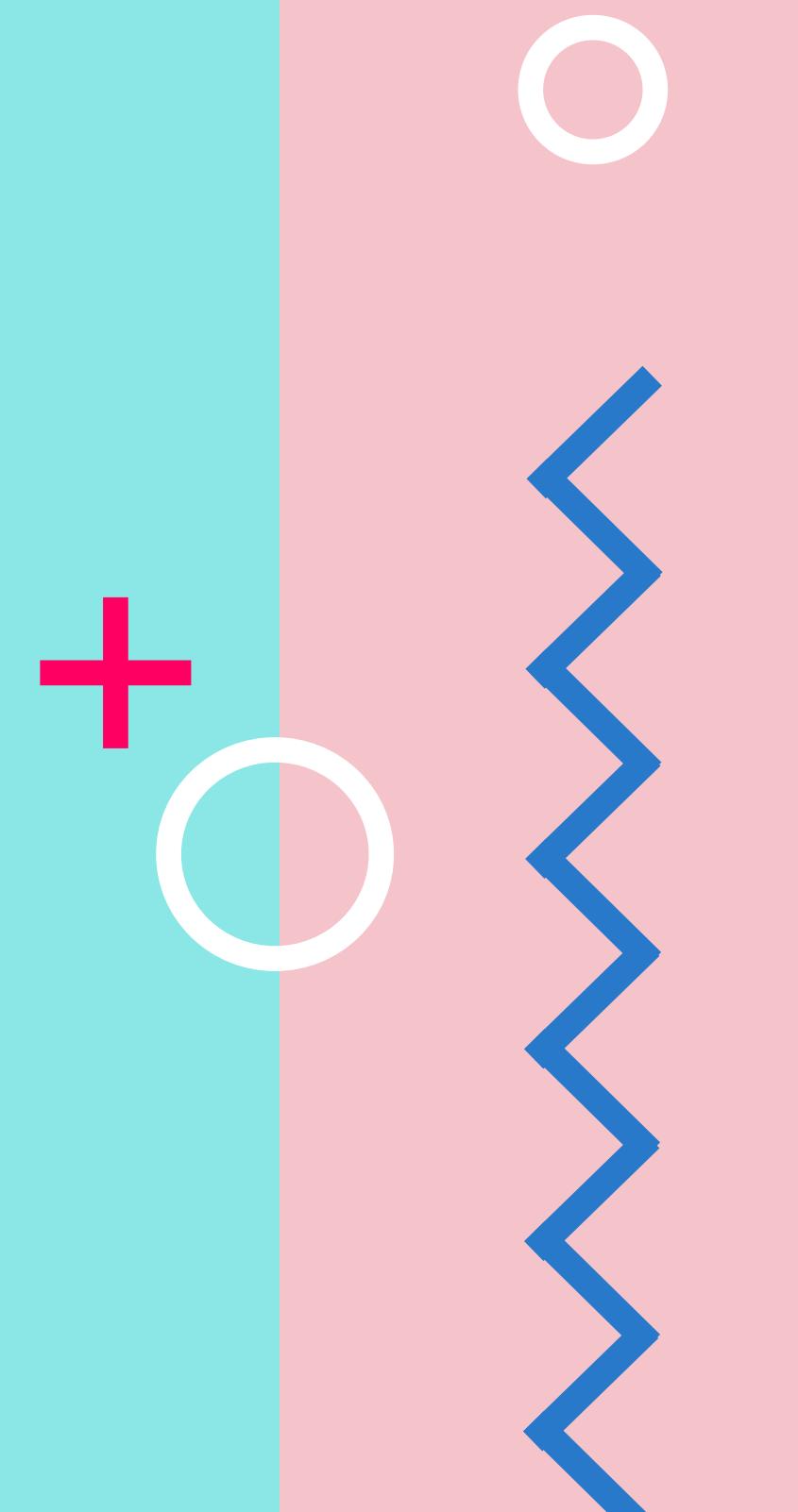
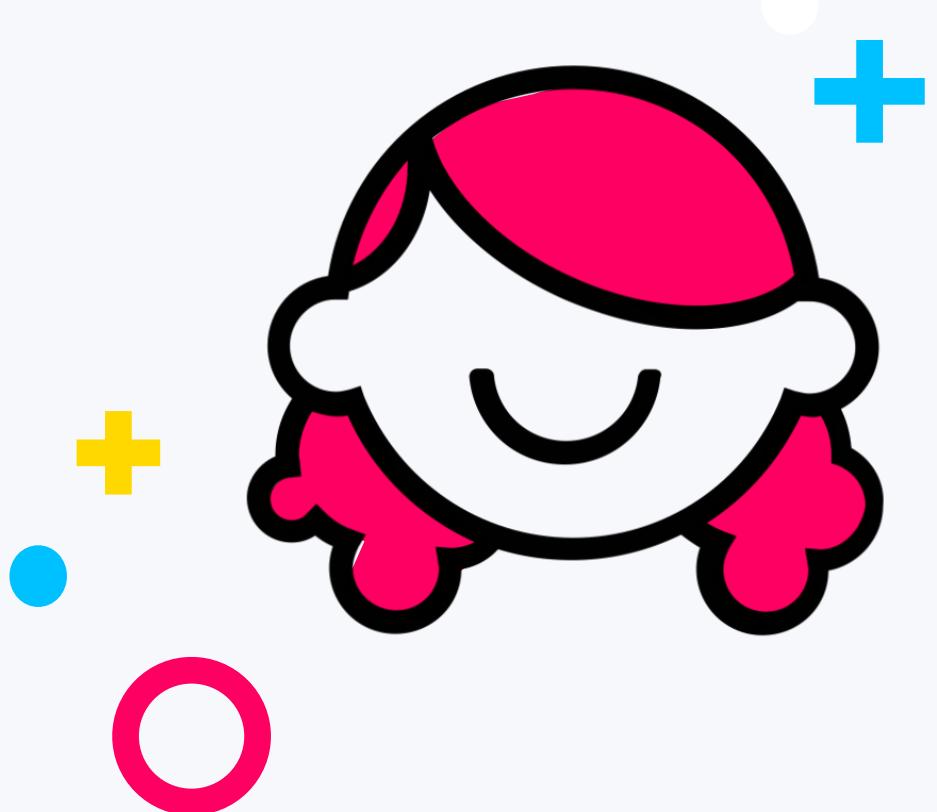


FONTASTIC WEB PERFORMANCE





@NOTWALDORF ✨ ✨





68% OF WEBSITES
USE WEB FONTS

WHAT IS BEAUTIFUL WEB TYPOGRAPHY

Typography doesn't just exist on the web. If you want beautiful web typography, you need to get beautiful typography first. As with most things in life, having a little history doesn't hurt.

*the
the | isms go
ist dies
art remains.*

VLADIMIR NABOKOV

BOOKS & FICTION

[PAGE-TURNER](#) [FICTION](#) [FICTION PODCAST](#) [POETRY](#) [POETRY PODCAST](#)



BOOKS

JONI MITCHELL'S OPENHEARTED HEROISM

She made the best music of her generation by falling in love, over and over, while defending her sense of self.

By Dan Chiasson



1. ▲ **Nobel Prize in Physics 2017 Winners: Rainer Weiss, Barry Barish and Kip Thorne** (nobelprize.org)

87 points by [runesoerensen](#) 56 minutes ago | [hide](#) | [18 comments](#)

2. ▲ **Apache Guacamole** (apache.org)

542 points by [mutin-sa](#) 8 hours ago | [hide](#) | [69 comments](#)

3. ▲ **The hippocampus as a 'predictive map'** (deepmind.com)

99 points by [runesoerensen](#) 7 hours ago | [hide](#) | [11 comments](#)

4. ▲ **What's been wrought using the Piece Table? (2014)** (archive.org)

305 points by [punnerud](#) 13 hours ago | [hide](#) | [73 comments](#)

5. ▲ **A Lua 5.3 VM and compiler written in Go** (github.com)

146 points by [relyio](#) 11 hours ago | [hide](#) | [26 comments](#)

6. ▲ **Statically typed functional programming language implementation with Go and LLVM** (github.com)

58 points by [kristianp](#) 8 hours ago | [hide](#) | [6 comments](#)

7. ▲ **Can ice structures solve a Himalayan water crisis?** (bbc.com)

39 points by [yumraj](#) 5 hours ago | [hide](#) | [6 comments](#)

8. ▲ **Nobel Prize in medicine to Hall, Rosbash, Young for work on circadian rhythms** (qz.com)

24 points by [tlb](#) 6 hours ago | [hide](#) | [discuss](#)

9. ▲ **Intel Gears Up for FPGA Push** (nextplatform.com)

89 points by [Katydid](#) 11 hours ago | [hide](#) | [50 comments](#)

10. ▲ **Brain vs. Deep Learning (2015)** (timdettmers.com)

130 points by [akkishore](#) 15 hours ago | [hide](#) | [30 comments](#)

11. ▲ **Ask HN: Who is hiring? (October 2017)**

```
<link href="https://fonts.googleapis.com/css?family=Roboto" rel="stylesheet">
```

```
<link href="https://fonts.googleapis.com/css?family=Roboto" rel="stylesheet">
```

```
@font-face {  
    font-family: 'Roboto';  
    font-style: normal;  
    font-weight: 400;  
    src: local('Roboto'), local('Roboto-Regular'),  
         url(font.woff2) format('woff2');  
    unicode-range: U+0460-052F, U+20B4, U+2DE0-2DFF, U+A640-A69F;  
}
```

```
<link href="https://fonts.googleapis.com/css?family=Roboto" rel="stylesheet">
```

```
@font-face {  
    font-family: 'Roboto';  
    font-style: normal;  
    font-weight: 400;  
    src: local('Roboto'), local('Roboto-Regular'),  
         url(font.woff2) format('woff2');  
    unicode-range: U+0460-052F, U+20B4, U+2DE0-2DFF, U+A640-A69F;  
}
```

```
div {  
    font-family: Roboto, sans-serif;  
}
```

“

THE MITT ROMNEY WEB FONT PROBLEM

//ZACH LEATHERMAN



●ooooo T-Mobile ⚡ 12:06 PM

🔒 100% 🔋

slate.com

Mitt Romney Is Officially Running for President

By Betsy Woodruff

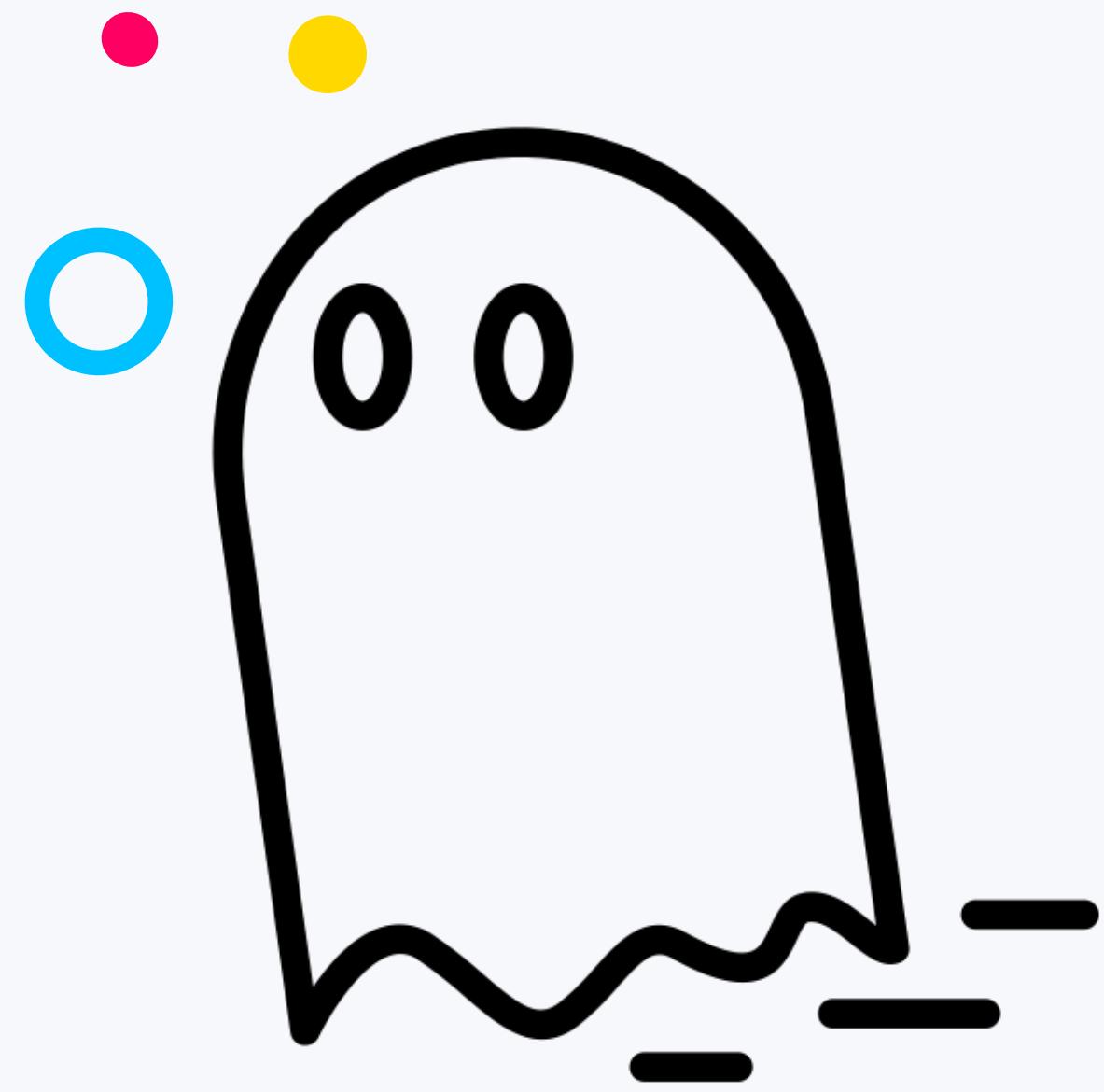
●ooooo T-Mobile ⚡ 12:06 PM

🔒 ↗ 100% 🔋

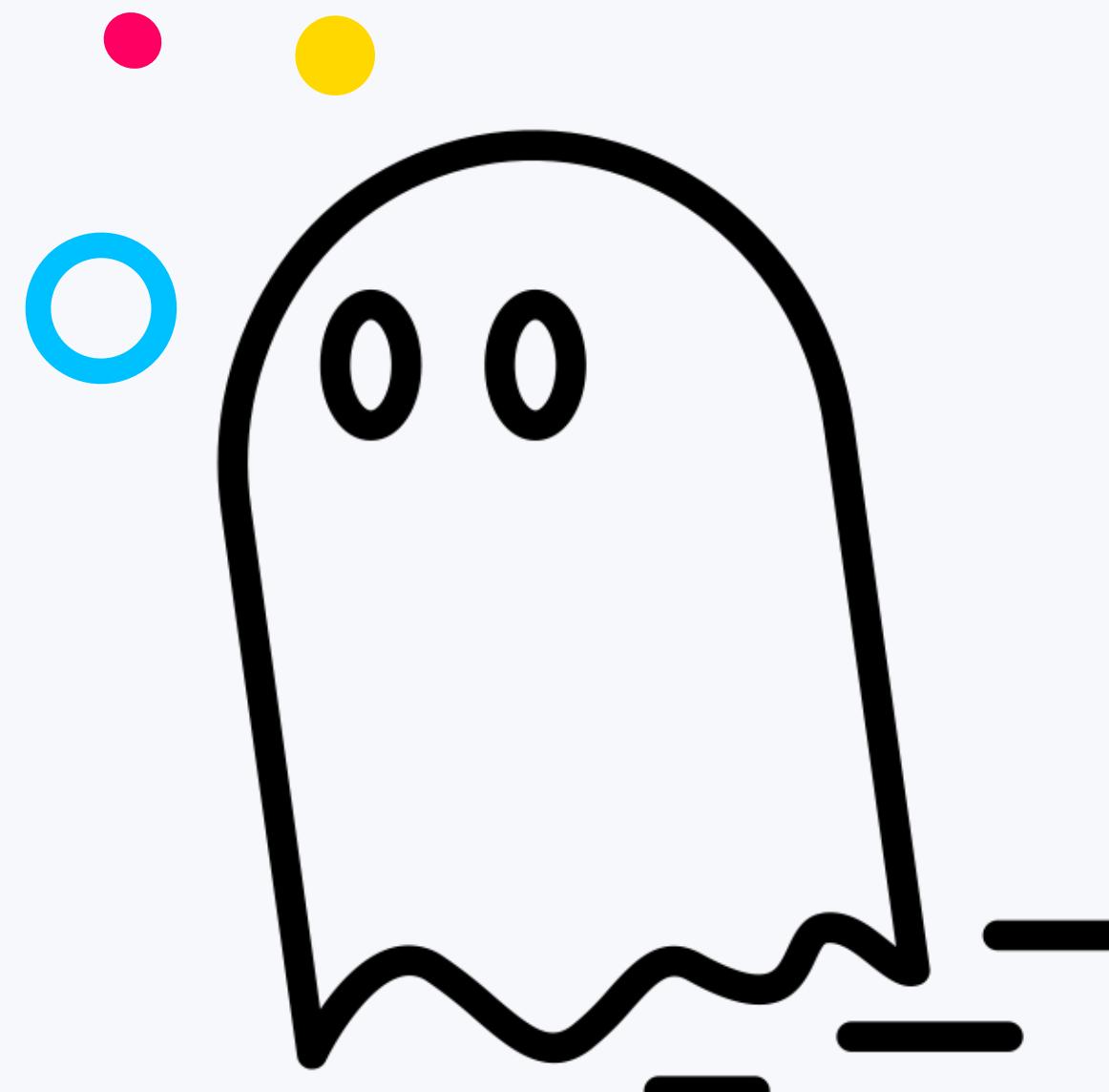
slate.com

Mitt Romney Is Officially Not Running for President

By Betsy Woodruff



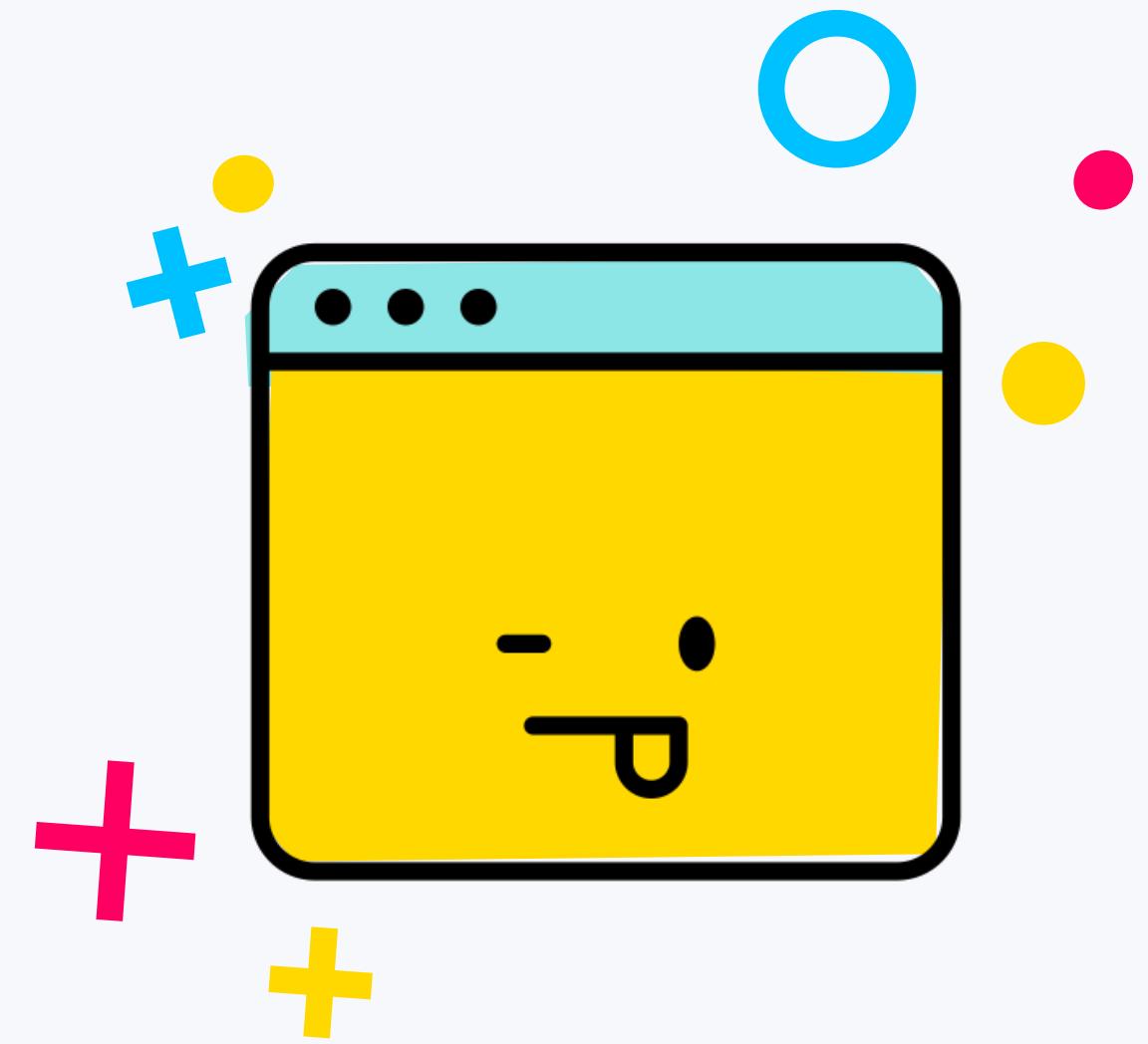
FOIT



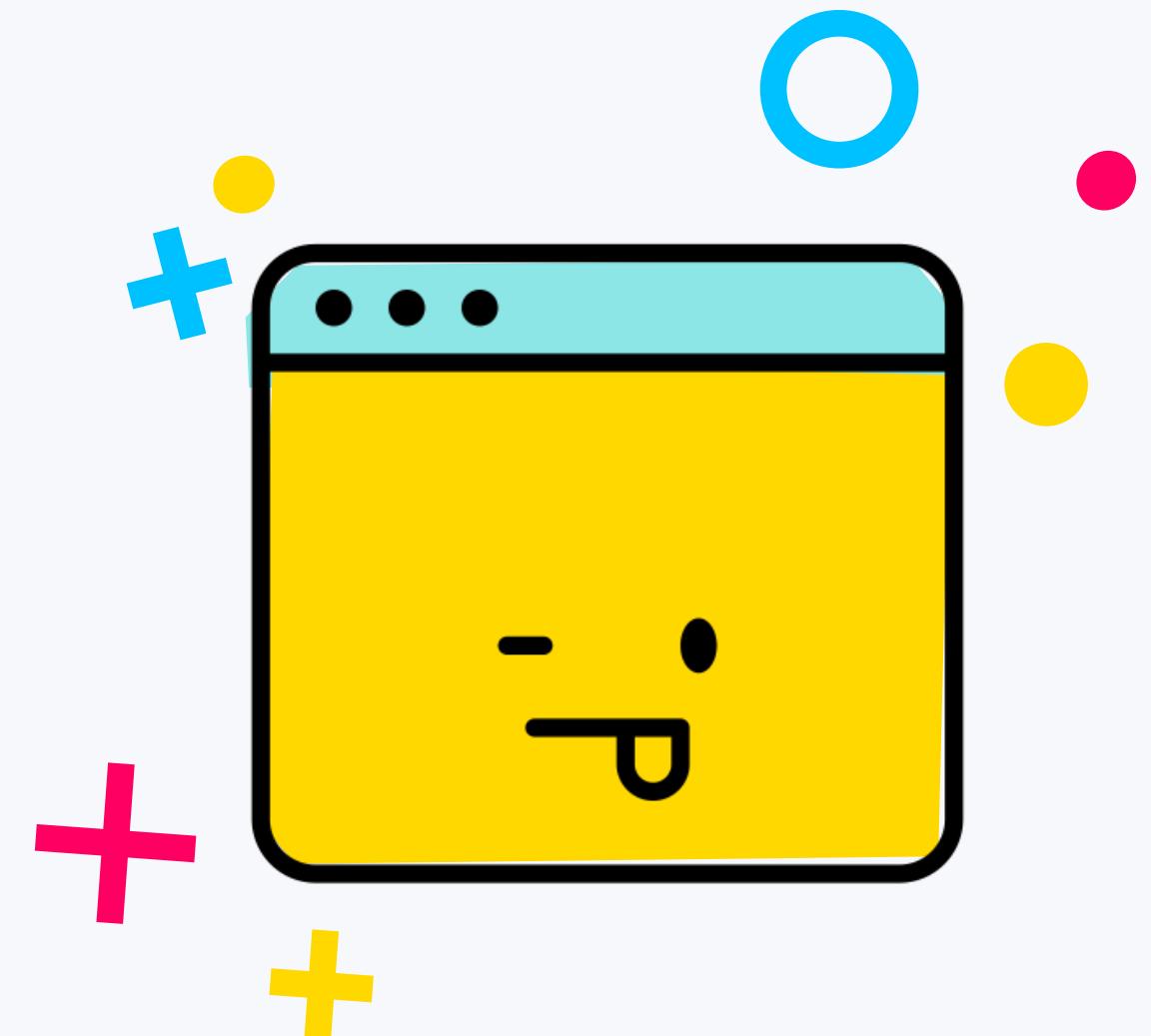
FOIT
FOUT



THE BROWSER HAS A TON OF OPINIONS



THE BROWSER HAS
A TON OF OPINIONS
+
ESPECIALLY ABOUT FONTS





index.html

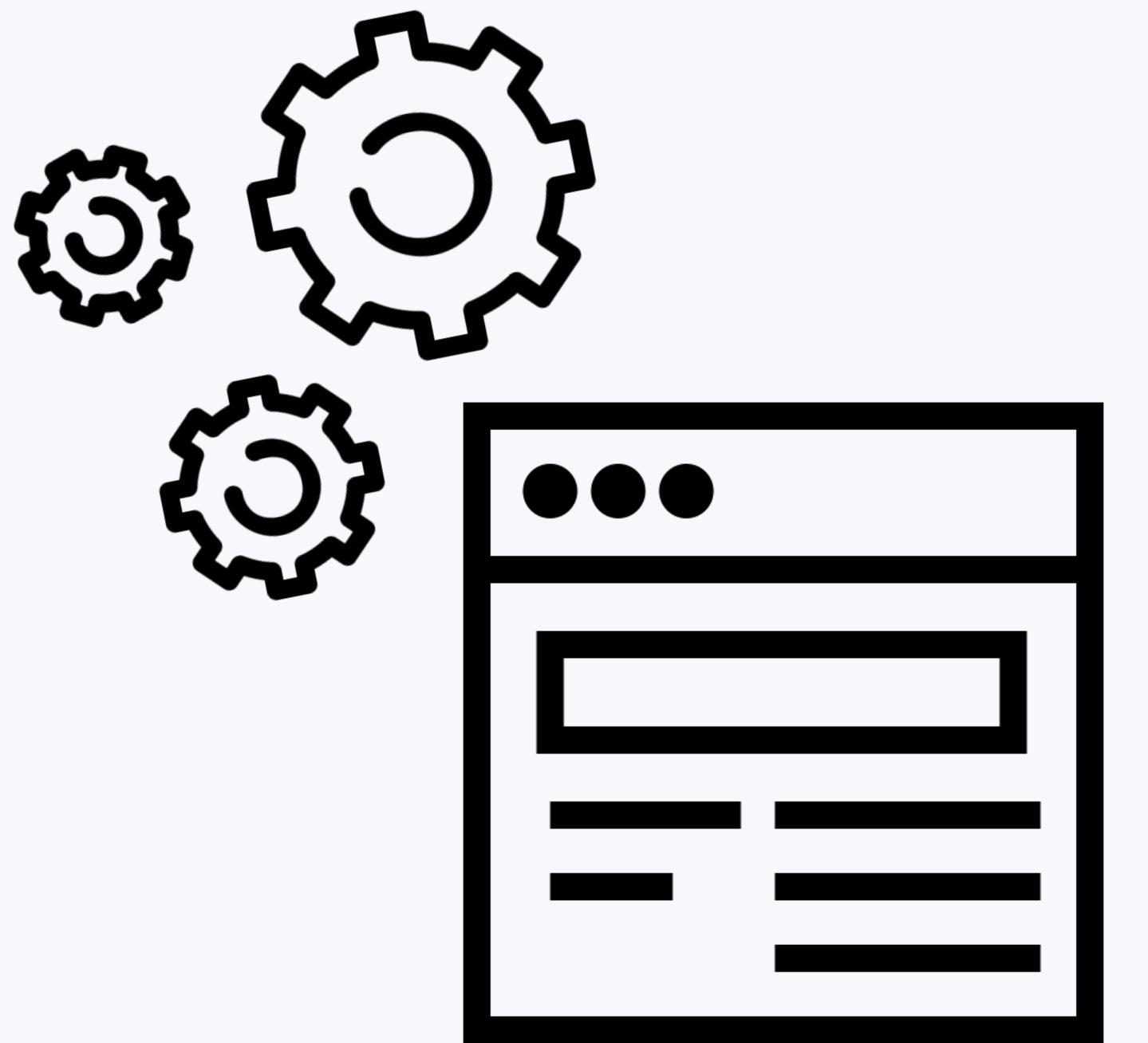
.....→

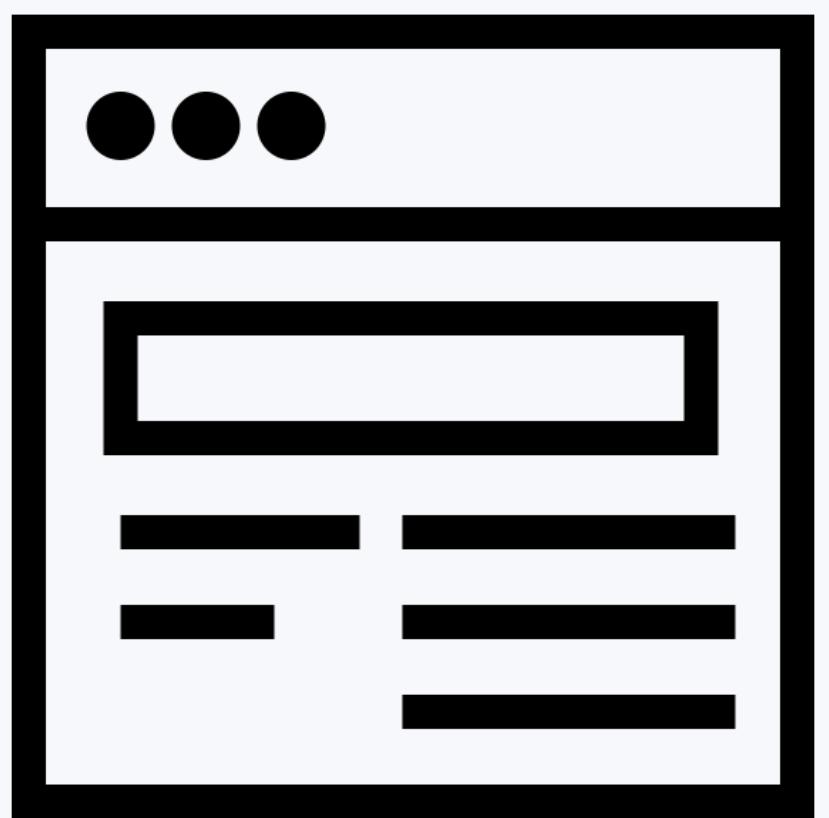
A dashed arrow points from the text "index.html" towards the cloud icon.



index.html







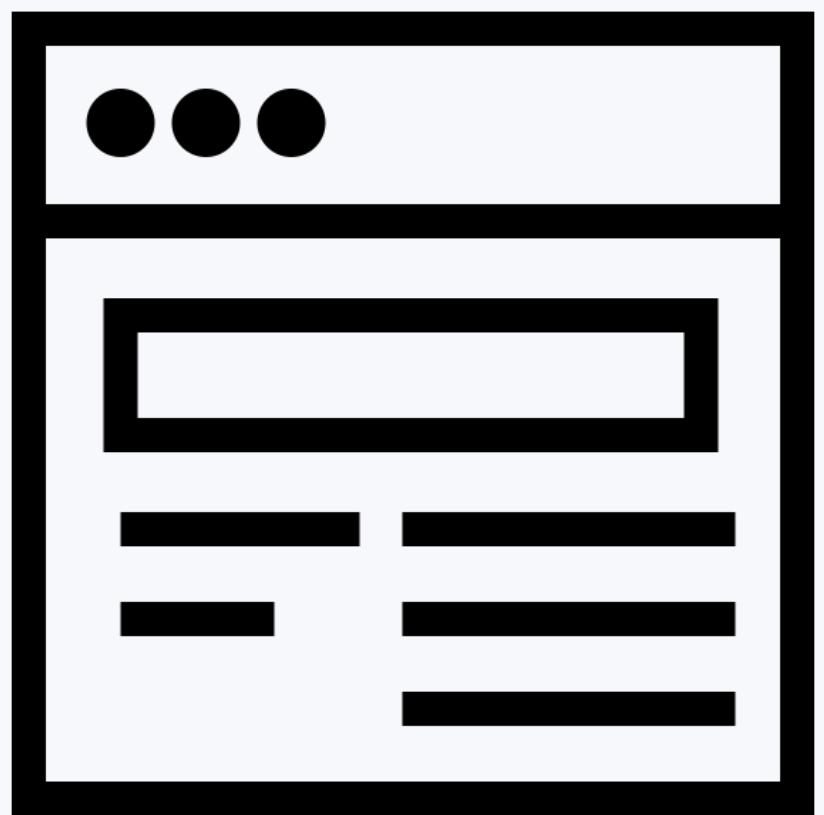


```
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family...">
```



.../css?family=Roboto:400

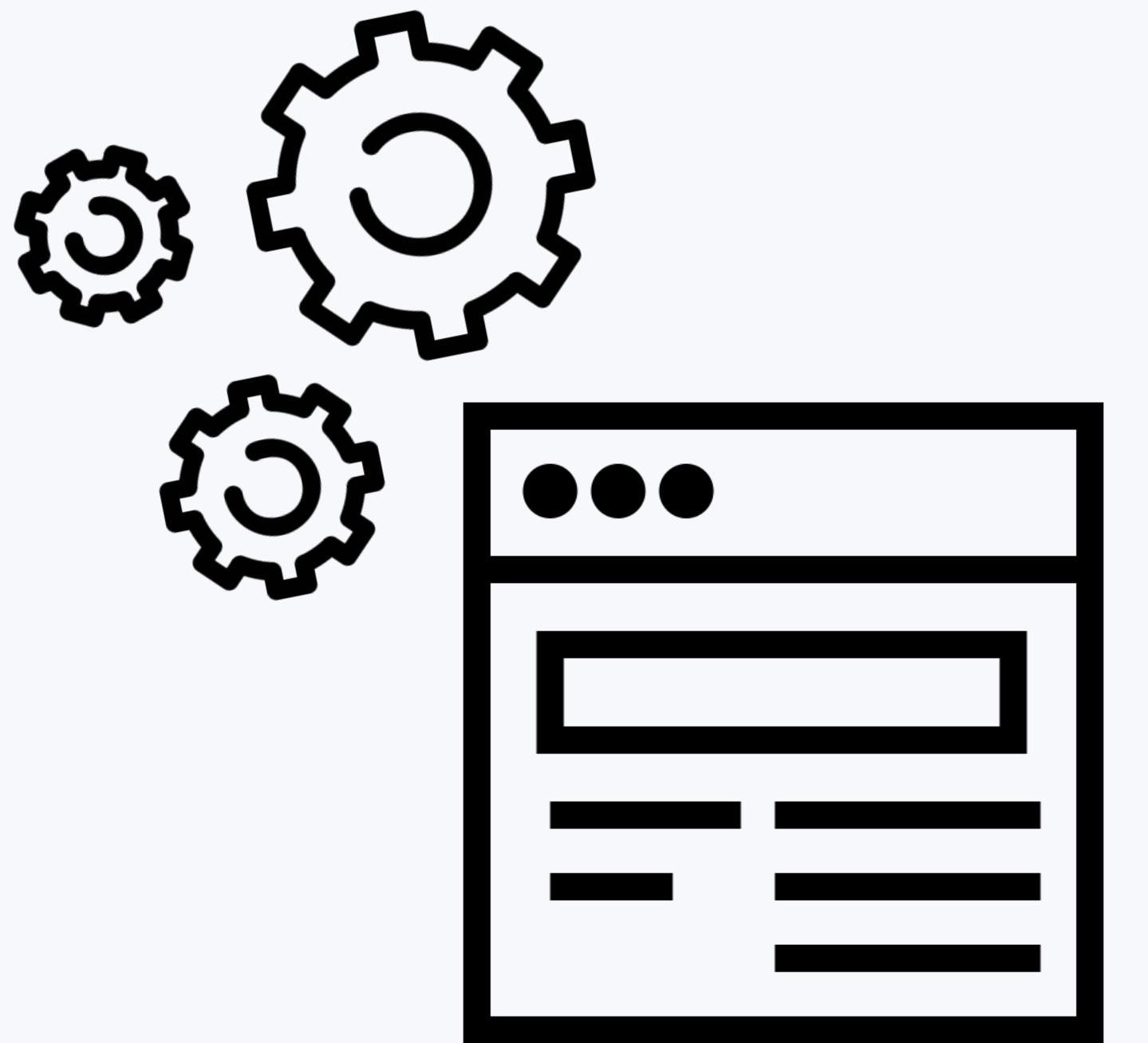




.../css?family=Roboto:400



```
@font-face {  
    font-family: 'Roboto'; font-style: normal; font-weight: 400;  
    src: local('Roboto'), url(https://font.woff2) format('woff2');  
}
```







```
div { font-family: Roboto, sans-serif; }
```



```
@font-face {  
    font-family: 'Roboto'; font-style: normal; font-weight: 400;  
    src: local('Roboto'), url(https://font.woff2) format('woff2');  
}
```

```
div { font-family: Roboto, sans-serif; }
```



DO I HAVE Roboto YET?

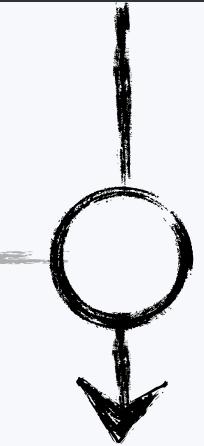
```
div { font-family: Roboto, sans-serif; }
```

RENDER



```
div { font-family: Roboto, sans-serif; }
```

RENDER



BLOCK

```
div { font-family: Roboto, sans-serif; }
```

RENDER



BLOCK



DO I HAVE Roboto YET?

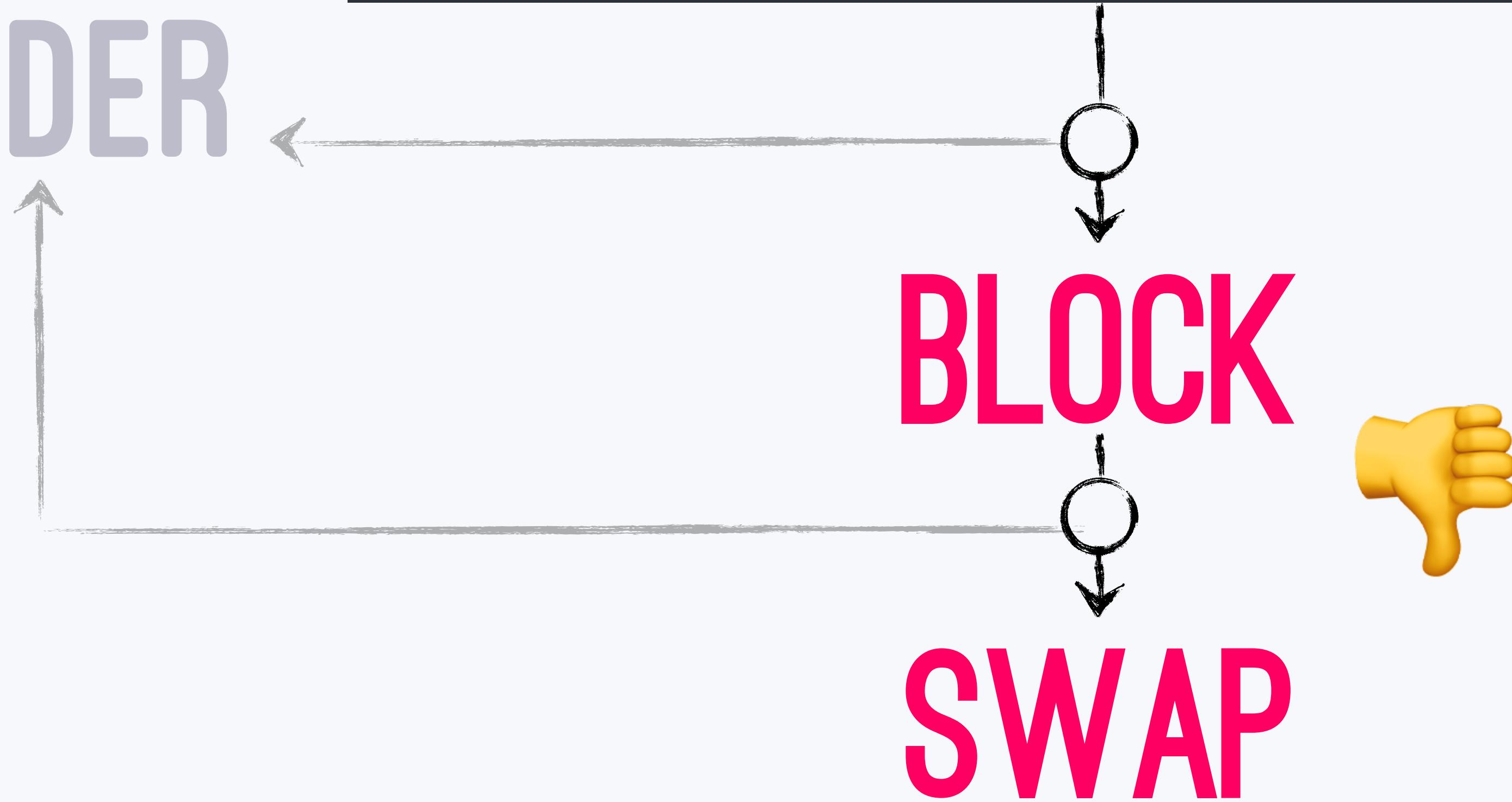
```
div { font-family: Roboto, sans-serif; }
```

RENDER



```
div { font-family: Roboto, sans-serif; }
```

RENDER



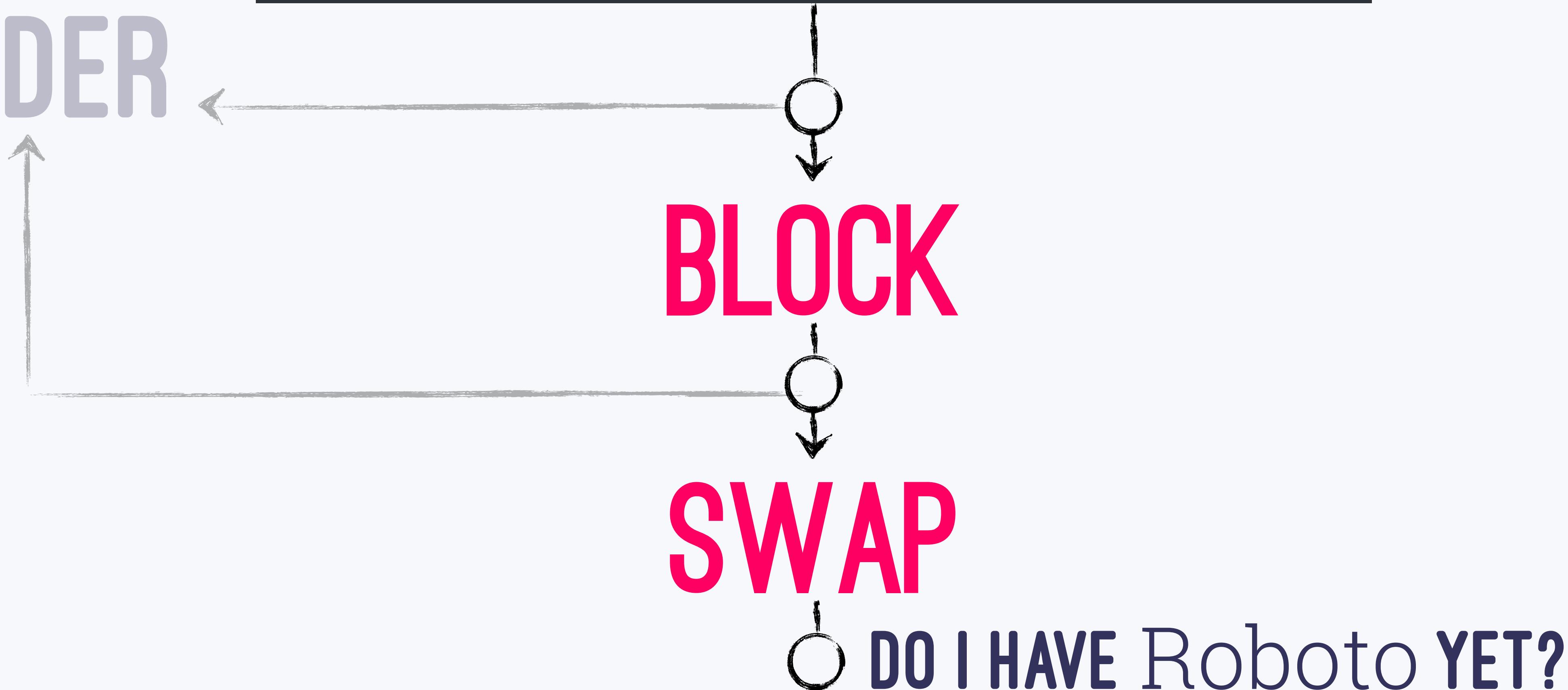
```
div { font-family: Roboto, sans-serif; }
```

RENDER

BLOCK

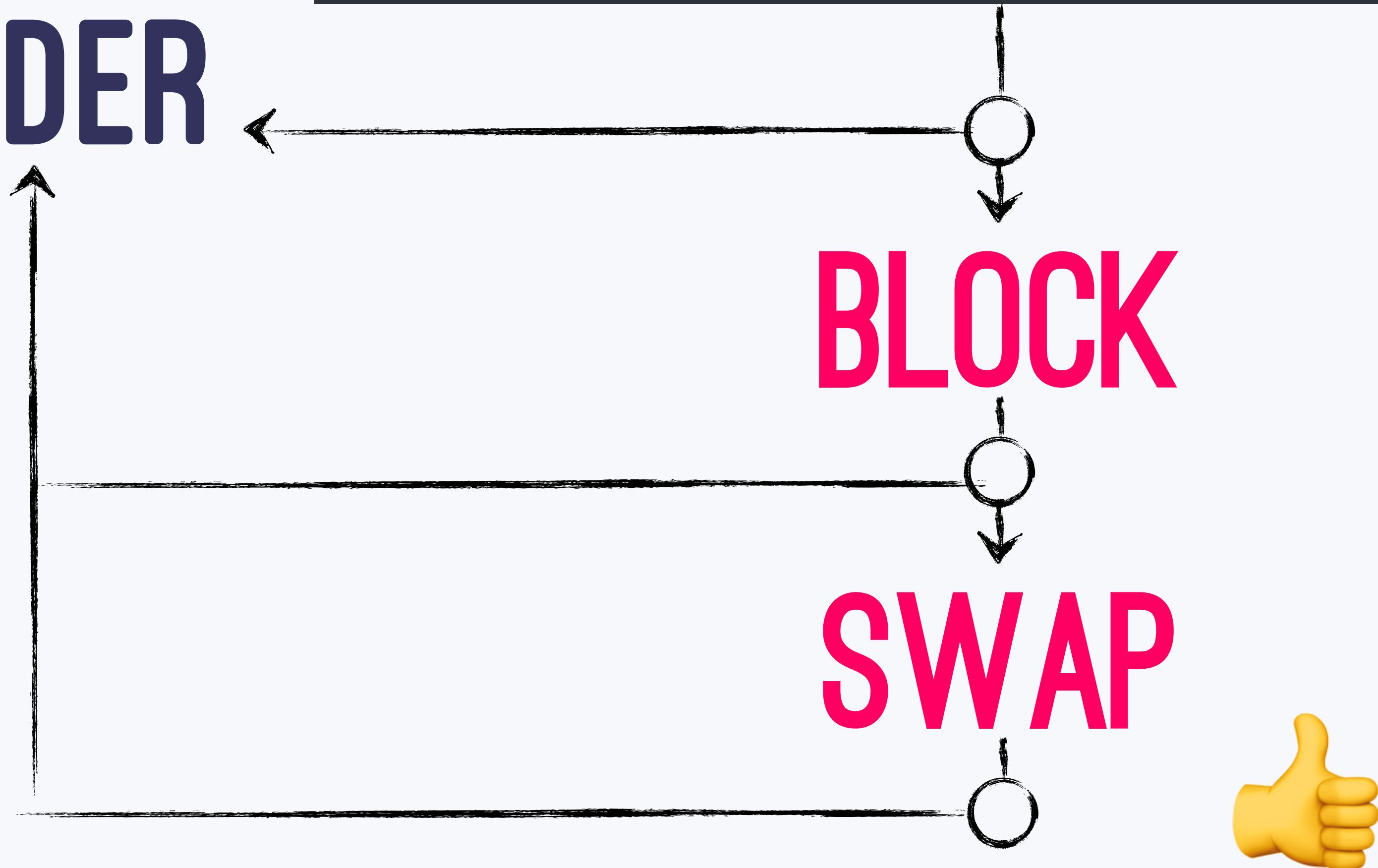
SWAP

DO I HAVE Roboto YET?



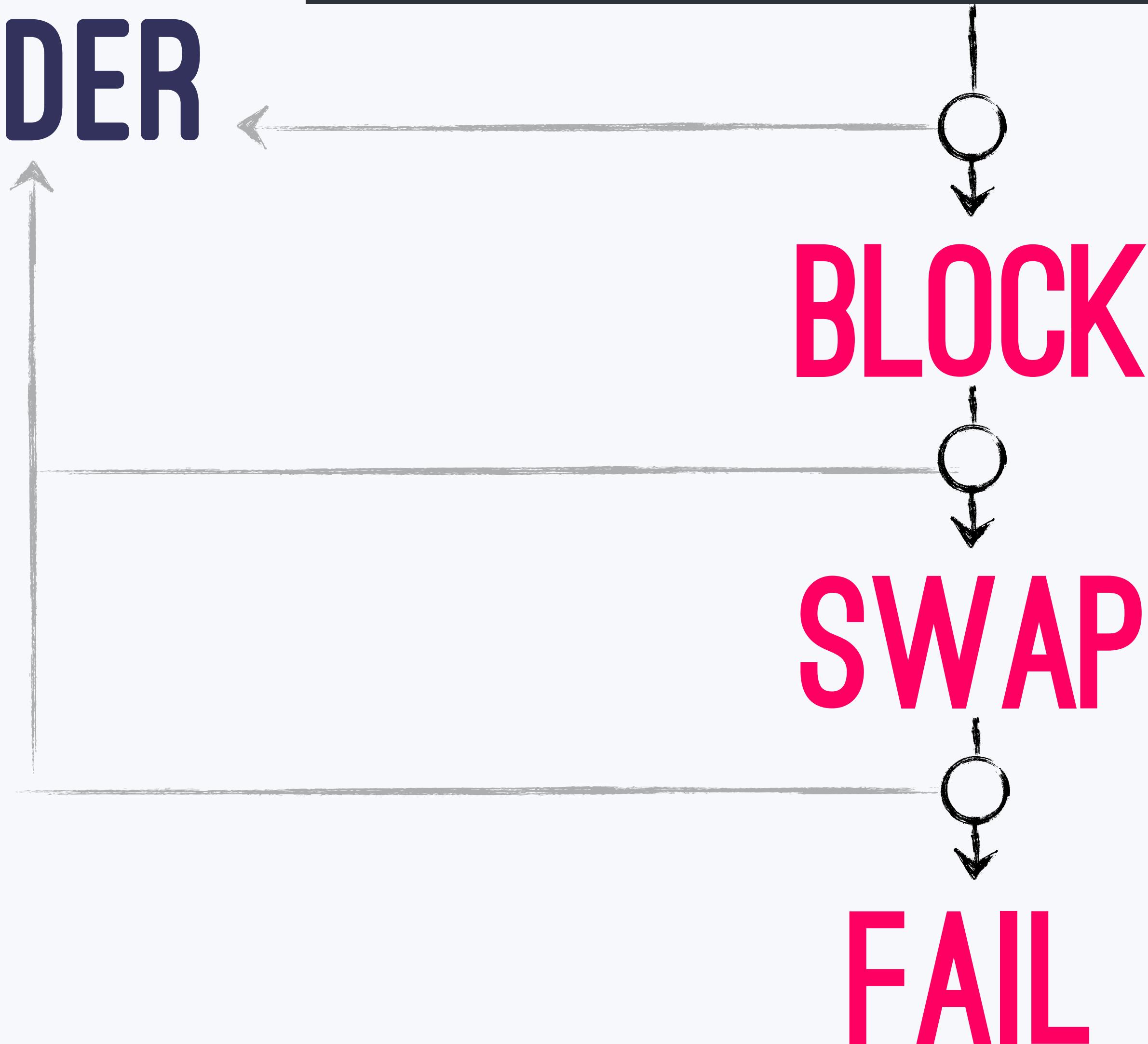
```
div { font-family: Roboto, sans-serif; }
```

RENDER



```
div { font-family: Roboto, sans-serif; }
```

RENDER





WHICH LOOKS LIKE THIS

0.0 s

•
•
•



commodo vitae



•
•
•



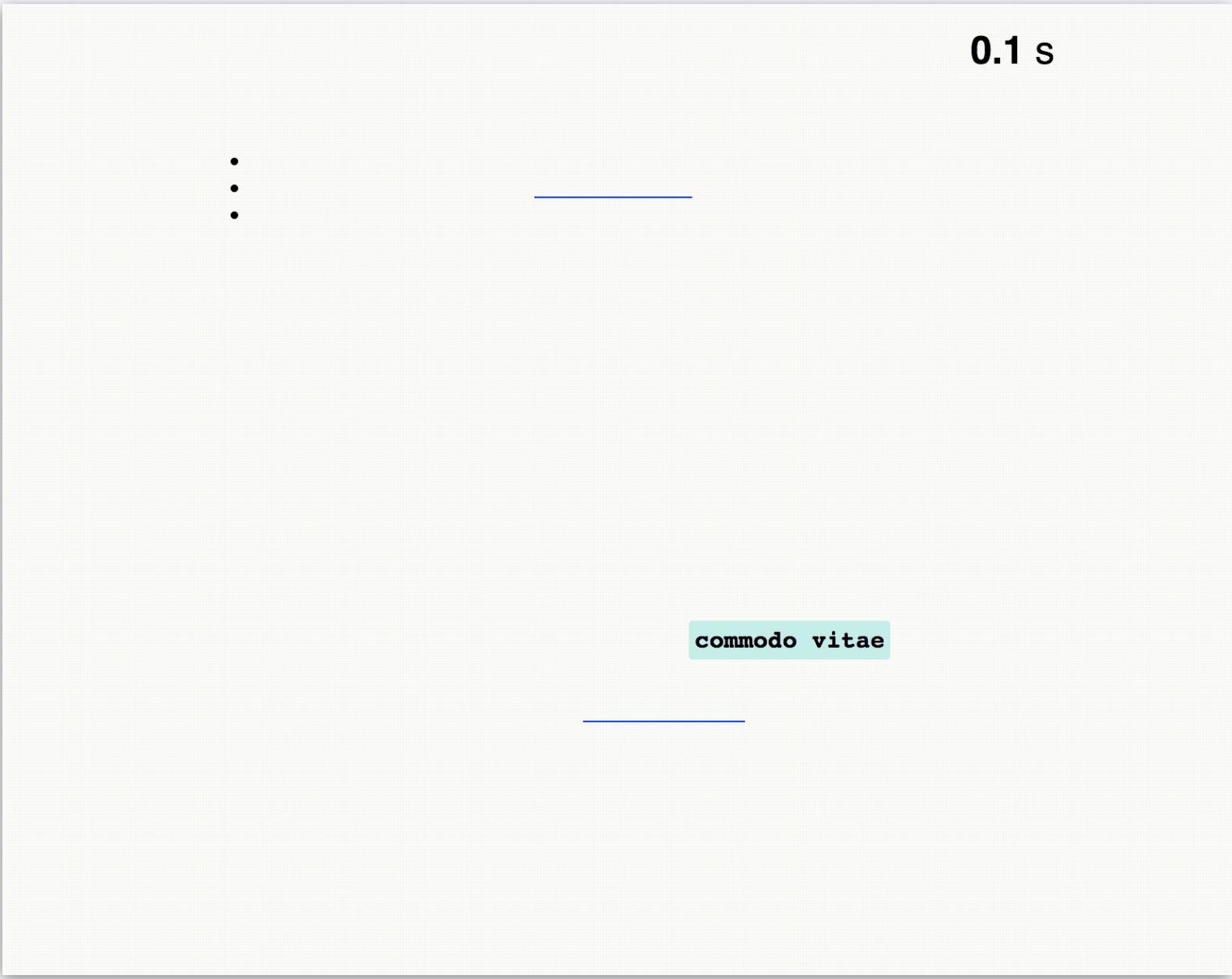
10

commodo vitae



10

BLOCK



0.1 s

HTML Ipsum Presents

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
- Aliquam tincidunt mauris eu [Donec non enim](#) risus.
- Vestibulum auctor dapibus neque.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec odio. Quisque volutpat mattis eros. Nullam malesuada erat ut turpis. Suspendisse urna nibh, viverra non, semper suscipit, posuere a, pede.

Donec nec justo eget felis facilisis fermentum. Aliquam porttitor mauris sit amet orci. Aenean dignissim pellentesque felis.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. *Aenean ultricies mi vitae est.* Mauris placerat eleifend leo. Quisque sit amet est et sapien ullamcorper pharetra. Vestibulum erat wisi, condimentum sed, **commodo vitae**, ornare sit amet, wisi. Aenean fermentum, elit eget tincidunt condimentum, eros ipsum rutrum orci, sagittis tempus lacus enim ac dui. [Donec non enim](#) in turpis pulvinar facilisis. Ut felis.

Pellentesque fermentum dolor

Aliquam quam lectus, facilisis auctor, ultrices ut, elementum vulputate, nunc.

FOIT

BLOCK

SWAP

0.1 s

•

•

commodo vitae

HTML Ipsum Presents

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
- Aliquam tincidunt mauris eu [Donec non enim](#) risus.
- Vestibulum auctor dapibus neque.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec odio. Quisque volutpat mattis eros. Nullam malesuada erat ut turpis. Suspendisse urna nibh, viverra non, semper suscipit, posuere a, pede.

Donec nec justo eget felis facilisis fermentum. Aliquam porttitor mauris sit amet orci. Aenean dignissim pellentesque felis.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. *Aenean ultricies mi vitae est*. Mauris placerat eleifend leo. Quisque sit amet est et sapien ullamcorper pharetra. Vestibulum erat wisi, condimentum sed, **commodo vitae**, ornare sit amet, wisi. Aenean fermentum, elit eget tincidunt condimentum, eros ipsum rutrum orci, sagittis tempus lacus enim ac dui. [Donec non enim](#) in turpis pulvinar facilisis. Ut felis.

Pellentesque fermentum dolor

Aliquam quam lectus, facilisis auctor, ultrices ut, elementum vulputate, nunc.

3.1 s

•

•

•

HTML Ipsum Presents

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
- Aliquam tincidunt mauris eu [Donec non enim](#) risus.
- Vestibulum auctor dapibus neque.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec odio. Quisque volutpat mattis eros. Nullam malesuada erat ut turpis. Suspendisse urna nibh, viverra non, semper suscipit, posuere a, pede.

Donec nec justo eget felis facilisis fermentum. Aliquam porttitor mauris sit amet orci. Aenean dignissim pellentesque felis.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. *Aenean ultricies mi vitae est*. Mauris placerat eleifend leo. Quisque sit amet est et sapien ullamcorper pharetra. Vestibulum erat wisi, condimentum sed, **commodo vitae**, ornare sit amet, wisi. Aenean fermentum, elit eget tincidunt condimentum, eros ipsum rutrum orci, sagittis tempus lacus enim ac dui. [Donec non enim](#) in turpis pulvinar facilisis. Ut felis.

Pellentesque fermentum dolor

FOIT

FOUT

**AMAZING.
NOW WHAT.**





**FOIT IS WAAAY
WORSE THAN FOUT**

MINIMIZE FOIT
YOU COULD JUST... NOT... USE WEBFONTS

**MINIMIZE FOIT
SHAKE IT OFF**

**MINIMIZE FOIT
DOWNLOAD FEWER THINGS**

MINIMIZE FOIT DOWNLOAD FEWER THINGS

```
@font-face {  
  font-family: 'Roboto';  
  font-weight: 400;  
  src: local('Roboto'), url(https://font.woff2) format('woff2');  
}
```

**MINIMIZE FOIT
DOWNLOAD EVEN FEWER THINGS**

MINIMIZE FOIT DOWNLOAD EVEN FEWER THINGS

```
@font-face {  
  font-family: 'Roboto';  
  font-weight: 400;  
  src: local('Roboto'), url(https://font.woff2) format('woff2');  
  unicode-range: U+0-A0;  
}
```

**MINIMIZE FOIT
DOWNLOAD EVEN FEWER THINGS EARLIER**

MINIMIZE FOIT DOWNLOAD EVEN FEWER THINGS EARLIER

```
@font-face {  
  font-family: 'Roboto';  
  font-weight: 400;  
  src: local('Roboto'), url(https://font.woff2) format('woff2');  
}
```

MINIMIZE FOIT DOWNLOAD EVEN FEWER THINGS EARLIER

```
@font-face {  
    font-family: 'Roboto';  
    font-weight: 400;  
    src: local('Roboto'), url(https://font.woff2) format('woff2');  
}  
  
<link rel="preload" href="https://font.woff2"  
as="font" type="font/woff2" crossorigin>
```



**MINIMIZE FOIT
FONT FACE OBSERVER**

MINIMIZE FOIT FONT FACE OBSERVER

```
body {  
  font-family: 'Roboto', sans-serif;  
}
```

MINIMIZE FOIT FONT FACE OBSERVER

```
body.fonts-loaded {  
  font-family: 'Roboto', sans-serif;  
}  
body {  
  font-family: sans-serif;  
}
```

MINIMIZE FOIT FONT FACE OBSERVER

```
var font = new FontFaceObserver('Roboto');

font.load().then(function () {

});
```

MINIMIZE FOIT FONT FACE OBSERVER

```
var font = new FontFaceObserver('Roboto');

font.load().then(function () {
  document.body.classList.add('fonts-loaded');
}) ;
```

**MINIMIZE FOIT
CONTROL THE BLOCK/SWAP PERIOD**

**MINIMIZE FOIT
FONT-DISPLAY: OPTIONAL**

MINIMIZE FOIT
FONT-DISPLAY: OPTIONAL



MINIMIZE FOIT FONT-DISPLAY: OPTIONAL

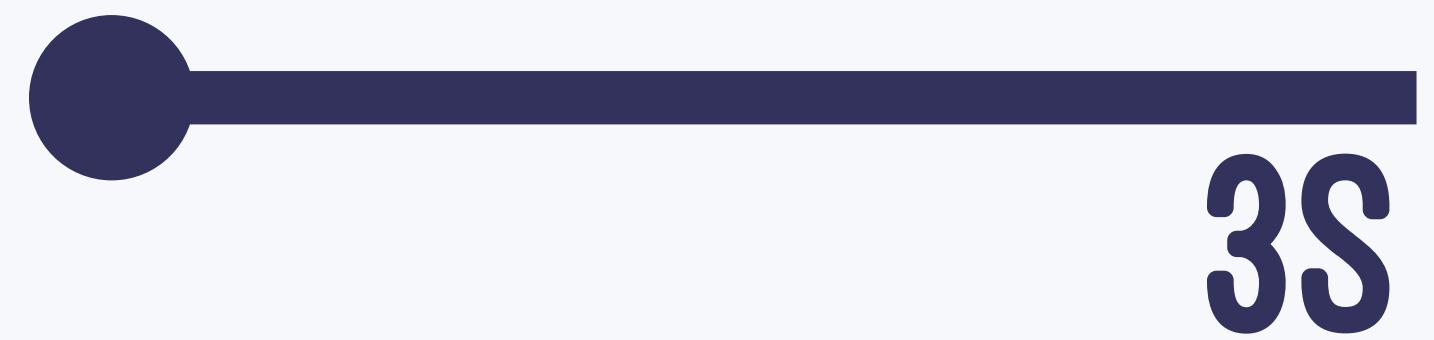
```
@font-face {  
  font-family: 'Roboto';  
  font-weight: 400;  
  src: local('Roboto'), url(https://font.woff2) format('woff2');  
}
```

MINIMIZE FOIT FONT-DISPLAY: OPTIONAL

```
@font-face {  
  font-family: 'Roboto';  
  font-weight: 400;  
  src: local('Roboto'), url(https://font.woff2) format('woff2');  
  font-display: optional;  
}
```

BLOCK

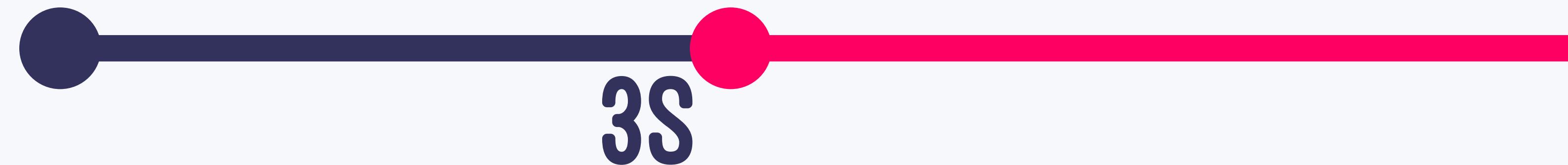
INVISIBLE



BLOCK

INVISIBLE

FALLBACK

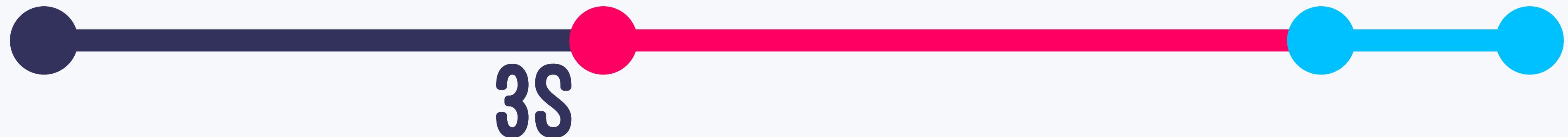


BLOCK

INVISIBLE

FALLBACK

WEBFONT



BLOCK

INVISIBLE

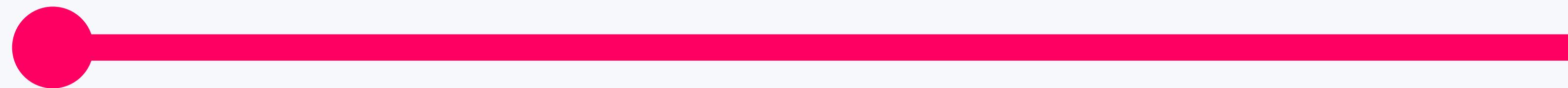
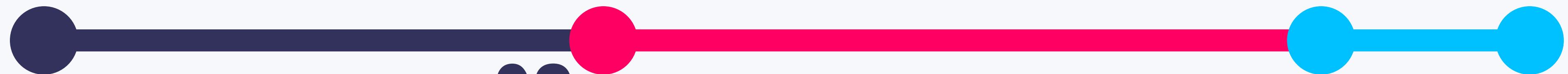
FALLBACK

WEBFONT

SWAP

0S

3S



BLOCK

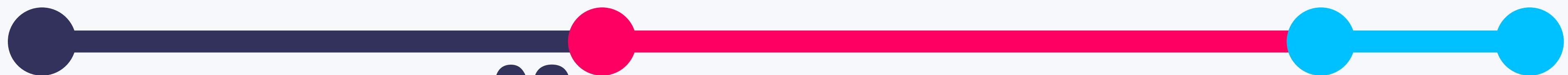
INVISIBLE

FALLBACK

WEBFONT

SWAP

0S



3S

BLOCK

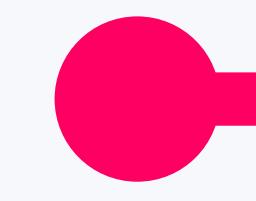
INVISIBLE

FALLBACK

WEBFONT

SWAP

FALLBACK



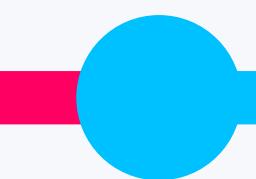
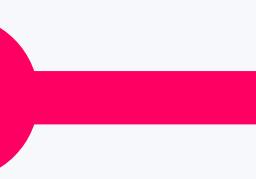
0S



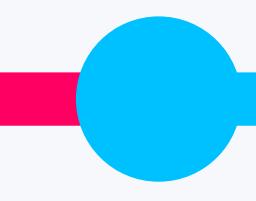
100MS



3S



WEBFONT



BLOCK

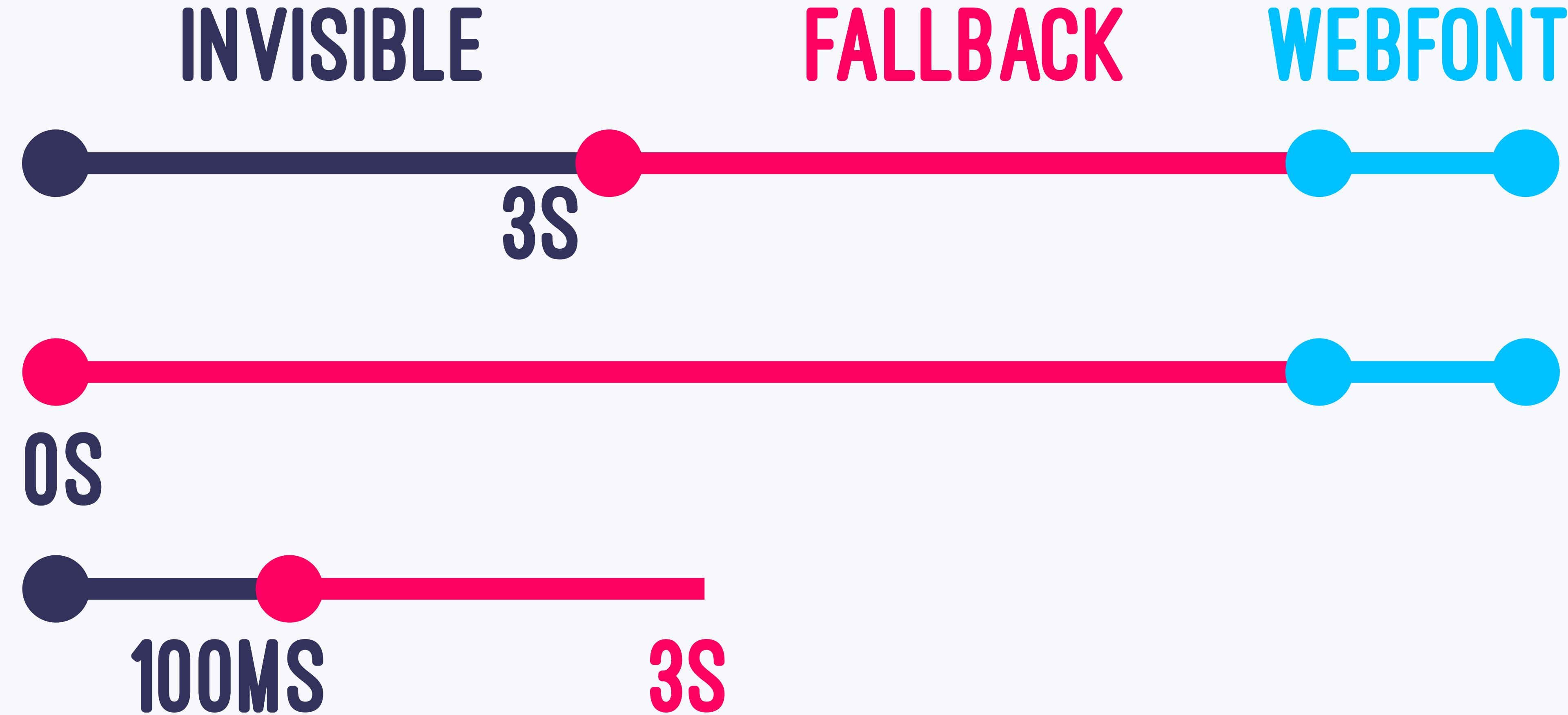
INVISIBLE

FALLBACK

WEBFONT

SWAP

FALLBACK



BLOCK

INVISIBLE

FALLBACK

WEBFONT

SWAP

0S

FALLBACK

100MS

3S

3S

BLOCK

INVISIBLE

FALLBACK

WEBFONT

3S

SWAP

0S

FALLBACK

100MS

3S

OPTIONAL

100MS



BLOCK

INVISIBLE

FALLBACK

WEBFONT

3S

SWAP

0S

FALLBACK

100MS

3S

OPTIONAL

100MS

BLOCK

INVISIBLE

FALLBACK

WEBFONT

3S

SWAP

0S

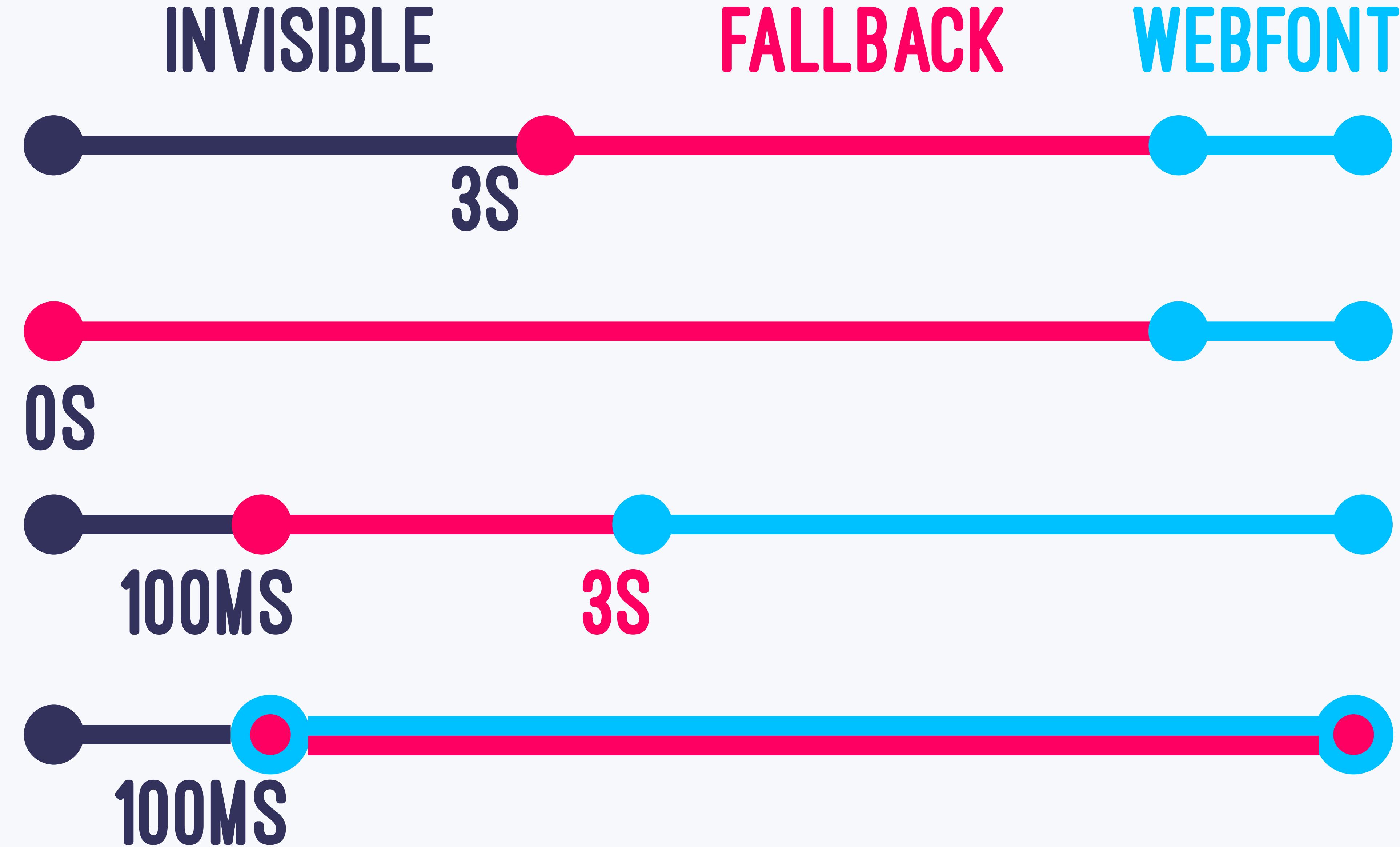
FALLBACK

100MS

3S

OPTIONAL

100MS



[HTTPS://FONT-DISPLAY.GLITCH.ME](https://font-display.glitch.me)

0.0 s

Very slow font (4s server delay)

Medium slow font (2s server delay)

Fast font (0s server delay)

MINIMIZE FOIT



MINIMIZE FOIT



MINIMIZE FOUT

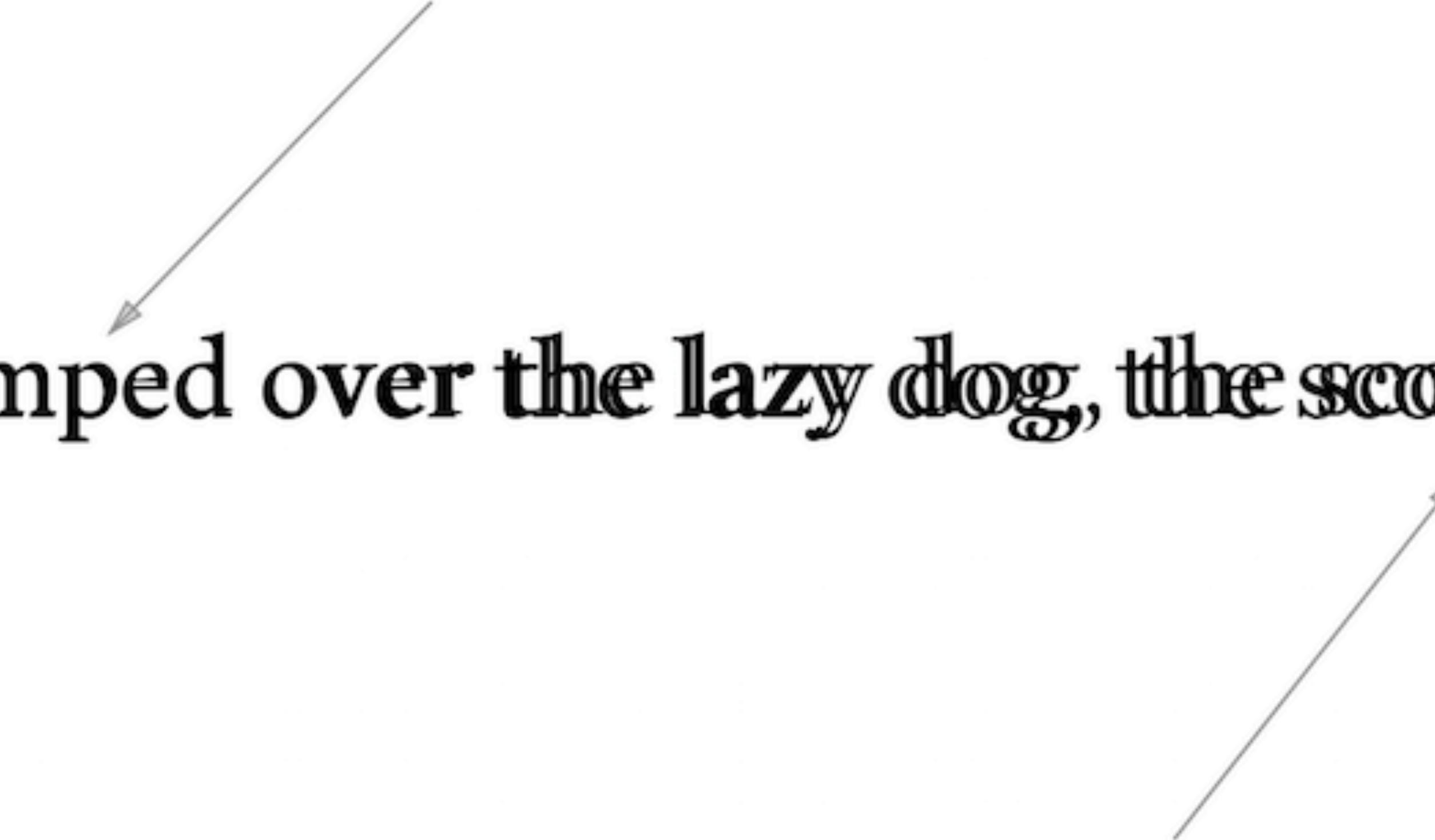


MINIMIZE FOUT
BE LESS JARRING

The fox jumped ower tthe lazy dog, tthe ssound teel.

SIMILAR X-HEIGHTS

The fox jumped over the lazy dog, the scoundrel.



CLOSE WIDTHS

HTTPS://MEOWNI.CA/FONT-STYLE-MATCHER

Fallback font
Georgia

Font size: 16px

Line height: 1

Font weight: 300

Letter spacing: 0px

Word spacing: 0px

Copy CSS to clipboard

The fox jumped over the lazy dog, the scoundrel.

Use different colours for each font

See layout shift due to FOUC

The fox jumped over the lazy, dbg, the scoundrel.

LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISICING DICTESED DO eiusmod tempor ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

Web font
Merriweather

Download from Google Fonts

Font size: 16px

Line height: 1

Font weight: 300

Letter spacing: 0px

Word spacing: 0px

Copy CSS to clipboard

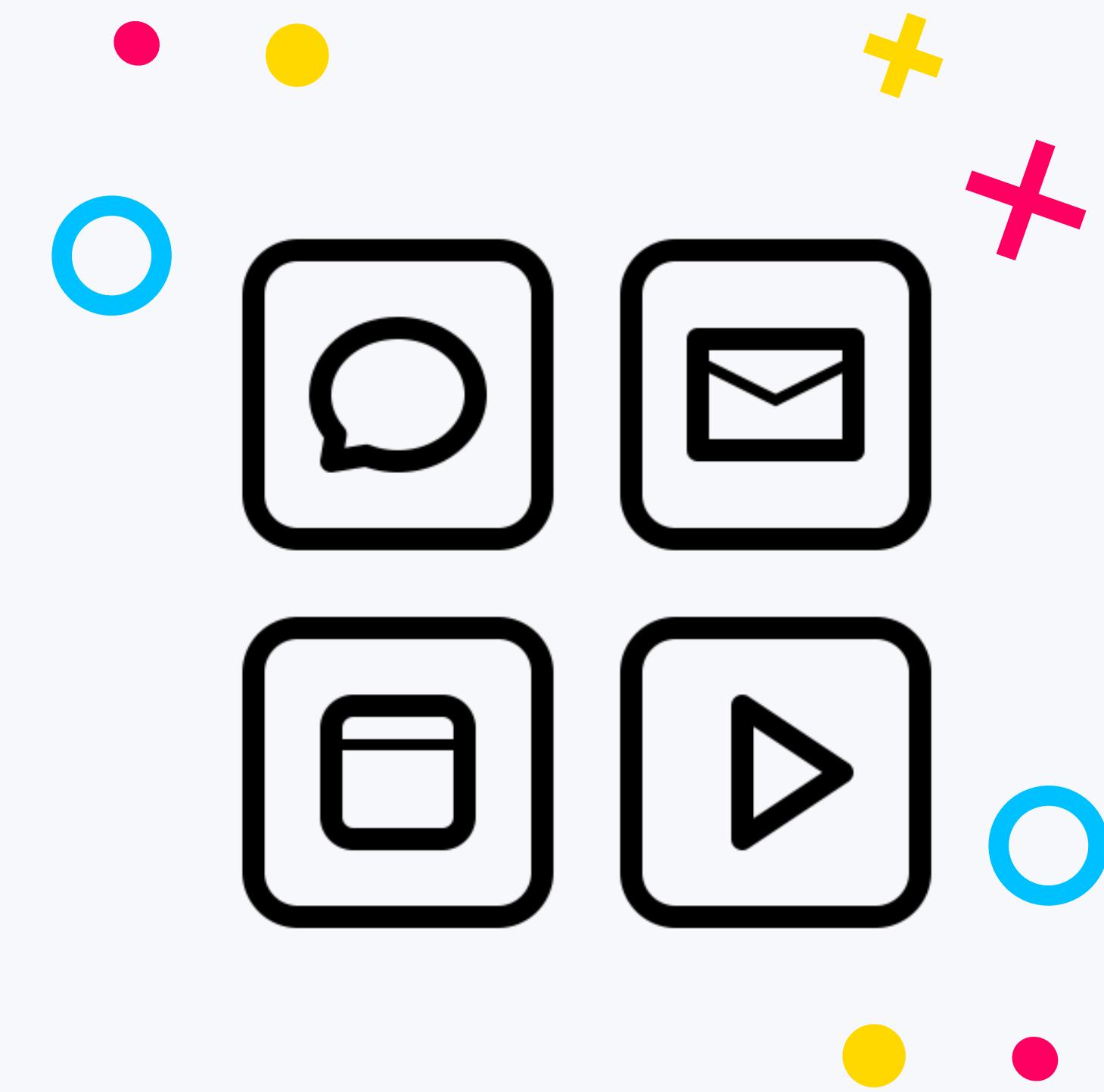
The fox jumped over the lazy dog, the scoundrel.



BONUS FUNSIES WITH WEB FONTS



ICON FONTS



fi

fi



🔍 Search

record voice over redeem remove shopping ... reorder report problem restore restore page

room rounded corner rowing schedule search settings settings applicatio...

settings backup re... settings bluetooth settings brightness settings cell settings ethernet settings input ante... settings input com...

settings 24dp ▾ [SVG](#) [PNGS](#) [ICON FONT](#)

STEP 1: Setup Icon Font

Follow the [instructions](#) to embed the icon font in your site and learn how to style your icons using CSS.

STEP 2: Use Icon in Your Site

```
<!-- For modern browsers. -->  
<i class="material-icons">settings</i>  
<!-- For IE9 or below. -->  
<i class="material-icons">&#xE8B8;</i>
```

MAKE YOUR OWN!





MAKE YOUR OWN!

STEP 1: DRAW SOME THINGS



MAKE YOUR OWN!

STEP 2: THERE IS NO STEP 2

HTTP://FONTASTIC.ME

Fontastic

Home Add More Icons Icon Cloud Account

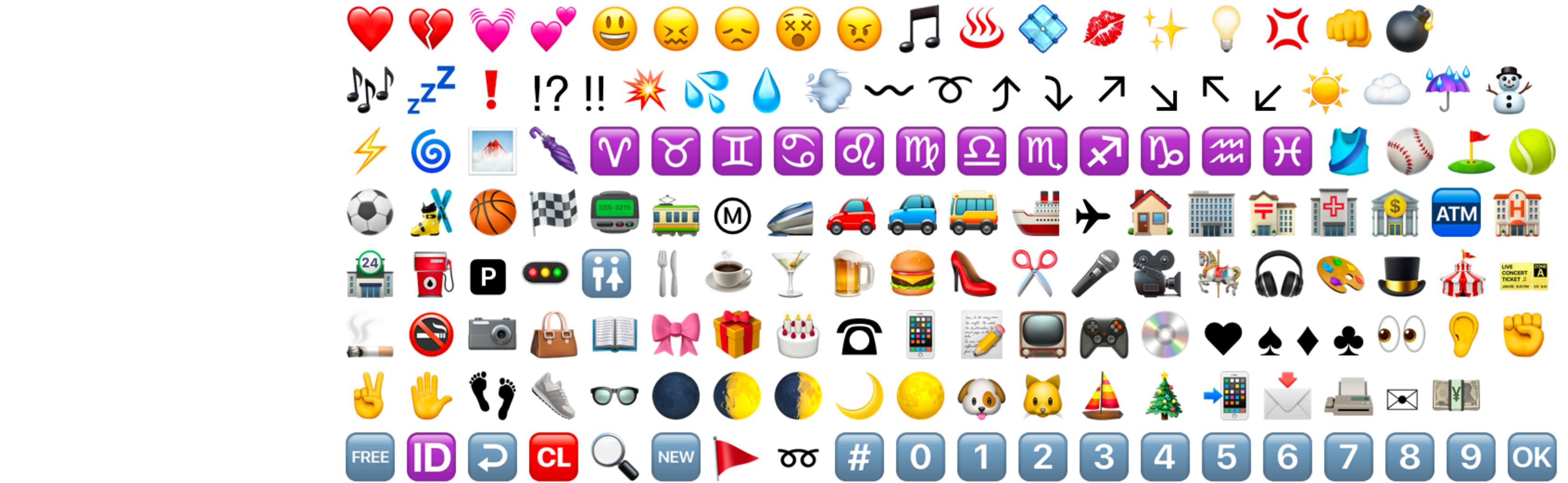
OG-DCM-Emoji ▾

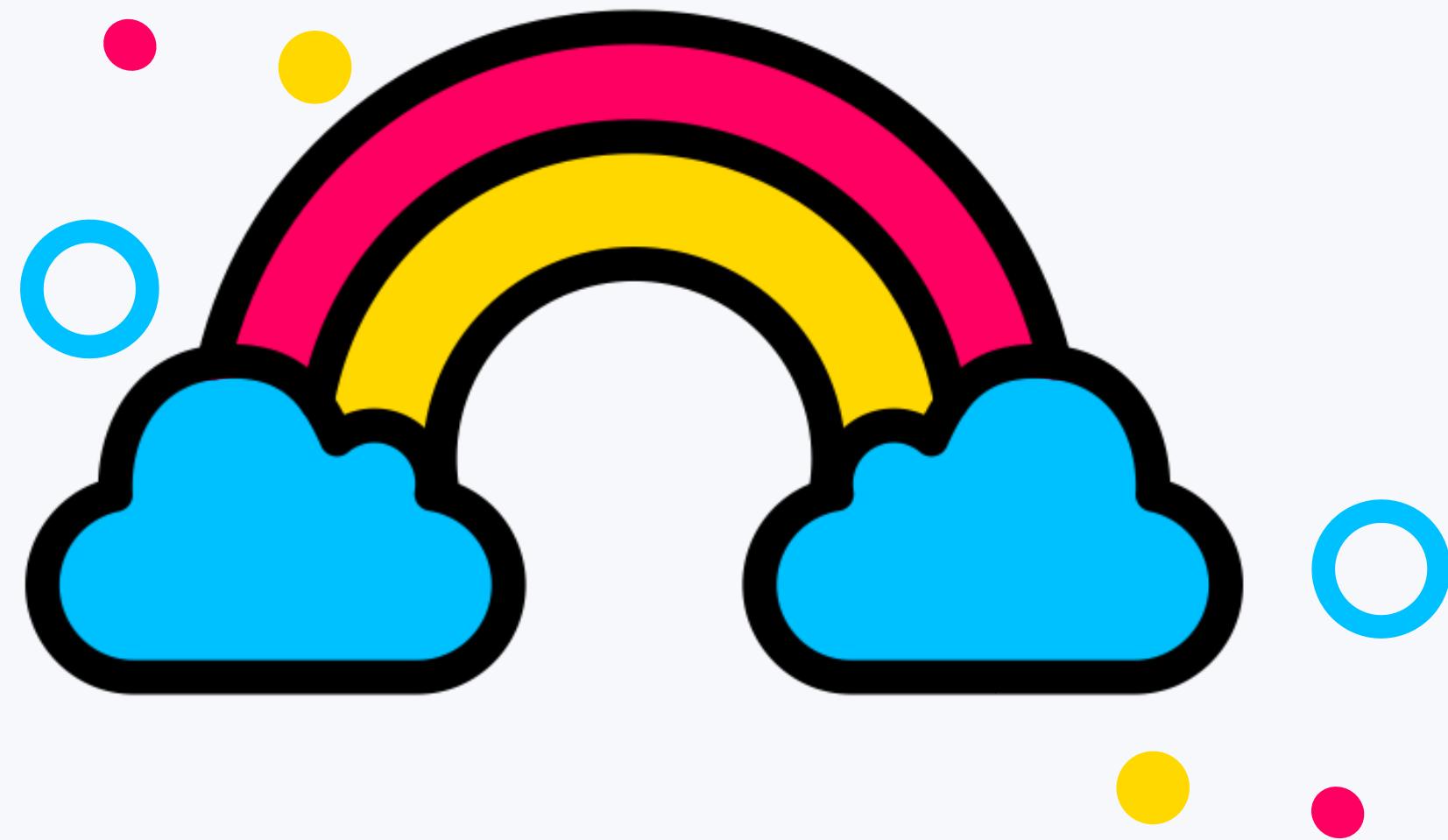
◀ ▶ | Deselect All Icons | Modify Font | Share Font | New Font

SELECT CUSTOMIZE PUBLISH 166

CHARACTER MAPPING Reset Characters ▾

❤️	💔	}];	⚡	^K	X	^K
U+2764	U+1F494	U+1F493	U+1F495	U+1F603	U+1F620	U+1F61E
⤵	⤷	⤸	⤹	⤻	⤼	⤽
U+1F616	U+1F635	U+1F3B5	U+2668	U+1F4A0	U+1F48B	U+2728
💡	⤸	⤹	⤻	⤼	zzz	!
U+1F4A1	U+1F4A2	U+1F44A	U+1F4A3	U+1F3B6	U+1F4A4	U+2757
!?	!!	ΣΞ	Ϟ	Ϭ	=3	~~~

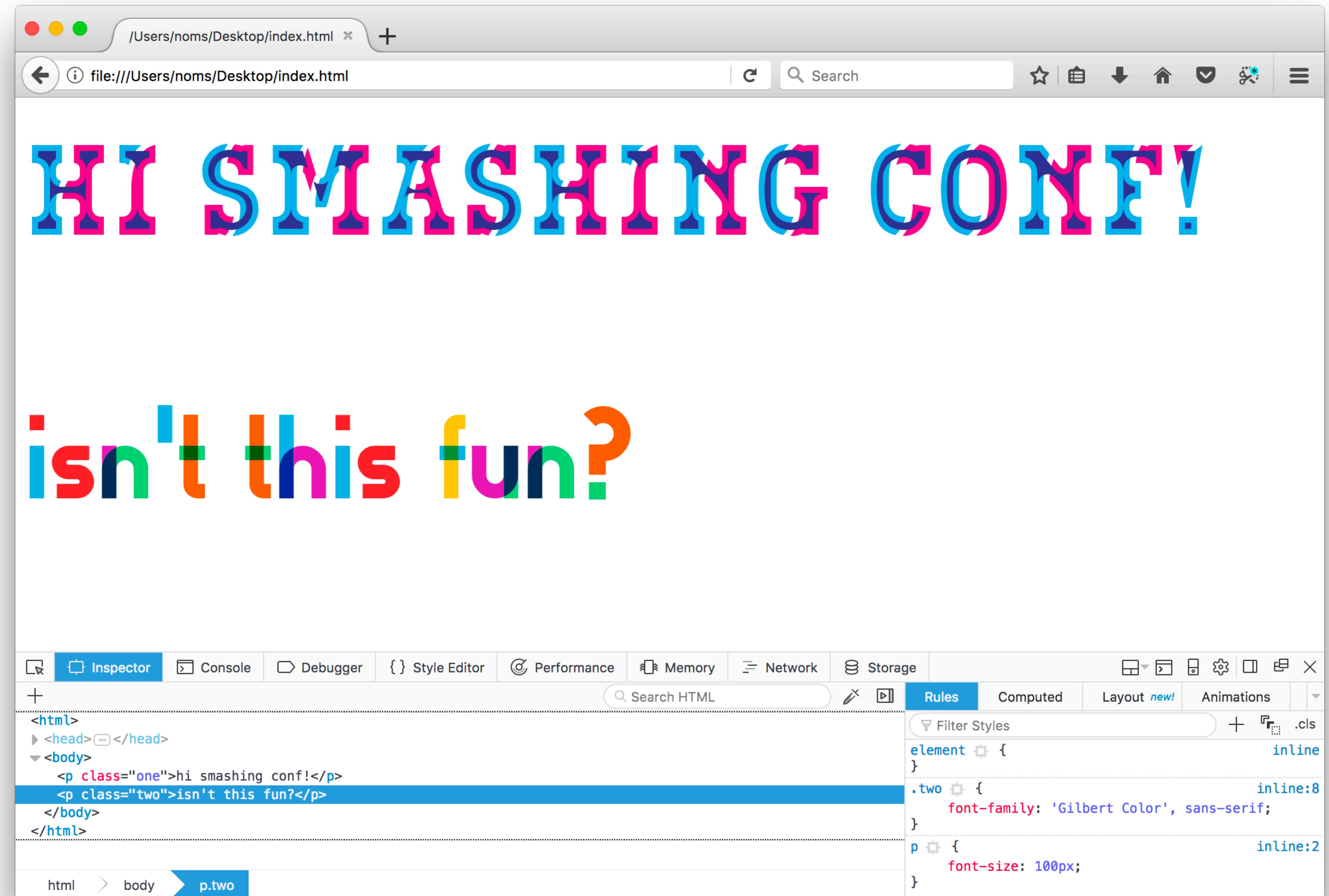




COLOUR FONTS?

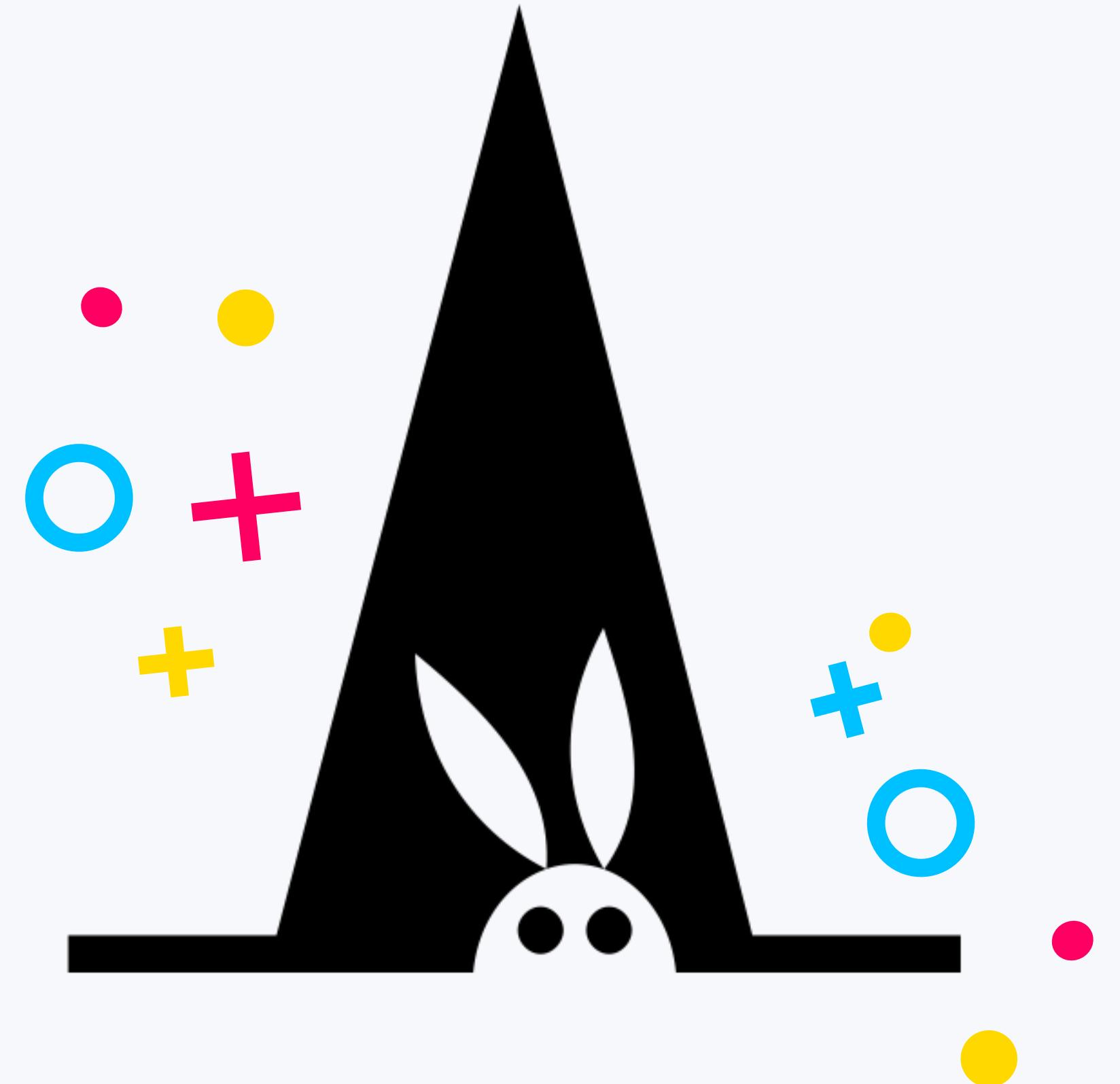
[HTTPS://TYPEWITHPRIDE.COM](https://typewithpride.com)

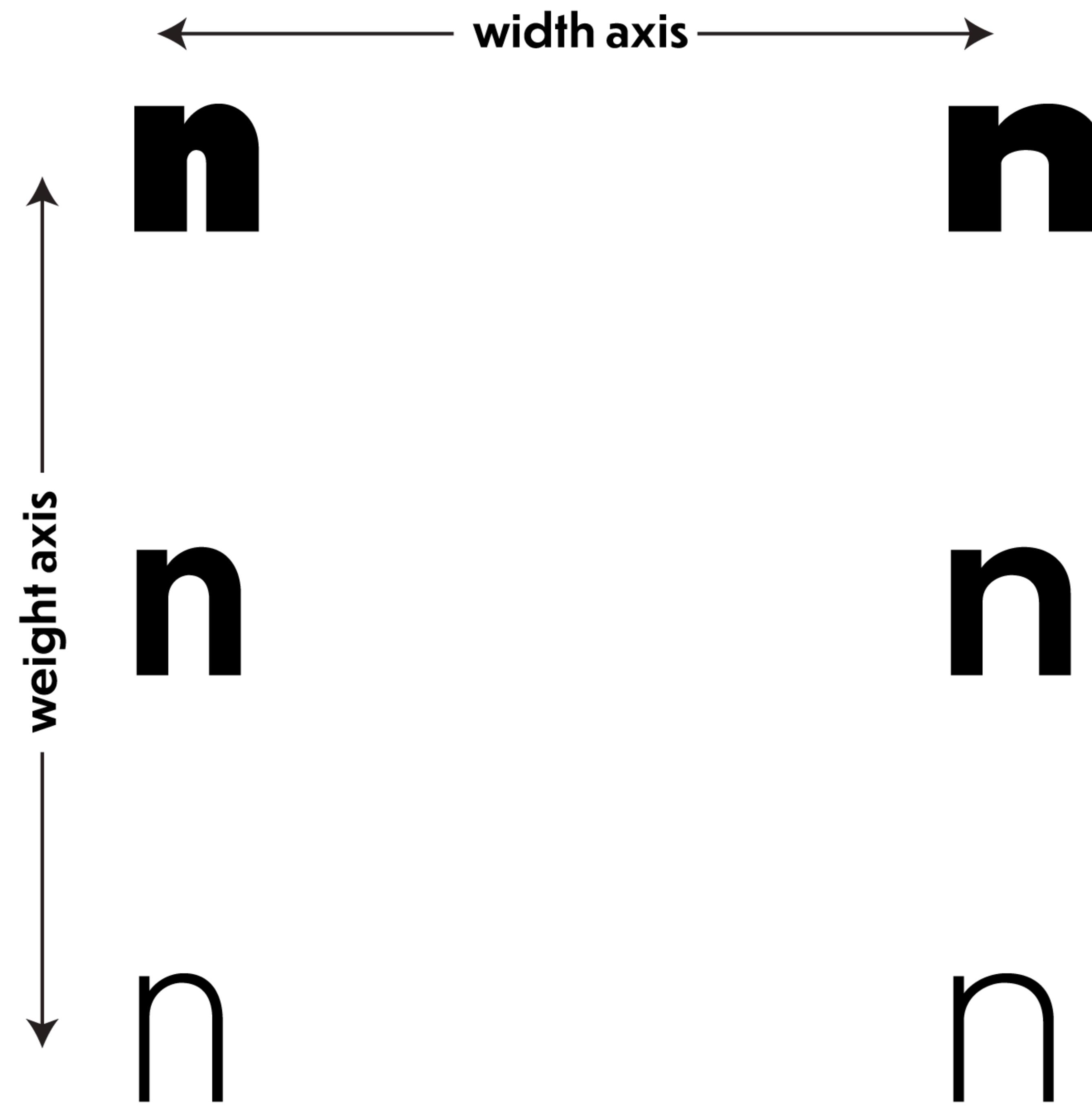
orgulho. büszkeség. fierté.
lepnums. stolz. ponos.
orgoglio. pride. stolthed.
krenari. mändrie. pýcha.



VARIABLE FONTS

VARIABLE FONTS BASICALLY SORCERY





width axis

weight axis

n n n n n
n n n n n
n n n n n
n n n n n
n n n n n
n n n n n

```
div {  
    font-family: 'AmstelvarAlpha Default';  
    font-size: 192px;  
    font-variation-settings:  
        'wght' 98.4113, 'wdth' 402;  
}
```

HTTPS://AXIS-PRAXIS.ORG

Amstelvar

TEXTBOX

Textbox 

Font

Font size

Line-height

Alignment

FONT VARIATION

Instance

Weight

Width

Optical Size

x opaque

x transparent

y opaque

lc y transparent

Serif height

Grade

COLOUR



[HTTPS://AXIS-PRAXIS.ORG](https://axis-praxis.org)

Buffalo Gals,
won't you come
out tonight?

TEXTBOX

Textbox heading ▾

Font Buffalo Gals Regular ▾ i

Font size

Line-height

Alignment

New textbox

CSS

FONT VARIATION ☰

Instance Test1 ▾

Cookies 0 ↕

Fringe 0 ↕

Hooves 0 ↕

Concavity 0 ↕

Bracketing 0 ↕

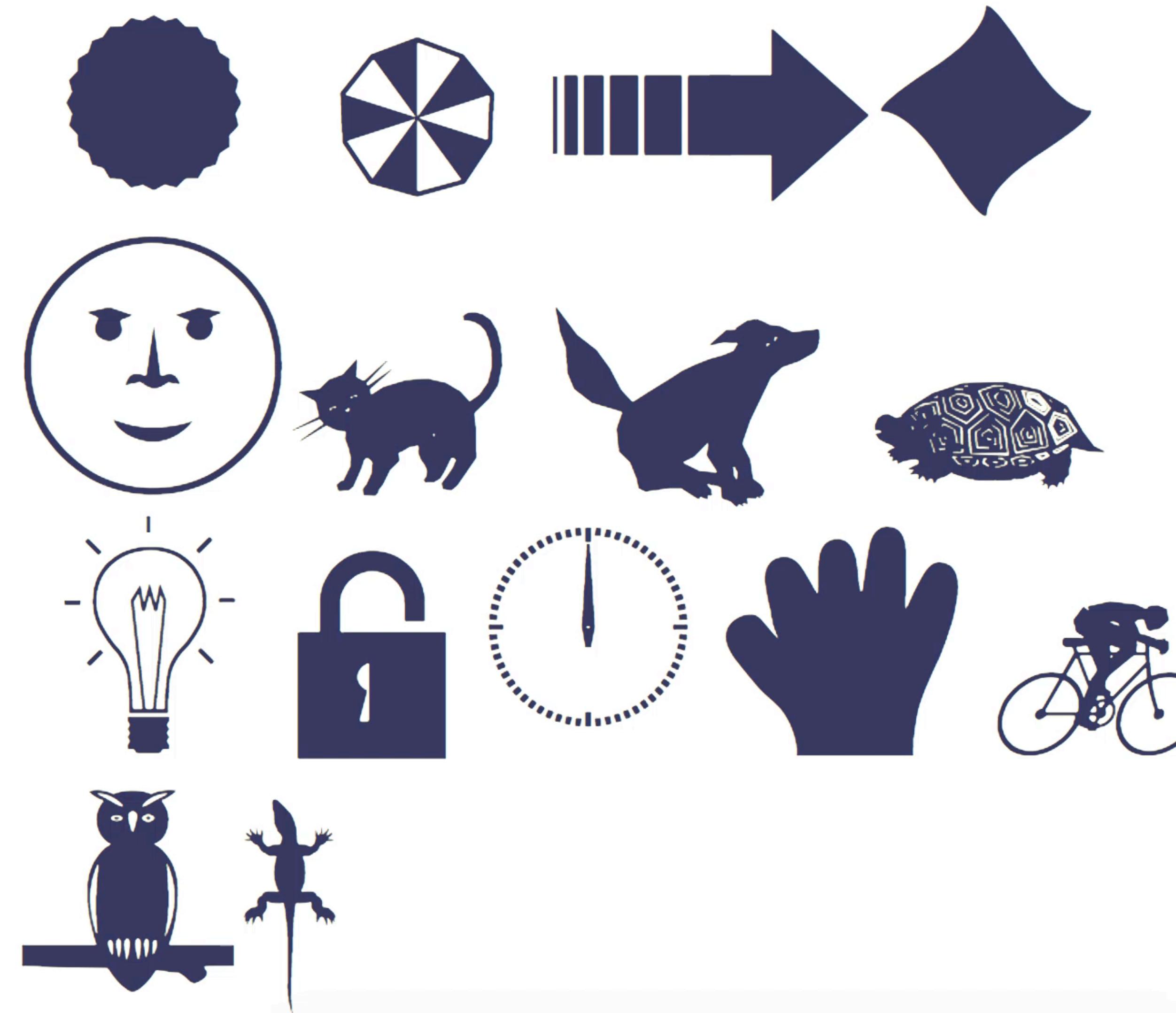
Toggle Cookies 0 ↕

COLOUR



```
div {  
    font-family: 'Buffalo Gals Regular';  
    font-size: 192px;  
    font-variation-settings:  
        'CK' -1, 'FR' -0.929784,  
        'HV' -1, 'CN' -0.902336,  
        'BR' 0.549087, 'TC' 0;  
}
```

HTTPS://AXIS-PRAXIS.ORG



TEXTBOX

Textbox

Font i

Font size

Line-height

Alignment

FONT VARIATION ZX

Instance

Toggle 1 0.5280 C

Toggle 2 0.4412 C

Toggle 3 0 C

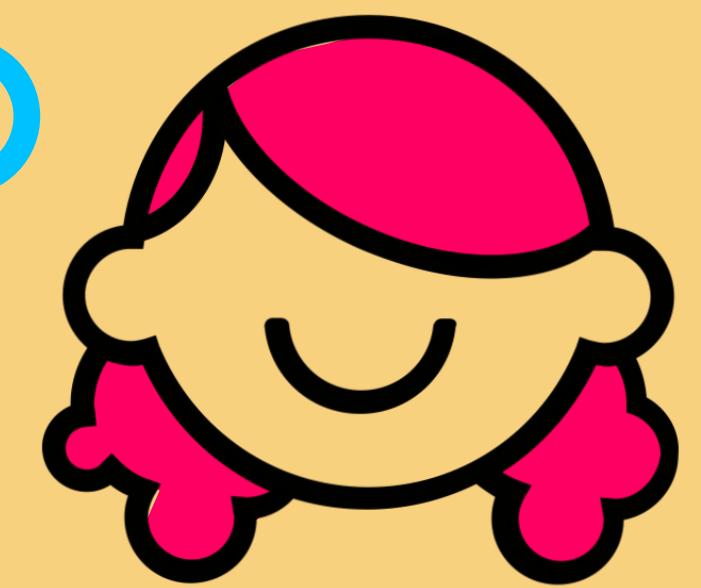
Toggle 4 0 C

Motion 1 0 C

Motion 2 0 C

COLOUR





// **BRAM STEIN** - WEBFONT HANDBOOK

// **HELEN HOLMES** - TYPE IS YOUR RIGHT

+ ×

// **JAKE ARCHIBALD** - MINIMISING-FONT-DOWNLOADS

// **EVERY ZACH LEATHERMAN BLOG POST EVER**





THANKS!

Noun Project: Smile by Clara Joy, Tubby Cat by Lauren Manninen, Exclamation by Kevin, Wink, Balloon, Microphone by Julien Deveaux, Ghost by Ted Meltok, Crazy Happy Creature by Tawny Whatmore, Cloud by Viraj, Web Page by Rajakumara, Settings by Akriti Bhusal, Dead cat by Erika Jasso, Wizard hat by Magicon, Rainbow by Grégory Montigny, Lettering by Carlo Pico, Icons by Setyo Ari Wibowo