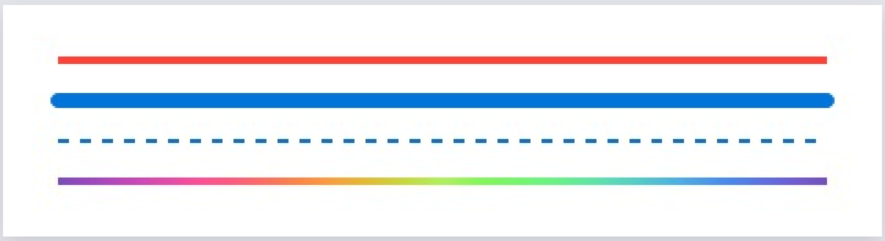
stroke

Defines how to draw a line.

A stroke has a *paint* (a solid color or gradient), a *thickness*, a line *cap*, a line *join*, a *miter limit*, and a *dash* pattern. All of these values are optional and have sensible defaults.

Example

```
#set line(length: 100%)
#stack(
  spacing: 1em,
  line(stroke: 2pt + red),
  line(stroke: (paint: blue, thickness: 4pt, cap: "round")),
  line(stroke: (paint: blue, thickness: 1pt, dash: "dashed")),
  line(stroke: 2pt + gradient.linear(..color.map.rainbow)),
)
```



Simple strokes

You can create a simple solid stroke from a color, a thickness, or a combination of the two. Specifically, wherever a stroke is expected you can pass any of the following values:

- A length specifying the stroke's thickness. The color is inherited, defaulting to black.
- A color to use for the stroke. The thickness is inherited, defaulting to `1pt`.
- A stroke combined from color and thickness using the `+` operator as in `2pt + red`.

For full control, you can also provide a dictionary or a `stroke` object to any function that expects a stroke. The dictionary's keys may include any of the parameters for the constructor function, shown below.

Fields

On a stroke object, you can access any of the fields listed in the constructor function. For example, `(2pt + blue).thickness` is `2pt`. Meanwhile, `stroke(red).cap` is `auto` because it's unspecified. Fields set to `auto` are inherited.

Constructor

Converts a value to a stroke or constructs a stroke with the given parameters.

Note that in most cases you do not need to convert values to strokes in order to use them, as they will be converted automatically. However, this constructor can be useful to ensure a value has all the fields of a stroke.

```
stroke(
  auto color gradient pattern,
  auto length,
  auto str,
  auto str,
  none auto str array dictionary,
  auto float,
) -> stroke
```

```
#let my-func(x) = {
    x = stroke(x) // Convert to a stroke
    [Stroke has thickness #x.thickness.]
}
#my-func(3pt) \
#my-func(red) \
#my-func(stroke(cap: "round", thickness: 1pt))
```

```
Stroke has thickness 3pt.
Stroke has thickness auto.
Stroke has thickness 1pt.
```

paint

`auto` or `color` or `gradient` or `pattern` *Required* *Positional*

The color or gradient to use for the stroke.

If set to `auto`, the value is inherited, defaulting to `black`.

thickness

`auto` or `length` *Required* *Positional*

The stroke's thickness.

If set to `auto`, the value is inherited, defaulting to `1pt`.

`cap` `auto` or `str` *Required* *Positional*

How the ends of the stroke are rendered.

If set to `auto`, the value is inherited, defaulting to `"butt"`.

Variant	Details
`"butt"`	Square stroke cap with the edge at the stroke's end point.
`"round"`	Circular stroke cap centered at the stroke's end point.
`"square"`	Square stroke cap centered at the stroke's end point.

`join` `auto` or `str` *Required* *Positional*

How sharp turns are rendered.

If set to `auto`, the value is inherited, defaulting to `"miter"`.

Variant	Details
`"miter"`	Segments are joined with sharp edges. Sharp bends exceeding the miter limit are bevelled instead.
`"round"`	Segments are joined with circular corners.
`"bevel"`	Segments are joined with a bevel (a straight edge connecting the butts of the joined segments).

`dash` `none` or `auto` or `str` or `array` or `dictionary` *Required* *Positional*

The dash pattern to use. This can be:

- One of the predefined patterns:
  - `"solid"` or `none`
  - `"dotted"`
  - `"densely-dotted"`
  - `"loosely-dotted"`
  - `"dashed"`
  - `"densely-dashed"`
  - `"loosely-dashed"`
  - `"dash-dotted"`
  - `"densely-dash-dotted"`
  - `"loosely-dash-dotted"`
- An array with alternating lengths for dashes and gaps. You can also use the string `"dot"` for a length equal to the line thickness.
- A dictionary with the keys `array` (same as the array above), and `phase` (of type length), which defines where in the pattern to start drawing.

If set to `auto`, the value is inherited, defaulting to `none`.

> View options

> View example

`miter-limit` `auto` or `float` *Required* *Positional*

Number at which protruding sharp bends are rendered with a bevel instead or a miter join. The higher the number, the sharper an angle can be before it is bevelled. Only applicable if `join` is `"miter"`.

Specifically, the miter limit is the maximum ratio between the corner's protrusion length and the stroke's thickness.

If set to `auto`, the value is inherited, defaulting to `4.0`.

> View example