

# Custom Properties: The Secret Ingredients for CSS Magic

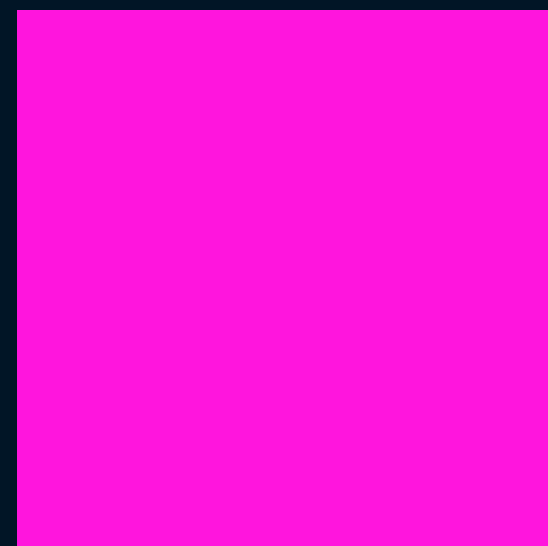
Michelle Barker (Atomic Smash)

Partners

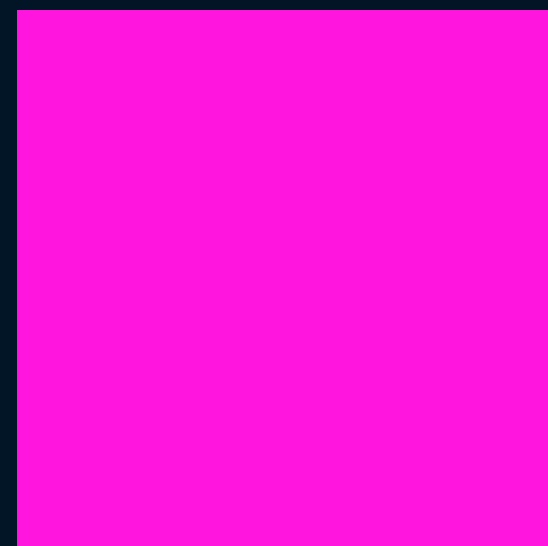


```
:root {  
  --primaryColor: deeppink;  
}
```

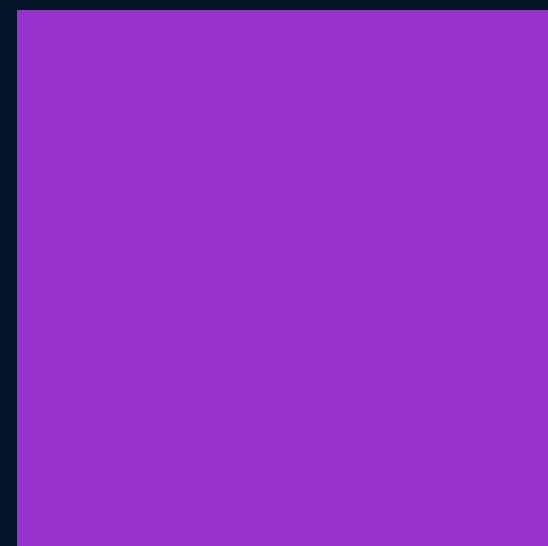
```
:root {  
  --primaryColor: deeppink;  
}  
  
.box {  
  background-color: var(--primaryColor);  
}
```



```
:root {  
  --primaryColor: deeppink;  
}  
  
.box {  
  background-color: var(--primaryColor, darkorchid);  
}
```

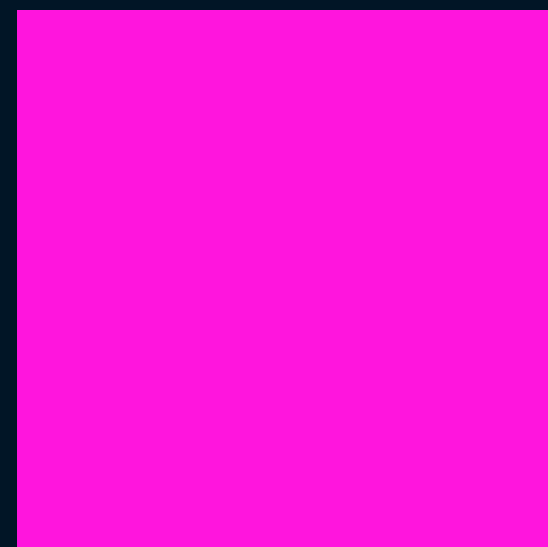


```
/* :root {  
  --primaryColor: deeppink;  
} */  
  
.box {  
  background-color: var(--primaryColor, darkorchid);  
}
```



IE11 🥲

```
.box {  
  background-color: deeppink;  
  background-color: var(--bg, darkorchid);  
}
```



# IE11 🥲

```
.box {  
  /* background-color: deeppink; */  
  background-color: var(--bg, darkorchid);  
}
```

The square is here,  
you just can't see it



# Nice lovely browser

```
.box {  
  background-color: deeppink;  
  background-color: var(--bg, 300);  
}
```

Sorry, it's still  
invisible





**Sass variable**



```
$bgColor: deeppink;
```

**!==**

```
--primaryColor: deeppink;
```



**Custom property**

Repeating values

Repeating values

Repeating values

**Repeating values**

Repeating values

Repeating values

Repeating values

```
.some-element {  
  padding: 12rem 1rem 1rem;  
}
```

```
.another-element {  
  padding: 0 1rem 1rem;  
}
```

```
.some-element {  
  padding: 12rem 1rem 1rem;  
}  
  
.another-element {  
  padding: 0 1rem 1rem;  
}  
  
@media (min-width: 50em) {  
  .some-element {  
    padding: 12rem 3rem 3rem;  
  }  
  
  .another-element {  
    padding: 0 3rem 3rem;  
  }  
}
```

```
.some-element {  
  padding: 12rem var(--pad) var(--pad);  
}
```

```
.another-element {  
  padding: 0 var(--pad) var(--pad);  
}
```

```
:root {  
  --pad: 1rem;  
}
```

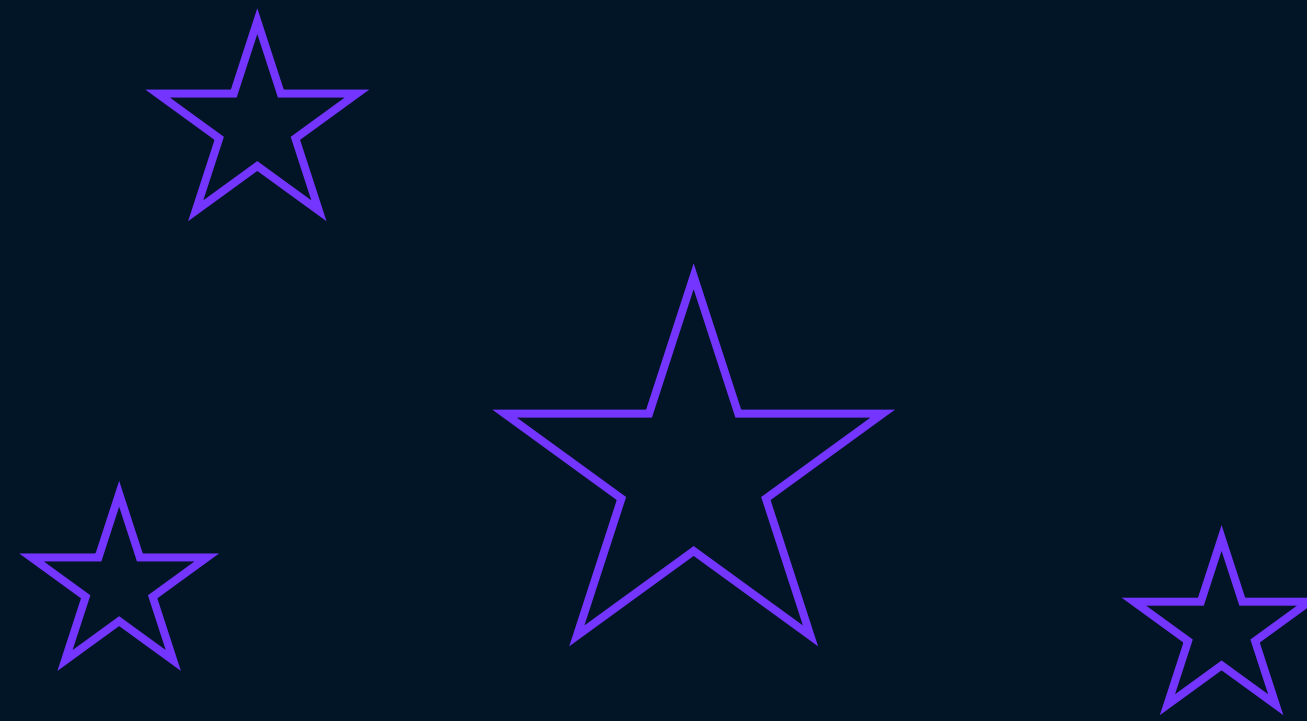
```
@media (min-width: 50em) {  
  :root {  
    --pad: 3rem;  
  }  
}
```

```
:root {  
  --clip: polygon(80% 0, 100% 0, 100% 100%, 20% 100%);  
}  
  
.element {  
  -webkit-clip-path: var(--clip);  
  clip-path: var(--clip);  
}
```



# Global vs local scoping





**Dark mode**

72 Posts

Latest article

## CSS-only Slide-up Caption How

27 May, 2020

Have you ever needed to build a UI where a caption needs to be revealed by revealing more content? This is something I've...

### All the CSS Colours

19 May, 2020

I recently made a demo where I needed to list all the CSS named colours as options in a select input. I didn't want to write them all out by...

### Exciting Things For CSS Layout

01 May, 2020

This past week has been exciting for me from browser vendors...

```
:root {
  --primary: deepPink;
  --headerBg: #1d1d26;
  --textColor: #0e0f0f;
  --textColorInverse: #fcfdff;
  --bg: #fcfdff;
  --bgTint: #dfeded;
  --bgGrey: #e6e8e8;
  --white: #fcfdff;
}
```

```
@media (prefers-color-scheme: dark) {
  :root {
    --bg: #161618;
    --bgTint: #27272c;
    --bgGrey: #27272c;
    --textColor: #dbd7db;
    --textColorInverse: #0e0f0f;
  }
}
```

72 Posts

### Lastest article

## CSS-only Slide-up Caption How

27 May, 2020

Have you ever needed to build a UI where a caption needs to be revealed by revealing more content? This is something I've...

### All the CSS Colours

19 May, 2020

I recently made a demo where I needed to list all the CSS named colours as options in a select input. I didn't want to write them all out by...

### Exciting Things For CSS Layouts

01 May, 2020

This past week has been a busy one for me from browser updates...

```
:root {  
  --color: deeppink;  
}
```

```
.purple {  
  --color: darkorchid;  
}
```

## Welcome to my website

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. [Sed augue lacus](#) viverra vitae congue eu consequat ac. Ridiculus mus mauris vitae ultricies. Quam quisque id diam vel quam elementum pulvinar etiam non. Eget egestas purus viverra accumsan in nisl.

Dignissim cras tincidunt lobortis feugiat vivamus at augue eget arcu. Vivamus at augue eget arcu dictum varius duis. Tortor aliquam nulla facilisi cras fermentum odio. Et malesuada fames ac turpis egestas maecenas pharetra convallis posuere. Viverra nam libero justo laoreet sit amet cursus sit amet. Mi proin sed libero enim sed faucibus turpis in. Est ullamcorper eget nulla facilisi etiam dignissim. Nulla aliquet enim tortor at auctor urna nunc. Vulputate eu scelerisque felis imperdiet proin fermentum leo. Sit amet consectetur adipiscing elit duis tristique sollicitudin nibh.

Try it out

## Welcome to my website

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. [Sed augue lacus](#) viverra vitae congue eu consequat ac. Ridiculus mus mauris vitae ultricies. Quam quisque id diam vel quam elementum pulvinar etiam non. Eget egestas purus viverra accumsan in nisl.

Dignissim cras tincidunt lobortis feugiat vivamus at augue eget arcu. Vivamus at augue eget arcu dictum varius duis. Tortor aliquam nulla facilisi cras fermentum odio. Et malesuada fames ac turpis egestas maecenas pharetra convallis posuere. Viverra nam libero justo laoreet sit amet cursus sit amet. Mi proin sed libero enim sed faucibus turpis in. Est ullamcorper eget nulla facilisi etiam dignissim. Nulla aliquet enim tortor at auctor urna nunc. Vulputate eu scelerisque felis imperdiet proin fermentum leo. Sit amet consectetur adipiscing elit duis tristique sollicitudin nibh.

Try it out



# Vertical rhythm

--vr: 2rem

# Vertical rhythm and custom properties

Using custom properties to set a vertical rhythm for our design system.

---

## First heading

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Fuga delectus harum distinctio iure id. Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

### **This section has a different vertical rhythm**

Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

[Find out more →](#)

var(--vr)

# Vertical rhythm and custom properties

Using custom properties to set a vertical rhythm for our design system.

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[Find out more →](#)

```
calc(2 * var(--vr))
```

# Vertical rhythm and custom properties

Using custom properties to set a vertical rhythm for our design system.

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[Find out more →](#)



```
* + * {  
  margin-top: var(--vr);  
}
```

```
* + * {  
  margin-top: var(--vr);  
}
```

```
* + h2 {  
  margin-top: calc(2 * var(--vr));  
}
```

```
:root {  
  --vr: 1rem;  
}
```

```
@media (min-width: 50em) {  
  :root {  
    --vr: 2rem;  
  }  
}
```

```
--vr: 1rem;
```

## Vertical rhythm and custom properties

Using custom properties to set a vertical rhythm for our design system.

---

### First heading

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Fuga delectus harum distinctio iure id. Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

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Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

[Find out more →](#)

### Second heading

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris et posuere risus. Nam tortor ex, consequat

```
--vr: 2rem;
```

## Vertical rhythm and custom properties

Using custom properties to set a vertical rhythm for our design system.

---

### First heading

Lorem ipsum dolor sit amet consectetur, adipisicing elit. Fuga delectus harum distinctio iure id. Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

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Minus nesciunt accusantium tenetur, explicabo, temporibus labore, eligendi commodi sequi molestiae perspiciatis asperiores nihil unde itaque?

[Find out more →](#)

```
:root {  
  --vr: 1rem;  
  --2vr: calc(2 * var(--vr));  
}
```

```
@media (min-width: 50em) {  
  :root {  
    --vr: 2rem;  
  }  
}
```

**Color**

# Hue Saturation Lightness

```
hsl(3deg, 89%, 61%)
```

# Hue Saturation Lightness

```
hsl(var(--hue), 89%, 61%)
```



```
.color-pair {  
  --hue: 3deg;  
  --hue2: calc(var(--hue) + 180deg);  
}
```

```
--hue: 3deg;
```



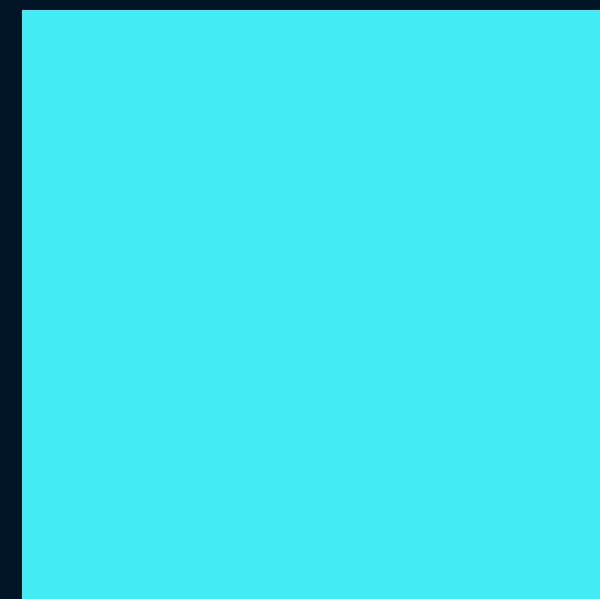
```
--hue2: calc(var(--hue) + 180deg);
```

```
.color-pair--red {  
  --hue: 3deg;  
}
```

```
hsl(var(--hue), 89%, 61%);
```

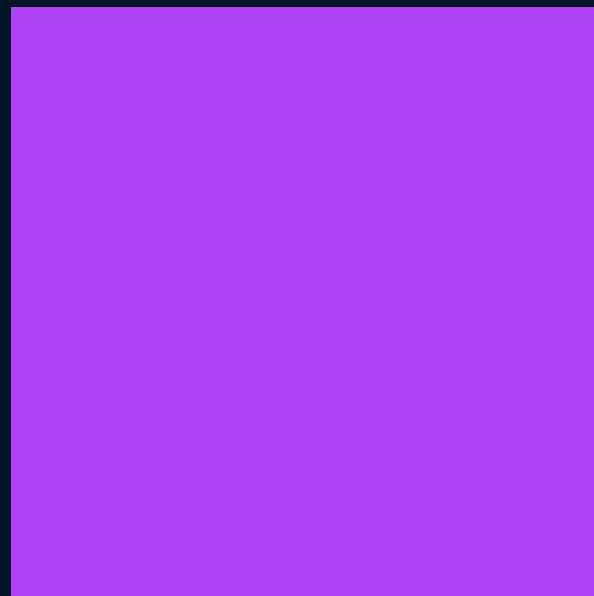


```
hsl(var(--hue2), 89%, 61%);
```



```
.color-pair--purple {  
  --hue: 276deg;  
}
```

```
hsl(var(--hue), 89%, 61%);
```

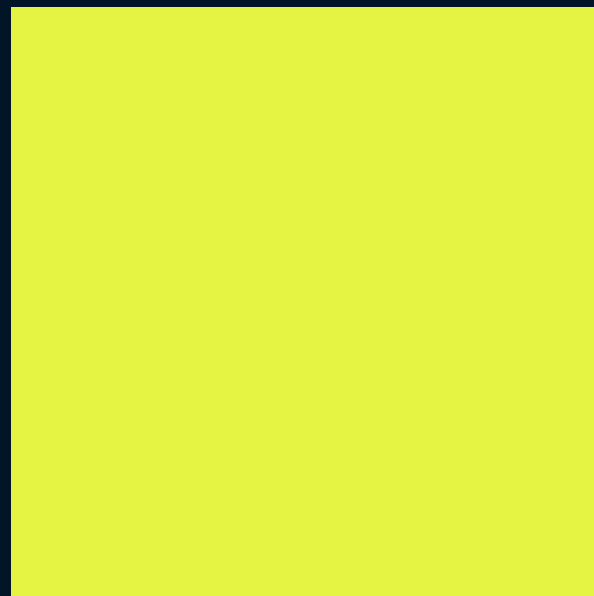


```
hsl(var(--hue2), 89%, 61%);
```



```
.color-pair--yellow {  
  --hue: 65deg;  
}
```

```
hsl(var(--hue), 89%, 61%);
```



```
hsl(var(--hue2), 89%, 61%);
```



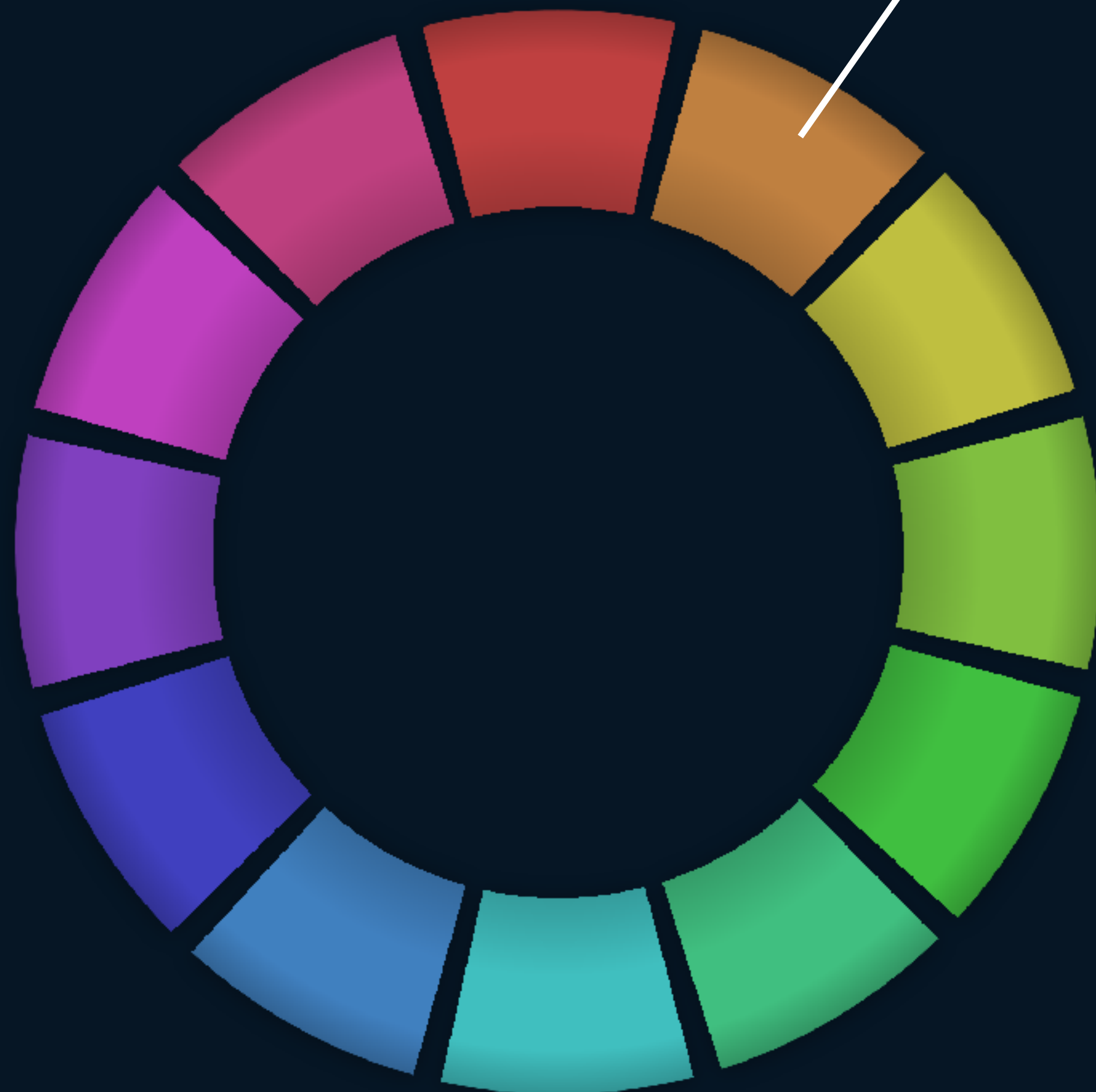


```
.element {  
  --segment: 30deg;  
}
```



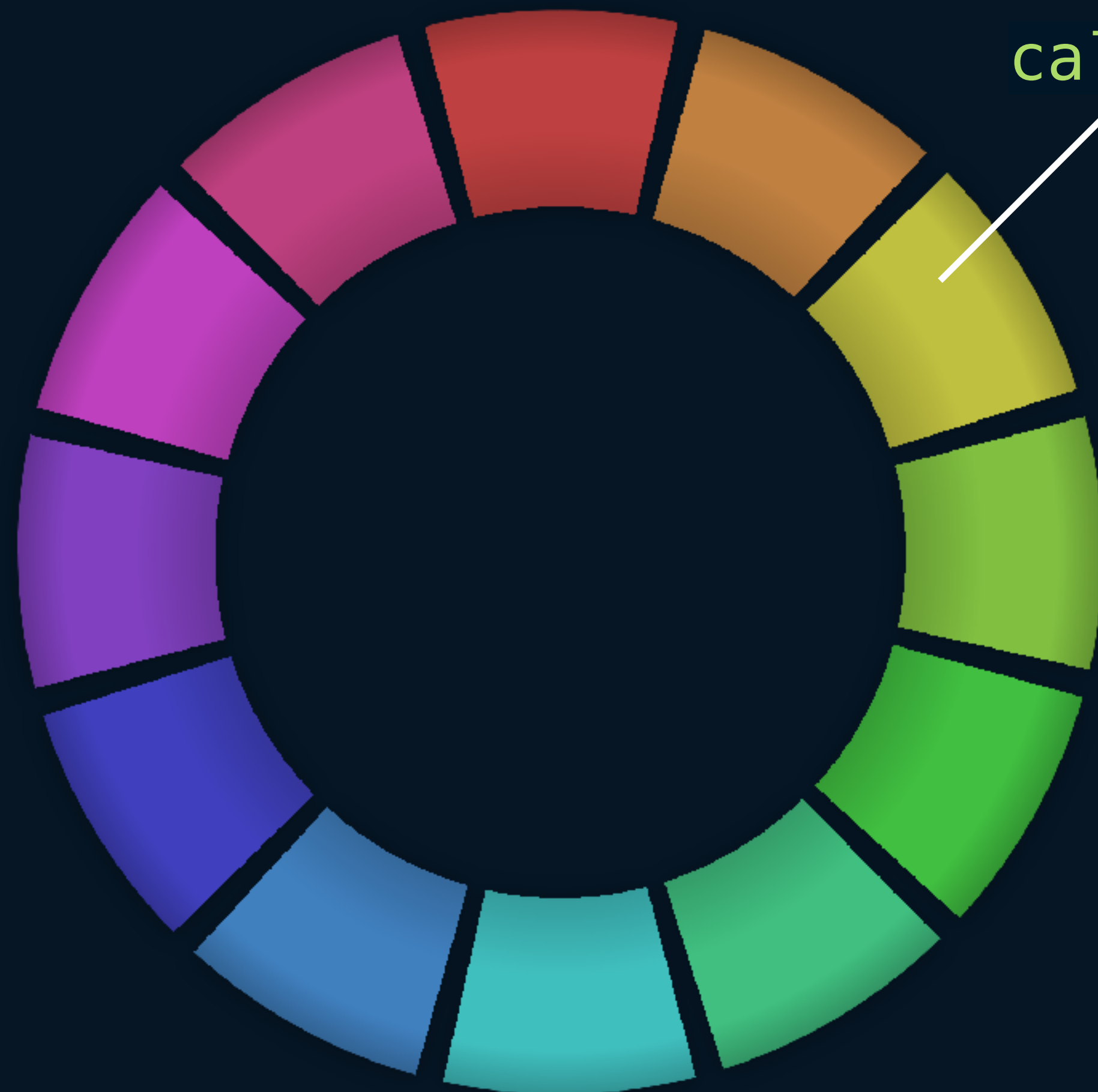
```
.element {  
  --segment: 30deg;  
}
```

```
calc(var(--segment) * 2);
```

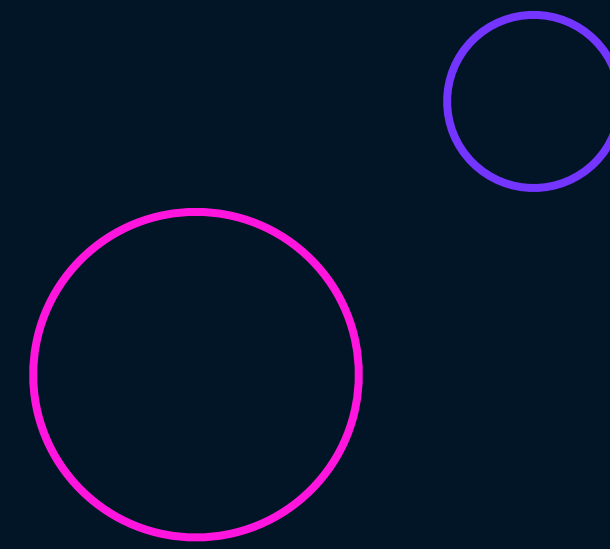




```
.element {  
  --segment: 30deg;  
}
```



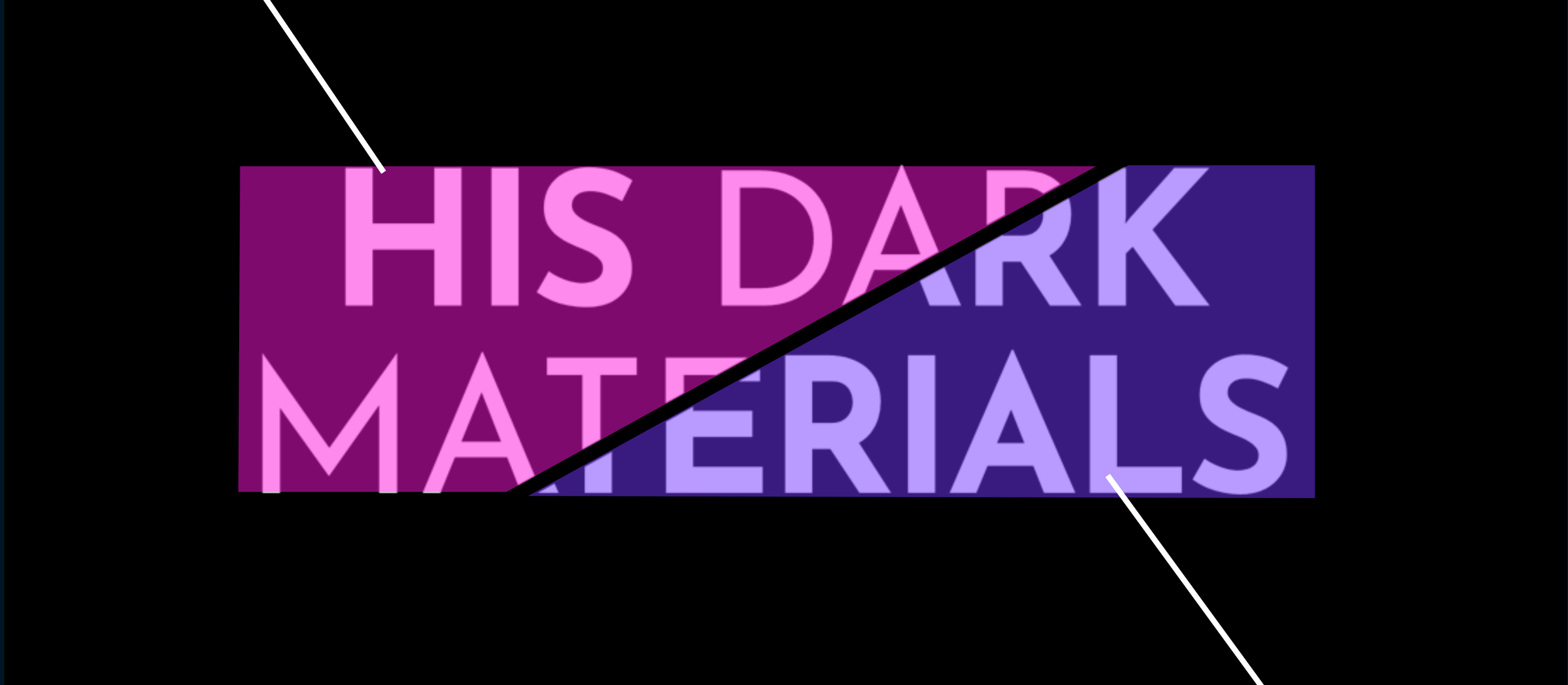
`calc(var(--segment) * 3);`



**Relative values**

# HIS DARK MATERIALS

**Path 1**



**Path 2**



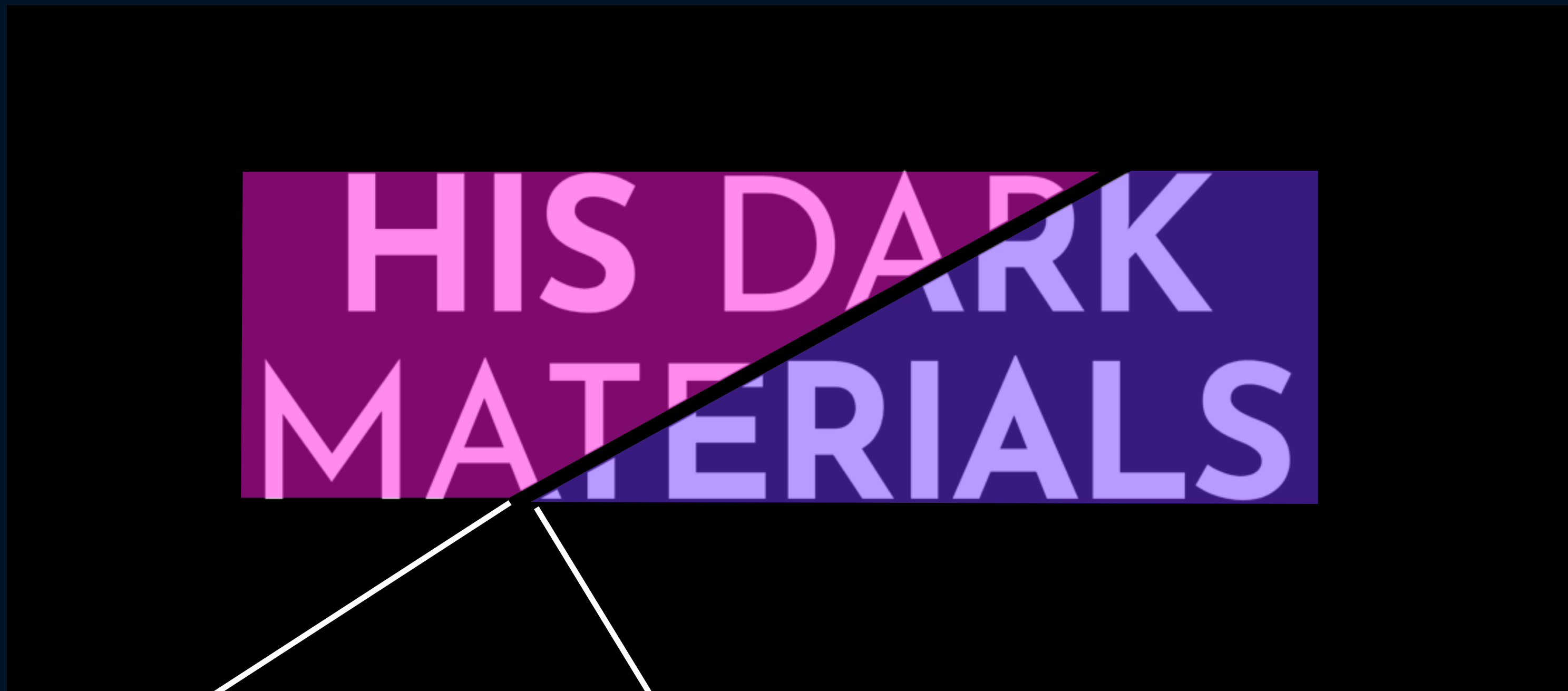
HIS DARK  
MATERIALS

`calc(80% - 0.5rem)`

`calc(80% + 0.5rem)`



HIS DARK  
MATERIALS



`calc(20% - 0.5rem)`

`calc(20% + 0.5rem)`

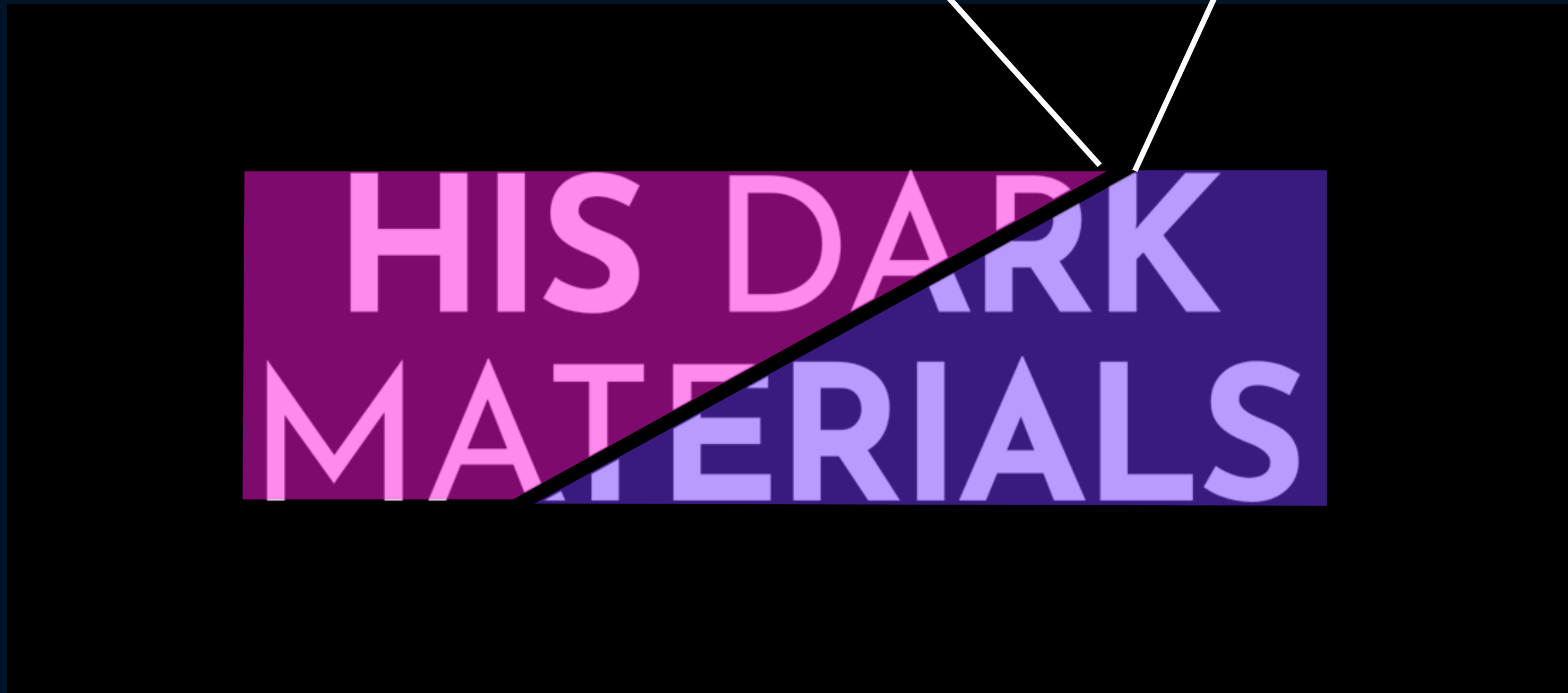
```
.element {  
  --bottom: 20%;  
  --top: 80%;  
  --offset: 0.5rem;  
}
```



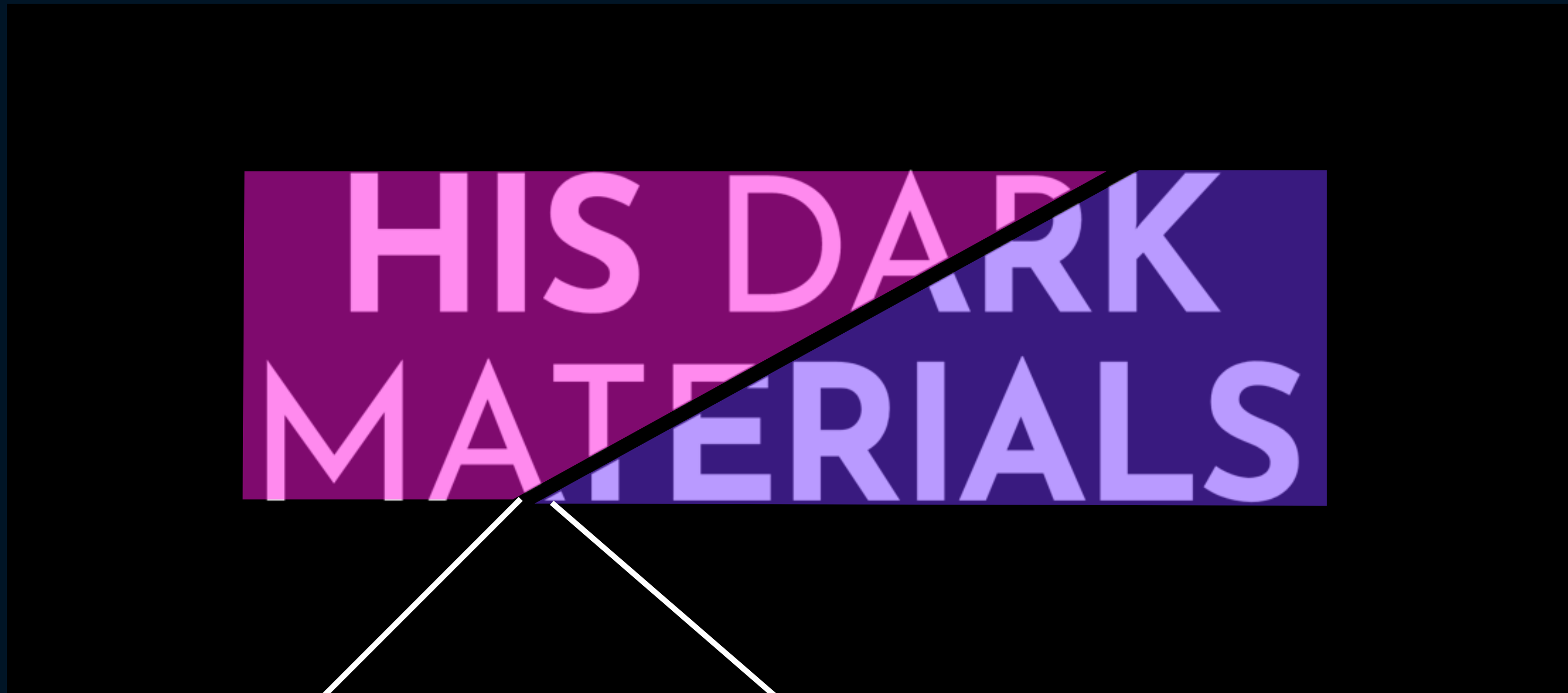
HIS DARK  
MATERIALS



```
.element {  
  --bottom: 20%;  
  --top: 80%;  
  --offset: 0.5rem;  
}  
  
calc(var(--top) - var(--offset))  
calc(var(--top) + var(--offset))
```



```
.element {  
  --bottom: 20%;  
  --top: 80%;  
  --offset: 0.5rem;  
}
```



`calc(var(--bottom) - var(--offset))`

`calc(var(--bottom) + var(--offset))`



**Local scoping**

```
.grid {  
  --cols: 8;  
  
  grid-template-columns: repeat(var(--cols), minmax(0, 1fr));  
  ...  
}  
  
@media (min-width: 60em) {  
  .grid {  
    --cols: 12;  
  }  
}
```



# STAGES & TANKS

With a world-class collection of some of the UK's largest soundstages and tanks, Warner Bros. Studios Leavesden is the place for even the most ambitious of sets.



# BACKLOT

At more than 100 acres, our backlot is one of the



With a world-class collection of some of the UK's largest soundstages and tanks, Warner Bros. Studios Leavesden is the place for even the most ambitious of sets.



# STAGES & TANKS



# BACKLOT

At more than 100 acres, our backlot is one of the

```
.grid {
  display: grid;
  grid-template-columns:
    [outer-start] minmax(20px, 1fr) [wrapper-start]
    repeat(24, minmax(0, 30px))
    [wrapper-end] minmax(20px, 1fr) [outer-end];
  grid-template-rows:
    [outer-start] 1fr [text-top-end] 40px
    [heading-start] auto [heading-end]
    40px [text-bottom-start] 1fr [outer-end];
  grid-gap: 0 20px;
}
```

```
.grid {  
  --columnWidth: 30px;  
  --gutter: 20px;  
  
  display: grid;  
  ...  
}
```



```
@supports (---cols: 8) {  
  .grid {  
    ---cols: 8;  
  
    /* More code here... */  
  }  
}
```

**S**  
**t**  
**a**  
**g**  
**g**  
**e**  
**r**  
**e**  
**d**

# **Animations**

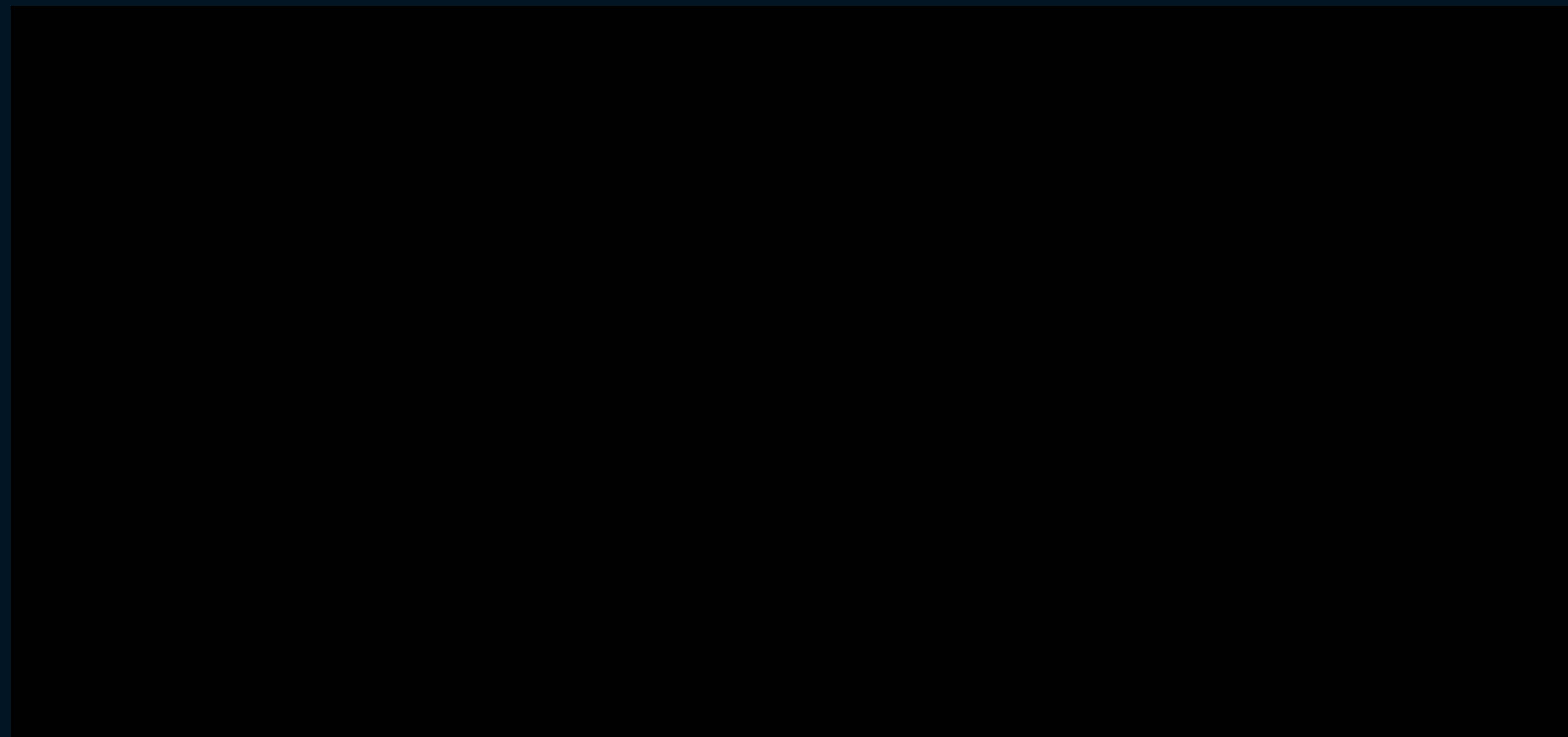


```
.some-element:nth-child(2) {  
  --i: 2;  
}
```

```
.some-element:nth-child(3) {  
  --i: 3;  
}
```

```
.some-element {  
  --delay: calc(var(--i, 1) * 400ms);  
}
```

```
.some-element {  
  --delay: calc(var(--i, 1) * 400ms);  
  animation: appear 1000ms var(--delay) forwards;  
}
```



# Progress indicators

---

## **1** Discovery and assessment

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Adipiscing diam donec adipiscing tristique risus.

## **2** Information gathering and analysis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Adipiscing diam donec adipiscing tristique risus.

## **3** Creating your claim



```
<ol style="--length: 5">
  <li style="--i: 1">...</li>
  <li style="--i: 2">...</li>
  <li style="--i: 3">...</li>
  <li style="--i: 4">...</li>
  <li style="--i: 5">...</li>
</ol>
```

```
li::before {  
  --stop: calc(100% / var(--length) * var(--i));  
  
  background:  
    linear-gradient(to right,  
      var(--c1) var(--stop), var(--c2) var(--stop));  
}
```



## Information gathering and analysis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Adipiscing diam donec adipiscing tristique risus.

```
<h1>  
  <span style="--i: 1">B</span>  
  <span style="--i: 2">r</span>  
  <span style="--i: 3">e</span>  
  <span style="--i: 4">a</span>  
  <span style="--i: 5">t</span>  
  <span style="--i: 6">h</span>  
  <span style="--i: 7">i</span>  
  <span style="--i: 8">n</span>  
  <span style="--i: 9">g</span>  
</h1>
```

```
span {  
  --delay: calc((var(--i) + 1) * 400ms);  
  animation: breathe 4000ms var(--delay) infinite both;  
}
```

# Breathing



# splitting.js.org

[Guide](#)[Plugins](#)[API](#)[Demos](#)[View on GitHub](#)

## CSS Vars for split words & chars! (items, grids, images, too!)

Splitting creates elements and adds CSS variables to unlock amazing possibilities for animating text, grids, and more!

[Get Splitting →](#)

Install with `npm i splitting -s` or [Download .zip](#)

### DoubleDash your CSS

The previously impractical becomes easy with Splitting's CSS Variables.

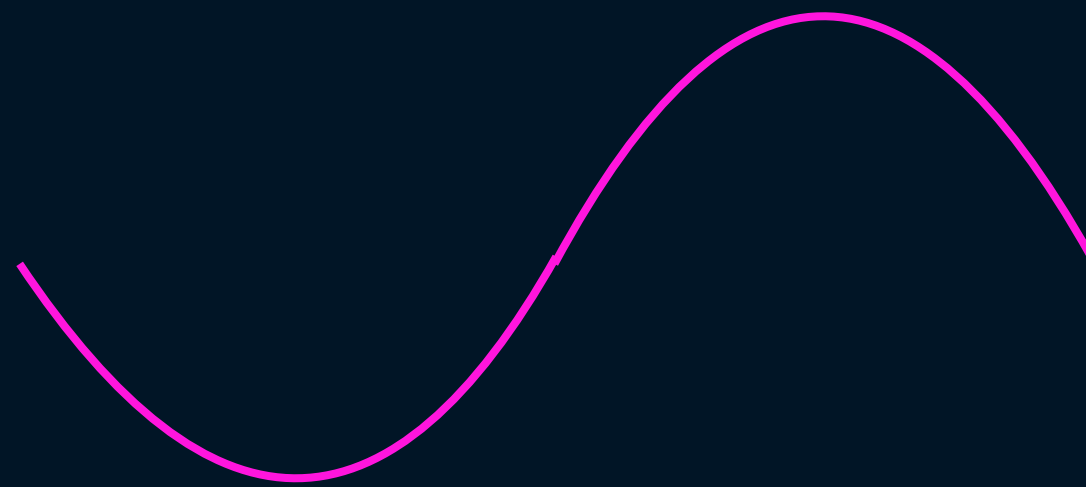
### Comically Small

A shocking amount of features in a 1.5kb (minified & gzipped) package.

### Progressively Enhance

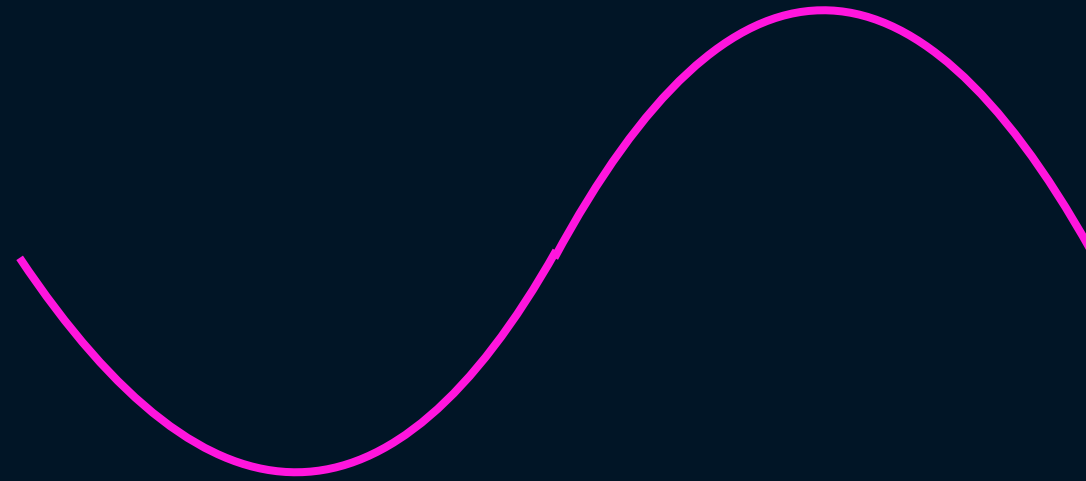
Upgrade websites for modern browsers without breaking IE.

# Motion Path





# Motion Path





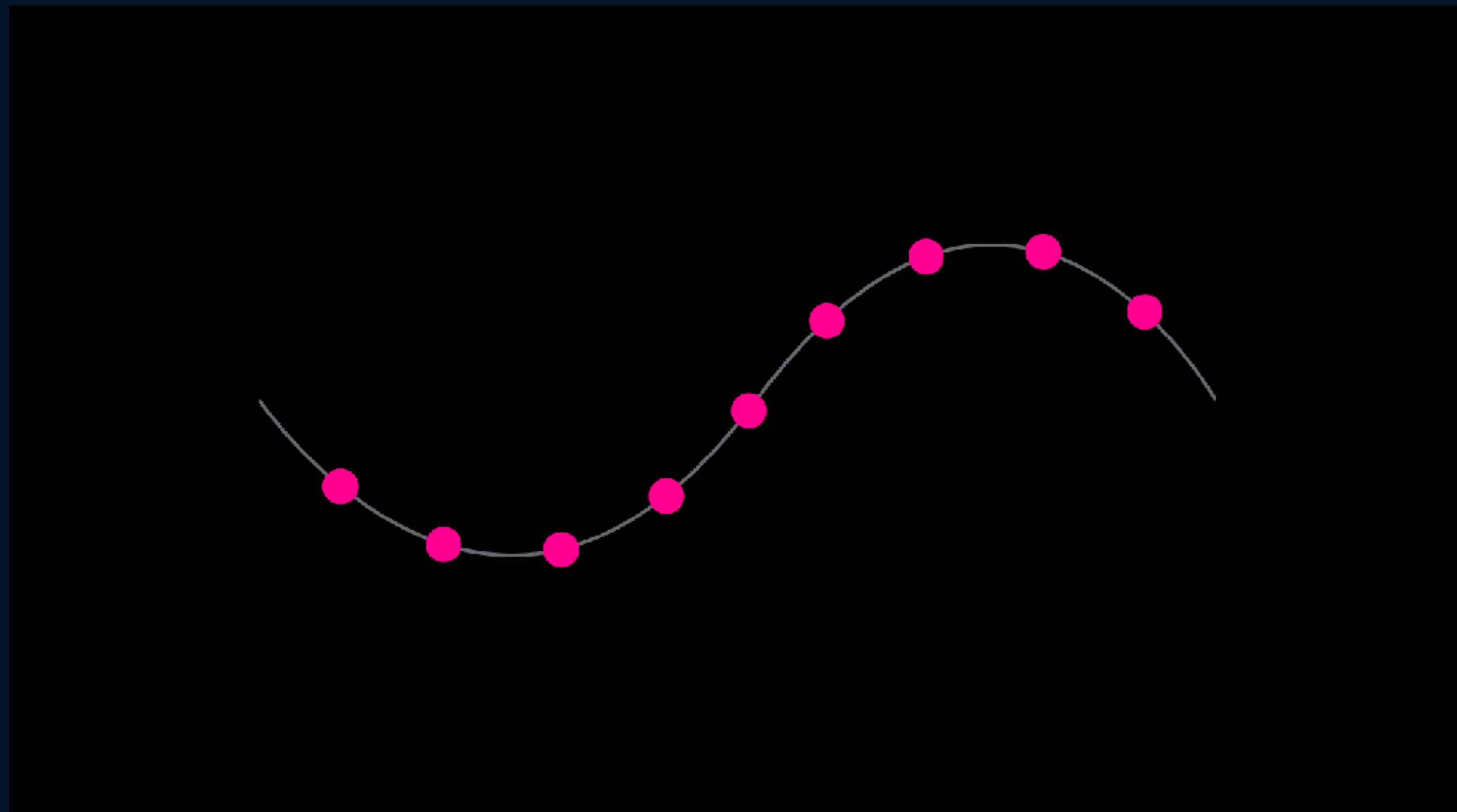
```
.element {  
  offset-path: path('M.4 84.1s127.4 188 267.7 0  
                    247.3 0 247.3 0');  
  offset-distance: 0;  
}
```

```
.element {
  offset-path: path('M.4 84.1s127.4 188 267.7 0
                    247.3 0 247.3 0');
  offset-distance: 0;
  animation: move 2000ms infinite alternate;
}

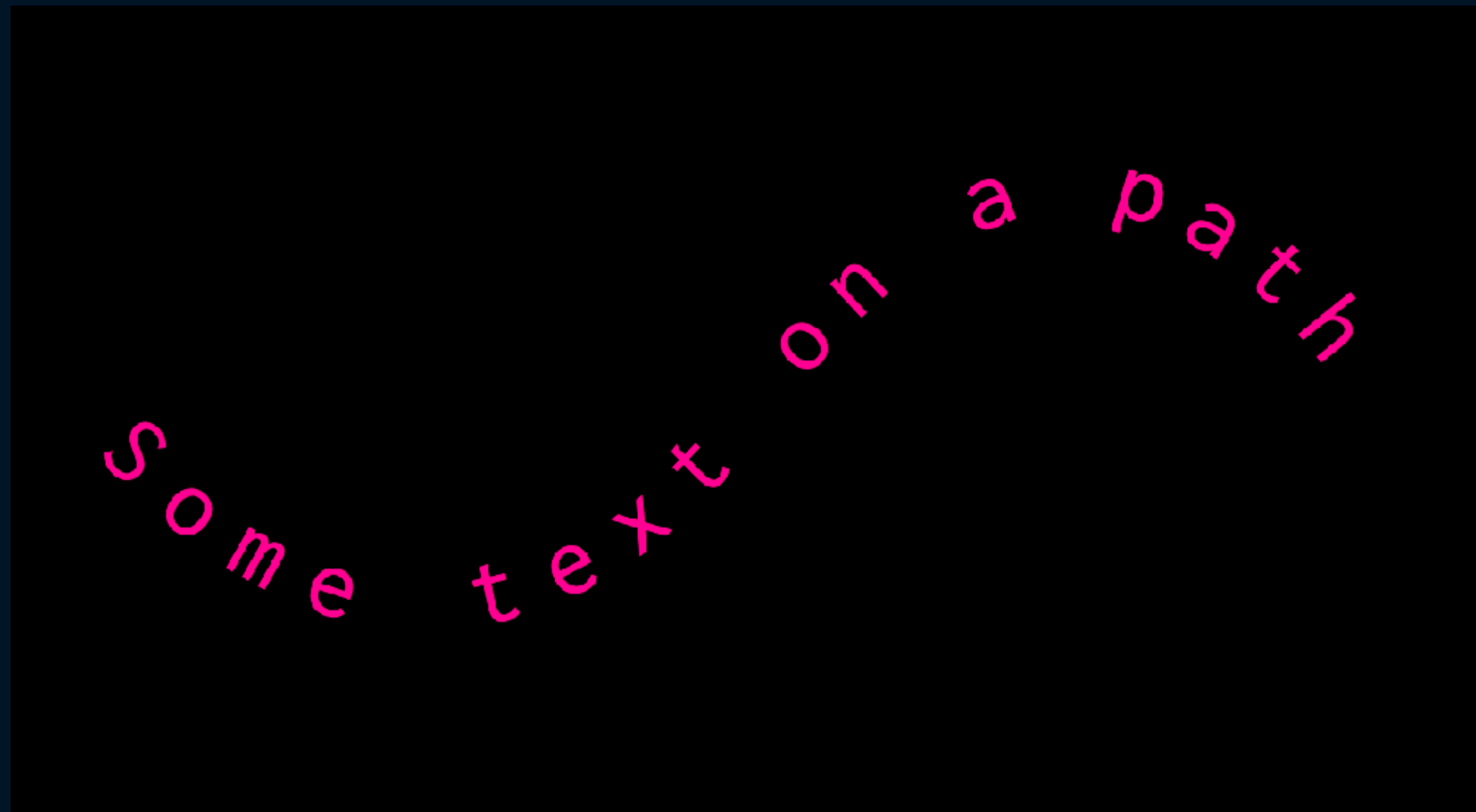
@keyframes move {
  to {
    offset-distance: 100%;
  }
}
```



```
.element {  
  offset-distance: calc(var(--i, 1) * 4rem);  
}
```



```
.char {  
  offset-distance: calc(var(--i, 1) * 2rem);  
}
```



```
.char {  
  --offset: calc(100% / (var(--char-total) + 1));  
  offset-distance: calc(var(--offset) * var(--char-index));  
}
```

```
.char {  
  --offset: calc(100% / (var(--char-total) + 1));  
  offset-distance: calc(var(--offset) * var(--char-index));  
}
```

```
.char {  
  --offset: calc(100% / (var(--char-total) + 1));  
  offset-distance: calc(var(--offset) * var(--char-index));  
}
```



MOTION PATH TEXT IN A CIRCLE WITH

```
--offset: calc(100% / (var(--char-total) + 1));
```

MOTION PATH TEXT IN A CIRCLE WITH

```
offset-distance: calc(var(--offset) * var(--char-index));
```

MOTION PATH TEXT IN A CIRCLE WITH

```
.char {
  --position: calc(var(--char-index) * 1em);

  offset-distance: var(--position);
  animation: move 1500ms infinite alternate forwards;
}

@keyframes move {
  to {
    offset-distance: calc(var(--position) + 12rem);
  }
}
```

I AM ANIMATING

```
.char {  
  --delay: calc(var(--char-index) * 30ms);  
  animation: move 1500ms var(--delay) infinite alternate forwards;  
}
```

I AM ANIMATING

CAN'T STOP LOOPING



JUST HANGING OUT

```
.item {
  --d: 1000ms;
  --i: calc(var(--item-total) - var(--item-index));
  --x: calc((var(--item-index) - var(--i)) * 4deg);
  --tPerSegment: calc(var(--d) / var(--item-total));
  --itemDuration: calc(var(--tPerSegment) * var(--item-index));
  --itemDuration2: calc(var(--tPerSegment) * var(--i));
  --c: calc(1 / var(--item-total) * 50);
  --h: calc(var(--item-index) * 15);
  --color: hsl(var(--h), 50%, 50%);
  --offset: calc(var(--item-index) * (var(--c) * 1%) + 1.65rem);
  --offset2: calc(var(--i) * (var(--c) * 1%));
  --endPos: calc(var(--item-total) * (var(--c) * 1%));
}
```



# State switching





```
.box {
```

```
--i: 0;
```

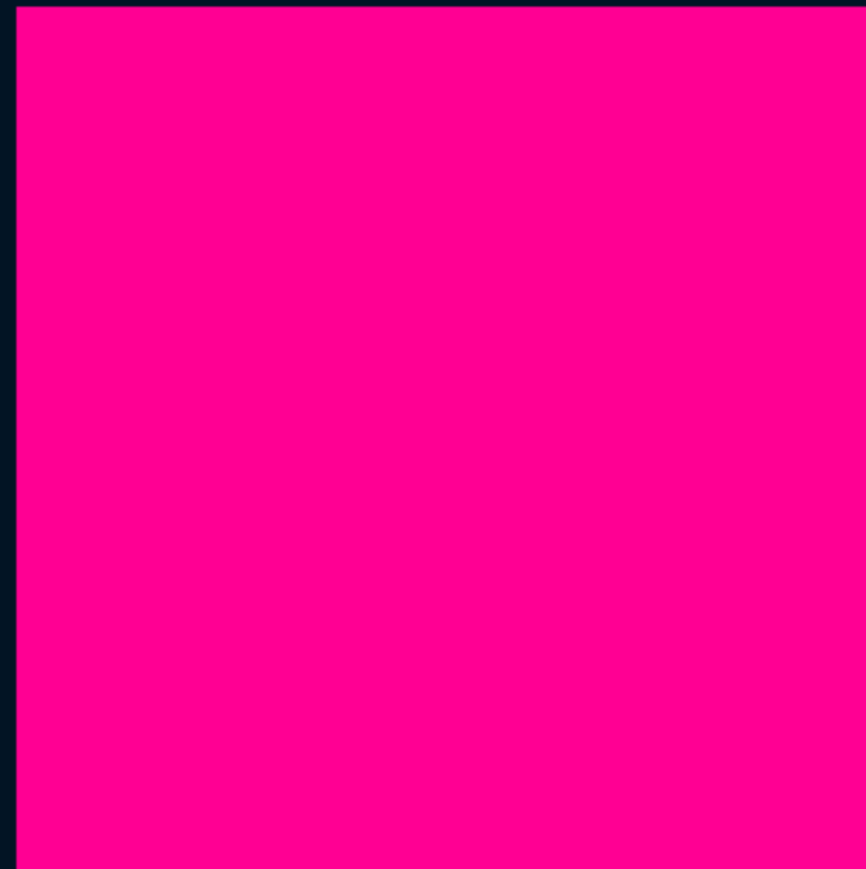
```
border-radius: calc(var(--i) * 50%);
```

```
transform:
```

```
  rotate(calc(var(--i) * 90deg)) skew(calc(var(--i) * 15deg));
```

```
}
```

Off



```
.box {
```

```
--i: 1;
```

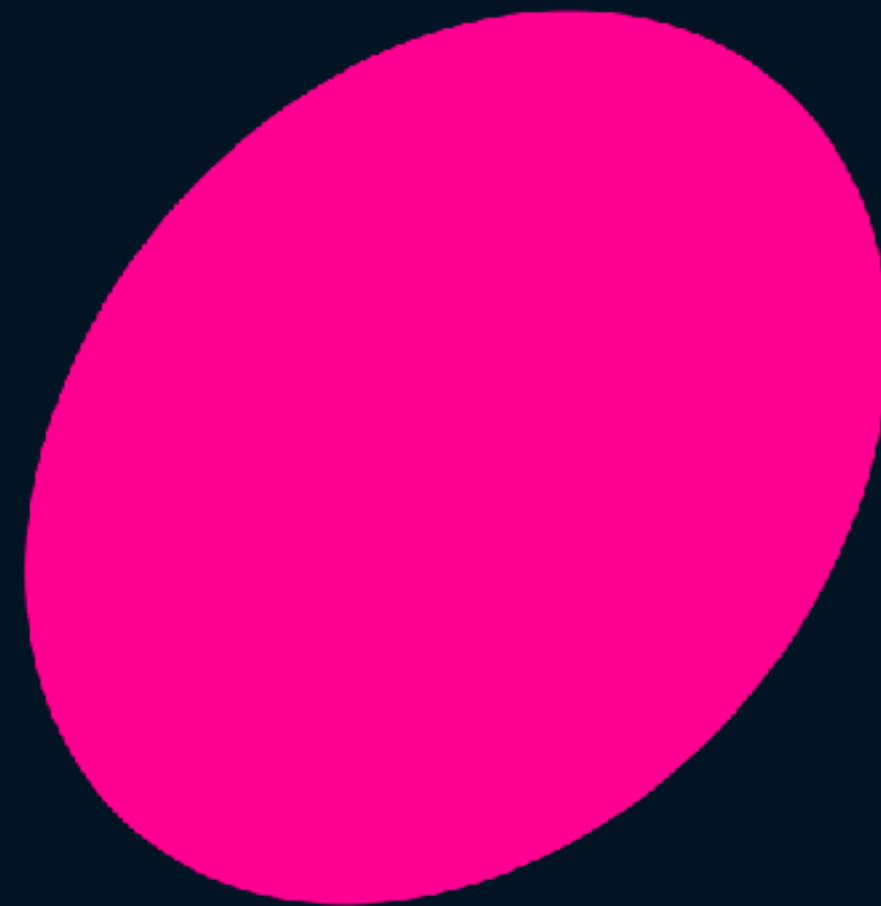
```
border-radius: calc(var(--i) * 50%);
```

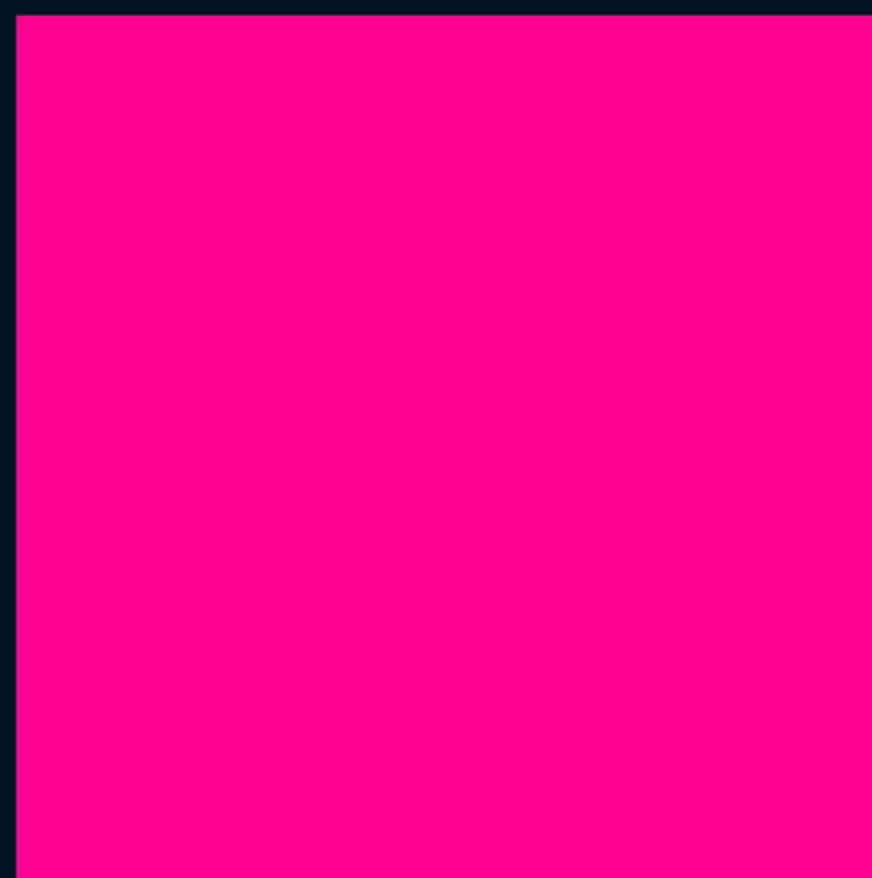
```
transform:
```

```
  rotate(calc(var(--i) * 90deg)) skew(calc(var(--i) * 15deg));
```

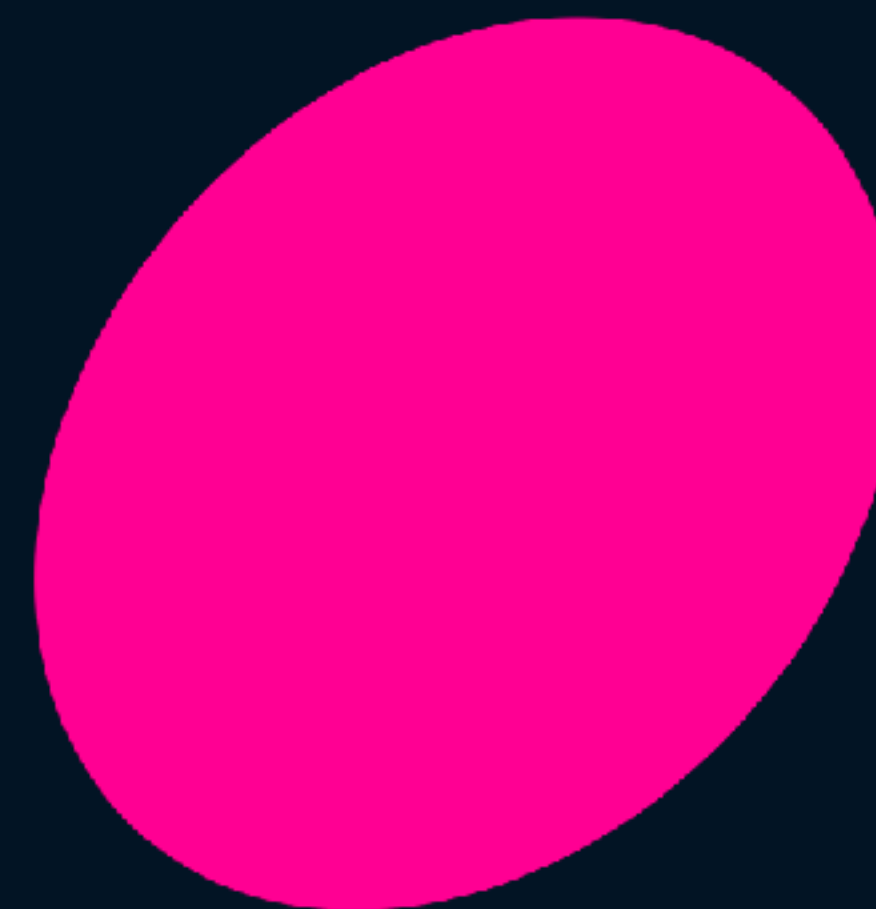
```
}
```

On



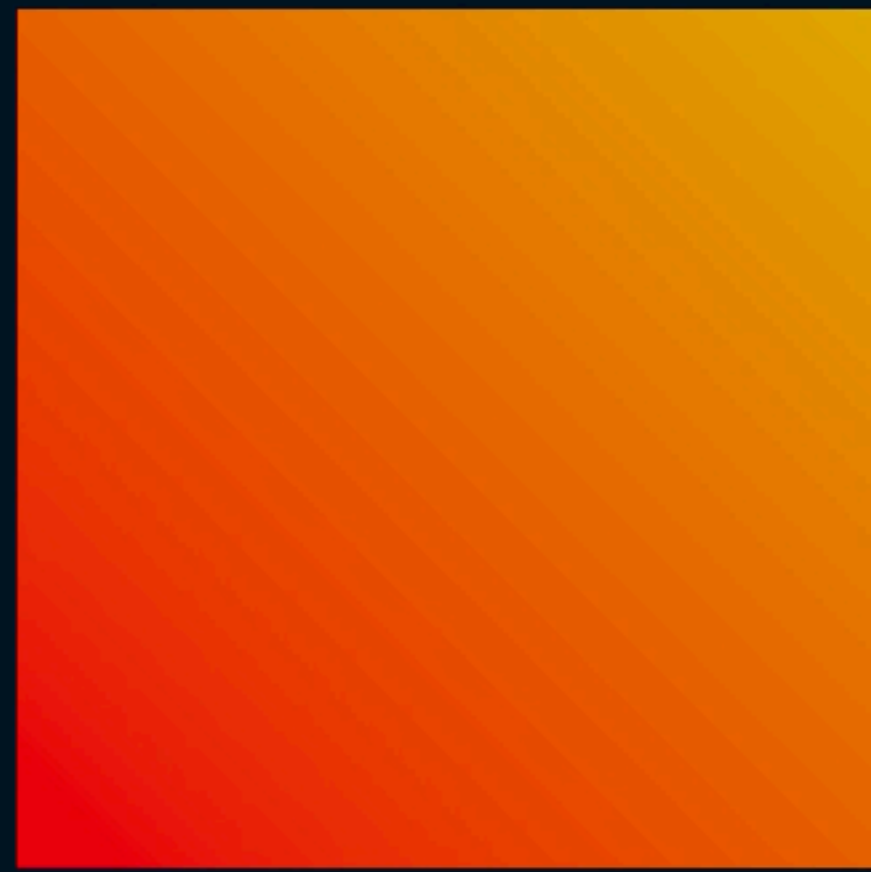


```
--i: 0;
```

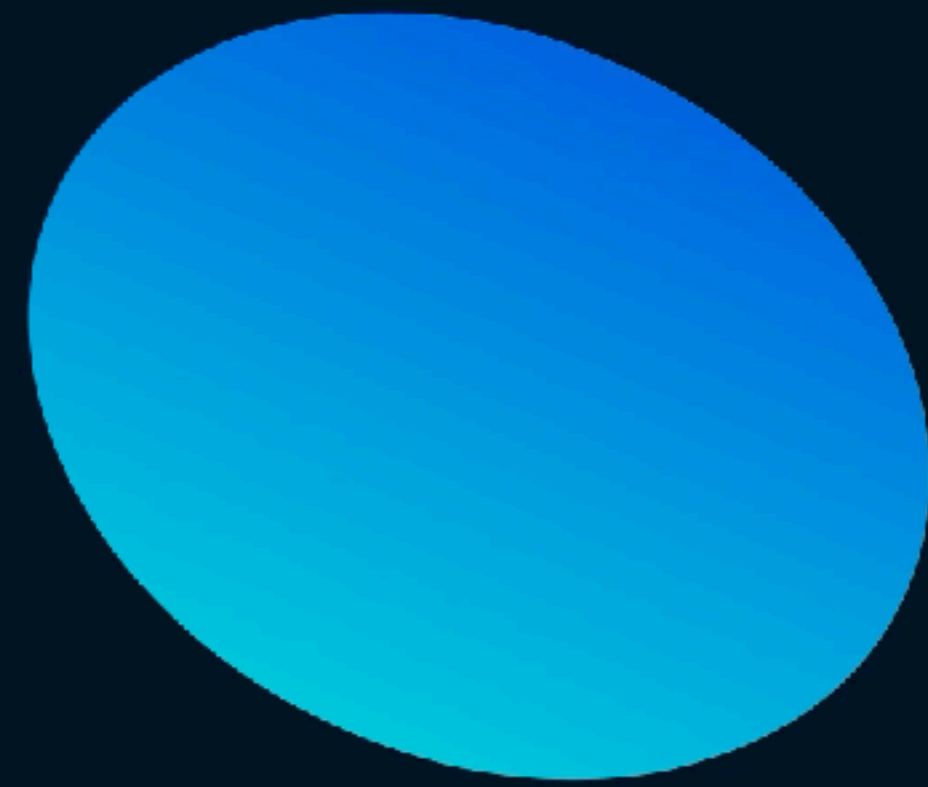


```
--i: 1;
```





```
--i: 0;
```



```
--i: 1;
```



## Zig-zag gradient lab

### Options

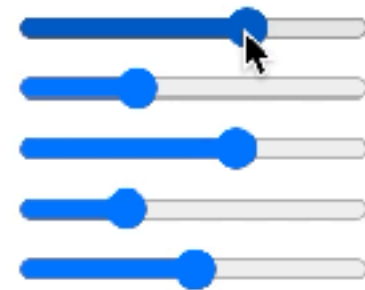
Angle

Stripe thickness

Segment width

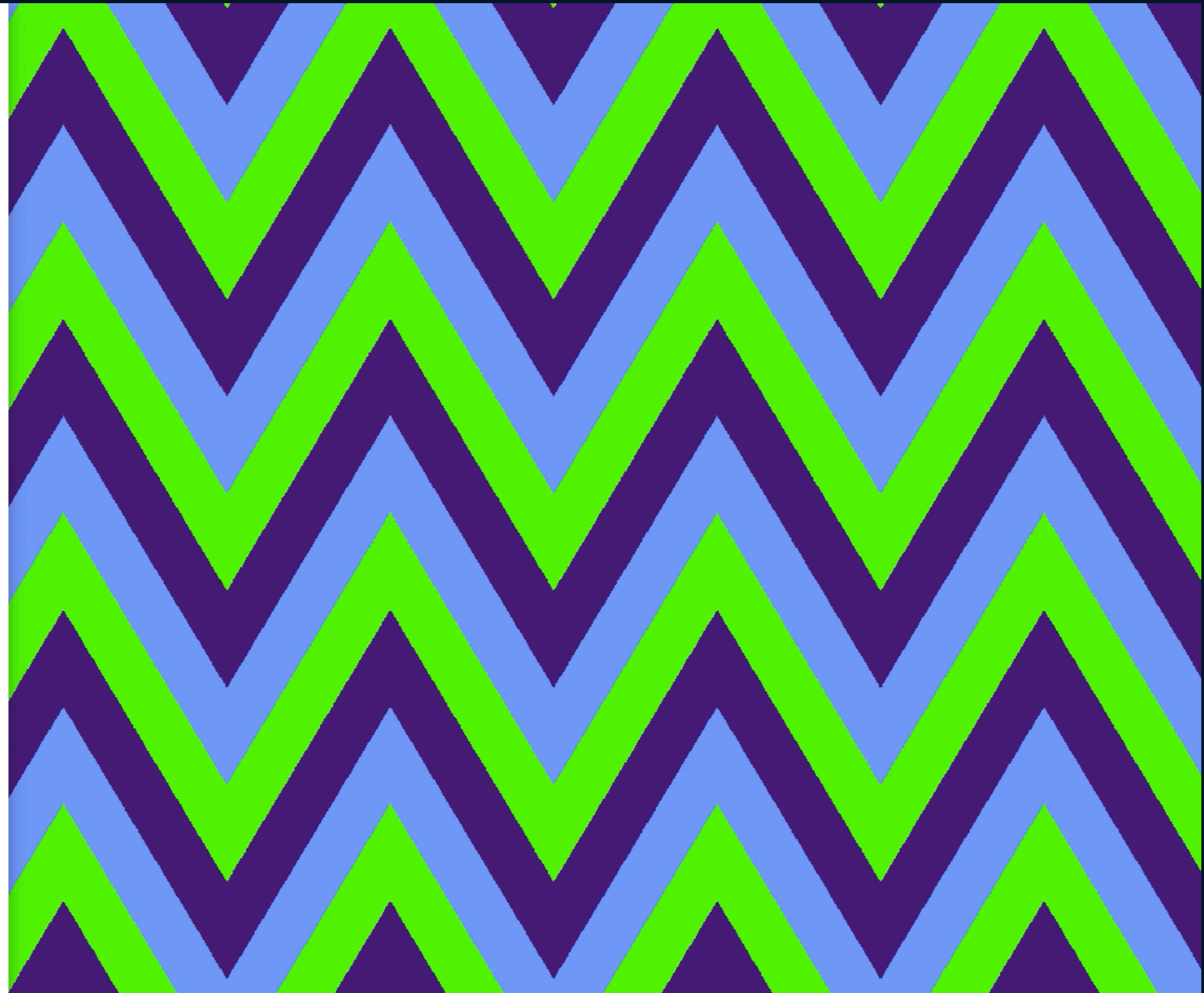
Primary colour

Contrast



### CSS output

```
.bg {  
  background-image: repeating-linear-gradient(59deg,  
  background-size: 131px 100%, 131px 100%;  
}  
  
.bg::after {  
  background-image: repeating-linear-gradient(calc(  
  background-size: 131px 100%, 131px 100%;  
  -webkit-mask-image: repeating-linear-gradient(to  
  mask-image: repeating-linear-gradient(to right,  
}
```



✨ Houdini ✨

```
CSS.registerProperty({  
  name: '--angle',  
  syntax: '<angle>',  
  inherits: true,  
  initialValue: '40deg',  
})
```

```
transition: --angle 200ms;
```

## Zig-zag gradient lab

### Options

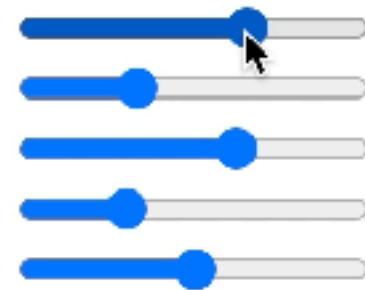
Angle

Stripe thickness

Segment width

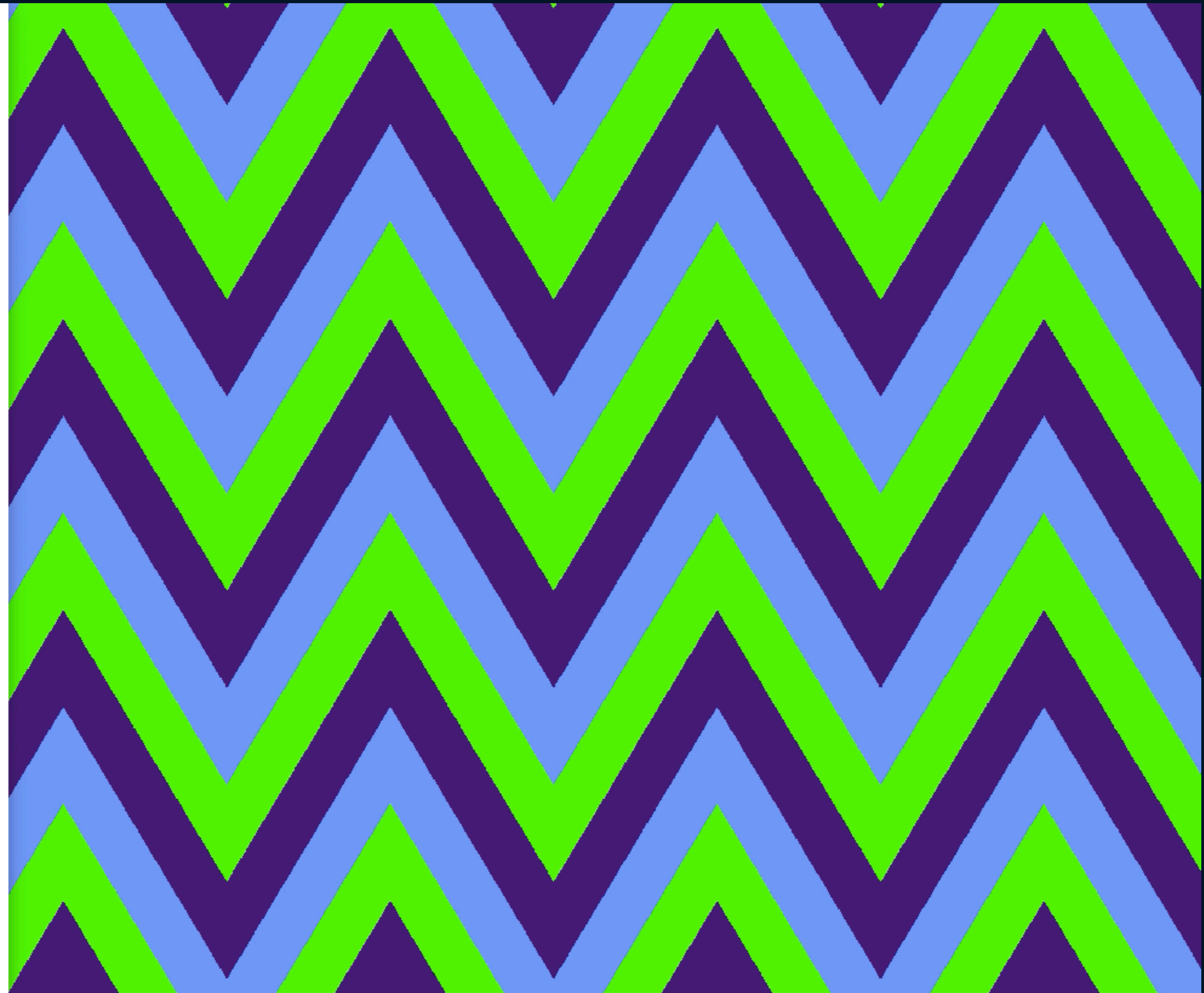
Primary colour

Contrast



### CSS output

```
.bg {  
  background-image: repeating-linear-gradient(59deg,  
  background-size: 131px 100%, 131px 100%;  
}  
  
.bg::after {  
  background-image: repeating-linear-gradient(calc(  
  background-size: 131px 100%, 131px 100%;  
  -webkit-mask-image: repeating-linear-gradient(to  
  mask-image: repeating-linear-gradient(to right,  
}
```



```
@property --angle {  
  syntax: '<angle>';  
  inherits: true;  
  initial-value: 40deg;  
}
```





```
chars.forEach((el, i) => {  
  el.style.setProperty('--s', getRandom[i])  
})
```

## **A user's guide to CSS variables**

**by Lea Verou**

[bit.ly/3fSZCOS](https://bit.ly/3fSZCOS)

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## **Calculating Color: Dynamic Color Theming with Pure CSS**

**by Una Kravets**

[bit.ly/3akbTKP](https://bit.ly/3akbTKP)

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## **CSS { In Real Life }**

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