Tailwind CSS Utility-first CSS

START HERE

`npm i tailwindcss @tailwindcss/cli`
Install

`@import "tailwindcss";`
Load it in your CSS

`npx @tailwindcss/cli -i <in> -o <out> --watch`
Build CSS

`flex items-center gap-4`
Layout in markup

`p-4 text-lg font-bold`
Space and type

`md:flex-row`
Responsive variant

`hover:bg-sky-700`
State variant

`w-[17px]`
One-off value

Your source files class names found → `scan` → **input.css** @import "tailwindcss" → `build` → **Tailwind CLI / Vite** only used classes → `emit` → **output.css** linked in HTML

CONCEPTS

Utilities are single-purpose classes you combine in markup. Variants are prefixes: md:, hover:, dark:. Unprefixed means every size (mobile first).

Write class names in full. Tailwind scans for literal strings, so "bg-" + color is never found; use a lookup of complete names instead.

v4 setup is CSS-first: configuration lives in your stylesheet (@theme, @source, @plugin), and there is no tailwind.config.js by default.

SETUP AND BUILD

`npm install tailwindcss @tailwindcss/cli`
Install with the standalone CLI

`npm install tailwindcss @tailwindcss/vite`
Install the Vite plugin

`@import "tailwindcss";`
Pull in Tailwind (preflight, theme, utilities)

`npx @tailwindcss/cli -i <in> -o <out>`
Build the CSS once

`npx @tailwindcss/cli -i <in> -o <out> --watch`
Rebuild on change

`npx @tailwindcss/cli -i <in> -o <out> --minify`
Minified production build

`@source "<path>";`
Scan extra files for classes

LAYOUT

`flex`
Flex container

`flex-col`
Stack children vertically

`items-center`
Align items on the cross axis

`justify-between`
Spread items along the main axis

`gap-4`
Gap between children (1 unit = 0.25rem)

`grid grid-cols-3`
Three-column grid

`col-span-2`
Span two grid columns

`block / inline-block / hidden`
Display values

LAYOUT (cont.)

`relative / absolute / fixed / sticky`
Positioning

`inset-0`
Pin to all four edges

`z-10`
Stacking order

`overflow-hidden`
Clip overflowing content

`container mx-auto`
Centred, width-capped container

`flex-wrap`
Let items wrap

`grow / shrink-0`
Flex grow and shrink

`place-items-center`
Centre grid items both ways

SPACING AND SIZING

`p-4`
Padding on all sides

`px-4 py-2`
Horizontal and vertical padding

`pt-2 / pr-2 / pb-2 / pl-2`
Padding per side

`m-4`
Margin on all sides

`mx-auto`
Centre a block horizontally

`w-full`
Width 100%

`h-screen`
Height 100vh

`w-64`
Fixed width (16rem)

`size-10`
Width and height together

`max-w-md`
Cap the width

`min-h-screen`
At least full viewport height

`w-1/2`
Fractional width

TYPOGRAPHY

`text-lg`
Font size (sm, base, lg, xl, 2xl...)

`font-bold`
Font weight

`text-center`
Align text

`text-gray-700`
Text colour

`leading-tight`
Line height

TYPOGRAPHY (cont.)

`font-mono`
Monospace font family

`truncate`
One line with ellipsis

`line-clamp-3`
Clamp to three lines

`uppercase`
Transform to upper case

`underline`
Underline text

COLOUR AND EFFECTS

`bg-white`
Background colour

`bg-blue-500`
Palette colour (50 to 950)

`bg-black/50`
Colour with 50% opacity

`opacity-50`
Element opacity

`border`
1px border

`border-2 border-gray-300`
Border width and colour

`rounded-lg`
Rounded corners

`rounded-full`
Pill or circle

`shadow-md`
Box shadow

`ring-2 ring-blue-500`
Outline ring (focus styles)

`bg-linear-to-r from-<c> to-<c>`
Gradient left to right

`transition`
Animate property changes

`cursor-pointer`
Pointer cursor

VARIANTS

`hover:bg-sky-700`
On hover

`focus:ring-2`
On focus

`active: / disabled:`
Pressed / disabled state

`focus-visible:outline-2`
Keyboard focus only

`sm: md: lg: xl: 2xl:`
Min-width breakpoints (40/48/64/80/96rem)

`max-md:hidden`
Below the md breakpoint

`dark:bg-gray-800`
Dark mode

VARIANTS (cont.)

`group / group-hover:underline`
Style child on parent hover

`first: last: odd: even:`
Position variants

`disabled:hover:bg-sky-500`
Stack variants, left to right

CUSTOM VALUES AND THEME

`w-[17px]`
Arbitrary value

`bg-[#316ff6]`
Arbitrary colour

`bg-(--my-var)`
Use a CSS variable

`bg-red-500!`
Important modifier (trailing !)

`@theme { --color-brand: #f00; }`
Add a design token (bg-brand)

`@theme { --breakpoint-sm: 30rem; }`
Override a default value

`@apply <utilities>;`
Inline utilities into your own CSS

`@custom-variant dark (&:where(.dark, .dark *));`
Class-based dark mode

RECIPES

Minimal CLI project

```
npm i tailwindcss @tailwindcss/cli
echo '@import "tailwindcss";' > src/input.css
npx @tailwindcss/cli -i src/input.css -o dist/out.css --watch
```

Card with hover and dark mode

```
<div class="rounded-xl bg-white p-6 shadow-md
  hover:shadow-lg dark:bg-gray-800">
  <h2 class="text-lg font-bold">Title</h2>
</div>
```

Responsive grid

```
<ul class="grid grid-cols-1 gap-4
  sm:grid-cols-2 lg:grid-cols-4">
  <li>...</li>
</ul>
```

Brand token and class-based dark mode

```
@import "tailwindcss";
@custom-variant dark (&:where(.dark, .dark *));
@theme {
  --color-brand: oklch(0.65 0.250);
}
/* use: bg-brand text-brand */
```