2011: THE YEAR OF CSS GRID

Revolutionising visual design on the web















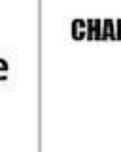


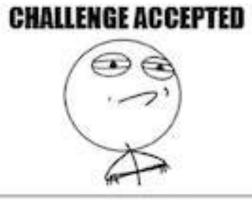




Tricky CSS inheritance issue on Monday

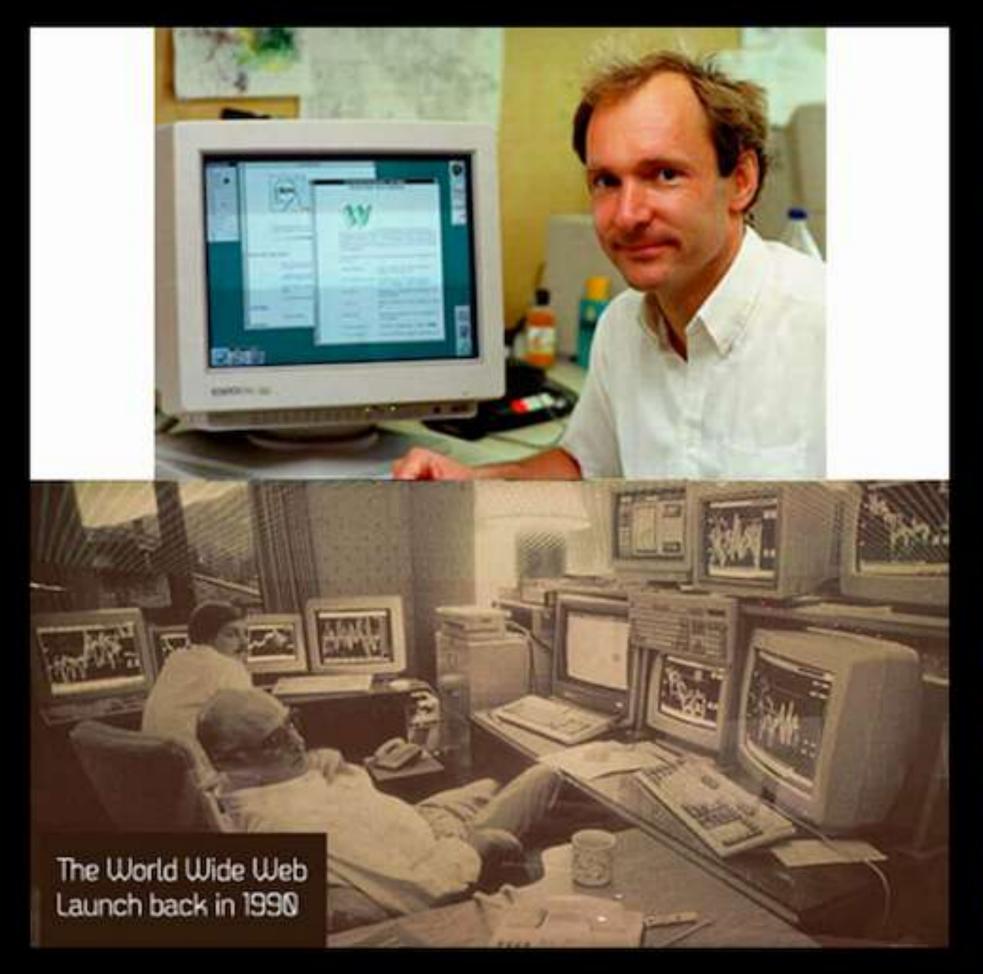
Tricky CSS inheritance issue on Friday









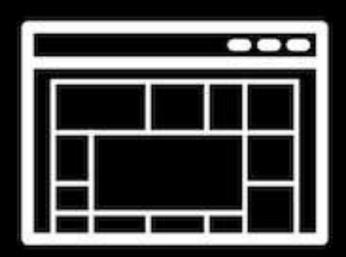




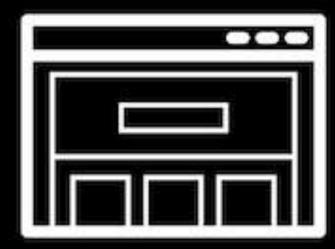


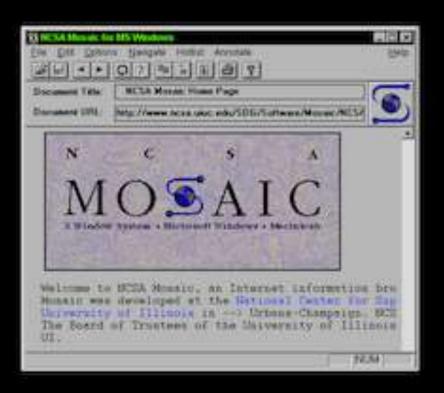
Web layouts over the years





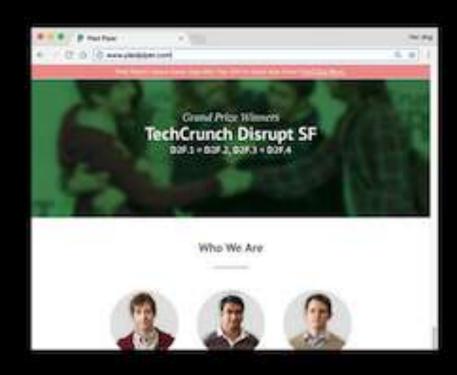














CSS Grid arrives

March 2017

Sun	Моп	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
Ð	6	9	8	9	10	11
12	13	3	15	16	17	18
19	20	0	22	23	24	25
E CLI		28	29	30	31	

October 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	٦
8	9	10	11	12	13	14
15	15	9	18	19	20	21
50	23	24	25	26	27	28
29	30					



"Our 'Age of Anxiety' is, in great part, the result of trying to do today's job with yesterday's tools—with yesterday's concepts."

-Marshall McLuhan



Grid browser support

CSS Grid Layout 🗹 Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit. Android Chrome for Firefox Safari iOS Safari IE Edge Chrome Opera Opera Mini Android Browser 54 60 46 10.2 9 10 4.4 55 10 15 10.1 47 10.3 4.4.4 61 56 16 62 48 11 56 11 all 61 57 63 TP 49 ✓ X Partial Support Global: 69.57% + 5.77% = 75.34% Prefixed Data from caniuse.com | Embed from caniuse.bitsofco.de



Evolution of **C**55 Specifications

CSS1

Recommendation: 11 Dec 1996

CSS2

Recommendation: 12 May 1998

CSS2:1 Recommendation: 7 Jun 2011

CSS2.2 Working draft: 12 Apr 2016

CSS3

Decision to modularise: 14 Apr 2000 (26 modules)

CSS Snapshot 2017 (88 modules)

Completed CSS Snapshot 2217 CSS Snapshot 2015 CSS Snapshot 2010 CSS Snapshot 2007 CSS Color Level 3 CSS Namespaces Selectors Level 3 CSS Level 2 Revision 1 CSS Level 1 CSS Print Profile Media Gueries CSS Style Attributes

CSS Backgrounds and Borders Level 3 CSS Conditional Rules Level 3 CSS Multi-column Layout Level 1 CSS Values and Links Level 3 CSS Cascading and inheritance Level 3 CSS Fonts Level 3 CSS Writing Modes Level 3 CSS Counter Styles Level 3

Rewriting CSS Basic Box Model Level 3 CSS Generated Content Level 3

Refining

CSS Animations Web Animations 10 CSS Text Level 3 CSS Transforms CSS Transitions CSS Box Flighment Level 3 CSS Display Level 3 Preview of CSS Level 2 CSS Timing Functions Level 1

CSS Image Values and Replaced Content Level 3 CSS Speech CSS Flexible Box Layout Level 1 CSS Text Decoration Level 3 CSS Shapes Level 1 CSS Masking Level 1 CSS Fragmentation Level 3 CSS Cascading Variables Compositing and Blending Level 1 CSS Syntax Level 3 CSS Gnd Layout Level 1 CSS Basic User Interface Level 3 CSS WILL Change Level 1 Media Cueries Level 4

CSS Cascading and Inheritance Level 4

Geometru Interfaces Level 1

CSS Scroll Snap Level 1 CSS Containment Level 1

CSS Backgrounds and Borders Level 4 CSS Device Adaptation CSS Exclusions Filter Effects CSS Generated Content for Paged Media CSS Page Floats CSS Template Layout CSS Line Grid CSS Lists Level 3 CSS Positioned Layout Level 3 CSS Regions CSS Table Level 3 CSS Object Model CSS Font Loading CSS Scooma Level Non-element Selectors

CSS Inline Lauout Level 3 Motion Path Level 1 CSS Round Display Level 1 CSS Basic User Interface Level 4 CSS Text Level 4 CSS Painting RPI Laval 1 CSS Properties and Values RPI Level 1 CSS Typed DM Level 1 Worklets Level 1 CSS Color Level 4 CSS Fonts Level 4 CSS Rhythmic Sizing Level 1 CSS Image Values and Replaced Content Level 4 CSS Fill and Stroke Level 3 CSS Overflow Level 4



Team Layout



And more...



Team Layout





What is C55 grid?

Defines a **two-dimensional** grid-based layout system, optimized for user interface design.



"Grid works from the <u>container</u> in, other layout methods start with the **item**"

-Rachel Andrew



Layout technique: inline-block

Item A	Item B	Item C
Item D	Item E	Item F

```
.inlineblock__item {
   display: inline-block;
   width: calc(100% / 3);
}
```



Layout technique: float

Item A	Item B	Item C
Item D	Item E	Item F

```
.float__item {
  float: left;
  width: calc(100% / 3);
}
```



Layout technique: flex

Item A	Item B	Item C
Item D	Item E	Item F

```
.flexbox {
   display: flex;
   flex-wrap: wrap;
}

.flexbox__item {
   flex: 0 0 calc(100% /
3);
}
```

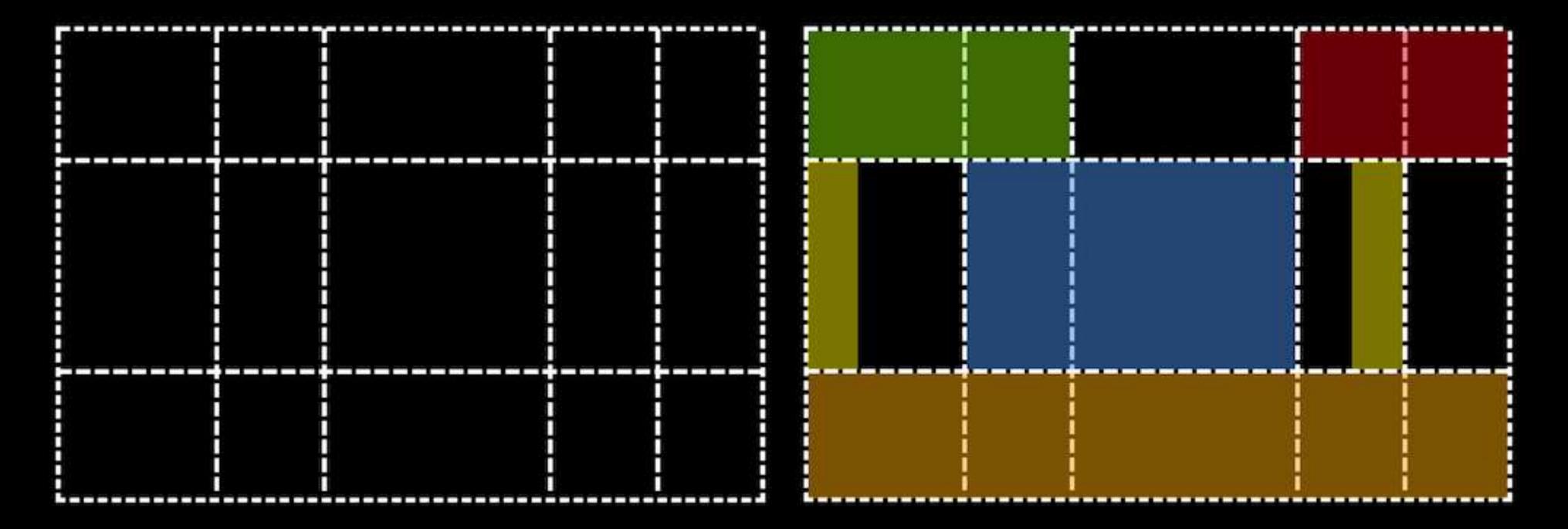


"Grid is the only layout technique that establishes a **relationship** between rows and columns of grid items."



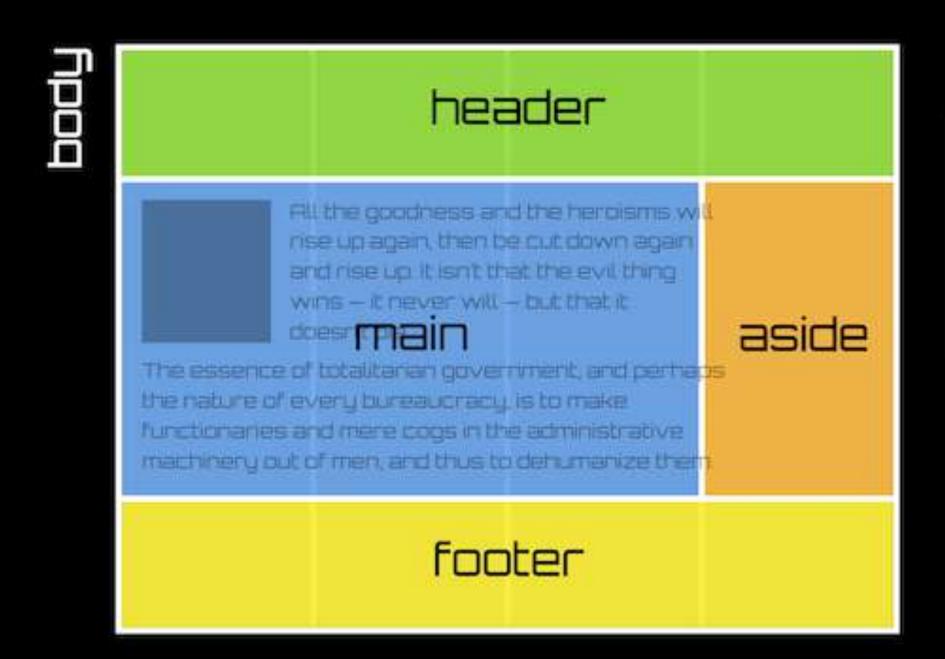
C55 grid basics

Define your grid. Place items in the grid.





Defining the Grid

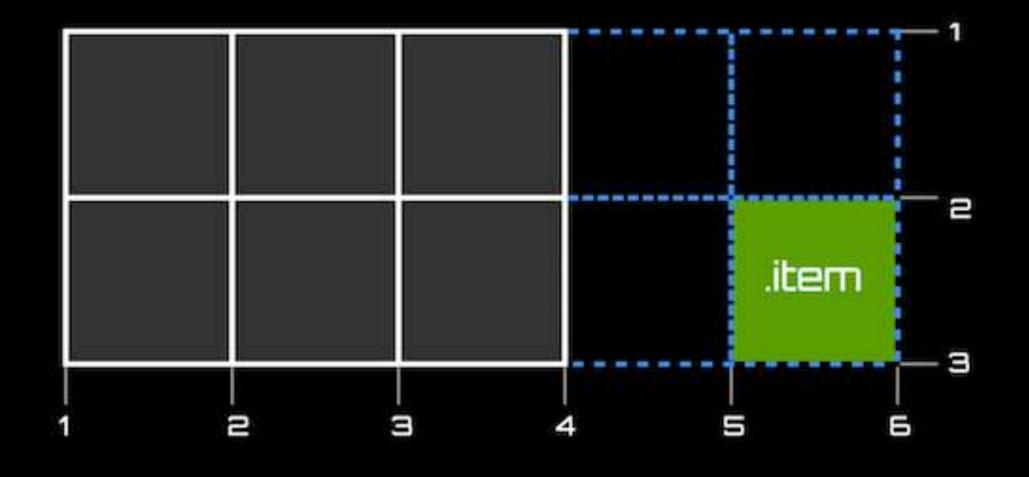


```
body {
   display: grid;
   grid-template-columns: 25% 25% 25% 25%;
   grid-template-rows: 20em 1fr 20em;
}
```

The grid formatting context only applies to child elements



Explicit Grid and Implicit Grid



```
.grid-container {
    display: grid;
    grid-template-columns: 150px 150px
    grid-template-rows: 150px 150px; /*
}

.item {
    grid-column: 5 / 6; /* grid-column-grid-row: 2 / 3; /* grid-row-start
}
```

The browser will create an implicit grid to hold items placed outside the grid.



"Cede **control** of your designs to the **browsers** that render them."



The repeat () function

To specify a large number of columns or rows that follow a similar pattern

```
repeat( [ <positive-integer> | auto-fill | auto-fit ] , <track-list> )
```



auto-fill VS. auto-fit

Allow browser to determine how many tracks to create depending on track size.

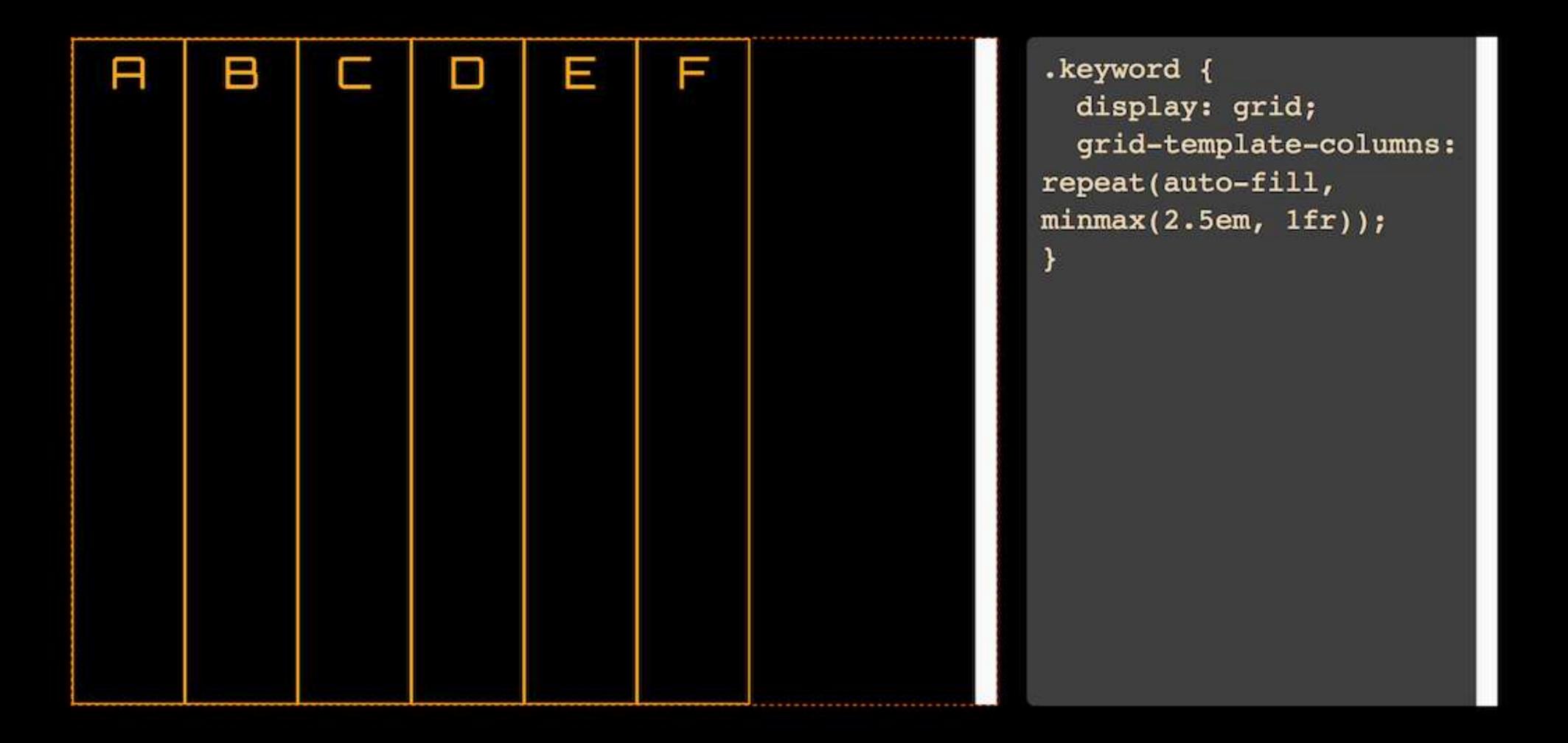




```
repeat(auto-fill, 100px);
```

auto-fit collapses empty tracks.

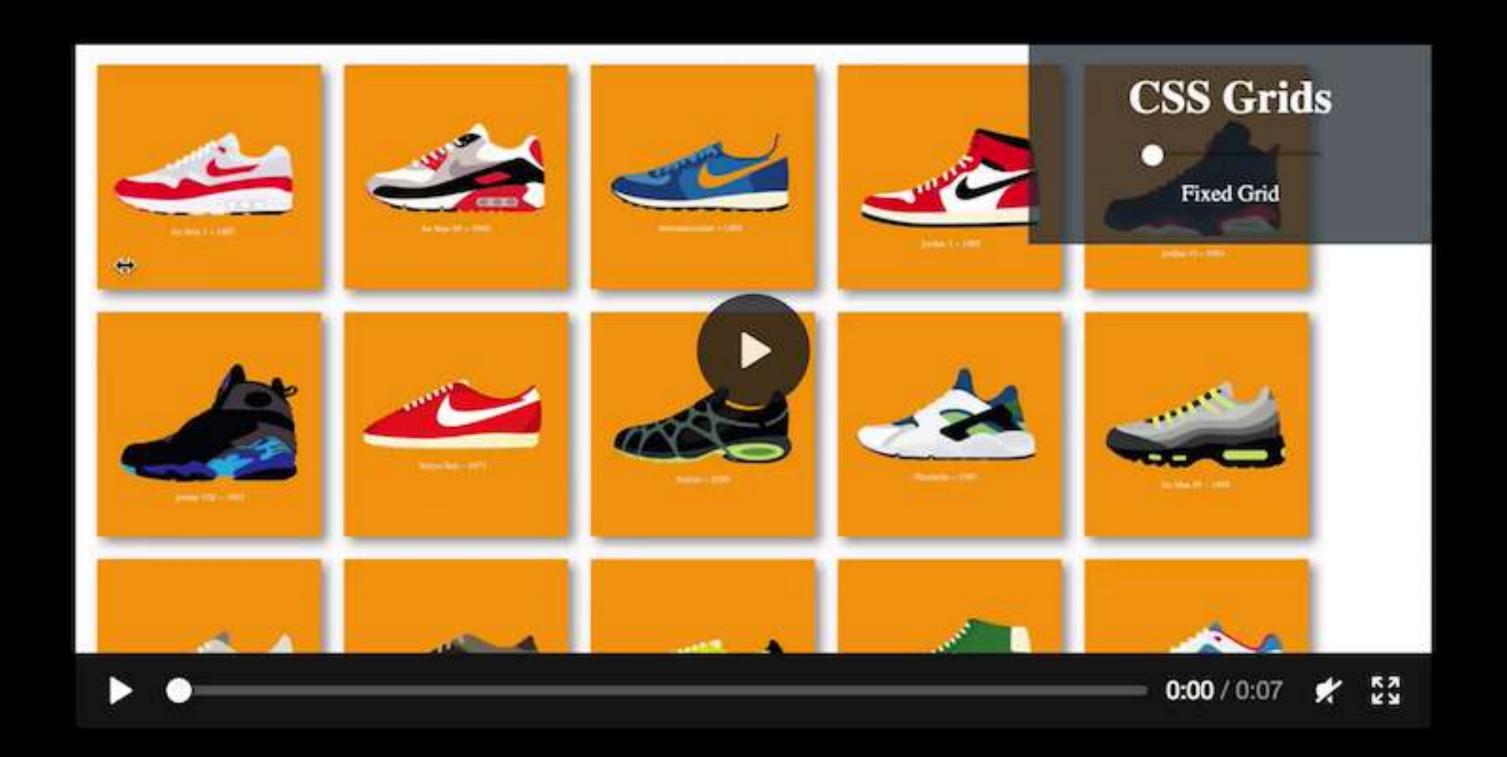






Fixed C55 grid

```
.container {
   display: grid;
   grid-template-columns: repeat(5, 10em);
}
```





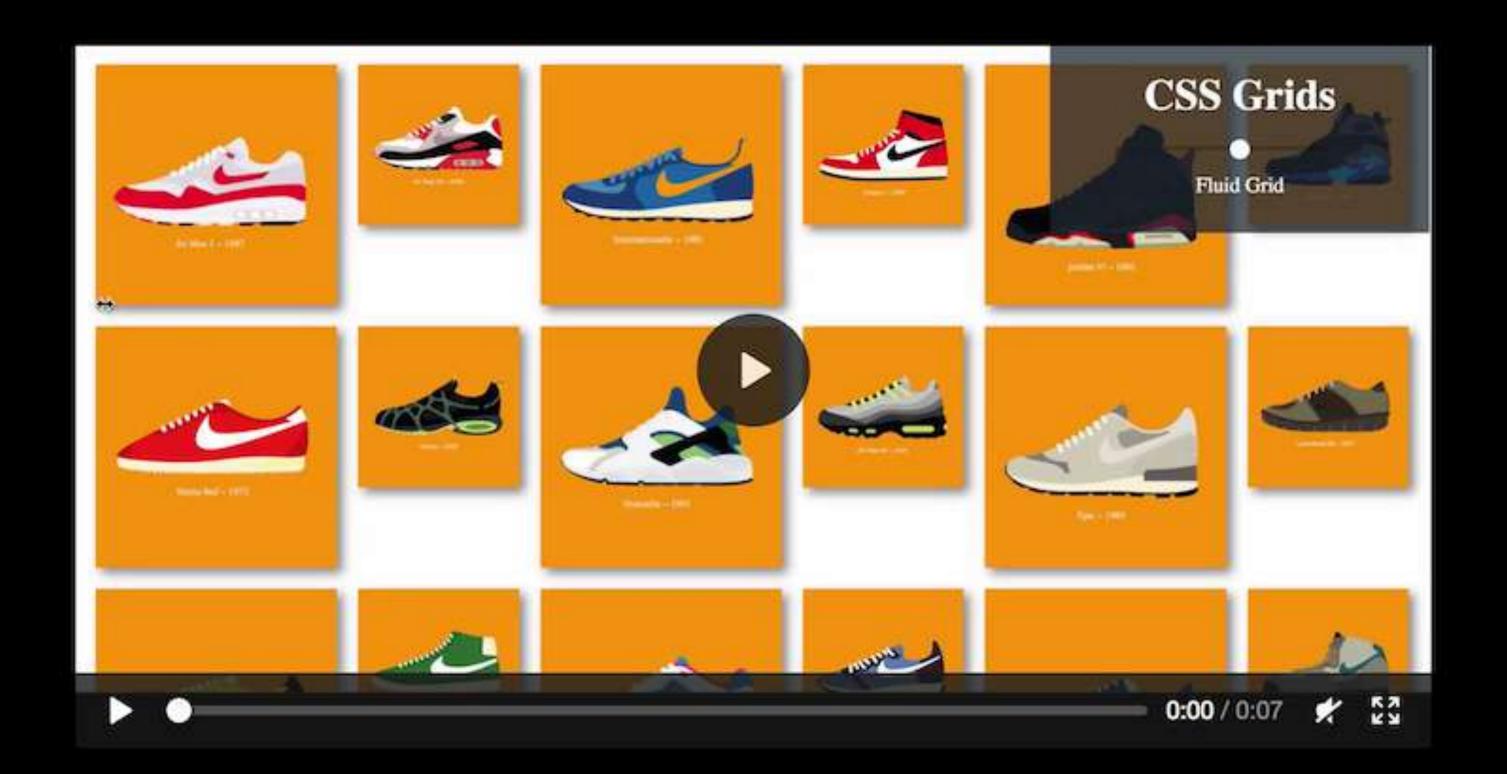
The fr unit

Represents a **fraction** of the **free space** in the grid container.



Fluid E55 grid

```
.container {
   display: grid;
   grid-template-columns: repeat(3, 3fr 2fr);
}
```





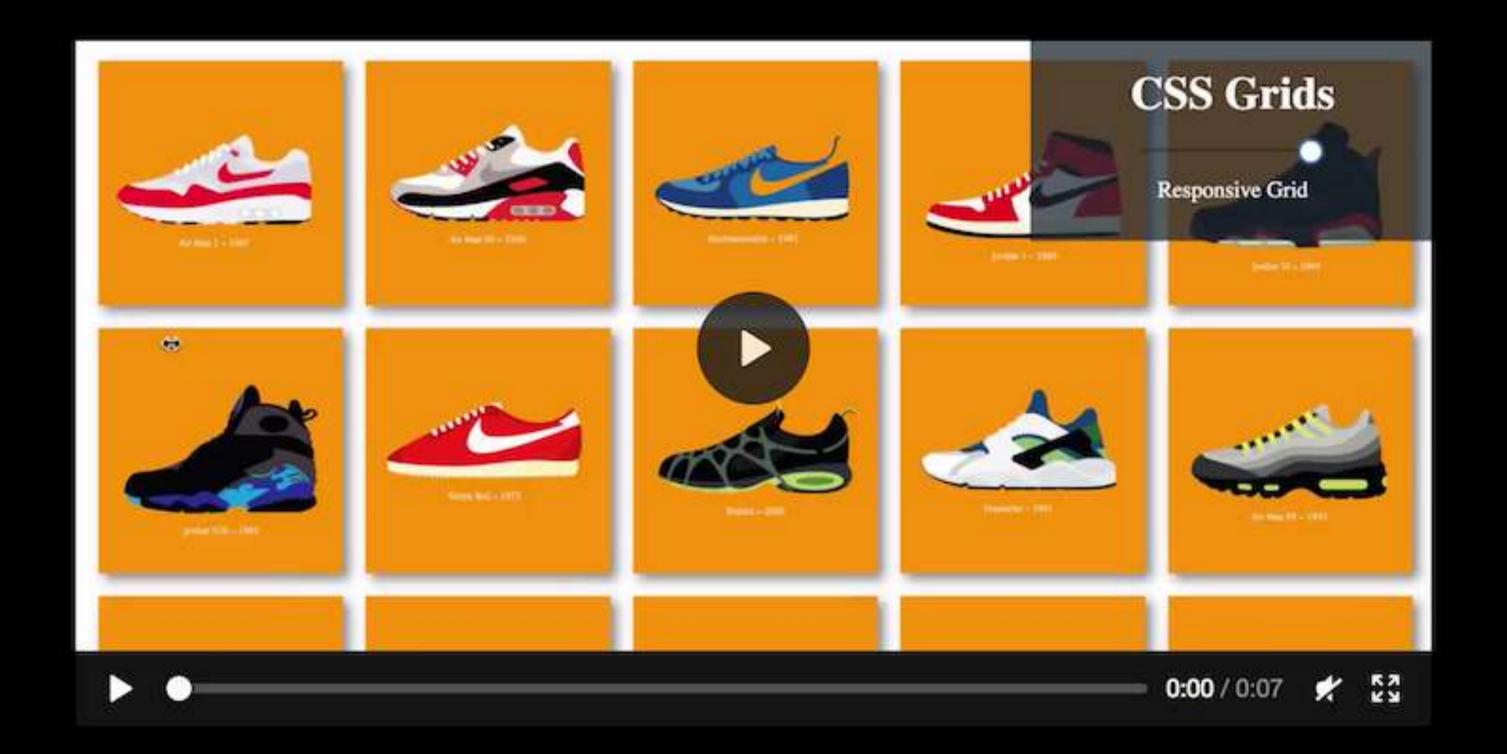
The minmax () function

Defines a size range greater than or equal to min and less than or equal to max.



Responsive CSS grid

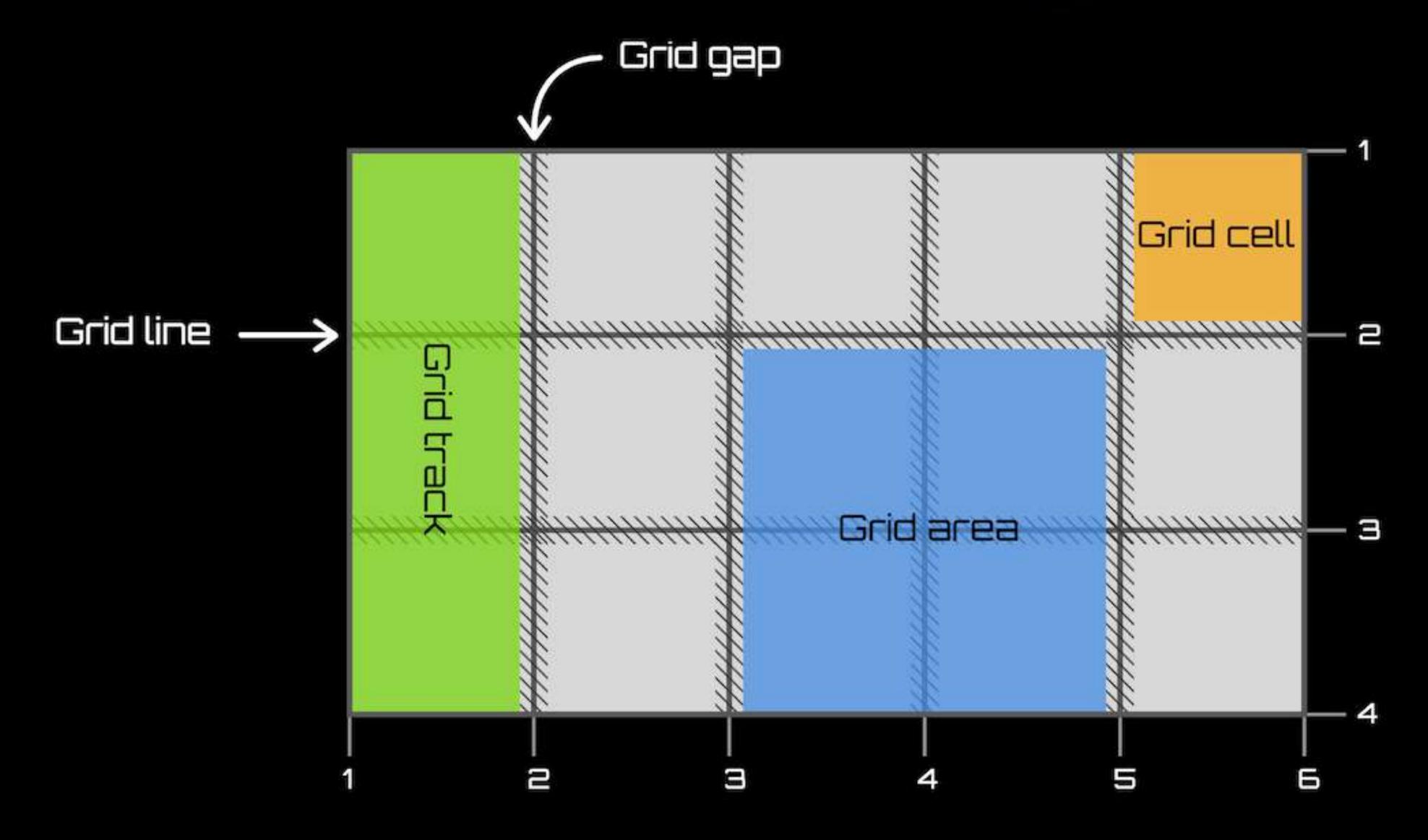
```
.container {
   display: grid;
   grid-template-columns: repeat(5, minmax(10em, 1fr));
}
```





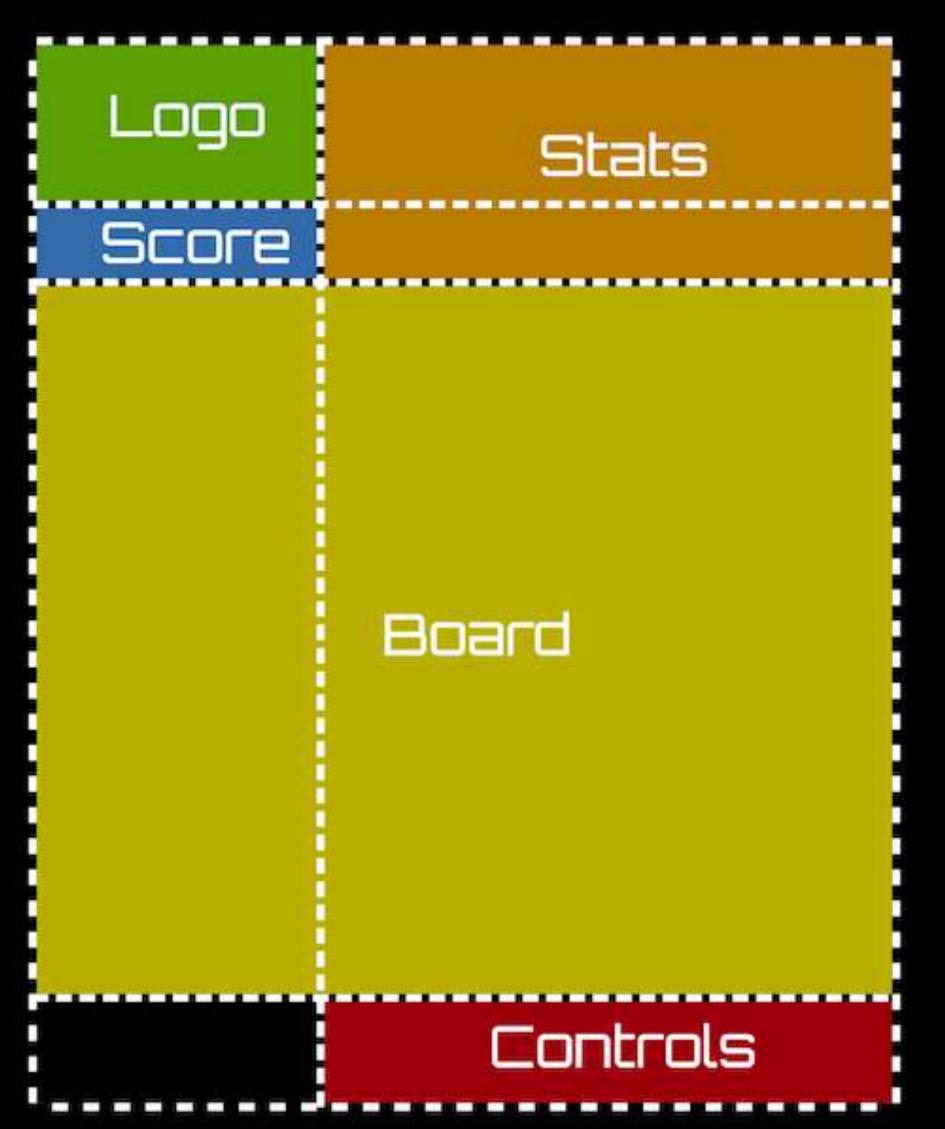


Basic terminology





Named areas





Aligning your grid items

Property	Axis	Aligns		Applies to
justify-content	main/inline	content within element (effectively adjusts		block containers, flex containers and grid containers
align-content	cross/block	padding)		
justify-self	inline	element within parent (effectively adjusts		block-level boxes, absolutely-positioned boxes and grid items
align-self	cross/block	margins)		absolutely-positioned boxes, flex items and grid items
justify-items	inline	items inside box (controls child items)		block containers and grid containers
align-items	cross/block			flex-containers and grid-containers

Source: CSS Box Alignment Module Level 3



justify/align-content

content-distribution properties



```
.content {
  justify-content: normal;
  align-content: normal;
  display: grid;
  grid-template-columns:
repeat(3, 25%);
  grid-template-rows:
repeat(3, 20%);
  grid-gap: 1em;
  grid-template-areas:
    "a b b"
    "a b b"
    "c c d";
.content itemA {
```



Values	justify-content	align-content
center		
start		
end		
space-around		
space-between		
space-evenly		



justify/align-self

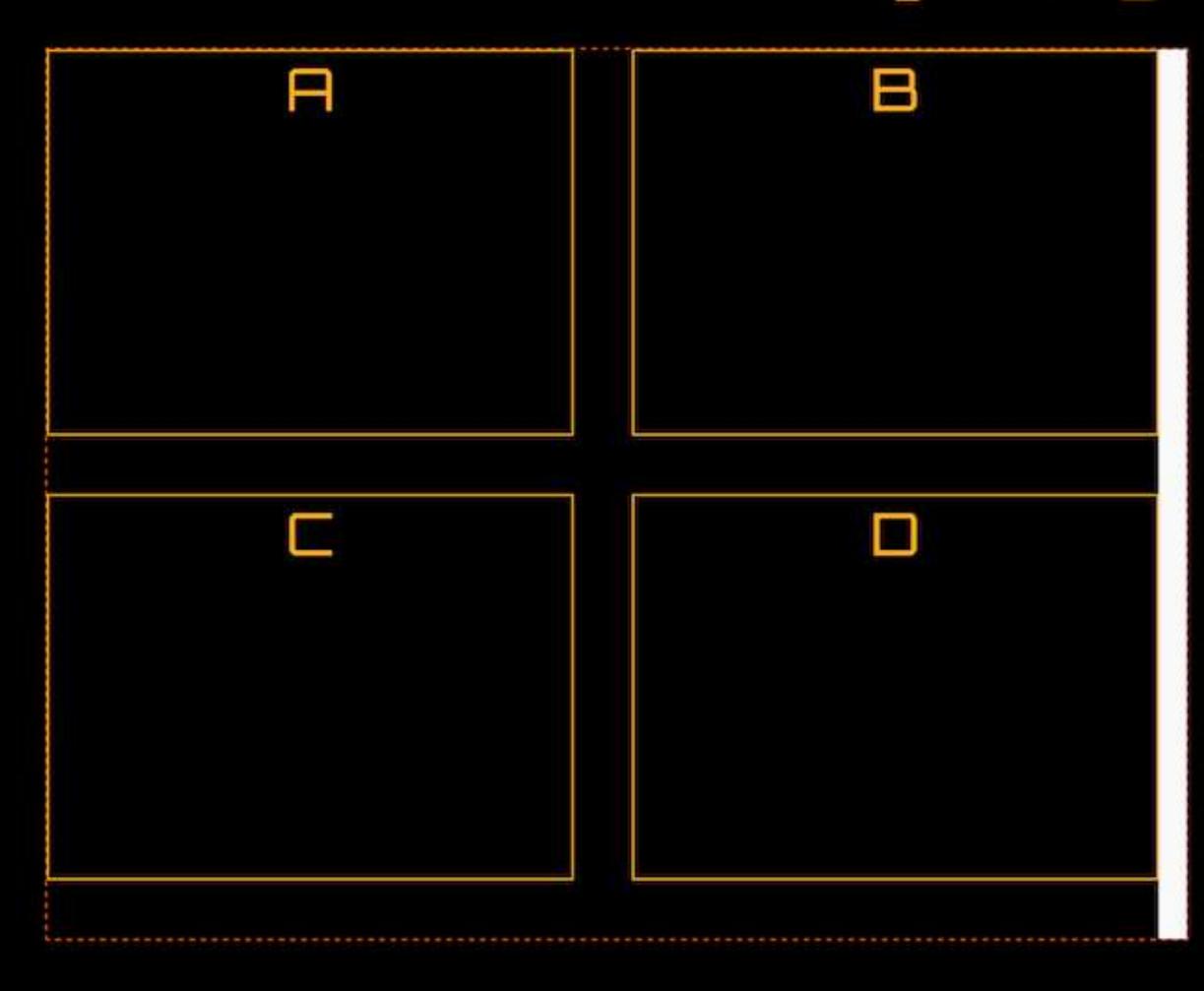
self-alignment properties

```
.self {
  display: grid;
  grid-template-columns:
repeat(4, 1fr);
  grid-gap: 1em;
  grid-auto-rows:
calc(25% - 1em);
  grid-template-areas:
    "aabb"
    "a a b b"
    "c c d d"
    "c c d d";
.self_itemA {
  grid-area: a;
```



justify/align-items

defaults for justify/align-self



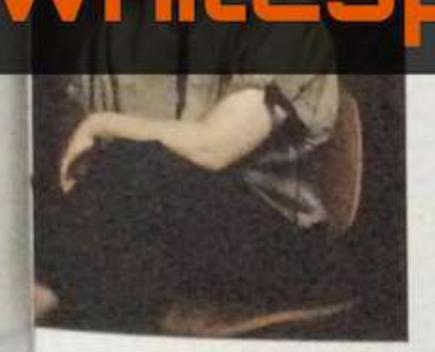
```
.items {
  justify-items: normal;
  align-items: normal;
  display: grid;
  grid-template-columns:
repeat(4, 1fr);
  grid-gap: 1em;
  grid-auto-rows: calc(25% -
1em);
  grid-template-areas:
    "a a b b"
    "a a b b"
    "c c d d"
    "c c d d";
```

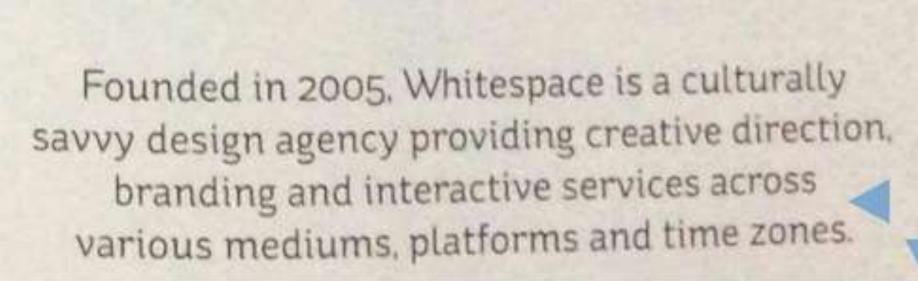




C N N E C T I N G



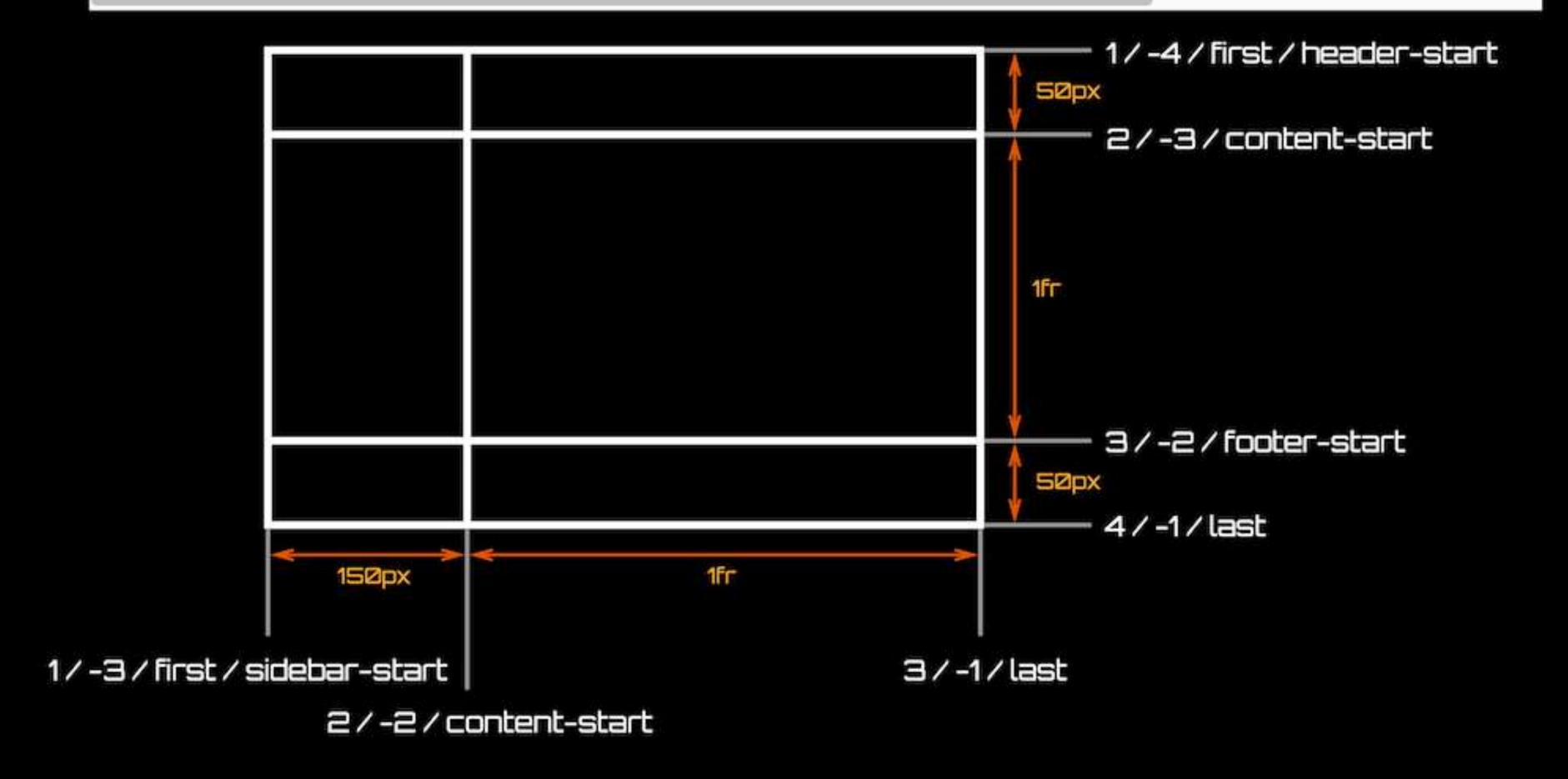




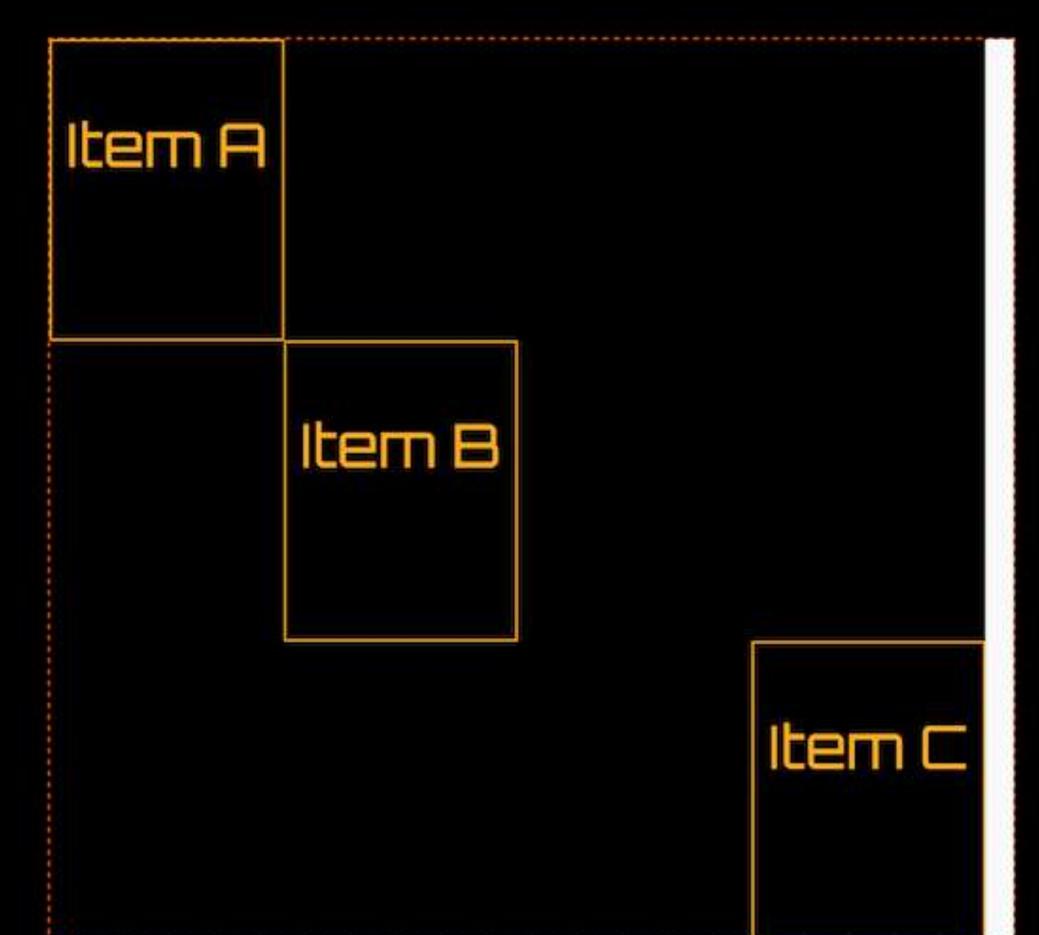
Tuesday 25th April

grid-row = nd grid-column

```
grid-template-columns: [first sidebar-start] 250px [content-start] 1fr [lagrid-template-rows: [first header-start] 100px [content-start] 1fr [footer
```





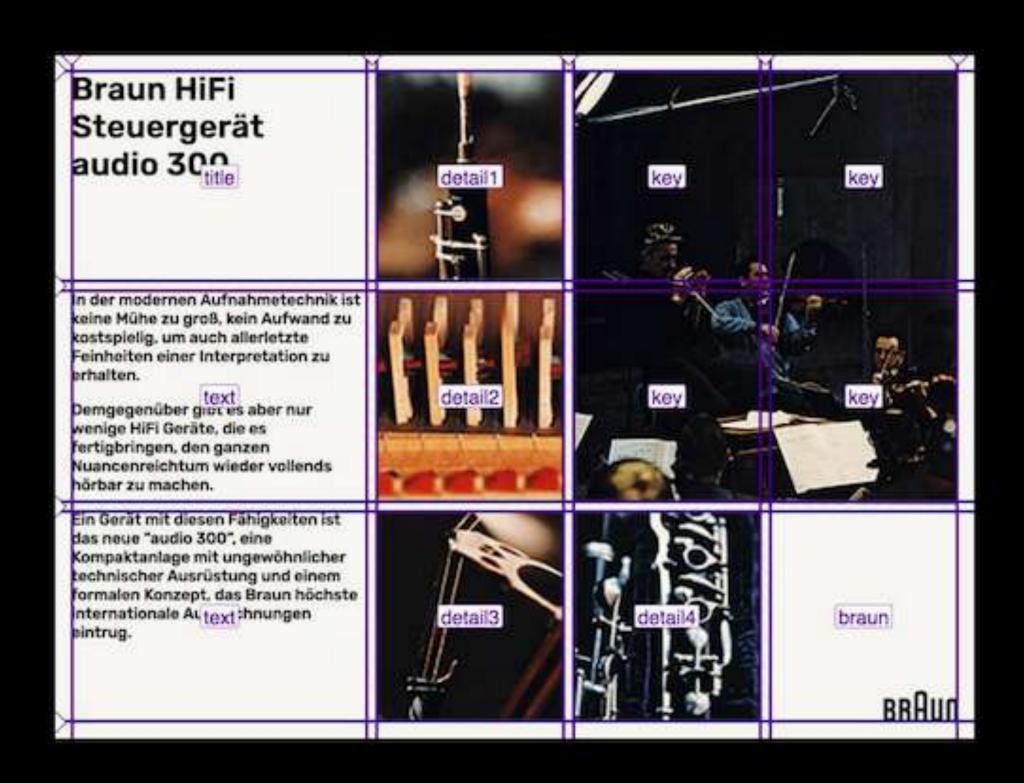


```
.whitespace {
  display: grid;
  grid-template-columns: repeat(4,
1fr);
  grid-template-areas: "a . . . "
                       ". b . ."
                       ". . . c";
.a { grid-area: a; }
.b { grid-area: b; }
.c { grid-area: c; }
```



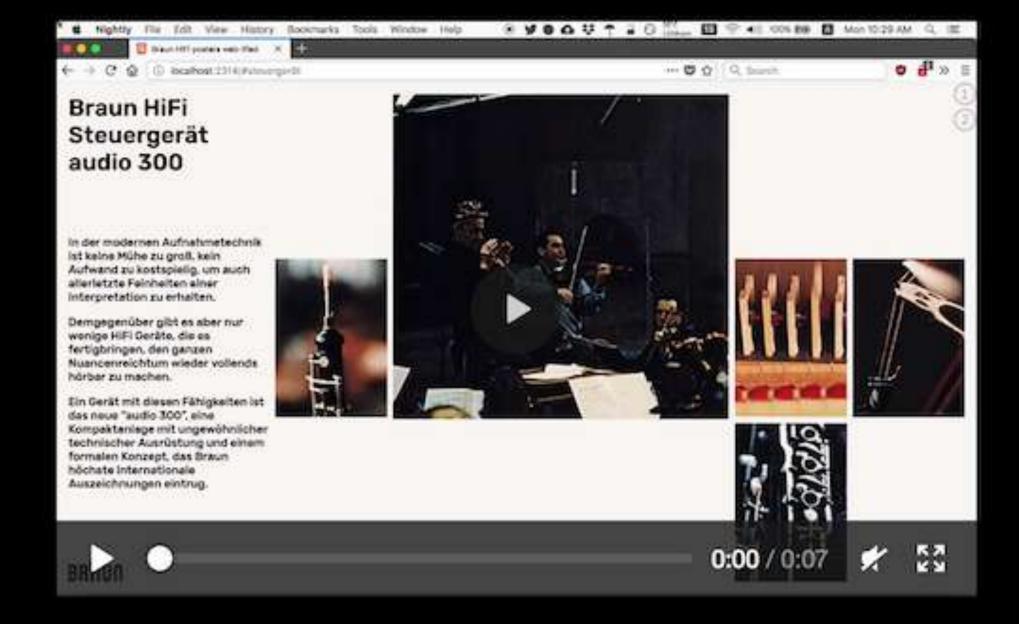
1	1	1	Y
	key		
detail1	key	detail2	detail3
		detail4	
		detail1 key	detail1 key detail2 detail2



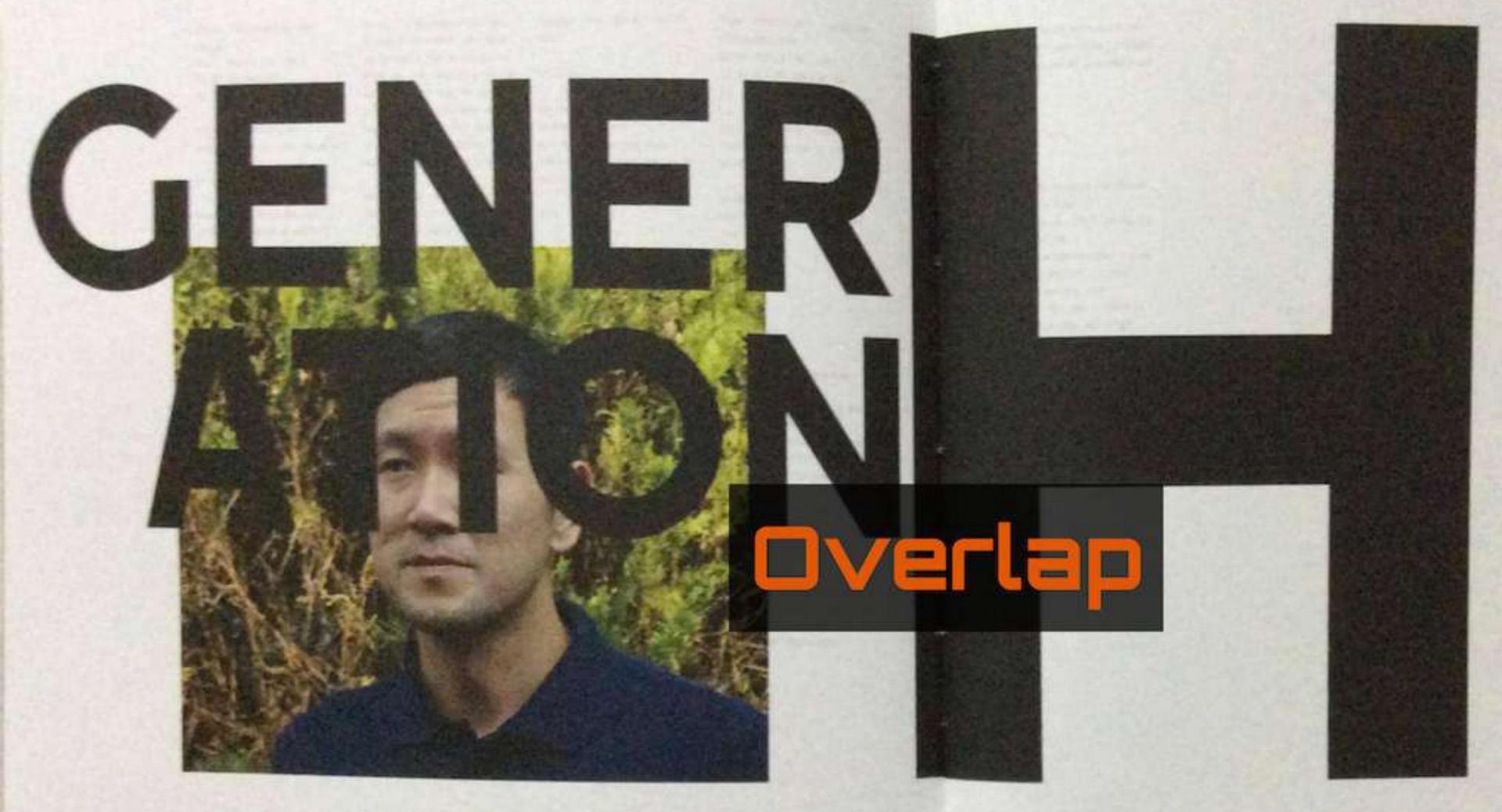


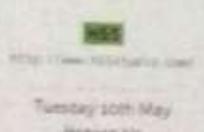






```
.steuergerat
 grid-gap: 0.5em;
 grid-template-columns: 50% 50%;
 grid-template-areas:
                       "title title"
                       "text text"
                       "key key"
                       "detail1 detail2"
                       "detail3 detail4";
@media screen and (min-aspect-ratio: 1/1) and (min-
 .steuergerat
   grid-template-columns: 18.75em 1fr 1fr 1fr;
   grid-template-rows: calc((100vh - 3em) / 3) cal
   grid-template-areas: "title detail1 key key"
                         "text detail2 key key"
                         "text detail3 detail4 brau
@media screen and (min-aspect-ratio: 8/5) and (min-
 .steuergerat
   grid-template-columns: 17.5em 1fr 3fr 1fr 1fr;
   grid-template-rows: calc((100vh - 3em) / 3) cal
   grid-template-areas: "title . key . . .
                         "text detail1 key detail2
                         "text . . detail4 .";
```





With his bold, stripped-back typographic approach, Hanson Ho founded H55 in 1999. It is now one of the most recognised and celebrated graphic design studios in Singapore.

HANSON HO IS VERY BUSY AS WELL AS RUNNING HIS. HE IS AN ACTIVE MEMBER OF THE DESIGN SOCIETY AND HANDLES DESIGN AND PRODUCTION OF THEIR BIANNUAL JOURNAL, HOWEVER, WE MANAGE TO ARRANGE AN EARLY MEETING OVER BREAKFAST AT SHIBLY PRATA SHOP NEAR THE STUDIO, WE OPEN BY SAYING THAT SINGAPORE IS FREQUENTLY MENTIONED AS THE GRAPHICS HUB OF SOUTHEAST ASIA...

HANSON chink riong Kong is very vibrant compared to Singapore. They us had a very strong identity throughout the years, even in the eightles. I think it has to do with language and less diversity whereas here identity is always a problem. Look at Japan and, yeah.

much influenced by Europe Less culture and insolners. So I'm quite surprised you say that mong keing has a wider creative industry – they have a music industry, places like Talwan have flig stors, more stars, files, makers, many there is nothing like that, the population is too small.

Priced you storm step inturning in the form you've bean steringming start ?

Trongs have changed here a lot in the last ten years. The last generation was kind of traditional, guitefoerarchical - studies, consultants, strategists, that aind of minking from the nineties. Not early progresstor. My paers claim's want to be like our predecessors. so we say "Why can't we've she the studies in London?" We actually referenced London a lot starts the frum We admired people like Tomato and the Designers. Republic we read Creative Review and wanted to get Into DGAD. Things like that, it was kind of a retails: sance. If you were there at the right time to writers all plicis. And as we started up our own small studies. with a more independent yours -- the studios had their own individualistic representation, rather than consultaxets, strategists blan blan Walt., So. 7 thirs things have changed a lot it's easier now to left up a new business. with new technology, we son't need a shude manager.

Source and an passe over strates you play that coming the Design Society have in Simplepore. How and though more man?

The Design Society is fairly new it was set up a few years ago when the designers from my generation were stable and not struggling as much as when we started we felt we should by to do something together.

What are the espectively of The Design Secrety?

We are interested in antitiving Singulary design history, to map it, and also to offer a rice yearly conference. We have maybe four or five careal new rise a year

THINK GLOBA TAIWAN. GROW

Principle Tarway Solation NAME OF THE PARTY OF Nortgo Trade, Terson









OCAL

Wednesday 27th April Done Bradene

Already an established consultancy in London and Paris, Figtree Network branched out to Hong Kong in 2010. David Brabbins tells us why. WE FIND THE OFFICES OF FIGTREE NETWORK TUCKED AWAY IN A QUIET BUT COOL STREET IN THE WANCHAI DISTRICT OF THE CITY, AFTER VISITING THE MONOCLE STORE ACROSS THE ROAD, WE POP IN TO CHAT WITH DAVID AND OUR CONVERSATION QUICKLY LEADS TO THE RISE OF THE CREATIVE SECTOR IN HIS NEW HOMELAND.

DAVID I think there is a push going on though not as strongly as in Singapore, which is a share in Hong. Kong the government have identified the creative Industry as one of six areas of growth as they try to regard beyond finance, property and stopping.

Wir be recomed that in Hong Xing Exchange each productrun standards are high, but actual dissign perhaps sens as:

Sure, this is the big lesp that Aulan businesses, inse-Daily Chimese businesses need to make. We've had the expenses of going through that process with HTC. Many businesses are not yet ready to make the lead on our first strangy when we came here was to help Asian. Opportunity and change of scene, I was getting a bit trusinesses build global brends. But it's not as simple as just doing communications. They have to Invest quite heavily in a long term strategy, acquire new competencles they never had innovation, marketing it is a big jump for companies that are used to making things for other people, and not designing things for themselves. HTC was a bit further along because they designed. stuff for mobile networks so they had all the competen-

How did Fightes Network pet started?

We are about seven years old Orange was the foundation client, I joined shortly after it was incorporated. You need sight good clients for an agency. HTC is our most recent large one and we have a couple more big. ones in the UK right now.

DK so have many offices does Fighted have?

Three We've got London - which is our HQ - there are about forty people there. About three or four work in Paris, then eight of us here in Hong Kong.

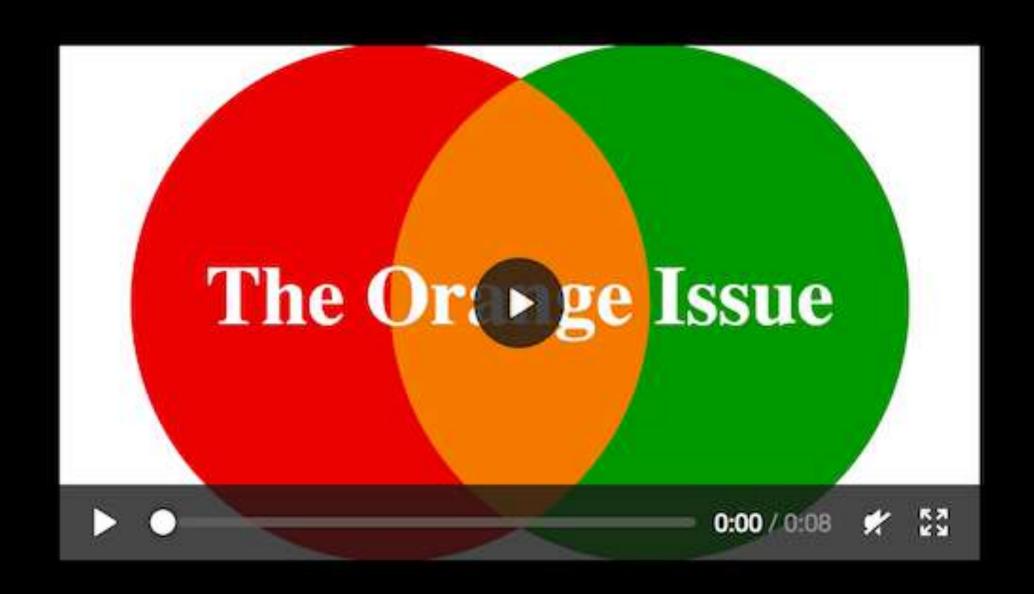
Old you initially work in the Condain Grenon?

Year. Back in the days when we were three guys in a garage, just tike Google!

What being it you to Hong King?"

bored with Lander; the weather but the hest's high tax, low growth. I found that I kept stopping over at Hong Kong when I was on my way to Talwan to meet with HTC I used to come here before flying buck to London to delich up with some mates. I gradually fell in love with the place so I thought "Well, what we de could work here," so here we are

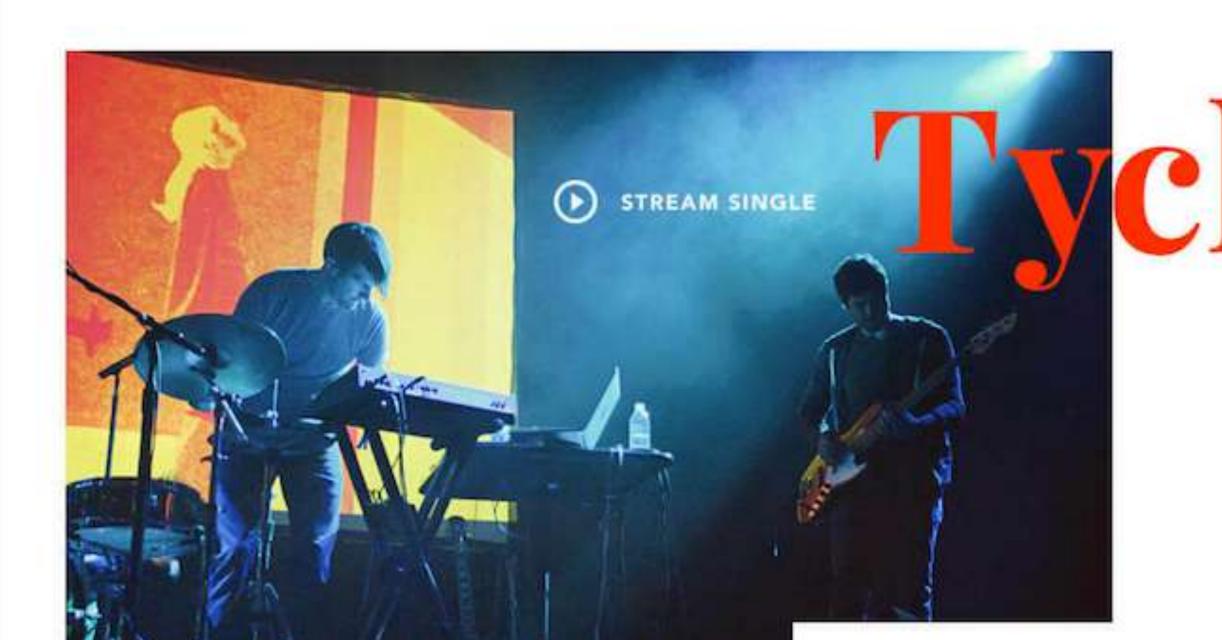




```
.container {
  display: grid;
  grid-template-columns: repeat(9, 1.
  grid-template-rows: repeat(6, 1.256
h2
  grid-row: 3 / 5;
  grid-column: 1 / 10;
.container::before {
  grid-row: 1 / 7;
  grid-column: 1 / 7;
.container::after {
  grid-row: 1 / 7;
  grid-column: 4 / 10;
```



Building a grid layout



TOUR DATES

but gave scant details about the project, leaving fans to speculate about just what the ambient master had in store. Fans need no longer worry, as Tycho's fifth studio album, Epoch, has arrived in grand fashion.

Earlier this year, San Francisco-bred artist and designer Tycho announced a new album on the way for 2016,

READ MORE

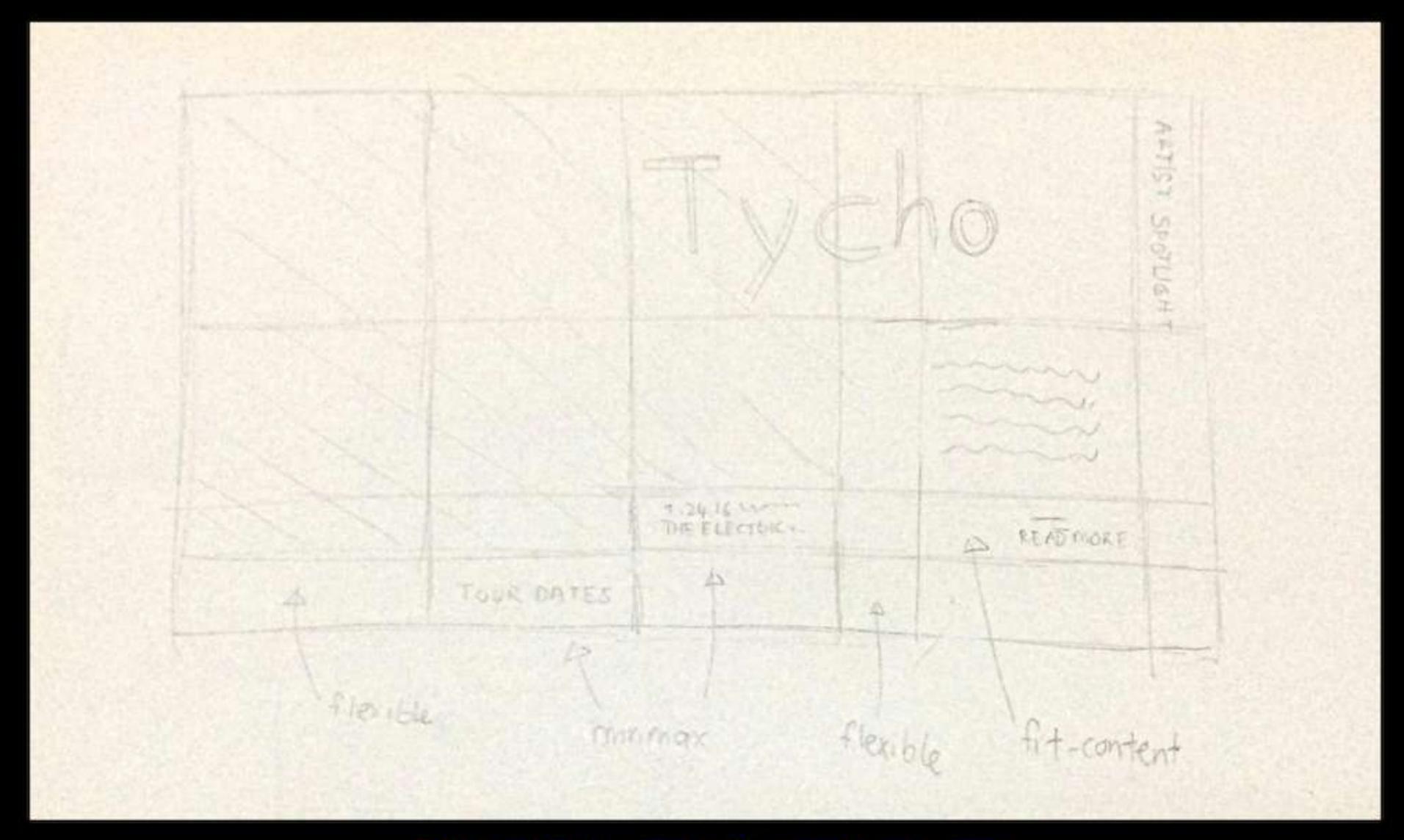
Design credit: Drew Sullivan

9.24.16 PHILADELPHIA

THE ELECTRIC FACTORY



https://www.chenhujjing.com/slides/gdaygt-2017



Good ol' pencil and paper



Tycho

Artist Spotlight

Tycho is an American ambient music project led by Scott Hansen as primary composer, songwriter and producer. Hailing from San Francisco, California, he is known as ISO50 for his photographic and design works. His music is a combination of downtempo vintage-style synthesizers and ambient melodies.

Read more



10,2,2010 Toronto The Drake Hotel

Tour states

Markup without any CSS

Tycho

ARTIST SPOTLIGHT

Tycho is an American ambient music project led by Scott Hansen as primary composer, songwriter and producer. Hailing from San Francisco, California, he is known as ISO50 for his photographic and design works. His music is a combination of downtempo vintage-style synthesizers and ambient melodies.

READ MORE



10.2.2010 TORONTO THE DRAKE HOTEL TOUR DYNES

Basic styles



"Websites do **NOT** have to look the same in every browser."



Tycho

ARTIST SPOTLIGHT

Tycho is an American ambient music project led by Scott Hansen as primary composer, songwriter and producer. Hailing from San Francisco, California, he is known as ISO50 for his photographic and design works. His music is a combination of downtempo vintage-style synthesizers and ambient melodies.

READ MORE



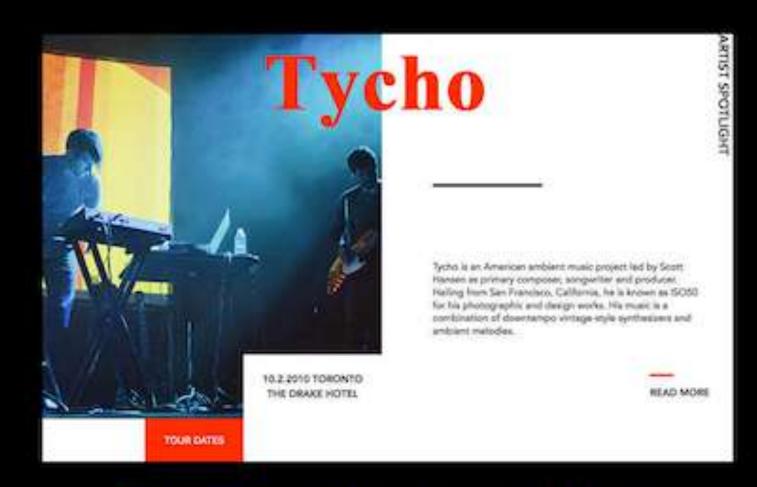
THE DRAKE HOTEL

TOUR DATES

Fallback layout

```
:-ms-input-placeholder, :root main {
  display: block;
h1 |
  margin-bottom: 0.25em;
h2
  margin-bottom: 1em;
.about
  margin-bottom: 1em;
  margin-bottom: 2em;
button
  padding: 1em 2em;
  position: absolute;
  right: 1em;
  bottom: 1em;
```





CSS grid in action

```
supports (display:grid) {
 @media (min-width: 42em) and (min-height:
   main
     max-width: none;
     padding: 0;
     display: grid;
     grid-template-columns: 2fr minmax(10em)
     grid-template-rows: 35vh 40vh 15vh 10vh
   h1
     grid-column: 3 / 6;
     grid-row: 1 / 2;
     z-index: 2;
     padding-left: 0.25em;
     margin-bottom: initial;
   h2
     grid-row: 1 / -1;
     grid-column: 6 / 7;
     writing-mode: vertical-rl;
     margin-bottom: initial;
     color: $text;
```







Tycho is an American ambient music project led by Scott Hansen as primary composer, songwriter and producer. Hailing from San Francisco, California, he is known as ISO50 for his photographic and design works. His music is a combination of downtempo vintage-style synthesizers and ambient melodies.

READ MORE

TOUR DATES.

0:00 / 0:09



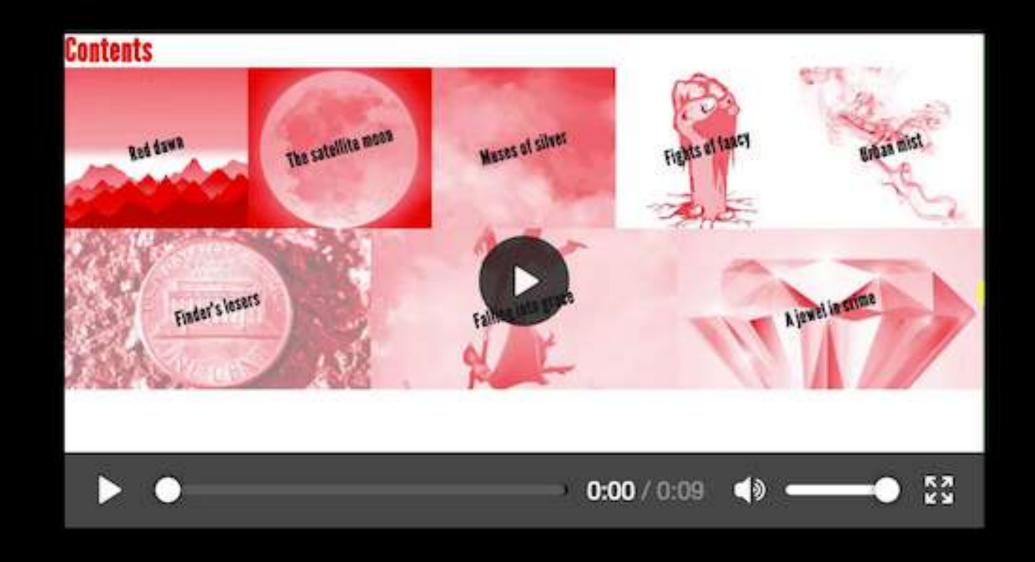




Fallback with feature queries

A conditional group rule whose condition tests whether the user agent supports CSS property:value pairs.





```
main {
    display: flex;
    flex-wrap: wrap;
    justify-content: space-between;
}

.title {
    width: 100%;
}

.card {
    flex: auto;
    min-width: 12em;
    height: 12em;
}
```



Browser support for @supports

CSS Feature Queries 🗹

CSS Feature Queries allow authors to condition rules based on whether particular property declarations are supported in CSS using the @supports at rule.

IE	Edge	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Chrome for Android
9	14	54	60	10	46	10.2		4.4	
10	15	55	61	10.1	47	10.3		4.4.4	
11	16	56	62	11	48	11	all	56	61
	17	57	63	TP	49	e de	•		



✓ X Partial Support

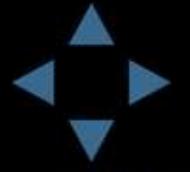
Global: 92.59% + 0% = 92.59%

Data from caniuse.com | Embed from caniuse.bitsofco.de





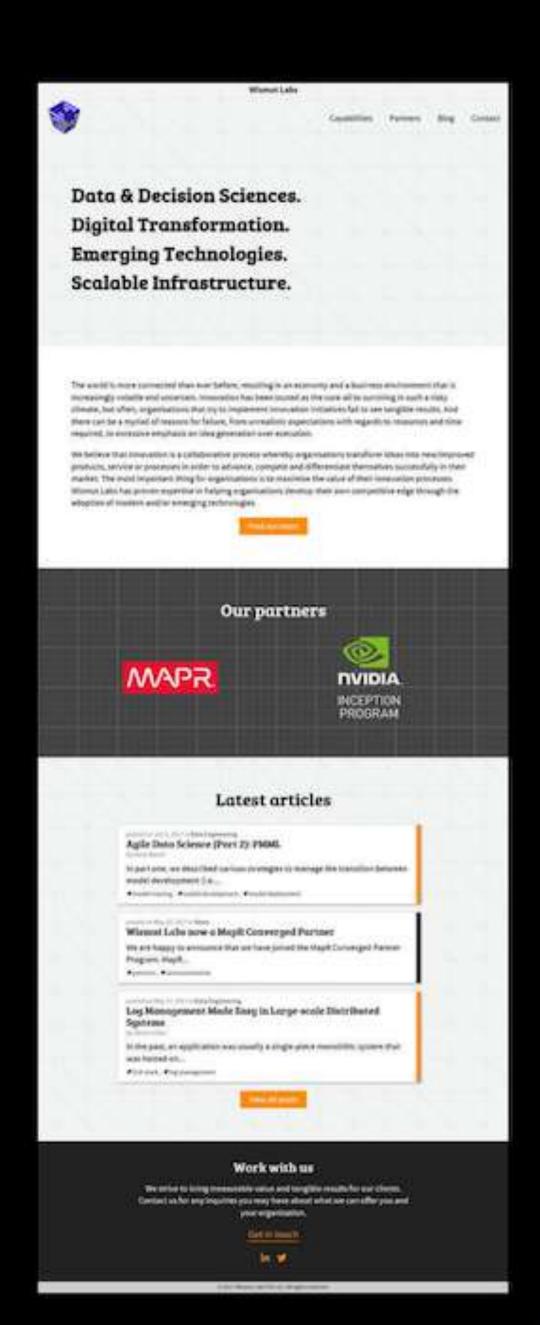
```
@supports (display:grid) {
   main
      display: grid;
      grid-template-columns: repeat
      grid-auto-rows: 8em;
    .title {
     width: initial;
    .card
     min-width: initial;
      height: initial;
    @media screen and (max-width: 38
     main {
        grid-template-rows: 3em repe
    @media screen and (min-aspect-ra
     main {
        grid-template-columns: repea
        grid-template-rows: repeat(
```



```
.selector {
   /* Styles that are supported in old browsers */
}

@supports (property:value) {
   .selector {
      /* Styles for browsers that support the speci
   }
}
```









https://www.wismutlabs.com



"CSS isn't a programming language. It's a stylesheet language. We shouldn't expect it to behave like a programming language. It has its own unique landscape and structures, ones that people with programming language mental maps might not expect."

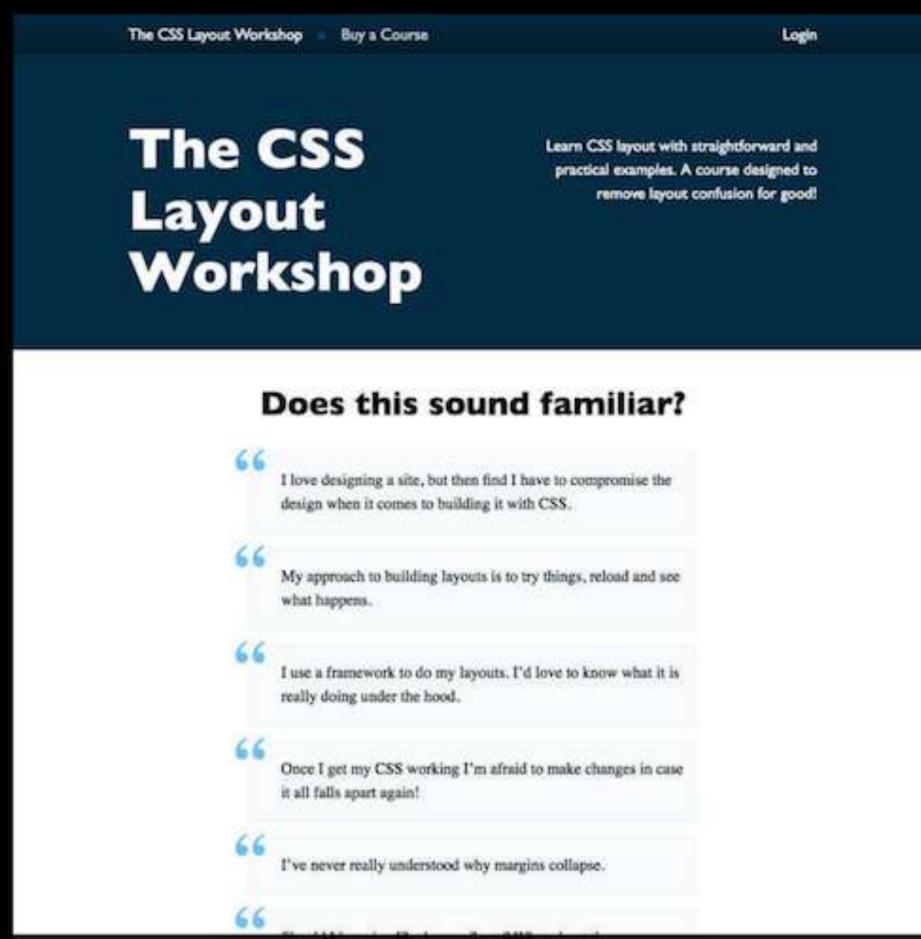
-Danielle Huntrods



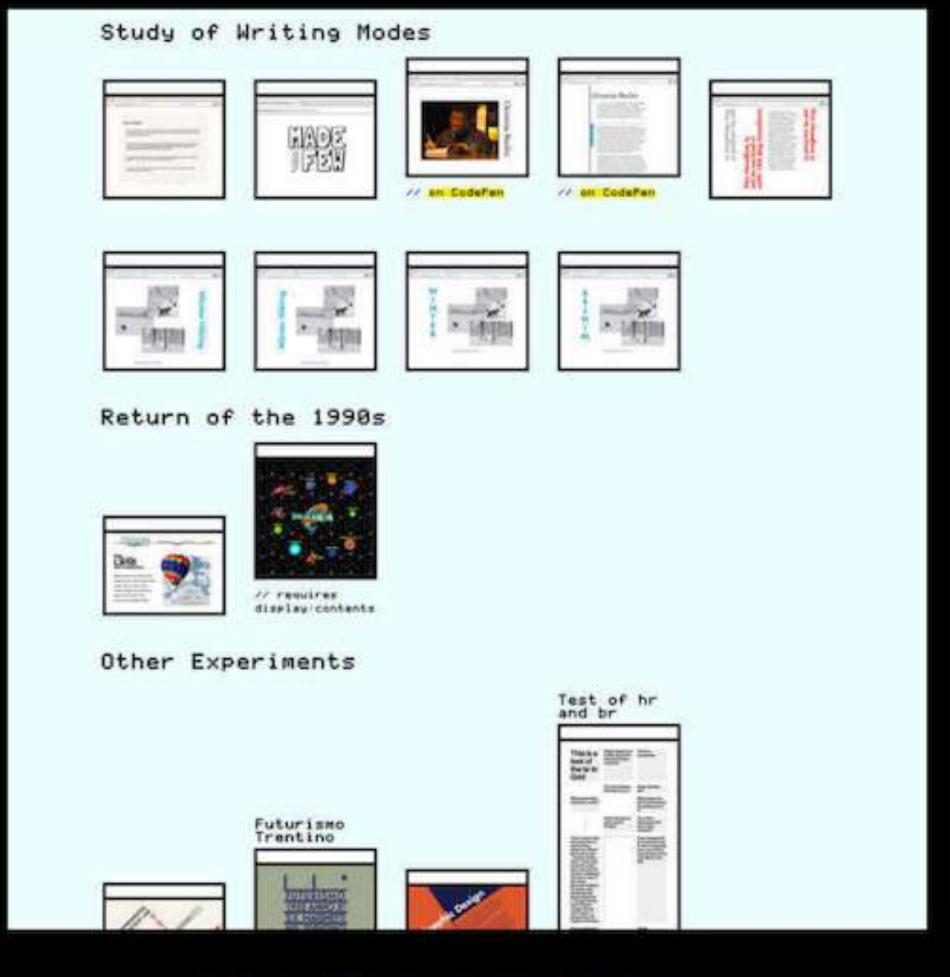
Shape the web we use and build for

- CSS specifications are all on GitHub
- Raising browser bugs can and does make a difference
- Write and talk about CSS features
- Browser developers are people too, provide feedback and be nice about it.





https://thecssworkshop.com/



http://labs.jensimmons.com/



Demos and examples

- Space Jam website
- Regular grids
- Braun HiFi print posters
- Simple overlap
- Tycho artist profile
- Fallback with feature queries
- Wismut Labs website
- Demos source code on GitHub



Useful resources

- CSS Grid Layout Module
 Level 1
- Codrops CSS Grid reference
 The Story of CSS Grid, from
- Grid by Example
- Learn CSS Grid
- Grid Auto-Placement Is Ready
- Automatizing the Grid
- Deep Dive into Grid Layout
 Placement

- CSS Grid Layout and positioned items
- The Story of CSS Grid, from Its Creators
- CSS Grid Layout is Here to
 Stay
- The New Layout Standard
 For The Web: CSS Grid,
 Flexbox And Box Alignment



Thank you!

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