

Intrinsic CSS

With Container Queries & Units

ODDBIRD

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JavaScript
HT
Jamstack
L



Jamstack

JavaScript

HTML

CSS



CSS

is

Awesome



»»»1989

- WorldWideWeb
- Info
- Navigate
- Document
- Edit
- Find
- Links
- Style
- Print... p
- Page layout...
- Windows
- Services
- Hide h
- Quit q

Welcome to the Universe of HyperText

Home

Access to this information is provided as part of the [WorldWideWeb](#) project. The WWW project does not take responsibility for the accuracy of information provided by others.

How to proceed

References to other information are represented like [this](#). Double-click on it to jump to related information.

General CERN Information sources

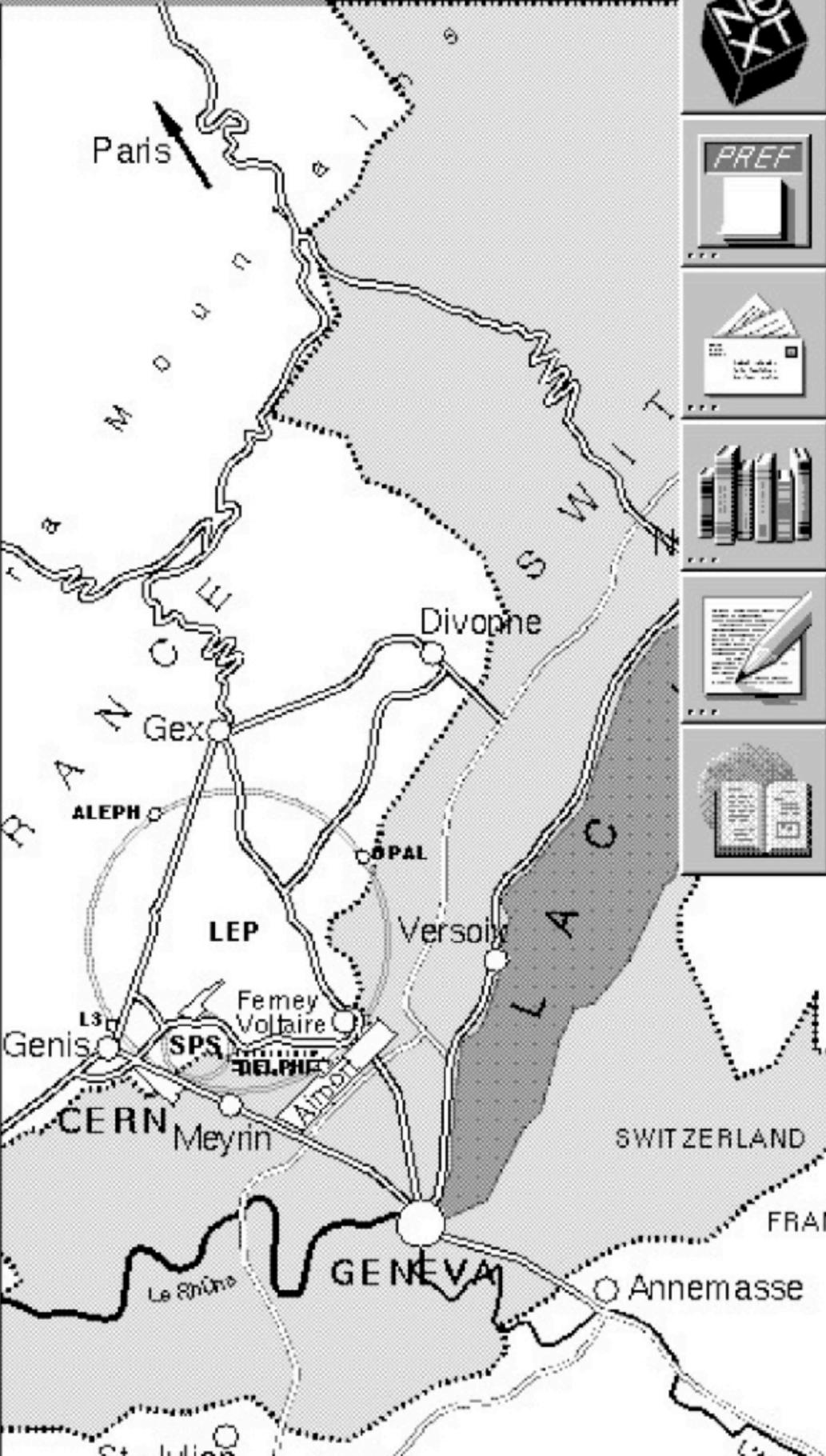
Now choose an area in which you would like to start browsing. The system currently has access to three sources of information. With the indexes, you should use the keyword search option on your browser.

CERN Information	A general keyword index of information made available by the computer centre, including CERN, Cray and IBM help files, "Writeups", and the Computer Newsletter (CNL). (This is the same data on CERNVM which is also available on CERNVM with the VM FIND command).
Yellow Pages	A keyword index to the CERN telephone book by function.
	You can access the internet news scheme (See information for new users). News articles are distributed typically CERN-wide or worldwide, and have a finite lifetime.

...may be of general interest at CERN include

...WS

...re Technology Interest Group) news.



- XXE
- PREF
- Stack of papers
- Books
- Pen writing on a document
- Open books

Info

HyperMedia Browser/Editor

Version 1.0
Alpha only

An exercise in global information availability

by Tim Berners-Lee

© 1990,91, CERN. Distribution restricted: ask for terms. TEST VERSION ONLY

Text: Text which is not constrained to be linear.

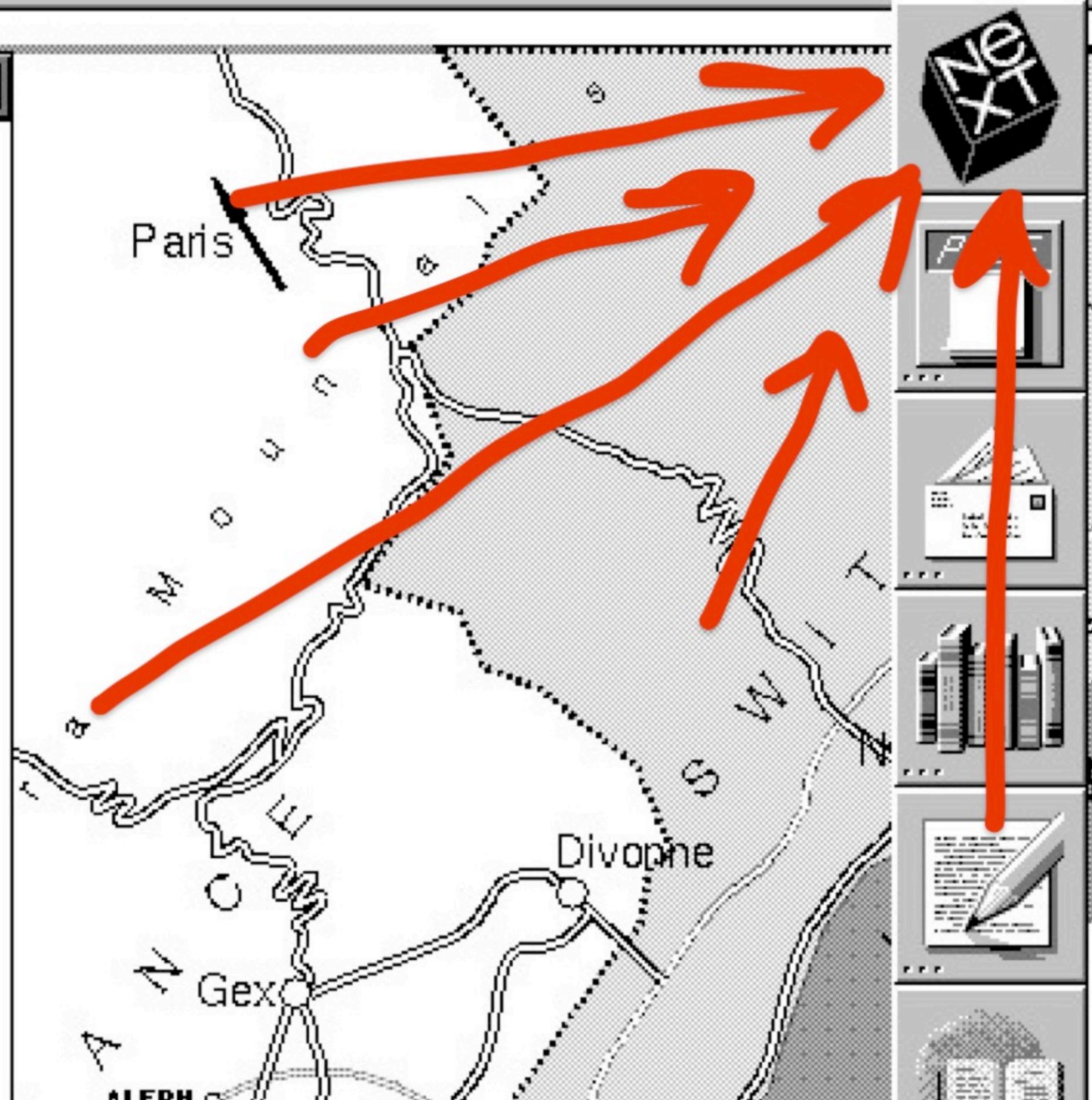
erse of HyperText

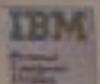
vided as part of the WorldWideWeb
ot take responsability for the accuracy

re represented like this . Double-click

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word search option on your browser.

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able by the computer centre, including
l, Cray and IBM help files, "Writeups",





```

BI-Sysinfo: Advanced Edition, ICI Copy 1987, 1988, Peter Norton

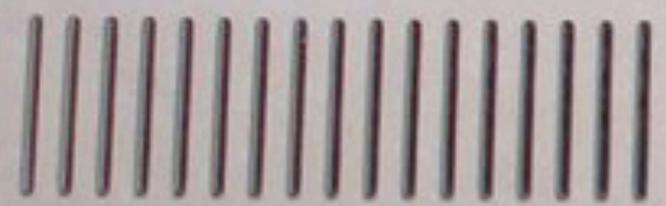
  Computer Name: IBM/PC
  Operating System: DOS 5.00
  Built-in BIOS Date: Wednesday, October 27, 1982
  Main Processor: Intel 8086
  Co-Processor: None
  Video Display Adapter: Hercules (VGA)
  Current Video Mode: Text, 80 x 25 Monochrome
  Available Disk Drives: 3: A: - C:

DOS reports 640 K-bytes of memory:
  64 K-bytes used by DOS and resident programs
  576 K-bytes available for application programs
A search for active memory finds:
  640 K-bytes main memory (at hex 0000-0000)
  32 K-bytes display memory (at hex 0000-0000)
2000-2100 Extensions are found at hex paragraphs: 0000

Computing Index (CI), relative to IBM/CT: 1.0
Disk Index (DI), relative to IBM/CT: Not computed. No drive specified

Performance Index (PI), relative to IBM/CT: Not computed.
C:\>

```



WORLD WIDE WEB

The WorldWideWeb (W3) is a wide-area hypermedia[1] information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary[2] of the project, Mailing lists[3] , Policy[4] , November's W3 news[5] , Frequently Asked Questions[6] .

What's out there?[7]Pointers to the world's online information, subjects[8] , W3 servers[9], etc.

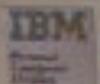
Help[10] on the browser you are using

Software Products[11] A list of W3 project components and their current state. (e.g. Line Mode[12] ,X11 Viola[13] , NeXTStep[14] , Servers[15] , Tools[16] , Mail robot[17] , Library[18])

Technical[19] Details of protocols, formats, program internals

“Web for all. Web on everything.”

– W3C Mission Statement



```

BI-Sysam Information, Advanced Edition, ICI Copy 1987, 1988, Peter Norton

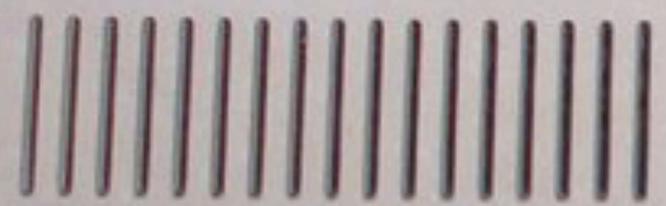
Computer Name: IBM/PC
Operating System: DOS 5.00
Built-in BIOS Date: Wednesday, October 27, 1982
Main Processor: Intel 8086
Co-Processor: None
Video Display Adapter: Monochrome (MDA)
Current Video Mode: Text, 80 x 25 Monochrome
Available Disk Drives: 3: A: - C:

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C:\>

```

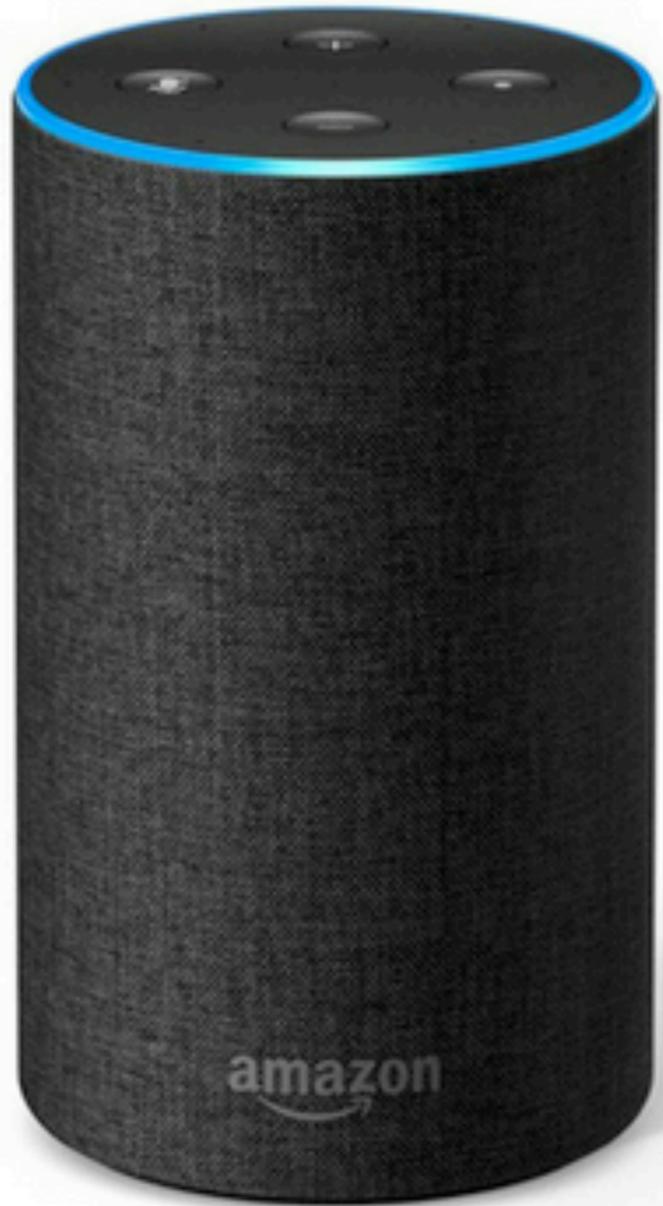














gettyimages
Comstock Images



“We’re designing unknown content with unknown collaborators on an infinite and unknowable canvas, across operating systems, interfaces, writing-modes, & languages...”

—Me 🙌

"Normal" Flow

Defines the default layout system on the web – a *document-like flow* of responsive **block** and **inline** elements.

While inline elements flow in the direction of text, *and are able to wrap around line-breaks* — **block** elements generate a solid box that stacks on the cross-axis.

Edit this text

"Normal" Flow

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Edit this text

@media Queries

2008/2009

Responsive Web Design™

Ethan Marcotte

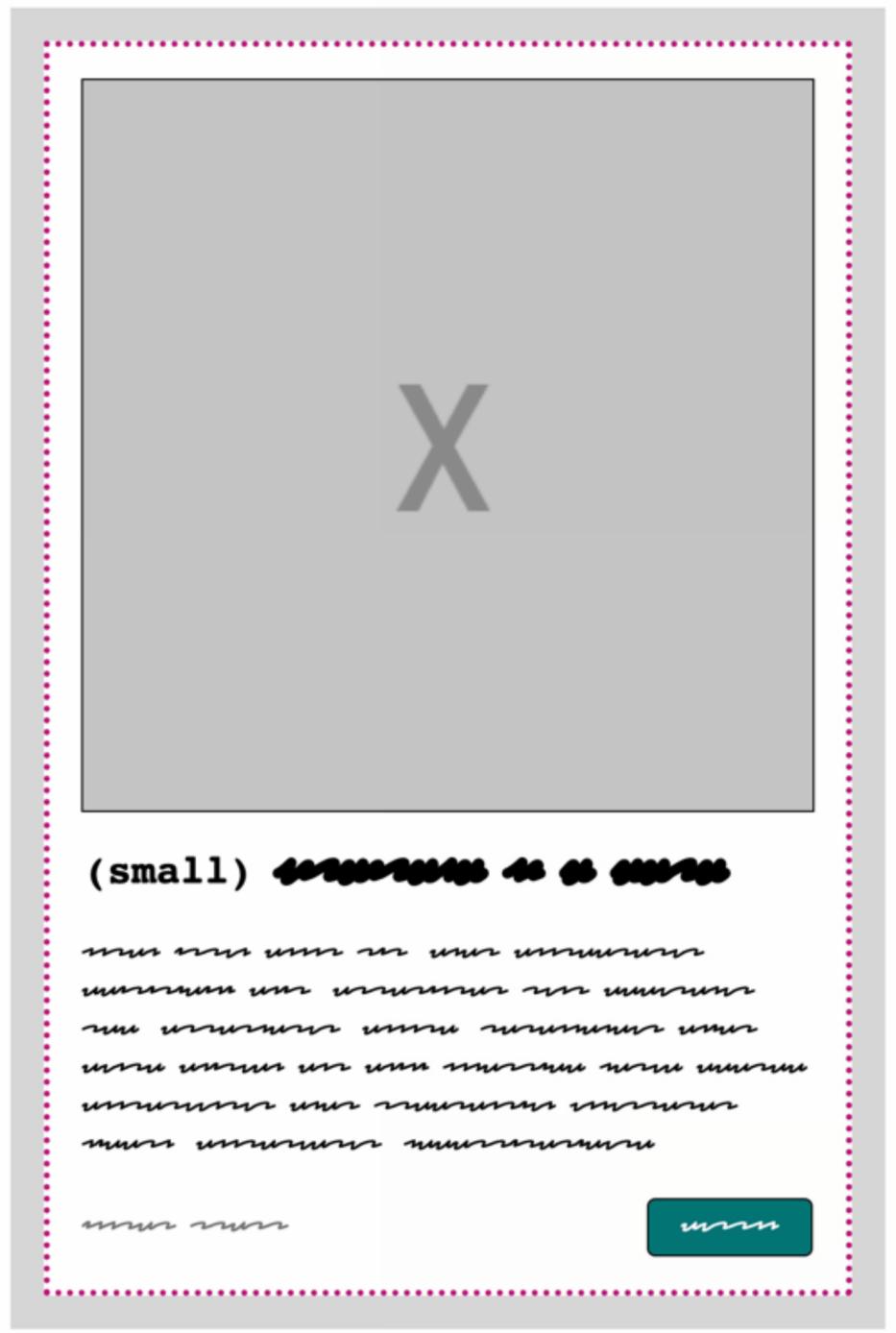
An evolution of the already-responsive web...

- **Fluid Grids** (%-based)
- **Flexible Images** (%-based)
- **Media Queries**

```
HTML
CSS
1 .root {
2   display: grid;
3   gap: 1em;
4   margin: 1em;
5 }
6
7 header {
8   grid-column: 1 / -1;
9 }
10
11 header,
12 aside,
13 main {
14   background: gainsboro;
15   padding: 1em;
16 }
17
18 .card {
```

Media vs Container

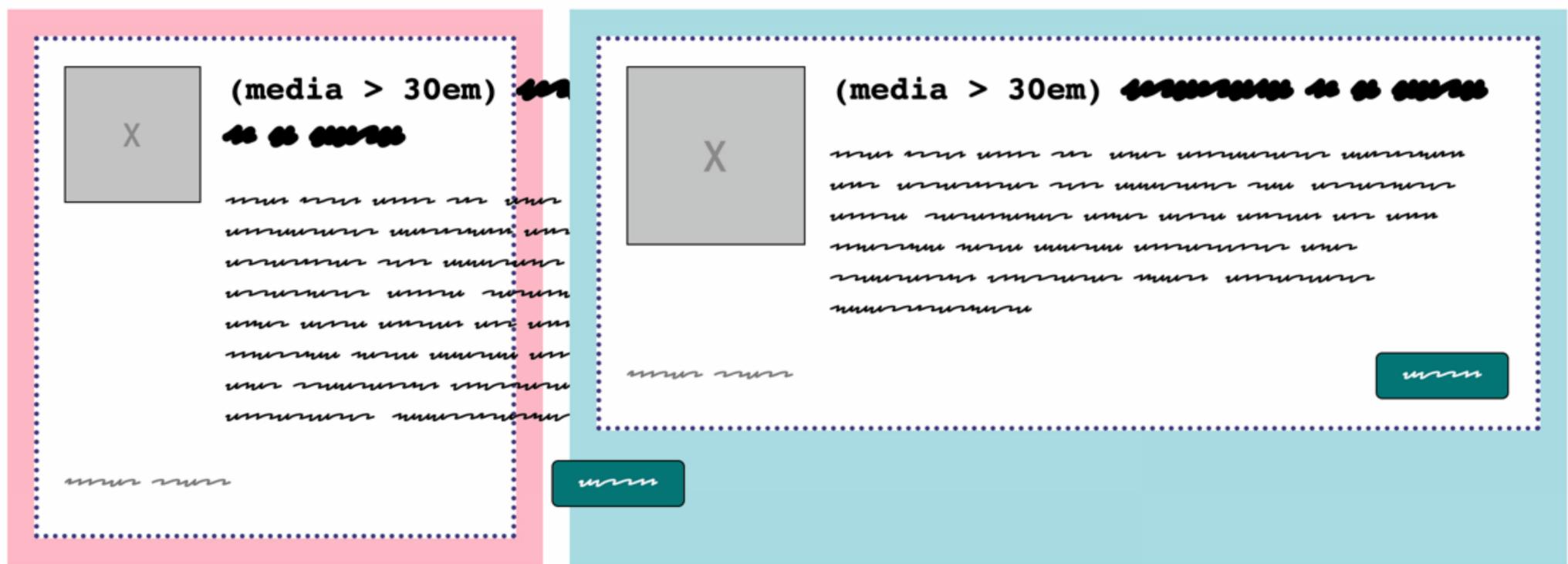
sidebar containers



```
HTML
CSS
1 .root {
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4   margin: 1em;
5 }
6
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8   grid-column: 1 / -1;
9 }
10
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12 aside,
13 main {
14   background: gainsboro;
15   padding: 1em;
16 }
17
18 .card {
```

Media vs Container

✓ sidebar containers



Container Queries????!?!1?!?

Please? If we promise to be good?

“No. Never gonna happen.”

—Browsers

"Normal" Flow

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Edit this text

Back To The [Right Now]

2010s » 2020s

- **Flexbox & Grid**
- **Box Alignment**
- **Viewport Units**
- **Intrinsic Sizing**
- **Aspect Ratios**
- **Min / Max / Clamp / &c.**



Intrinsic Web Design™

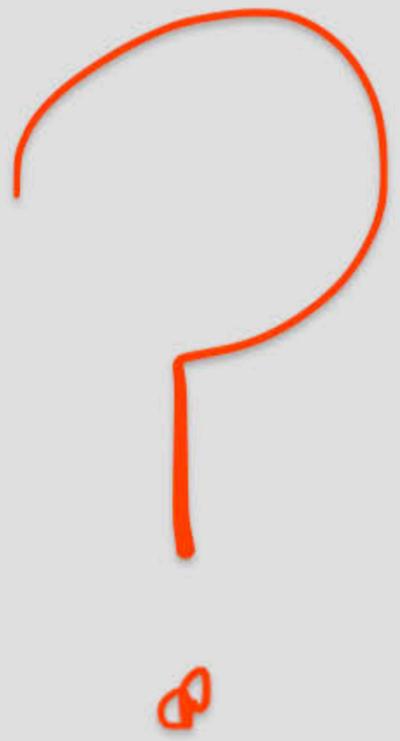
Jen Simmons

The responsive web keeps evolving...

- Truly **Two-Dimensional Layouts**
- Combine **Fluid & Fixed**
- Stages of **Squishiness**
- **Nested Contexts**
- **Expand & Contract Content**
- **Media Queries, As Needed**

- Truly Two-Dimensional Layouts
- Combine Fluid & Fixed
- Stages of Squishiness
- **Nested Contexts**
- **Expand & Contract Content**
- Media Queries, As Needed

.sidebar



main



.grid-item



.grid-item



.grid-item





Laying Foundations



2010s » 2020s

2020 Proposals

- **David Baron:** `@container`
- **Brian Kardell:** `switch()`

@container

CSS Containment

Size, Layout, Style, Paint

Avoid internal impacts on external elements...

Size Containment

Removes Intrinsic Sizing

"Normal" Flow

Defines the default layout system on the web – a *document-like flow* of responsive **block** and **inline** elements.

While **inline elements** flow in the direction of text, *and are able to wrap around line-breaks* — **block elements** generate a solid box that stacks on the cross-axis.

Edit this text

```
HTML
CSS 21 unsaved changes X
1 @layer setup, demo;
2
3 @layer demo {
4   .rad {
5     max-height: 2.8em;
6     max-width: 2.8em;
7     max-width: min-content;
8     /* contain: layout size style; */
9   }
10 }
11
12 @layer setup {
13   .rad {
14     border: medium solid;
15     font-size: 2em;
16     margin: 0 auto;
17     padding: 0.25em;
18   }
19 }
JS
```

CSS is
Awesome

```
HTML
CSS 22 unsaved changes X
1 @layer setup, demo;
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3 @layer demo {
4   .rad {
5     max-height: 2.8em;
6     max-width: 2.8em;
7     /* max-width: min-content; */
8     /* contain: layout size style; */
9   }
10 }
11
12 @layer setup {
13   .rad {
14     border: medium solid;
15     font-size: 2em;
16     margin: 0 auto;
17     padding: 0.25em;
18   }

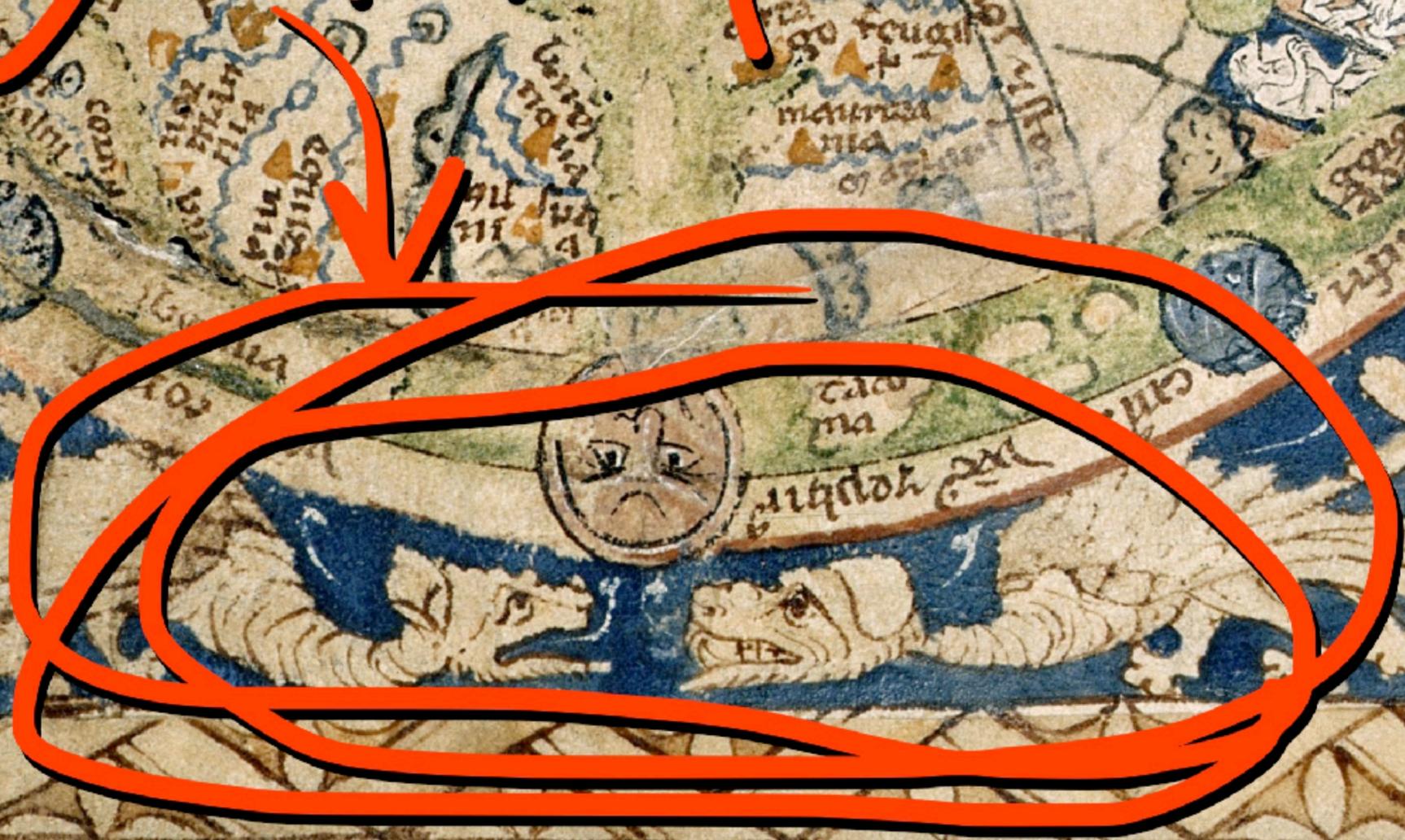
```

CSS
is
Awesome

Single-Axis Containment?

We need it

DRAGONS



`contain: inline-size`
~~`block-size`~~

Thanks to [Ian Kilpatrick](#)

Containment Gotchas

- **Inline-size is *never intrinsic* (content-sized)**
- **Subgrids can't contribute track sizing**
- **Counters are contained**

“Yeah, ok.”

—Browsers

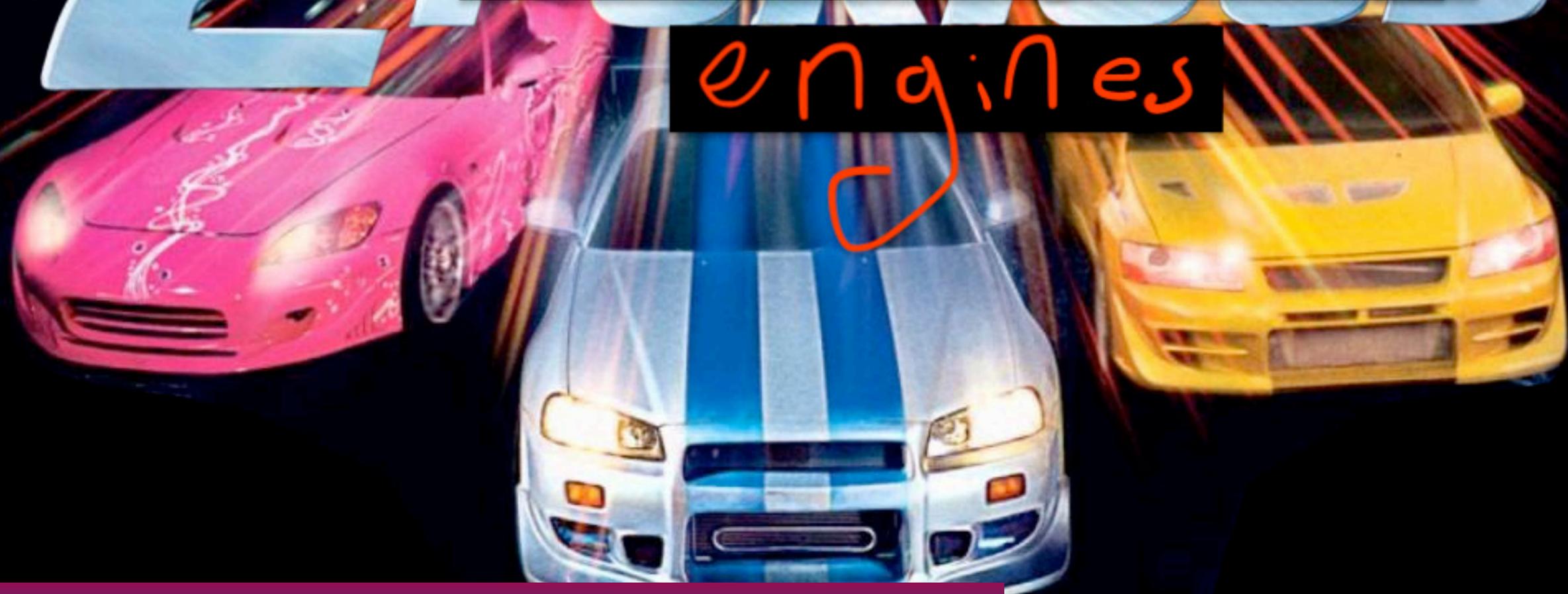


It's Impossible



It's Shipping

2022 WEEKS BROWSER engines



August-September 2022 » Chrome/Edge 105 & Safari 16

Define Containers

Elements we want to query

~~contain: layout size style~~

We can do better (more declarative)

container-type: inline-size

normal | size* | inline-size*

*Make sure the sizing is **extrinsic** (block elements stretch by default)

No Default Container

We need something to query

```
html {  
  container-type: inline-size;  
}
```

Similar to @media, but em/rem queries use actual root font-size

```
html,  
main,  
aside {  
    container-type: inline-size;  
}
```

Container Names

Optional and unlimited

```
html {  
  container-type: inline-size;  
  container-name: layout root;  
}
```

Use names like unique IDs or reusable classes

```
html {  
  container-name: layout root;  
}  
  
main {  
  container-name: layout content;  
}  
  
.card {  
  container-name: component card;  
}
```

Use names like unique IDs or reusable classes

```
html {  
  container: layout root / inline-size;  
}
```

Name is required in the shorthand, but type is optional

Query Containers

Depending on context

```
@media (min-width: 40em) {  
  .card { /* ... */  
  h2 { /* ... */  
}
```

```
@container (min-width: 40em) {  
  .card { /* ... */  
  h2 { /* ... */  
}
```

```
@container (width > 40em) {  
  .card { /* ... */  
  h2 { /* ... */  
}
```

**Each Matched Element
Queries the Nearest Ancestor
With the Necessary Container-Type**

```
HTML
CSS
1 .root {
2   display: grid;
3   gap: 1em;
4   margin: 1em;
5 }
6
7 header {
8   grid-column: 1 / -1;
9 }
10
11 header,
12 aside,
13 main {
14   background: gainsboro;
15   padding: 1em;
16 }
17
18 .card {
```

Media vs Container

✓ sidebar containers

The image illustrates the difference between media queries and container queries. On the left, a pink container (representing a media query) contains a small image and text. On the right, a teal container (representing a container query) contains a larger image and text. Both are labeled '(media > 30em)'. The teal container also features a button in the bottom right corner.

Nest Containers

Each will query the next one up

```
* CSS
25 container-type: inline-size;
26 }
27
28 @container (min-width: 500px) {
29   div {
30     border: 1px solid rgba(255,0,0,0.25);
31   }
32 }
33 @container (min-width: 600px) {
34   div {
35     border: 2px solid rgba(0,255,0,0.25);
36   }
37 }
38 @container (min-width: 700px) {
39   div {
40     border: 3px solid rgba(0,0,255,0.25);
41   }
42 }
43 @container (min-width: 800px) {
44   div {
45     border: 4px solid rgba(0,255,255,0.25);
46   }
47
48 @container (min-width: 900px) {
```

Eric Portis (CodePen)



Query Named Containers

When it matters

```
@container card (width > 40em) {  
  h2 { /* ... */ }  
}
```

**Each Matched Element
Queries the Nearest Ancestor
With the Necessary Container-Type
And Container-Name**

Container Queries with Block Quotes

I



They do great work. We'll be working with them again soon.

David A. Herron, OddBird

II



They do great work. We'll be working with them again soon.

David A. Herron, OddBird

III

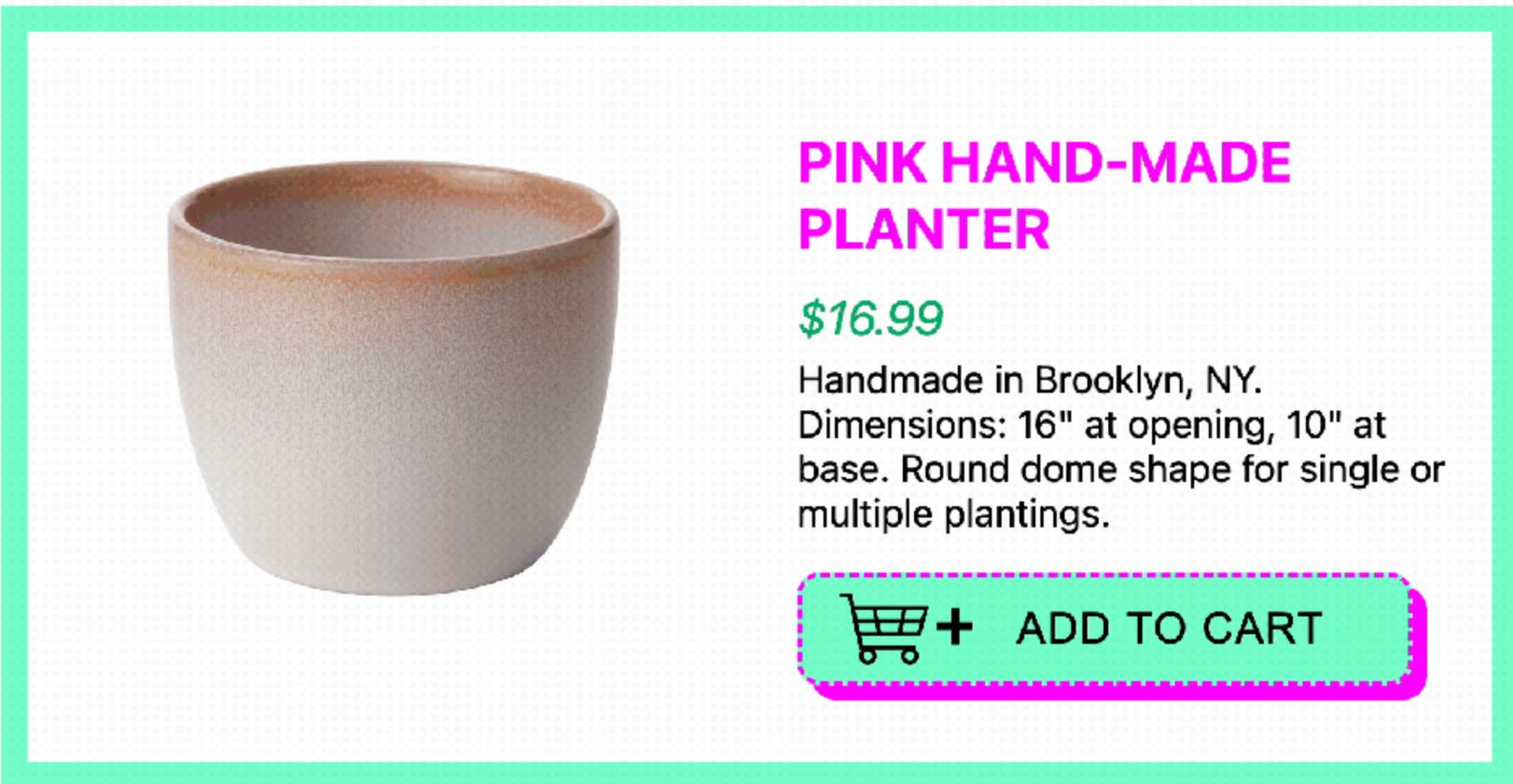


They do great work. We'll be working with them again soon.

David A. Herron, OddBird

David Herron (CodePen)

```
HTML
CSS (SCSS)
73
74 // Cart lines at 30px or wider
75 @container (min-width: 30px) {
76   .cart-lines-group {
77     display: block;
78   }
79 }
80
81 // Add "+" at 50px or wider
82 @container (min-width: 50px) {
83   .plus-group {
84     display: block;
85   }
86 }
87
88 // "Add" instead of "+" at 100px
89 @container (min-width: 100px) {
90   .cart-button {
```





Jhey Tompkins (CodePen)

Grid & Flexbox Tracks

Don't Match the Container Size

```
<section class=grid>  
  <article class=card>..  
  <article class=card>..  
  <article class=card>..  
</section>
```



```
<section class=grid>  
  <div class=card-container>  
    <article class=card>...</article>  
  </div>  
  
  ...  
</section>
```

```
HTML
1 <main>
2   <h1>Resources</h1>
3   <div class="card">
4     <article>
5       
6     <div class="content">
```

```
* CSS
17 // change the grid template when the card is larger! //
18 @container (min-width: 30em) {
19   article {
20     grid-template: "img content" auto / minmax(5em, 10em) 1fr;
21   }
22 }
23
24 /* bigger changes, when we have even more space */
25 @container (min-width: 50em) {
26   article {
27     position: relative;
28     grid-template:
29       [img-start] minmax(1em, 2em)
```

```
JS
```

Resources



Container Queries & The Future of CSS

March 25 in [Talks](#), [CSS](#)

Lorem ipsum, dolor sit amet consectetur adipisicing elit. Fugiat blanditiis excepturi debitis ipsum illo. Reiciendis animi ducimus dicta iste accusantium corrupti, beatae odit ex earum, molestiae at?



Beyond CSS Variables

March 23 in [Talks](#), [CSS](#)

Lorem ipsum, dolor sit amet consectetur adipisicing elit. Fugiat blanditiis excepturi debitis ipsum illo. Reiciendis animi ducimus dicta iste accusantium corrupti, beatae odit ex earum, molestiae at?

Web Component : host

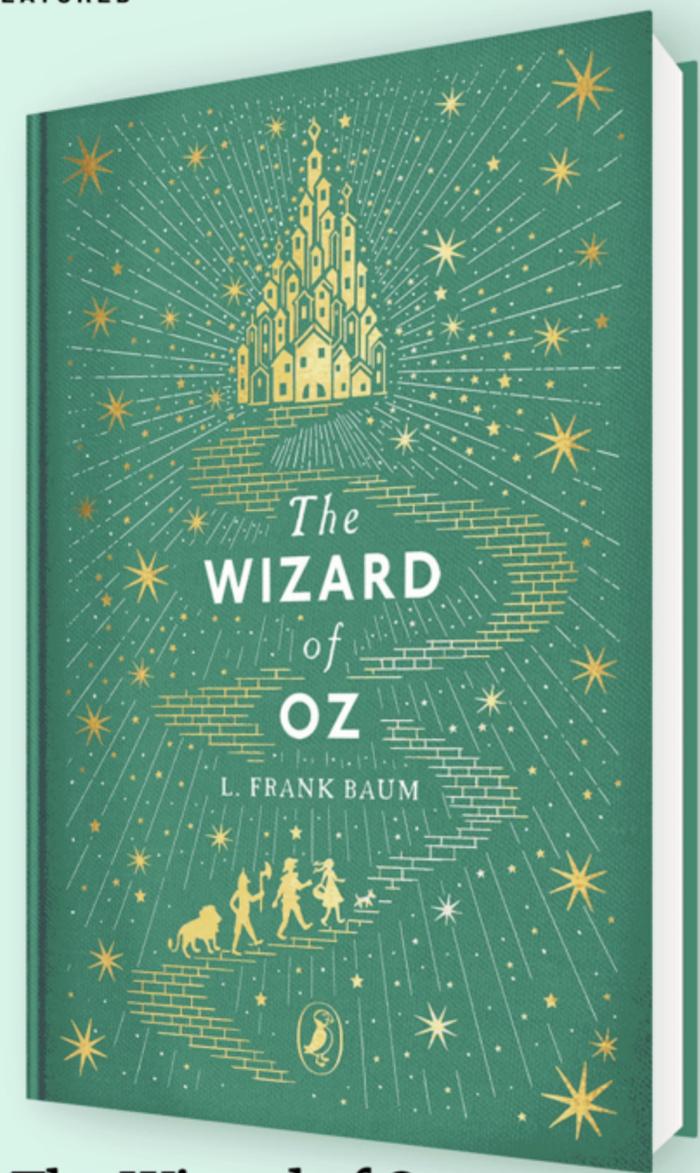
Containers built in

```

1 <!-- BOOK TEMPLATE -->
2 <template id="book-template">
3   <style>
4     /* Layout Container */
5     :host {
6       container-type: inline-size;
7       cursor: grab;
8       display: block;
9     }
10
11    /* Base Styles */
12    ::slotted(img) {
13      display: block;
14      width: 100%;
15      height: auto;
16      border-radius: 0px 2px 2px 0px;
17      background-color: var(--cover-c
18    }
19    .book {
20      font-size: var(--font-size, 1re
21      font-weight: 400;
22    }
23    .meta {
24      padding-top: 1em;

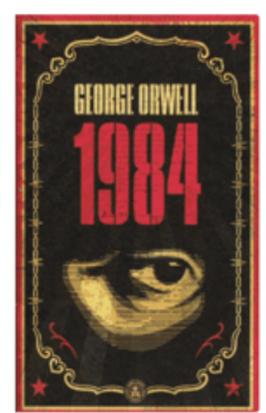
```

FEATURED

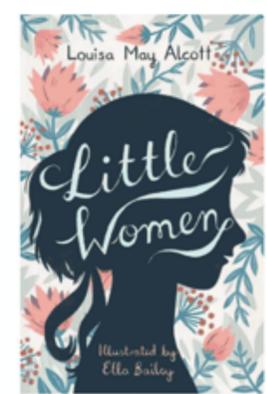


The Wizard of Oz
L. Frank Baum

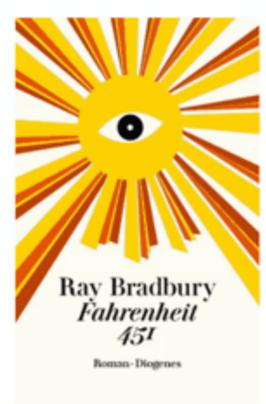
BESTSELLERS



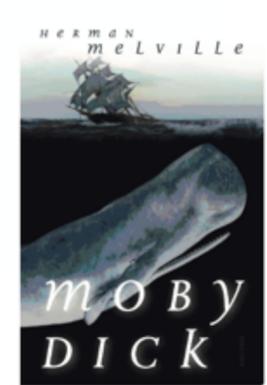
1984
George Orwell



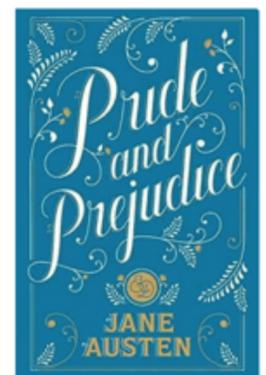
Little Women
Louisa May Alcott



Fahrenheit
451
Ray Bradbury



Moby Dick
Herman Melville



Pride and
Prejudice
Jane Austen



Sputnik
Sweetheart
Haruki Murakami

CART



Don Quijote

Container Query Units

`cqw` | `cqh` | `cqi` | `cqb` | `cqmin` | `cqmax`

Fallback to Small Viewport

When no container is available

```
h2{  
  font-size: max(1.25rem, 12cqi - 1rem);  
}
```

cqi » container query **inline**

```
HTML
CSS
20 background: var(--background);
21 }
22 html,
23 main,
24 article {
25   container-type: inline-size;
26 }
27
28 /* Query units! */
29 h1,
30 .product-price {
31   font-size: max(1.25rem, 12cqi - 1rem);
32   font-weight: 700;
33   line-height: 1;
34   margin: 0;
35   mix-blend-mode: multiply;
36 }
37
38 /* Layout */
39 main {
40   width: min(100% - (var(--margin) * 2), var(--max-width));
41   margin: var(--margin) auto;
42 }
43
```

Scott Kellum (CodePen)

Latest Products



Nike Metcon 7 \$130
Women's Training Shoes



Nike Free Metcon 4 \$120
Women's Training Shoes



Nike Space Hippie 04 \$130
Men's Shoes





Val Head (CodePen)

CSS Container Queries (Size) WD

Usage % of all users all users ?

Global 65.34% + 7.67% = 73.01%

★ Size queries in Container Queries provide a way to query the size of a container, and conditionally apply CSS to the content of that container.

Current aligned Usage relative Date relative Filtered All ⚙

Chrome	Edge*	Safari	Firefox	Opera	IE	Chrome for Android	Safari on iOS*	Samsung Internet	Opera Mini*	Opera Mobile*	UC Browser for Android	Android Browser*	Firefox for Android	QQ Browser	Baidu Browser	KaiOS Browser
4-91																
^{1 2} 92																
¹ 93-104	12-104															
³ 105	³ 105	3.1-15.6		10-78			3.2-15.6									
106	106	16.0	2-105	¹ 79-90	6-10		16.0	4-17.0		12-12.1		2.1-4.4.4				
107	107	16.1	106	³ 91	11	107	16.1	18.0	all	64	13.4	107	106	13.1	13.18	2.5
108-110		16.2-TP	107-108													

Notes Test on a real browser Known issues (0) Resources (9) Feedback

- ¹ Can be enabled with the "Enable CSS Container Queries" feature flag under `chrome://flags`
- ² The initial Chrome prototype used an earlier draft syntax based on the `contain` property
- ³ Combining size container queries and table layout inside a multicolumn layout doesn't work

Firefox is Coming Soon*

***my unofficial read of the issue status & recent commits**

```
@supports not (container: name) {  
  /* fallback */  
}
```

Test for support

There's a Polyfill

GoogleChromeLabs/container-query-polyfill

Container Style Queries??

Work is underway...

```
@container style(font-style: italic) {  
  em {  
    background: var(-highlight);  
  }  
}
```

```
@container style(--arrow: bottom-right) {  
  .tooltip::after {  
    inset-block-start: 100%;  
    inset-inline-end: 1em;  
  }  
}
```

```
HTML
CSS
1 html {
2 /* --button-theme: mia; */
3 /* --button-theme: mia-plus; */
4 }
5
6 /*
7 This works in Chrome/Edge Canary
8 go to: about://flags
9 and enable: Experimental Web Platform Features
10 */
11
12 @container style(--button-theme: mia) or style(--
13 button {
14 background: var(--flag);
15 border: thick solid mediumvioletred;
16 border-radius: 1em 0;
17 box-shadow: var(--4-shadows);
18 font-weight: bold;
19 padding: 0.5em 1em;
20 --shadow-offset: 4px;
21 }
22 }
23
24 @container style(--button-theme: mia-plus) {
```

button themes!

Prototype in Chromium Canary

Currently only works with **custom properties**

[about://flags](#) » **Experimental Web Platform features**

More Query Features??

What would you ask a container?

```
@container state(is-stuck) {  
    /* when position:sticky applies? */  
}
```

```
@container state(is-snapped) {  
  /* when scroll-snap applies? */  
}
```

“Our medium is not done. Our medium is still going through radical changes.”

—Jen Simmons

ODDBIRD



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