  @keyframes zoom {  from { transform: scale(0.1); }  to { transform: scale(1); }  } | |  |
| Animation Timing Function Demo | animation: move 5s 1 forwards;  /\* name, duration, iteration, fill mode \*/  .a { animation-timing-function: linear; }  .b { animation-timing-function: ease; }  .c { animation-timing-function: ease-in; }  .d { animation-timing-function: ease-out; }  .e { animation-timing-function: ease-in-out; } |  | |
|  | https://cssanimation.rocks/spheres/ |  | |

# CSS COUNTERS

|  |  |  |  |
| --- | --- | --- | --- |
| About CSS Counters | CSS counters are like variables maintained by CSS whose values can be incremented by CSS rules (to track how many times they are used). Counters let you adjust the appearance of content based on its placement in the document. | | |
| Create a CSS Counter | counter-reset: section 3; /\* counter named "section" initially set to 3 \*/ | | |
| Increment Counter | counter-increment: section; | | |
| Use Counter to Number Headings | body { counter-reset: part 3; }  h2::before {  counter-increment: part;  content: "Part " counter(part) ": ";  } | <h2>One</h2>  <h2>Two</h2>  <h2>Three</h2> | Part 4: One  Part 5: Two  Part 6: Three |
| Use Nesting Counters | body { counter-reset: title; }  h1 { counter-reset: subtitle; }  h1::before {  counter-increment: title;  content: "Part " counter(title) ": ";  }  h2::before {  counter-increment: subtitle;  content: "Part " counter(title) "."  counter(subtitle) ": ";  } | <h1>One</h1>  <h2>Two</h2>  <h2>Three</h2>  <h1>One</h1>  <h2>Two</h2>  <h2>Three</h2> | Part 1: One  Part 1.1: Two  Part 1.2: Three  Part 2: One  Part 2.1: Two  Part 2.2: Three |
| Nesting One Counter | ul { counter-reset: title; }  li::before {  counter-increment: title;  content: counters(title, ".") ". ";  } | <ul>  <li>item</li>  <li>item</li>  <ul>  <li>item</li>  <li>item</li>  </ul>  </ul> | 1. item  2. item  2.1. item  2.2. item |

# CSS WEBSITE LAYOUT

## BOX MODEL & TYPES OF ELEMENTS

|  |  |  |  |
| --- | --- | --- | --- |
| About CSS Box Model | It is a box that wraps around every HTML element and consists of (from outside to inside) margins, borders, padding and the actual content. |  | |
| Inline Elements | Don't start on a new line, margin can be added just on the right and left sides, the top and bottom padding is ignored when positioning the element, width ant height are not applied: a, label, map, span, strong, em, i, img, textarea, input, button, select, etc. Inline elements cannot contain block elements. | | |
| .parent { width: 350px; height: 200px; }  .child {  width: 80px; /\* not applied \*/  margin: 5px;  padding: 15px; /\* ignored on the top \*/  } | |  |
| Inline-Block Elements | Don't start on a new line, but can have padding and margin added on all four sides. Declaration in CSS code: display: inline-block;. | | |
| .child {  display: inline-block;  width: 80px; /\* applied \*/  margin: 5px;  padding: 15px; /\* considered \*/  } | |  |
| Block Elements | Start on a new line and fill up the full width available: main, header, article, section, fieldset, nav, ul, ol, li, form, h1-h6, p, div, etc. | | |
| .child {  display: block;  width: 80px; /\* applied \*/  margin: 5px; /\* merged on the top \*/  padding: 15px; /\* applied and considered \*/  } | |  |

## WIDTH

### INLINE ELEMENTS

|  |  |  |
| --- | --- | --- |
| NOT Applied | width: auto; |  |
| width: 100px | 200px; |
| width: 50% | 100%; |

### INLINE-BLOCK ELEMENTS

|  |  |  |
| --- | --- | --- |
| Default | width: auto; /\* default \*/ |  |
| width: fit-content; |
| Content's Maximum Width | width: max-content;  /\* the maximum width of the content;  for text: will not wrap even by overflow \*/ |  |
| Content's Minimum Width | width: min-content;  /\* for text: as small as the longest word \*/ |  |
| Fixed | width: 96px; |  |
| Relative to Current Font Size | width: 6em; |  |
| Relative to Root's Font Size | width: 6rem; |  |
| Relative to Parent's Size | width: 50%; |  |
| width: calc(100% - 20px); |  |
| Relative to Viewport's Width | width: 30vw; |  |
| width: 30vmax;  /\* if the screen is more wide than tall \*/ |

### BLOCK ELEMENTS

|  |  |  |
| --- | --- | --- |
| Default | width: auto; /\* default \*/ |  |
| width: 100%; |
| Fit Content | width: fit-content; |  |
| Content's Maximum Width | width: max-content;  /\* the maximum width of the content;  for text: will not wrap even by overflow \*/ |  |
| Content's Minimum Width | width: min-content;  /\* for text: as small as the longest word \*/ |  |
| Fixed | width: 100px; |  |
| Relative to Current Font Size | width: 6em; |  |
| Relative to Root's Font Size | width: 6rem; |  |
| Relative to Parent's Size | width: 50%; |  |
| Relative to Viewport's Width | width: 30vw; |  |
| width: 30vmax;  /\* if the screen is more wide than tall \*/ |

### WIDTH LIMITS

|  |  |  |
| --- | --- | --- |
| Maximum Width | width: 70%;  max-width: 200px; /\* default: none \*/ |  |
| Minimum Width | width: 70%;  min-width: 100px; /\* default: none \*/ |  |

## HEIGHT

### INLINE ELEMENTS

|  |  |  |
| --- | --- | --- |
| NOT Applied | height: auto; |  |
| height: 100px | 200px; |
| height: 50% | 100%; |

### INLINE-BLOCK ELEMENTS

|  |  |  |
| --- | --- | --- |
| Default | height: auto; /\* default \*/ |  |
| height: fit-content; |
| Fixed | height: 80px; |  |
| Relative to Current Font Size | height: 4em; |  |
| Relative to Root's Font Size | height: 2.8rem; |  |
| Relative to Parent's Size | height: 50%; |  |
| Height Relative to Viewport's Height | height: 34vh;  /\* 34% of the screen's height \*/ |  |
| height: 34vmin;  /\* if the screen is more wide than tall \*/ |

### BLOCK ELEMENTS

|  |  |  |
| --- | --- | --- |
| Block Elements: Default Width | height: auto; /\* default \*/ |  |
| height: fit-content; |
| Fixed | height: 80px; |  |
| Relative to Current Font Size | height: 4em; |  |
| Relative to Root's Font Size | height: 2.8rem; |  |
| Relative to Parent's Size | height: 50%; |  |
| Height Relative to Viewport's Height | height: 34vh;  /\* 34% of the screen's height \*/ |  |
| height: 34vmin;  /\* if the screen is more wide than tall \*/ |

### HEIGHT LIMITS

|  |  |  |
| --- | --- | --- |
| Maximum Height | height: 60%;  max-height: 70px; /\* default: none \*/ |  |
| Minimum Height | height: 60%;  min-height: 70px; /\* default: none \*/ |  |

## MARGIN

### NO MARGIN

|  |  |  |
| --- | --- | --- |
| Inline Elements | .first { margin: 0; }  /\* default \*/ |  |
| Inline-Block Elements | .first { margin: 0; }  /\* default \*/ |  |
| Block Elements | .first { margin: 0; }  /\* right margin always fills the whole line \*/ |  |

### TOP

|  |  |  |
| --- | --- | --- |
| Inline Elements: NOT Apllied | .first { margin-top: 15px; } |  |
| Inline-Block Elements | .first { margin-top: 15px; } |  |
| Block Elements: Margin outside Parent | .first { margin-top: 15px; }  /\* if parent is block, top margins merge and stay outside parent \*/ |  |
| Block Elements: Margin Inside Parent | .parent { display: inline-block; }  .first { margin-top: 10px; } |  |
| .parent { float: left; }  .first { margin-top: 10px; } |
| .parent {  margin-top: -1px;  padding-top: 1px;  }  .first { margin-top: 10px; } |
| Block Elements: Parent with Border/Padding | .parent { border: 1px solid transparent; }  .first { margin-top: 10px; } |  |
| .parent { padding: 1px; }  .first { margin-top: 10px; } |
| Block Elements: Parent with NOT Visible Overflow | .parent { overflow: hidden; }  .first { margin-top: 10px; } |  |
| Shorthand Property | margin: 10px 0 0 0; /\* top, right, bottom, left \*/ | |

### RIGHT

|  |  |  |
| --- | --- | --- |
| Inline Elements | .first { margin-right: 20px; }  /\* moves right neighbour to the right \*/ |  |
| Inline-Block Elements | .first { margin-right: 15px; } |  |
| Block Elements | .first { margin-right: 0 | 300px | 100%; }  /\* right margin always fills the whole line \*/ |  |
| Shorthand Property | margin: 0 15px 0 0; /\* top, right, bottom, left \*/ | |

### BOTTOM

|  |  |  |
| --- | --- | --- |
| Inline Elements: NOT Applied | .first { margin-bottom: 20px; } |  |
| Inline-Block Elements | .first { margin-bottom: 15px; } |  |
| Block Elements | .first { margin-bottom: 10px; }  /\* does NOT move element \*/ |  |
| Shorthand Property | margin: 0 0 10px 0; /\* top, right, bottom, left \*/ | |

### LEFT

|  |  |  |
| --- | --- | --- |
| Inline Elements | .first { margin-left: 20px; } |  |
|  | .second { margin-left: 60px; } |  |
| Inline-Block Elements | .first { margin-left: 10px; } |  |
| Block Elements | .first { margin-left: 10px; }  /\* moves element \*/ |  |
| Shorthand Property | margin: 0 0 0 10px; /\* top, right, bottom, left \*/ | |

### EQUAL LEFT & RIGHT

|  |  |  |
| --- | --- | --- |
| Inline Elements: NOT Applied | .first { margin: auto; } |  |
| Inline-Block Elements: NOT Applied | .first { margin: auto; } |  |
| Block Elements: Centered Horizontally | .first { margin: auto; }  /\* all 4 sides \*/ |  |
| .first { margin: 0 auto; }  /\* top & bottom, left & right \*/ |

### NEGATIVE

|  |  |  |
| --- | --- | --- |
| Inline Elements | .first { margin-left: -10px; }  /\* moves element to the left \*/ |  |
|  | .first { margin-right: -20px; }  /\* moves right neighbour to the left \*/ |  |
| Inline-Block Elements | .first { margin-left: -10px; }  /\* moves element to the left \*/ |  |
|  | .first { margin-right: -20px; }  /\* moves right neighbour to the left \*/ |  |
|  | .first { margin-top: -10px; }  /\* only works when there is a bottom neighbour \*/ |  |
|  | .first { margin-top: -10px; }  /\* moves element to the top \*/ |  |
|  | .first { margin-bottom: -30px; }  /\* only works when there is a bottom neighbour \*/ |  |
|  | .first { margin-bottom: -30px; }  /\* moves bottom neighbour to the top \*/ |  |
| Block Elements | .first { margin-left: -10px; }  /\* moves element to the left \*/ |  |
|  | .first { margin-right: -20px | -200px; } |  |
|  | .first { margin-top: -10px; } |  |
|  | .parent { display: inline-block; }  .first { margin-top: -10px; } |  |
|  | .first { margin-bottom: -30px; } |  |
| Horizontal Negative Margins with Width: Auto | .parent { padding: 5px; }  .first {  width: auto;  margin-left: -10px;  margin-right: -10px;  } |  |

### INLINE ELEMENTS

|  |  |  |
| --- | --- | --- |
| No Margin | .first {  margin-top: 0px; /\* default \*/  margin-right: 0px; /\* default \*/  margin-bottom: 0px; /\* default \*/  margin-left: 0px; /\* default \*/  } |  |
| .first { margin: 0; } /\* default \*/ |
| Top and Bottom: NOT Applied | .first {  margin-top: 20px | 200px;  margin-bottom: 20px | 200px;  } |  |
| .first { margin: 20px 0; }  /\* top & bottom, left & right \*/ |
| Left: Clears Space to the Left | .first { margin-left: 20px; } |  |
| .first { margin: 0 0 0 20px; }  /\* top, right, bottom, left \*/ |
| Right: Does NOT Move Element | .first { margin-right: 20px; } |  |
| .first { margin: 0 20px 0 0; }  /\* top, right, bottom, left \*/ |

### INLINE-BLOCK ELEMENTS

|  |  |  |
| --- | --- | --- |
| No Margin | .first {  margin-top: 0px; /\* default \*/  margin-right: 0px; /\* default \*/  margin-bottom: 0px; /\* default \*/  margin-left: 0px; /\* default \*/  } |  |
| .first { margin: 0; } /\* default \*/ |
| Top: Moves Element to the Bottom | .first { margin-top: 15px; } |  |
| .first { margin: 15px 0 0 0; }  /\* top, right, bottom, left \*/ |
| Bottom: Does NOT Move Element | .first { margin-bottom: 15px; } |  |
| .first { margin: 0 15px 0 0; }  /\* top, right, bottom, left \*/ |
|  | .first { margin-bottom: 50px; } |  |
| .first { margin: 0 50px 0 0; }  /\* top, right, bottom, left \*/ |
| Left: Moves Element to the Right | .first { margin-left: 10px; } |  |
| .first { margin: 0 0 0 10px; }  /\* top, right, bottom, left \*/ |
| Right | .first { margin-right: 15px; } |  |
| .first { margin: 0 15px 0 0; }  /\* top, right, bottom, left \*/ |
| Auto: NOT Applied | .first { margin: auto; } |  |

|  |  |
| --- | --- |
| Paddings (the Space between the Content and the Border) | padding-top: 10px;  padding-right: 20px;  padding-bottom: 30px;  padding-left: 40px;  padding: 10px 20px 30px 40px; /\* shorthand property \*/  padding: 10px 20px; /\* top & bottom: 10px, left & right: 20px \*/ |
| Outline (outside Border, NOT Calculated in Dimensions) | outline-width: 4px | thin | medium | thick; /\* the width of the element's outline \*/  outline-style: dotted| dashed | solid | ...; /\* the style of the element's outline \*/  outline-color: 4px; /\* the color of the element's outline \*/  outline: 4px dotted red; /\* width, style, color \*/  outline-offset: 15px; /\* the space between the outline and the border \*/ |
| Set the Width/Height Calculation | box-sizing: content-box; /\* default value, width and height only include content \*/  box-sizing: border-box; /\* size includes content, border, paddings and margins \*/ |
| Set the Sizing for the Whole Document | html { box-sizing: border-box; }  \*, \*::before, \*::after { box-sizing: inherit; } |

## OVERFLOW

|  |  |  |
| --- | --- | --- |
| Overflow (Only for Block Elements with Height) | overflow: visible; /\* default \*/ |  |
|  | overflow: hidden; |  |
|  | overflow: scroll; /\* adds a scrollbar \*/ |  |
|  | overflow: auto; /\* adds a scrollbar wher needed \*/ |  |
|  | overflow-y: scroll; /\* adds a vertical scrollbar \*/ |

## POSITION & FLOAT

|  |  |  |  |
| --- | --- | --- | --- |
| Make the Rest of a Container Wrap around a Given Child | float: right; /\* floats the element to the right of its container \*/  float: left; /\* floats the element to the left of its container \*/  float: none; /\* default; restricts the element to float \*/ | | |
| Specify on Which Side of an Element Floating Elements are NOT Allowed to Float | clear: none; /\* other elements are allowed to float to the left and to the right \*/  clear: left; /\* other elements are NOT allowed to the left \*/  clear: right; /\* other elements are NOT allowed to the right \*/  clear: both; /\* other elements are NOT allowed to float around \*/ | | |
| The Clearfix Hack | .parent { overflow: auto; } /\* when a floated element is taller than its parent \*/  .parent::after { content: ''; clear: both; display: table; } /\* same as above \*/ | | |
| Specify the Type of Positioning Method Used for an Element | position: static; /\* default; element is in its normal position in the layout flow \*/  position: relative; /\* looks like static (in natural flow) but is relative to parent \*/  position: absolute; /\* relative to closest positioned ancestor/root (NOT in flow) \*/  position: fixed; /\* positioned according to the viewport \*/  position: sticky; /\* relative until a given position is met, then fixed \*/ | | |
| Positioning Properties (Don't Work with Static Position!) | top: 20px; /\* relative: 20 px down from original position;  absolute: 20px down from the parent's (closest positioned element's) top \*/  left: -100px; /\* relative: 100 px left from original position;  absolute: 100px left from the parent's left border \*/  top: 50%; left: 50%; transform: translate(-50%, -50%); /\* center (absolute) \*/  z-index: 1; /\* behind the elements with z-index 2, 3, etc.; position: absolute! \*/ | | |
| Tooltip | <div>  Hover over me  <span>Tooltip text</span>  </div> | div { position: relative; }  span {  position: absolute;  bottom: 130%;  left: 0;  } |  |
| Tooltip Arrow | span::after {  position: absolute;  top: 100%;  left: calc(50% - 5px);  border: 5px solid;  border-color: gray transparent transparent transparent;  } | |  |

## FLEFBOX

### ABOUT FLEXBOX

|  |  |
| --- | --- |
| About Flexbox | It is a method for laying out rows and columns that offers space distribution between items in an interface and powerful alignment capabilities. Flexbox expands items to fill available free space or shrinks them to prevent overflow. |
| Advantages of Flexbox | With flexbox, we can vertically center an element inside its parent, make all the children of a container take up an equal amount of the available width/height, make all the columns in a multiple-column layout adopt the same height even if they contain a different amout of content, etc. |

### PROPERTIES FOR THE PARENT

|  |  |
| --- | --- |
| Create a Flexbox Container | display: flex; /\* the child elements are turned into flexbox items \*/  display: inline-flex; /\* container is displayed inline, its children ‒ flexbox items \*/ |
| Specify Flex Direction | flex-direction: row; /\* default; flexbox items are ordered in the text direction \*/  flex-direction: row-reverse; /\* the opposite way of the text direction \*/  flex-direction: row; /\* the flexbox items are ordered like the text direction \*/  flex-direction: column; /\* the same way as the text direction (cross axis) \*/  flex-direction: column-reverse; /\* the text direction (cross axis) reversed \*/ |
| Specify the Number of Lines the Fexbox Items Will Appear on | flex-wrap: nowrap; /\* default, the flexbox items will remain on a single line \*/  flex-wrap: wrap; /\* will be distributed among multiple lines if needed \*/  flex-wrap: wrap-reverse; /\* multiple lines if needed, next line before previous \*/ |
| Specify Flex Direction and Number of Lines | flex-flow: row wrap; /\* default; shorthand for flex-direction and flex-wrap \*/ |
| Horizontal Alignment of Items within Flexbox Container | justify-content: flex-start; /\* pushed towards the start of the container \*/  justify-content: flex-end; /\* pushed towards the end of the container \*/  justify-content: center; /\* centered along the container's main axis \*/  justify-content: space-between; /\* remaining space distributed between items \*/  justify-content: space-around; /\* remaining space distributed around items \*/ |
| Vertical Alignment of Items within Flexbox Container | align-items: stretch; /\* default; will stretch across the whole cross axis \*/  align-items: flex-start; /\* aligned at the start of the cross axis \*/  align-items: flex-end; /\* aligned at the end of the cross axis \*/  align-items: center; /\* aligned at the center of the cross axis \*/  align-items: baseline; /\* according to the baseline of the content \*/ |
| Vertical Alignment of Lines (when Multiple Lines) | align-content: stretch; /\* each line will stretch to fill the remaining space \*/  align-content: flex-start; /\* only needed space from the start of container \*/  align-content: flex-end; /\* only needed space to the end of container (down) \*/  align-content: center; /\* only needed space at the center of container \*/  align-content: space-between; /\* remaining space appears between the lines \*/  align-content: space-around; /\* remaining space distributed around the lines \*/ |

### PROPERTIES FOR THE CHILDREN

|  |  |
| --- | --- |
| Specify the Order of a Flexbox Item | order: 0; /\* will appear after item with order: -7 and before item with order: 9 \*/ |
| Specify Item Growth When Space Available | flex-grow: 0; /\* item will NOT grow, it will only fill the space it needs \*/  flex-grow: 1; /\* will fill up remaining space if the only item with flex-grow \*/ |
| Specify How Much an Item Should Shrink if not Enough Space | flex-shrink: 0; /\* will NOT shink and will NOT wrap its content \*/  flex-shrink: 1; /\* default; will shink by a factor of 1 and will wrap its content \*/ |
| Speify the Initial Size of a Flexbox Item (Main Axis) | flex-basis: auto; /\* automatically sized based on its content or width/height \*/  flex-basis: 80px; /\* will wrap its content to avoid overflow \*/  flex-basis: 100%; /\* = width: 100% when flex-direction: row \*/ |
| Specify Initial Size and Size Changes | flex: 0 1 auto; /\* default; flex-grow: 0, flex-shrink: 1, flex-basis: auto \*/ |
| Align a Single Item | align-self: auto; /\* will use the value of align-items \*/  align-self: flex-start; /\* aligns the item at the start of the container's cross axis \*/  align-self: flex-end; /\* aligns the item at the end of the container's cross axis \*/  align-self: center; /\* aligns the item at the center of the container's cross axis \*/  align-self: stretch; /\* will stretch across the container's whole cross axis \*/ |

## CSS LAYOUT EXAMPLES

### HORIZONTAL ALIGNMENT

|  |  |  |
| --- | --- | --- |
| Center One or More Inline or Inline-Block Element Horizontally inside Parent | .parent {  text-align: center;  } |  |
| Center One Block Element Horizontally inside Parent | margin: 0 auto;  /\* auto only works for block elements \*/ |  |
| Center Several Flex Items Horizontally inside Parent | .parent {  display: flex;  justify-content: center;  } |  |
| Stretch an Inline-Block or Block Element to Take the Whole Width of the Parent | width: 100%; |  |
| Stretch a Flex Item to Take the Whole Width of the Parent | width | flex-basis: 100%;  or  flex-grow: 1;  /\* + align-items: flex-start; to prevent stretching \*/ |  |
| Distribute Space between Inline-Block or Flex Items 50/50 | <div>1</div><div>2</div>  <!-- inline-block: no whitespace/new line between the HTML elements! -->  .first, .second { width: 50%; } |  |
| Distribute Space between Flex Items 50/50 | .parent {  display: flex; }  .first, .second {  flex-grow: 1; } |  |
| Distribute Space Evenly between 3 Inline-Block or Flex Items | <div>1</div><div>2</div><div>...  <!-- inline-block: no whitespace/new line between the HTML elements! -->  .first, .second, .third {  width: 33.333%; } |  |
| Distribute Space Evenly between 3 Block or Flex Items | <div>1</div><div>2</div><div>...  <!-- block: no whitespace/new line between the HTML elements! -->  .first, .second, .third {  width: 33.333%; float: left; } |  |
| Distribute Space Evenly between 3 or More Flex Items | .parent {  display: flex; }  .first, .second, .third {  flex-grow: 1; } |  |
| Distribute Space between Inline-Block or Flex Items 70/30 | <div>1</div><div>2</div>  <!-- inline-block: no whitespace/new line between the HTML elements! -->  .first { width: 70%; }  .second { width: 30%; } |  |
| Distribute Space between Flex Items 70/30 when Enough Space | .parent { display: flex; }  .first { flex-grow: 3; }  .second { flex-grow: 1; } |  |
| Distribute Space between Flex Items 70/30 when NOT Enough Space | .parent { display: flex; }  .first { flex-shrink: 0; }  .second { flex-shrink: 3; } |  |
| Position Inline or Inline-Block Elements with All Available Empty Space in between | .parent { position: relative; }  .first { position: absolute; left: 0; }  .first { position: absolute; right: 0; } |  |
| Position Block Elements with All Available Empty Space in between | .parent {  column-count: 2;  column-gap: calc(100% - 160px);  }  .child { width: 80px; } |  |
| Position Flex Items with All Available Empty Space in between | justify-content: space-between;  /\* + align-items: flex-start; to prevent stretching \*/ |  |
| Position Inline or Inline-Block Elements with All Available Empty Space Equally Distributed around Them | .parent { position: relative; }  .first { position: absolute; left: 25%;  transform: translate(-50%, 0) }  .second { position: absolute;  right: 25%;  transform: translate(50%, 0) } |  |
| Position Block Elements with All Available Empty Space Equally Distributed around Them | .parent { column-count: 2; }  .child {  width: 80px;  margin: 0 auto;  } |  |
| Position Flex Items with All Available Empty Space Distributed around Them | justify-content: space-around;  /\* + align-items: flex-start; to prevent stretching \*/ |  |

### VERTICAL ALIGNMENT

|  |  |  |
| --- | --- | --- |
| Position Inline-Block Elements Vertically next to Each Other | .first { vertical-align: bottom; }  .second, .third {  vertical-align: middle; }  .fourth { vertical-align: top; } |  |
| Position Flex Items Vertically next to Each Other | .parent { display: flex; }  .first { align-self: flex-end; }  .second { align-self: stretch; }  .third { align-self: center; }  .fourth { align-self: flex-start; } |  |
| Center Any Element Vertically inside Parent | .parent { position: relative; }  .child { position: absolute; top: 50%;  transform: translate(0%, -50%);  margin-top: 0; } |  |
| Center a Flex Item Vertically inside Parent with a Parent Property | .parent {  display: flex;  align-items: center;  } /\* parent must have height! \*/ |  |
| Center a Flex Item Vertically inside Parent with a Child Property | .parent {  display: flex; }  .child {  align-self: center; } |  |
| Stretch Inline-Block and Block Elements Vertically | .first, .second {  height: 100%;  } |  |
| Stretch Flex Elements Vertically | .parent {  display: flex;  /\* align-items: stretch; (default) \*/  } |  |
| Display Rows of Flex Items at the Top of the Parent | .parent {  align-content: flex-start;  } |  |
| Display Rows of Flex Items at the Bottom of the Parent | .parent {  align-content: flex-end;  } |  |
| Display Rows of Flex Items in the Middle of the Parent | .parent {  align-content: center;  } |  |
| Display All Available Vertical Space between the Rows of Flex Items | .parent {  align-content: space-between;  } |  |
| Distribute Evenly the Available Vertical Space between the Rows of Flex Items | .parent {  align-content: space-around;  } |  |
| Stretch the Rows of Flex Items to Fill the Whole Vertical Space | .parent {  align-content: stretch;  } |  |

### HORIZONTAL AND VERTICAL ALIGNMENT

|  |  |  |
| --- | --- | --- |
| Center Any Element Horizontally and Vertically inside Parent | .parent { position: relative; }  .child {  position: absolute;  top: 50%;  left: 50%;  transform: translate(-50%, -50%);  margin: 0;  } |  |
| Center a Flex Item Horizontally and Vertically inside Parent | .parent {  display: flex;  justify-content: center;  align-items: center;  } /\* parent must have height! \*/ |  |

### DISPLAYING IMAGES

|  |  |  |
| --- | --- | --- |
| Make a Large Image Scalable | <article><img></article>  img { width: 100%; height: 100%; } |  |
|  |  |  |

### DROPDOWN MENUS

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| --- | --- | --- |
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# RESPONSIVE WEB DESIGN

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| --- | --- |
| About Responsive Web Design | Responsive web design is using HTML and CSS to automatically resize, hide, shrink or enlarge a website to make it look good on all devices. |
| Set the Viewport in HTML | <meta *name*="viewport" *content*="width=device-width, initial-scale=1.0">  <!-- gives the browser instructions on how to control the page's dimensions and scaling --> |

## MEDIA QUERIES

|  |  |
| --- | --- |
| About Media Queries | A CSS technique which uses the @media rule to include a block of CSS properties only if a certain condition is true. Good practice is to initially style the page for mobile phones and then add media queries for larger screens (AFTER the original CSS declaration). |
| Use Media Queries | @media only screen and (min-width: 600px) {  p { color: red;} /\* only applies when screen width > 600 px \*/  }  @media print { p { color: red;} } /\* only when printed \*/ |
| Media Types | all | print | screen | speech |
| Media Feature Rules | (min/max-)width | height | orientation | (min/max-)aspect-ratio |
| Logical Operators | and /\* combines multiple media features \*/  not /\* negates a media query \*/  only /\* applies a style only if an entire query matches \*/  , (comma) /\* combines multiple media queries into a single rule \*/ |
| Typical Device Breakpoints | @media screen and (max-width: 600px) { ... } /\* extra small devices \*/  @media screen and (min-width: 600px) { ... } /\* small devices \*/  @media screen and (min-width: 768px) { ... } /\* medium devices \*/  @media screen and (min-width: 992px) { ... } /\* large devices \*/  @media screen and (min-width: 1200px) { ... } /\* extra large devices \*/ |
| Media-Dependent @import Rules | @import url("finerprint.css") print;  @import url("landscape.css") screen and (orientation: landscape); |

# CSS ARCHITECTURE

## ITCSS LAYERS

|  |  |
| --- | --- |
| About ITCSS | Inverted Triangle CSS is a methodology that helps developers organize their project CSS files in layers (subfolders) in order to better deal with CSS specifics like global namespace, cascade and selectors specifity. |
| Layer Architecture in the Project Folder | Create a folder "styles" in the project folder. It should contain the following subfolders: 01-settings, 02-tools, 03-generic, 04-elements, 05-objects, 06-components, 07-utilities. |
| Import Stylesheets into HTML | When using pure CSS, import all CSS files (in the given order) into the HTML page, each in its own <link> tag, or import all CSS files into a styles/style.css file using @import url('./...') and then import only this file in the HTML. |
| Layers Settings & Tools | Used with preprocessors, no actual CSS code generated. |
| Generic Layer | 03-generic/generic-normalize.css: /\* tag selectors \*/  github.com/sindresorhus/modern-normalize/modern-normalize.css  /\* resets browser settings for HTML elements (styles, box-sizing definition, etc.) \*/  03-generic/generic-fonts.css:  @import url('https://fonts.googleapis.com/css2?family=Lato&display=swap');  03-generic/generic-scrollbar.css:  ::-webkit-scrollbar { width: 8px; }  ::-webkit-scrollbar-track { box-shadow: inset 0 0 5px red; border-radius: 8px; }  ::-webkit-scrollbar-thumb { background-color: red; border-radius: 8px; }  03-generic/generic-selection.css:  ::selection { color: white; background-color: tomato; } |
| Elements Layer | 04-elements/elements-body.css: /\* tag selectors \*/  body { min-height: 100vh; display: flex; flex-flow: column wrap; }  04-elements/elements-heading.css:  h1, h2, h3, h4, h5 { font-family: Georgia, serif; }  h1 { font-size: 36px; line-height: 43px; }  04-elements/elements-links.css:  a { color: black; text-decoration: none; }  a:hover { text-decoration: underline; } |
| Objects Layer | 05-objects/objects-containers.css: /\* class selectors for abstract objects \*/  .o-centered-container { display: flex; flex-flow: column wrap; }  .o-row-container { display: flex; flex-flow: row wrap; } |
| Components Layer | 06-components/components-site-header.css: /\* class (id) selectors \*/  .c-site-header { border: 2px solid gray; border-radius: 8px; padding: 10px; }  06-components/components-card.css:  .c-card { border: 2px solid gray; border-radius: 8px; padding: 10px; }  .c-card p { margin: 0; }  .c-card h1 { margin-top: 0; }  06-components/components-thumbnail.css:  .c-thumbnail { width: 40px; height: 40px; }  .c-thumbnail--circle { border-radius: 50%; }  .c-thumbnail--big { width: 100px; height: 100px; } |
| Utilities Layer | 07-utilities/utilities-hidden.css: /\* class (id) selectors \*/  .u-visually-hidden { /\* hidden, but read by reading software \*/  position: absolute;  padding: 0 **!important**;  border: 0 **!important**;  width: 1px **!important**;  height: 1px **!important**;  overflow: hidden;  } |

## BEM NAMING CONVENTION

|  |  |
| --- | --- |
| About BEM | Block, Element, Modifier is a popular naming convention for classes in HTML and CSS. It helps developers experience less problems from cascading and also be able to transfer blocks (components) from finished projects to new ones.  It can be perfectly combined with the ITCSS architecture, playing a key role in the sixth layer, components. |
| Parent Element | .btn |
| Child Element | .btn\_\_price |
| Modifier | .btn--big |
| Example | <a *class*="btn btn--big btn--orange" *href*="#"></a> |

## OBJECT ORIENTED CSS

|  |  |  |
| --- | --- | --- |
| Purpose and Principles | The purpose of OOCSS is to encourage code reuse and, ultimately, faster and more efficient stylesheets that are easier to add and to maintain. It is based on two main principles: separation of structure from skin and separation of containers and content. | |
| Separation of Structure from Skin | It is the abstraction of repeated visual features ("skins") into class-based modules, so that they become reusable. | |
| CSS | OOCSS |
| #button {  width: 200px;  height: 50px;  border: solid 1px #ccc;  background-color: lightgray;  }  #box {  width: 400px;  overflow: hidden;  border: solid 1px #ccc;  background-color: lightgray;  } | .button {  width: 200px;  height: 50px;  }  .box {  width: 400px;  overflow: hidden;  }  .skin {  border: solid 1px #ccc;  background-color: lightgray;  } |
| Separation of Containers and Content | It is the code writing that ensures the styles are not dependent on any containing element and can be reused anywhere: avoid selectors like *.sidebar h3* or *h1.title*). | |

## CSS MODULES

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## CSS STYLED COMPONENTS

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| --- | --- |
|  |  |