



Kunsthistorisches Museum, Naturhistorisches Museum, Volksgarten und Parlament in Wien

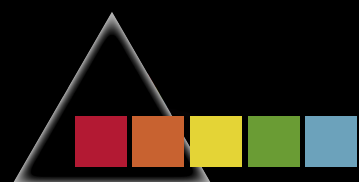
# Manuel Matuzovic

- Frontend Developer aus Wien
- Spezialisiert auf CSS, Performance und Accessibility



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- Schreibe Artikel, halte Vorträge und Workshops




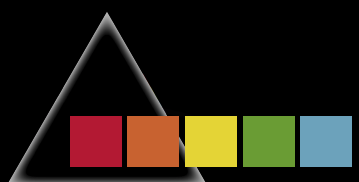
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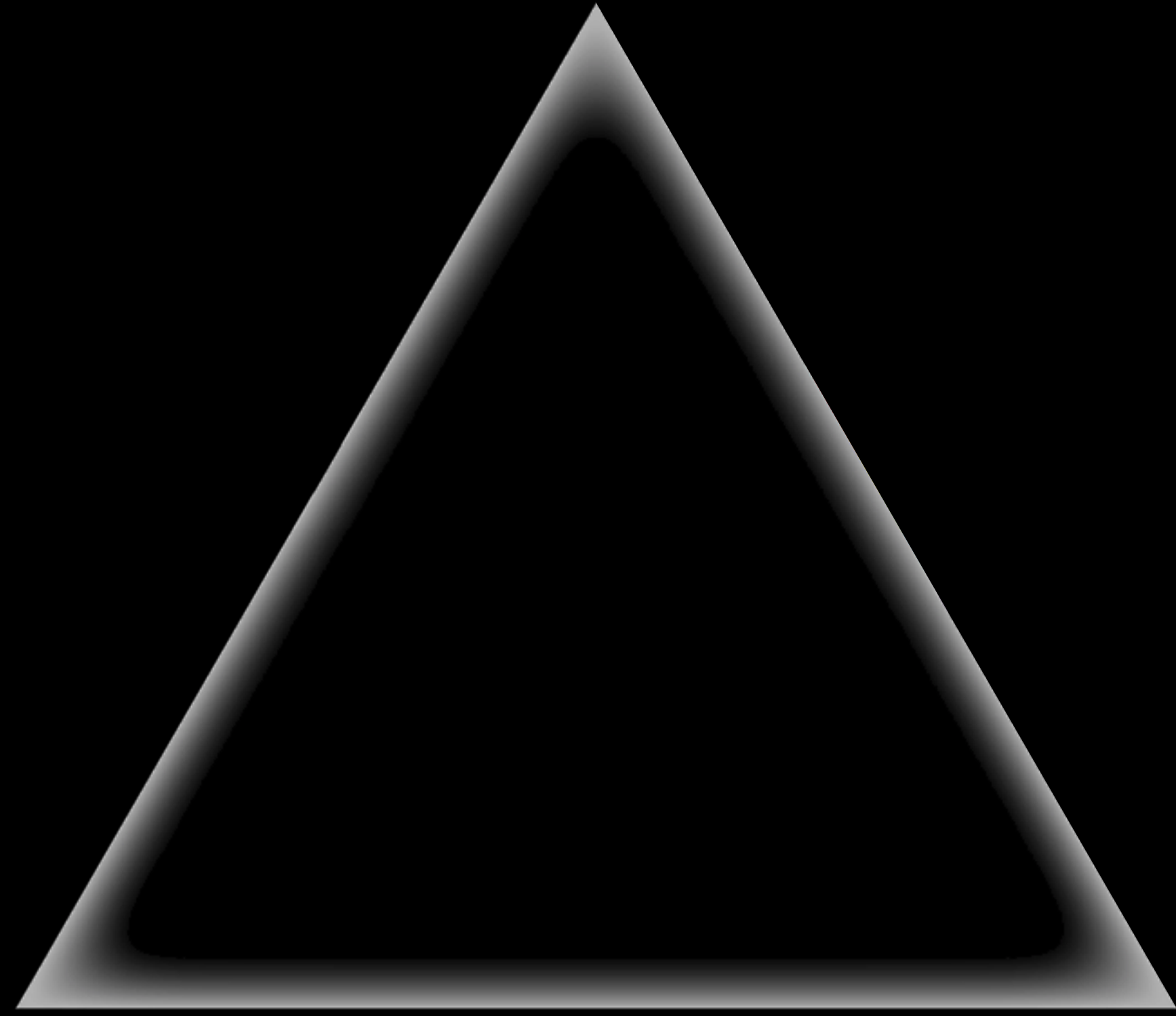
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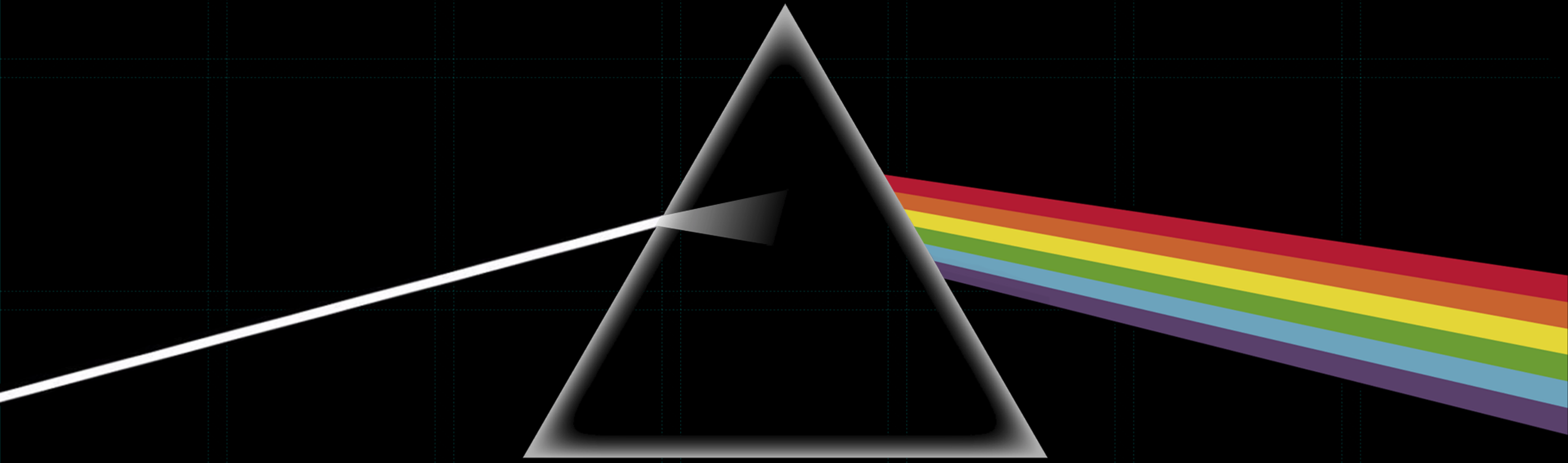


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-  @mmatuzo auf Twitter







*The dark side of the grid*



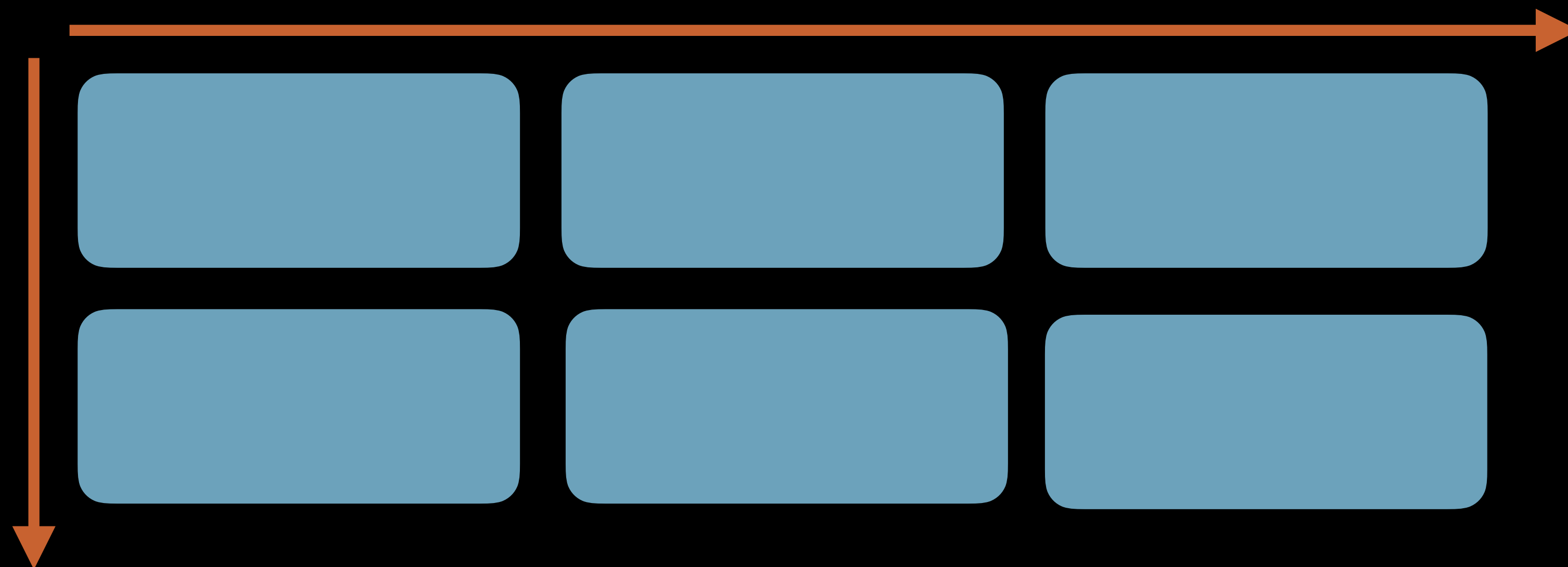
# Was ist CSS Grid Layout?

CSS Grid ist ein auf Rastern basierendes Layout-System, das für zweidimensionale Layouts designt wurde.



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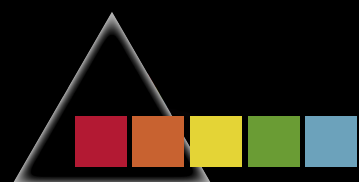


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- Das erste richtige Layout-System in CSS.



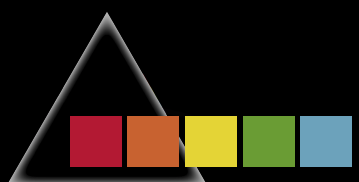
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# Was ist besonders an Grid?

- Das erste richtige Layout-System in CSS.
- **float, display: inline-block, position, display: table** waren ursprünglich nicht für das Bauen von Layouts konzipiert.
- Irgendwie wie table-Layouts, aber responsive, flexibel und in CSS formuliert und nicht in HTML.





Y

oung photographer Pablo Baquedano spent three seasons roaming the Ardennes, a forest region that spreads throughout France, Luxembourg, and Belgium. Over winter, spring, and summer, the 28-year-old Baquedano witnessed first hand a region in crisis, suffering from a post-industrial economic collapse and a declining population. In the Ardennes there almost as many grandparents as there are children now. That's how many people have left, faced otherwise with a bleak future in a region stuck in terminal decline. Pablo spent his time in the Ardennes capturing the daily life of those living in a region, capturing the truth and beauty of the lives of those France forgot. The photos, in stark black and white, immortalize the romantic banality of small town life, but the images are neither maudlin nor judgemental, they're picturesque and picaresque. You photography has a very journalistic approach. What makes you want to work in this way? From the start, the photographers I have always liked the most had this approach to their work. I'm good when I'm close to people. If I'm not, I'm bored. To me, photography is about exchange. Generally my projects are born out of discussion, a piece of information, or an encounter. When I'm shooting, I'm in touch with the people I photograph, I like to take the time to chat with them over coffee or a glass of wine. What is the common thread between your different projects? People. It needs to be about life. What I like is when my images feel timeless. The ephemeral nature of events doesn't really attract me that much. For your latest project, you have traveled the Ardennes.

What is the common thread between your different projects? People. It needs to be about life. What I like is when my images feel timeless. The ephemeral nature of events doesn't really attract me that much. For your latest project, you have traveled the Ardennes. Why did you choose this region of France? I wanted to find a region of France that felt forgotten. I was talking to my brother-in-law, who had worked there as a professor, and the idea began to take shape. For me it was a real discovery and the idea of talking about a whole region in this way was something new for me, it was exciting.

The region has been very devastated by the economic crisis. How did you perceive it? My goal was to let the images talk for themselves, but of course, the crisis is everywhere there. Chatting with John Paul Mayette, who works in a co-operative activity defending the Ardennes metalworks, made me aware of the damages caused by the crisis. People there are engaged in a constant fight to preserve their expertise, their lives and their communities, but in the end, the crisis is always stronger than them. habitants a new face over time.

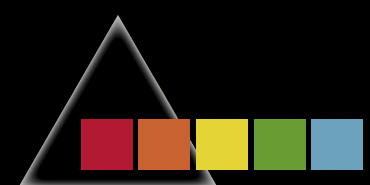
Yet I think I have managed to show that life in the Ardennes continues, thanks to men like John Paul. It was important to show the period of the time I'd spent there, but in the end, the seasons were more a framework for the images than a creative asset in itself. interests me is that the changing seasons give landscapes and inhabitants a new face over time.

Some of the very most touching pictures in the series depict the youth of Ardennes. What's it like to be young there? For the youth of the Ardennes, it is difficult to imagine a future in this place. Some even say that the Ardennes feels like a prison to them. Yet, there are a lot of people trying to find solutions to



“What I like is when my images feel timeless.”

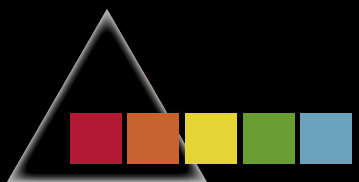
# Grids Geschichte im Überblick





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- Frühe 90er: Erste Ideen, aber „zu komplex“ zu implementieren.



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- 1996: „frame-basiertes“ Layout-Modell.



# Grids Geschichte im Überblick

- Frühe 90er: Erste Ideen, aber „zu komplex“ zu implementieren.
- 1996: „frame-basiertes“ Layout-Modell.
- 2005: Advanced Layout Module (später Template Layout Module).





The image displays a Windows 8 Start screen with a grid of live tiles. The tiles are arranged in a grid that is approximately 4 columns wide and 4 rows high, though some tiles are larger than others. The tiles include:

- Mail:** A teal tile with a photo of Joe Brown, text "Joe Brown", "Out of the office until Jun...", "Hi there, I'm out of the o...", and a notification count of "2".
- Calendar:** A purple tile showing "30 Wednesday" and a calendar icon.
- Internet Explorer:** A blue tile with the "e" logo.
- Store:** A green tile with a shopping bag icon.
- Photos:** A large tile with a collage of photos, including a landscape, a Tesla logo, and a person on a bicycle.
- Maps:** A purple tile with a map icon.
- SkyDrive:** A blue tile with a cloud icon.
- News:** A purple tile with a headline "Sun Sentinel - Celtics' Allen mired in shooting slump" and a small icon.
- Messaging:** A purple tile with a speech bubble icon containing a smiley face.
- Video:** A red tile with a play button icon.
- Music:** An orange tile with a headphones icon.
- Paris, France:** A teal tile with a briefcase icon.
- Desktop:** A large tile with a photo of red tulips.
- Weather:** A blue tile with a sun icon.
- Xbox LIVE Games:** A green tile with a game controller icon.
- Camera:** A red tile with a camera icon.
- Finance:** A green tile with a bar chart icon.

# Grids Geschichte im Überblick



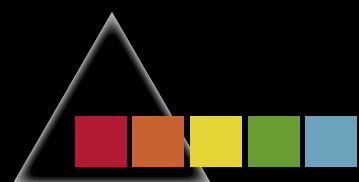
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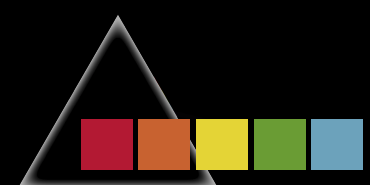


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- 2012 präsentiert Microsoft dem W3C einen Entwurf der Spezifikation.
- Die CSS Working Group beginnt an Microsofts Vorschlag zu feilen.
- Bloomberg engagiert Igalia, um CSS Grid in Blink und WebKit zu implementieren.



# Grids Geschichte im Überblick



# Grids Geschichte im Überblick

- Jänner 2017: CSS Grid in Chromium 56 für Android



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- Früher März 2017: Chrome und Firefox
- Ende März 2017: Opera und Safari
- 17. Oktober 2017: Edge



# FEATURES



```
$ grids zeichnen
```

```
.grid {  
  display: grid;  
  
}
```





```
$ grids zeichnen
```

```
.grid {  
  display: grid;  
  grid-template-columns: 150px 150px 150px;  
}
```



```
$ grids zeichnen
```

```
.grid {  
  display: grid;  
  grid-template-columns: 150px 150px 150px;  
  grid-template-rows: 100px 100px;  
}
```



\$ grids zeichnen



The screenshot shows the Firefox Developer Tools interface. At the top, the navigation bar includes Inspector, Console, Debugger, Style Editor, Performance, Memory, Network, and Storage. The main area is divided into three panes: the HTML pane on the left, the Rules pane in the middle, and the Computed pane on the right.

In the HTML pane, the following structure is visible:

```
<!DOCTYPE html>
<html lang="en">
  <head>
  </head>
  <body translate="no">
    <div class="grid">
    </div>
  </body>
</html>
```

The `<div class="grid">` element is selected and highlighted in blue. A tooltip labeled "grid" is visible over it.

The Rules pane shows the following CSS rules:

- `element {` (inline)
- `.grid {` (inline:46)

The `.grid` rule is expanded, showing the following checked properties:

- `display: # grid;`
- `grid-template-columns: 150px 150px 150px;`
- `grid-template-columns: 150px 150px 150px;`

A tooltip with the text "Click to toggle the CSS Grid highlighter" is positioned over the `grid-template-columns` property.

The breadcrumb at the bottom left reads: `html > body > div.grid`

## Grid-Debugging in Firefox aktivieren

The image shows the Firefox Developer Tools interface. The top navigation bar includes Inspector, Console, Debugger, Style Editor, Performance, Memory, Network, and Storage. The left pane shows the HTML tree with the following structure:

```
<!DOCTYPE html>
<html lang="en">
  <head>
  </head>
  <body translate="no">
    <div class="grid">
    </div>
  </body>
</html>
```

The right pane shows the 'Rules' tab with the following CSS rules:

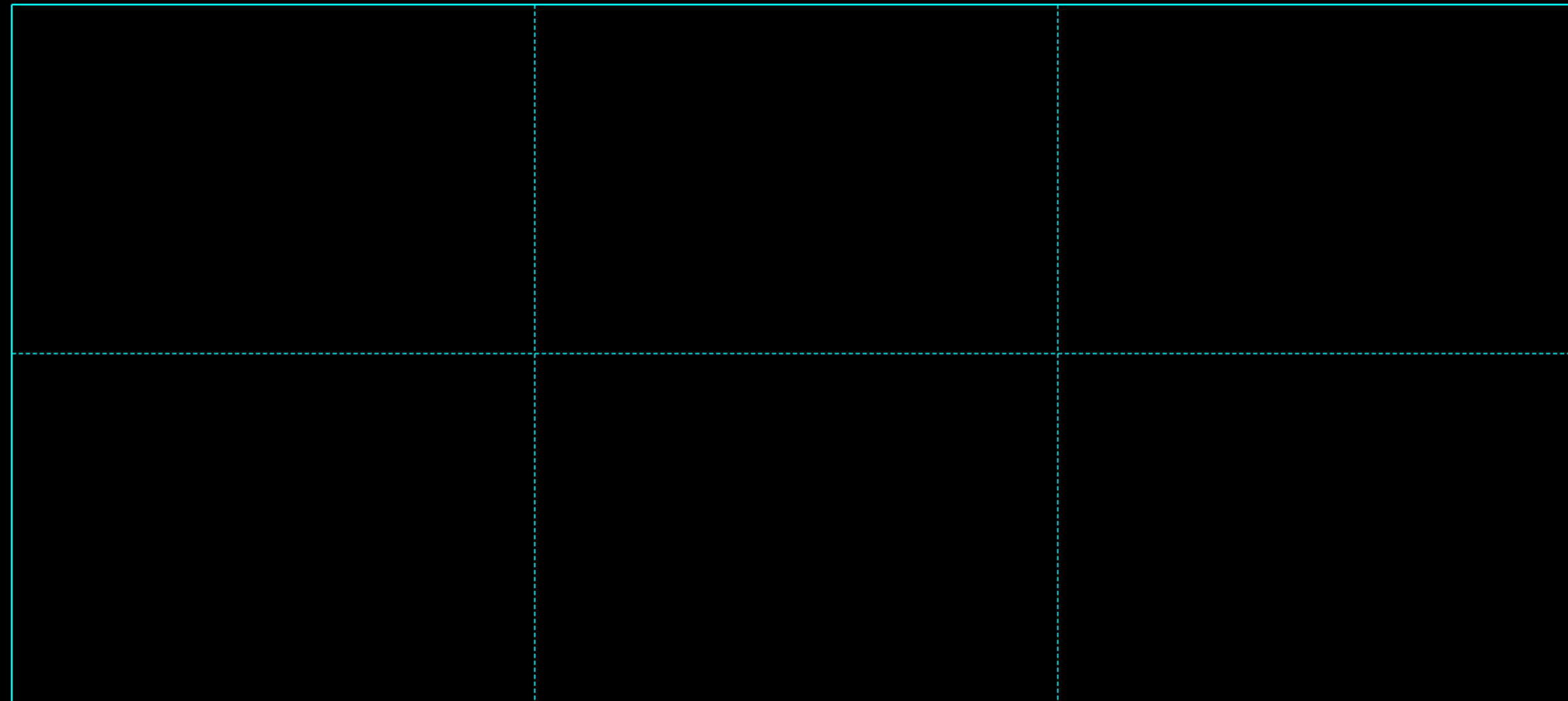
```
element {
}
.grid {
  display: # grid;
  grid-template-columns: 150px 150px 150px;
  grid-templ
}
```

A yellow arrow points to the 'grid-template-columns' property in the '.grid' rule. A tooltip is visible over the arrow with the text: "Click to toggle the CSS Grid highlighter".

At the bottom left of the DevTools interface, the breadcrumb path is: `html > body > div.grid`.

Grid-Debugging in Firefox aktivieren

\$ grids zeichnen



\$ elemente platzieren

```
.item {  
  grid-column: 3;  
  grid-row: 2;  
}
```



\$ elemente platzieren





```
$ layouts „zeichnen“
```

```
.grid {  
  display: grid;  
  grid-template-columns: 1fr 1fr 200px;  
  
}
```



```
$ layouts „zeichnen“
```

```
.grid {  
  display: grid;  
  grid-template-columns: 1fr 1fr 200px;  
  grid-template-areas: "header header header"  
  
}
```



```
$ layouts „zeichnen“
```

```
.grid {  
  display: grid;  
  grid-template-columns: 1fr 1fr 200px;  
  grid-template-areas: "header header header"  
                      "main main sidebar"  
}
```

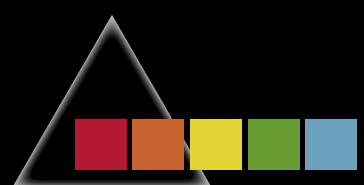
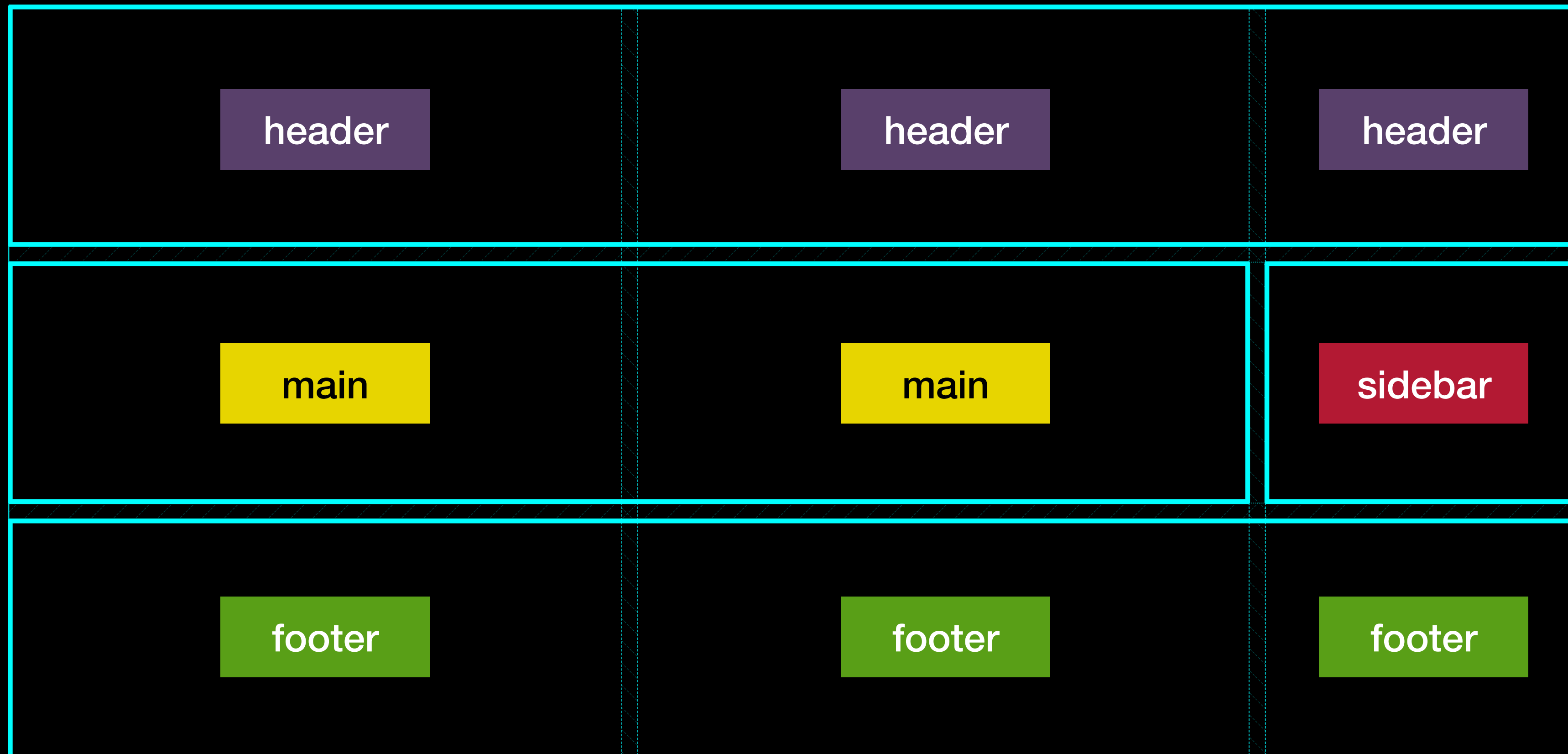


```
$ layouts „zeichnen“
```

```
.grid {  
  display: grid;  
  grid-template-columns: 1fr 1fr 200px;  
  grid-template-areas: "header header header"  
                      "main main sidebar"  
                      "footer footer footer";  
}
```



\$ layouts „zeichnen“



```
$ layouts „zeichnen“
```

```
.header {
```

```
}
```

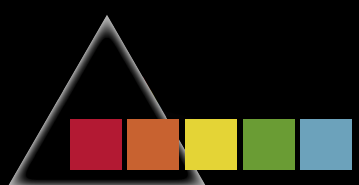
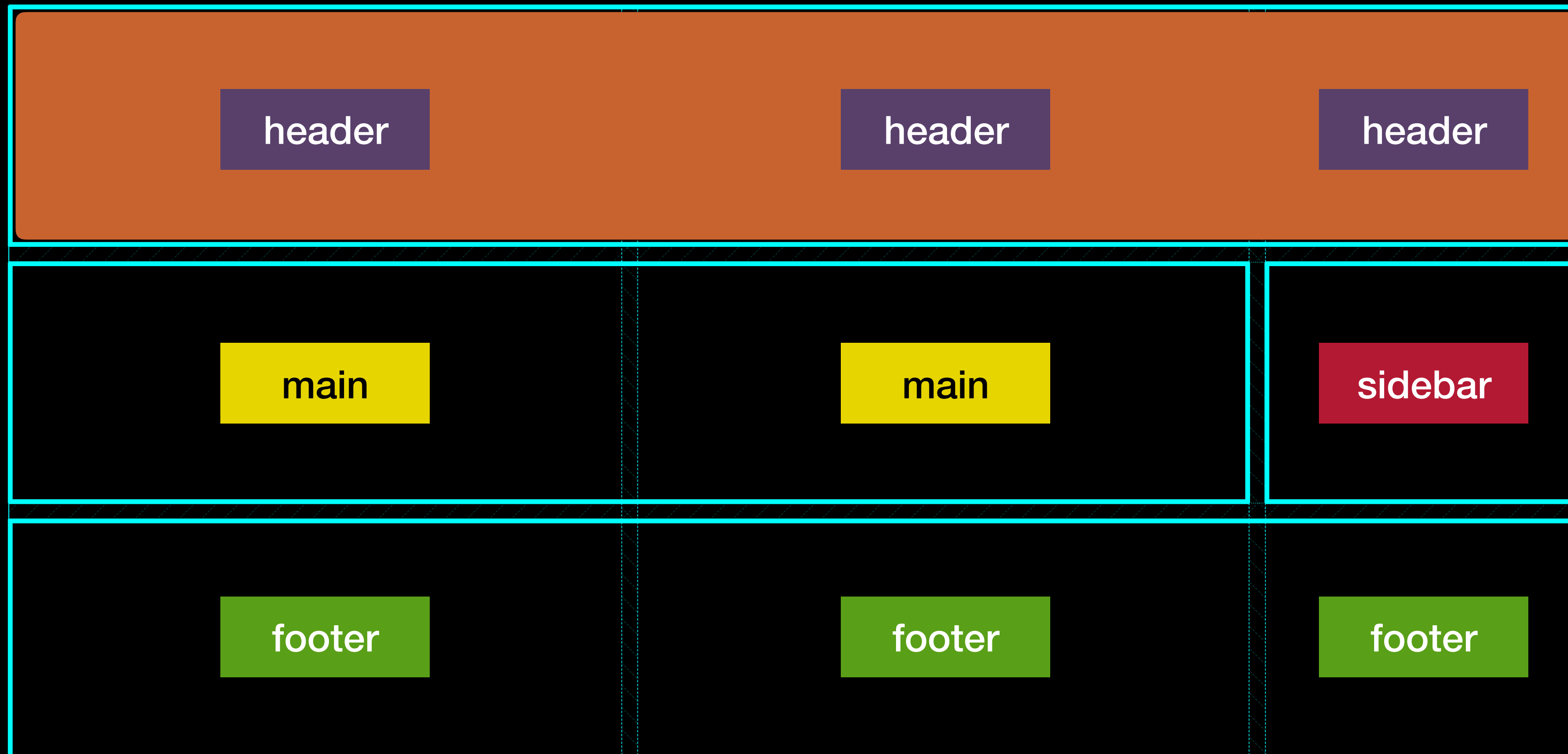


```
$ layouts „zeichnen“
```

```
.header {  
  grid-area: header;  
}
```



\$ layouts „zeichnen“





```
$ implizite grids
```

```
.grid {  
  display: grid;  
  grid-template-columns: 150px 150px 150px;  
  grid-template-rows: 100px 100px;  
  grid-gap: 20px;  
  
}
```

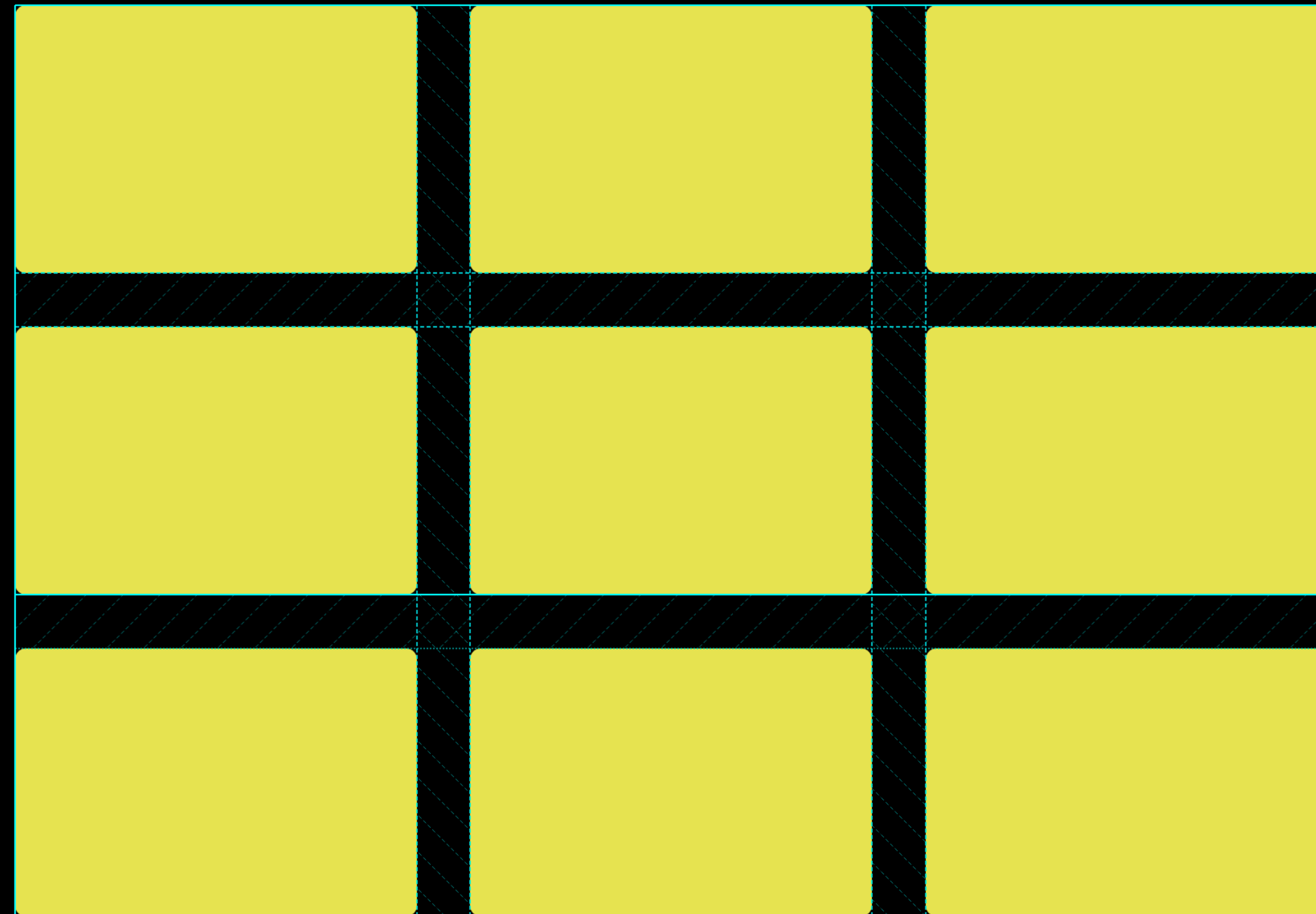


```
$ implizite grids
```

```
.grid {  
  display: grid;  
  grid-template-columns: 150px 150px 150px;  
  grid-template-rows: 100px 100px;  
  grid-gap: 20px;  
  grid-auto-rows: 100px;  
}
```



\$ implizite grids



# Grid(-verwandte) Eigenschaften und Werte

- display
- grid-template-columns
- grid-template-rows
- grid-template-areas
- grid-template
- grid-column-gap
- grid-row-gap
- grid-gap
- justify-items
- align-items
- place-items



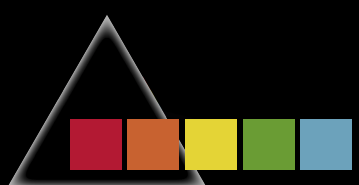
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- display
- grid-template-columns
- grid-template-rows
- grid-template-areas
- grid-template
- grid-column-gap
- grid-row-gap
- grid-gap
- justify-items
- align-items
- place-items
- justify-content
- align-content
- place-content
- grid-auto-columns
- grid-auto-rows
- grid-auto-flow
- grid
- grid-column-start
- grid-column-end
- grid-row-start
- grid-row-end



# Grid(-verwandte) Eigenschaften und Werte

- display
- grid-template-columns
- grid-template-rows
- grid-template-areas
- grid-template
- grid-column-gap
- grid-row-gap
- grid-gap
- justify-items
- align-items
- place-items
- justify-content
- align-content
- place-content
- grid-auto-columns
- grid-auto-rows
- grid-auto-flow
- grid
- grid-column-start
- grid-column-end
- grid-row-start
- grid-row-end
- grid-column
- grid-row
- grid-area
- justify-self
- align-self
- place-self
- min-content, max-content, fit-content
- fr
- repeat()
- minmax()

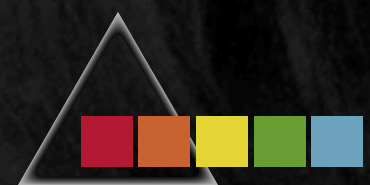




Cover des Albums „The Dark Side of the Moon“, 1973 erschienen.

PINK FLOYD FUN FACT #1

**45 Millionen verkaufte Tonträger**





## PINK FLOYD FUN FACT #1

# 45 Millionen verkaufte Tonträger

The Dark Side of the Moon ist mit über 45 Millionen verkauften Tonträgern auf Platz 3 der meistverkauften Alben weltweit.



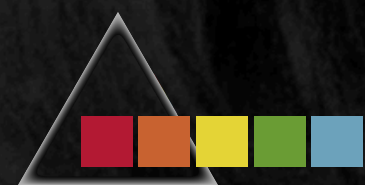
## PINK FLOYD FUN FACT #1

# 45 Millionen verkaufte Tonträger

The Dark Side of the Moon ist mit über 45 Millionen verkauften Tonträgern auf Platz 3 der meistverkauften Alben weltweit.

#1 Thriller von Michael Jackson (66 Millionen)

#2 Back in Black von AC/DC (50 Millionen)



VISUELLE  
REIHENFOLGE



# Visuelle Reihenfolge ändern



# Visuelle Reihenfolge ändern

- Explizite Platzierung



# Visuelle Reihenfolge ändern

- Explizite Platzierung
- Order



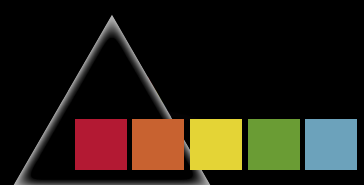
# Visuelle Reihenfolge ändern

- Explizite Platzierung
- Order
- Absolute Positionierung



# Visuelle Reihenfolge ändern

- Explizite Platzierung
- Order
- Absolute Positionierung
- Auto flow





# Visuelle Reihenfolge ändern

- Explizite Platzierung
- Order
- Absolute Positionierung
- Auto flow
- Areas



# Visuelle Reihenfolge

Sowohl die Tab-Reihenfolge als auch die Reihenfolge in der Screenreader Inhalte lesen folgen der Reihenfolge im DOM.



Lorem ipsum dolor sit, amet consectetur adipiscing elit. Fugiat delectus quae fugit, vel non minima dolores qui ipsa officiis quis expedita nobis nemo totam vero quaerat iusto cumque, omnis in.

Name

E-Mail

Button

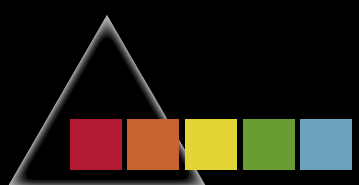


Lorem ipsum dolor sit, amet consectetur adipiscing elit. Fugiat delectus quae fugit, vel non minima dolores qui ipsa officiis quis expedita nobis nemo totam vero quaerat iusto cumque, omnis in.

Name

E-Mail

Button



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Name

E-Mail

Button



Wenn die visuelle Reihenfolge nicht der Reihenfolge im DOM entspricht.

**1. Keyboard User tun sich schwer, zu erahnen, welches Element als nächstes fokussiert wird.**

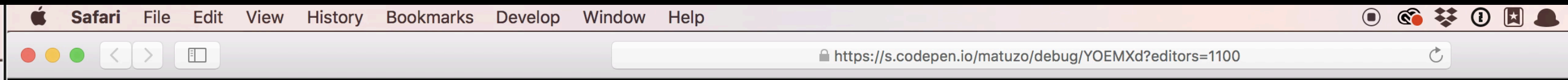
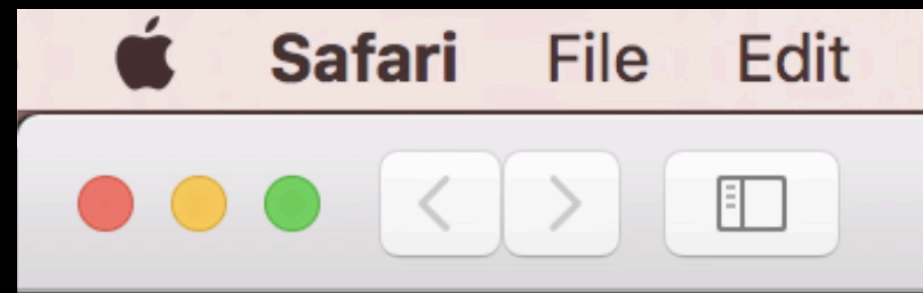


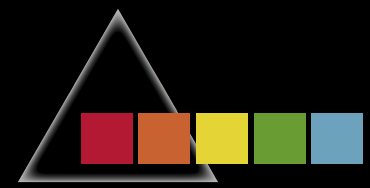
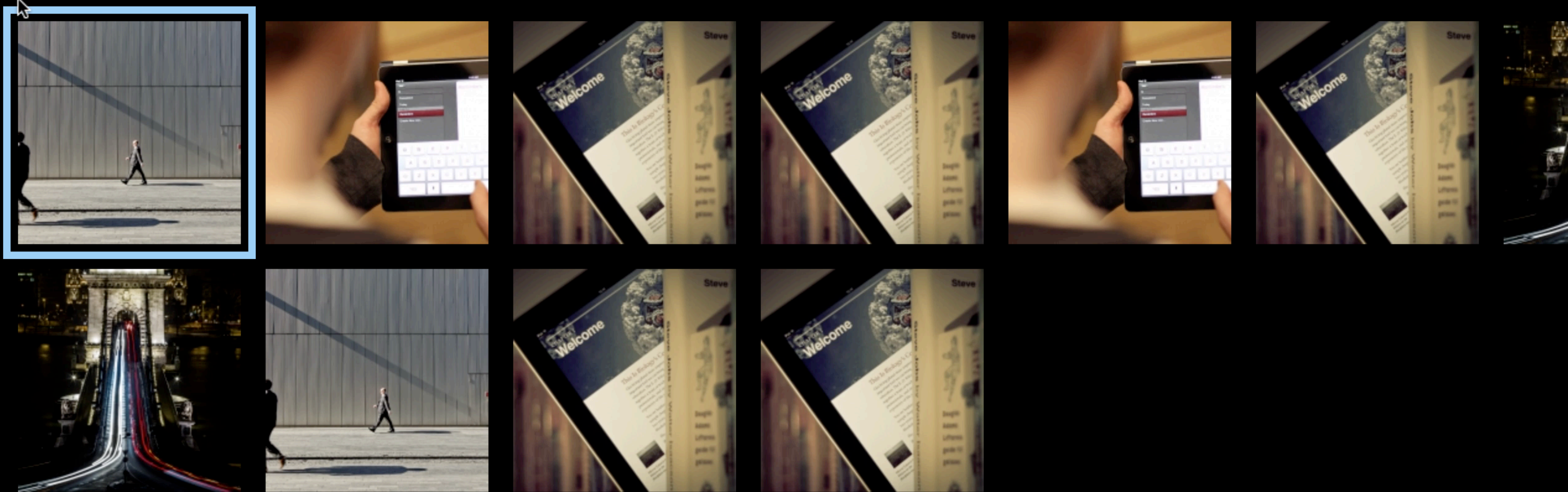
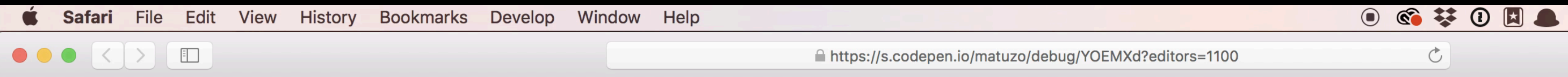
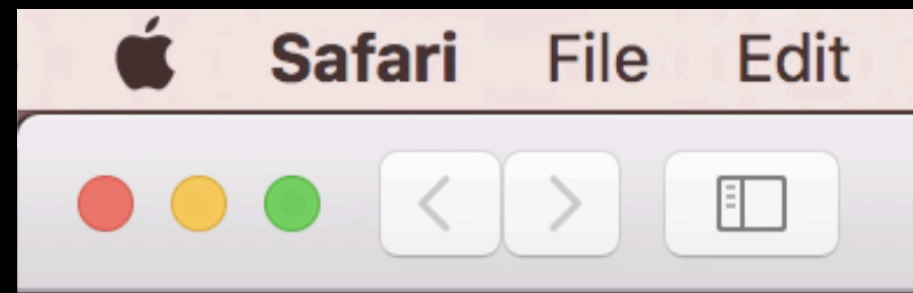
Wenn die visuelle Reihenfolge nicht der Reihenfolge im DOM entspricht.

**2. Benutzer von Bildschirm lupen sind irritiert, wenn der Bildausschnitt ständig hin und her springt.**









Wenn die visuelle Reihenfolge nicht der Reihenfolge im DOM entspricht.

**3. Wenn ein blinder Screenreader User gemeinsam mit einem sehenden User arbeitet und sie auf Inhalte in unterschiedlicher Reihenfolge stoßen, kann es zu Verwirrungen kommen.**



# Wer navigiert mit dem Keyboard?



# Wer navigiert mit dem Keyboard?

- Menschen, die aus physischen Gründen keine Maus bedienen können.



# Wer navigiert mit dem Keyboard?

- Menschen, die aus physischen Gründen keine Maus bedienen können.
- Menschen mit chronischen Erkrankungen, die körperliche Belastung meiden sollten.



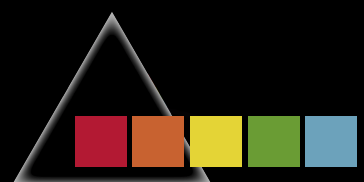
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- Jemand, der/die temporär keine Maus verwenden kann (bspw. wegen einer Verletzung)



# Wer navigiert mit dem Keyboard?

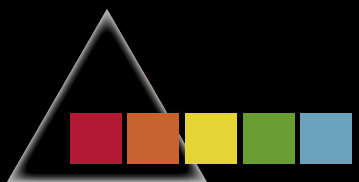
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- Poweruser





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- Menschen mit chronischen Erkrankungen, die körperliche Belastung meiden sollten.
- Jemand, der/die temporär keine Maus verwenden kann (bspw. wegen einer Verletzung)
- Poweruser (bspw. DeveloperInnen oder DesignerInnen 🤪)



# Wer verwendet Screenreader?



# Wer verwendet Screenreader?

- Blinde Menschen.



# Wer verwendet Screenreader?

- Blinde Menschen.
- Menschen mit Sehschwächen, die ergänzend einen Screenreader verwenden.



# Wer verwendet Screenreader?

- Blinde Menschen.
- Menschen mit Sehschwächen, die ergänzend einen Screenreader verwenden.
- Menschen mit Lernschwächen.



VISUELLE REIHENFOLGE

EXPLIZITE

PLATZIERUNG



# Elemente platzieren

In einem Grid kann man Elemente auf Linien vertikal und horizontal platzieren. Dafür gibt man die Anfangs- und/oder Endlinie an.



# Elemente platzieren

In einem Grid kann man Elemente auf Linien vertikal und horizontal platzieren. Dafür gibt man die Anfangs- und/oder Endlinie an.

- `grid-column-start`
- `grid-column-end`
- `grid-row-start`
- `grid-row-end`





\$ elemente platzieren

```
.item:nth-child(2) {  
  grid-column-start: 4;  
  grid-row-start: 2;  
}
```



1

2

3

4

5

6

7

8

9

<https://codepen.io/matuzo/pen/xaOgGg>



@mmatuzo

1

2

3

4

5

6

7

8

9

<https://codepen.io/matuzo/pen/xaOgGg>



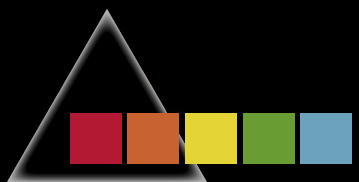
@mmatuzo

## \$ elemente platzieren

```
.item:nth-child(1) {  
  grid-column: 2;  
  grid-row: 2;  
}
```

```
.item:nth-child(2) {  
  grid-column: 3;  
  grid-row: 3;  
}
```

...



3	4	6
8	1	5
7	9	2

<https://codepen.io/matuzo/pen/xaOgGg>



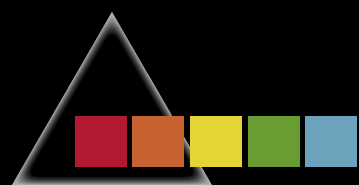
3	4	6
8	1	5
7	9	2

<https://codepen.io/matuzo/pen/xaOgGg>



VISUELLE REIHENFOLGE

ORDER EIGENSCHAFT

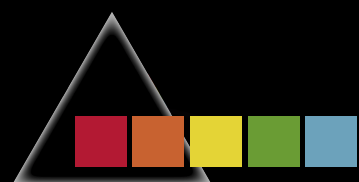


\$ order eigenschaft

```
.item:nth-child(2) {  
  order: 9;  
}
```

```
.item:nth-child(5) {  
  order: 6;  
}
```

...





3	4	6
8	1	5
7	9	2

<https://codepen.io/matuzo/pen/dqpvXg>



3	4	6
8	1	5
7	9	2

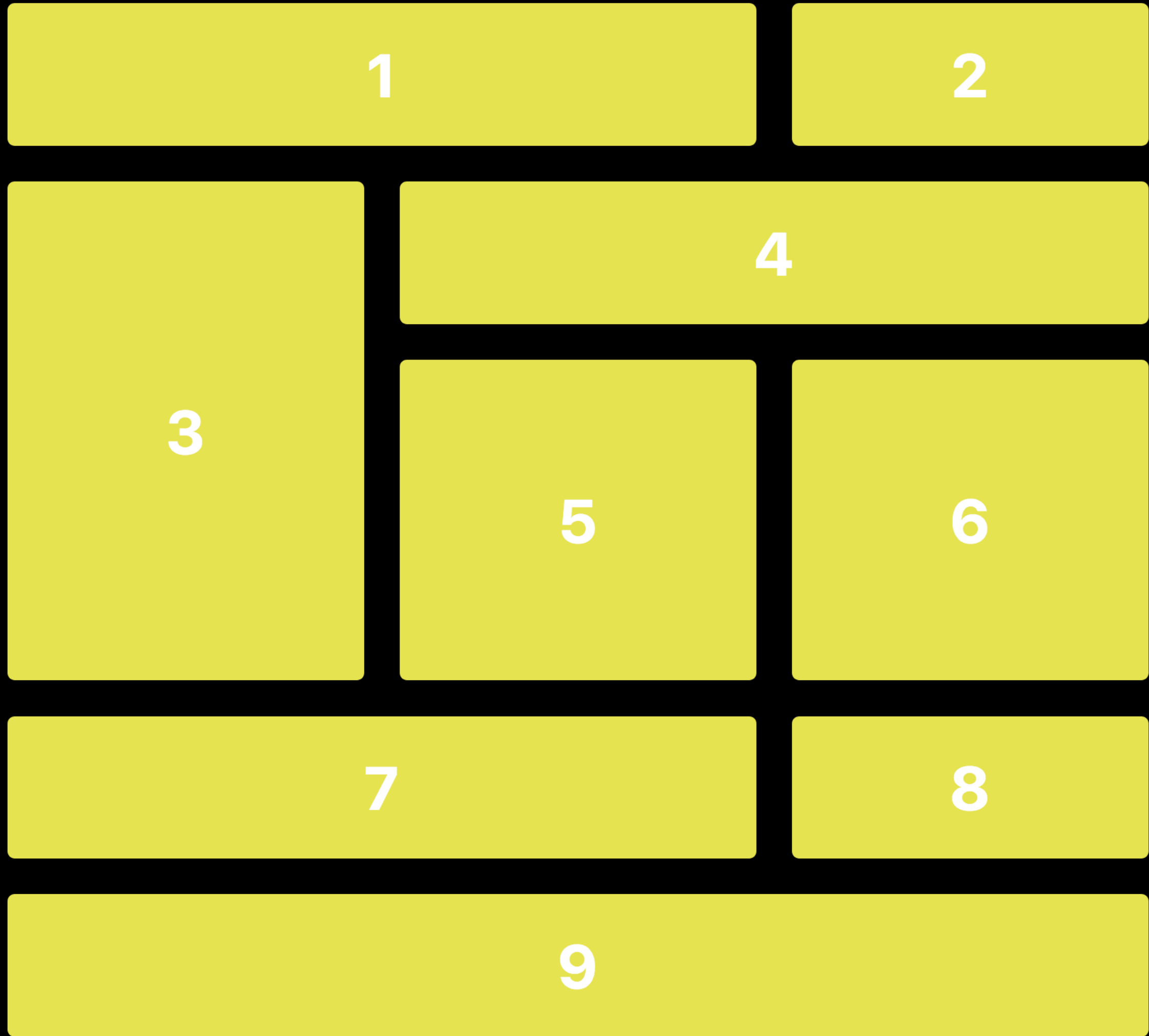
<https://codepen.io/matuzo/pen/dqpvXg>



VISUELLE REIHENFOLGE

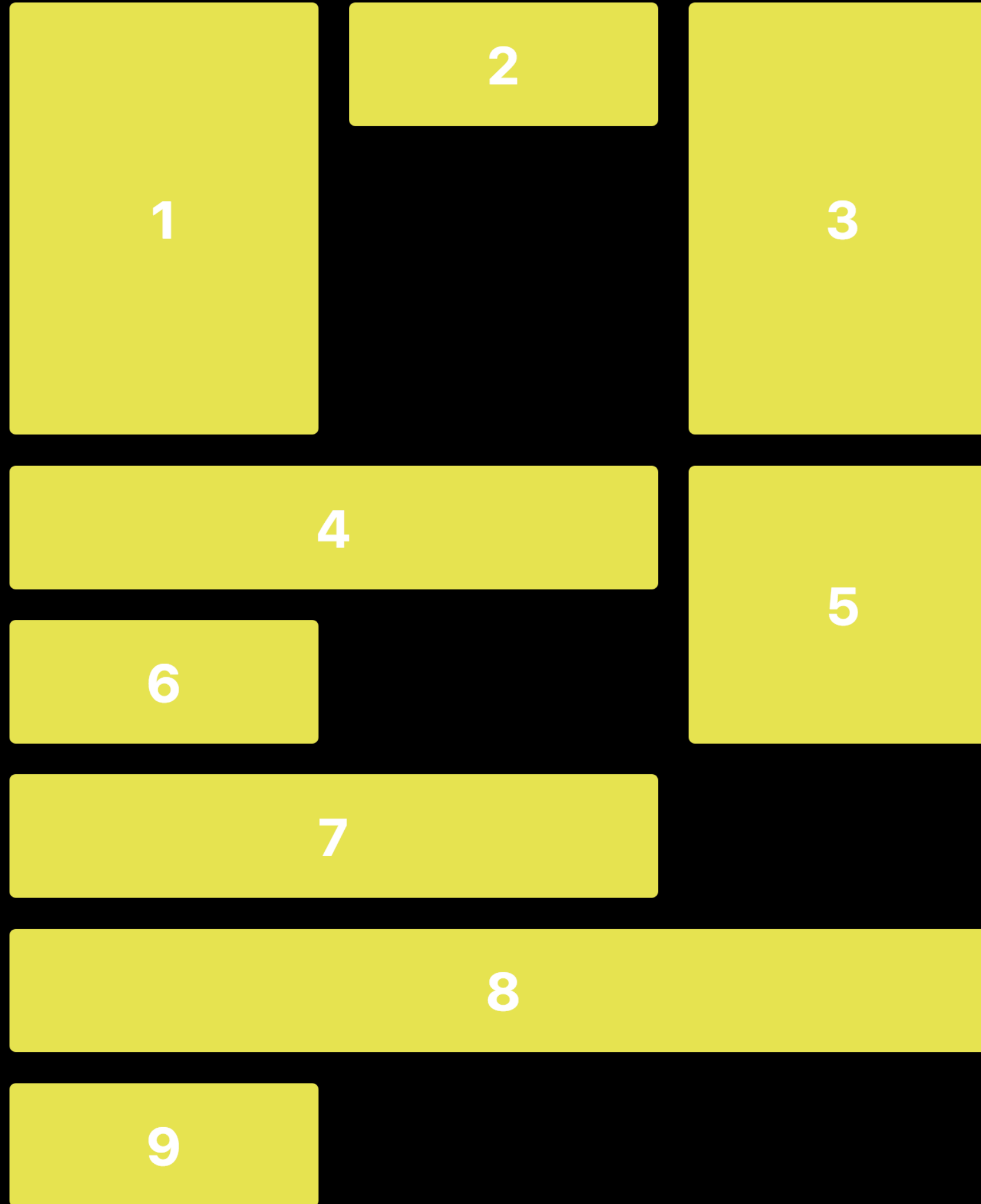
AUTO-FLOW





<https://s.codepen.io/matuzo/pen/pONEzJ>





<https://s.codepen.io/matuzo/pen/pONEzJ>



```
$ auto-flow
```

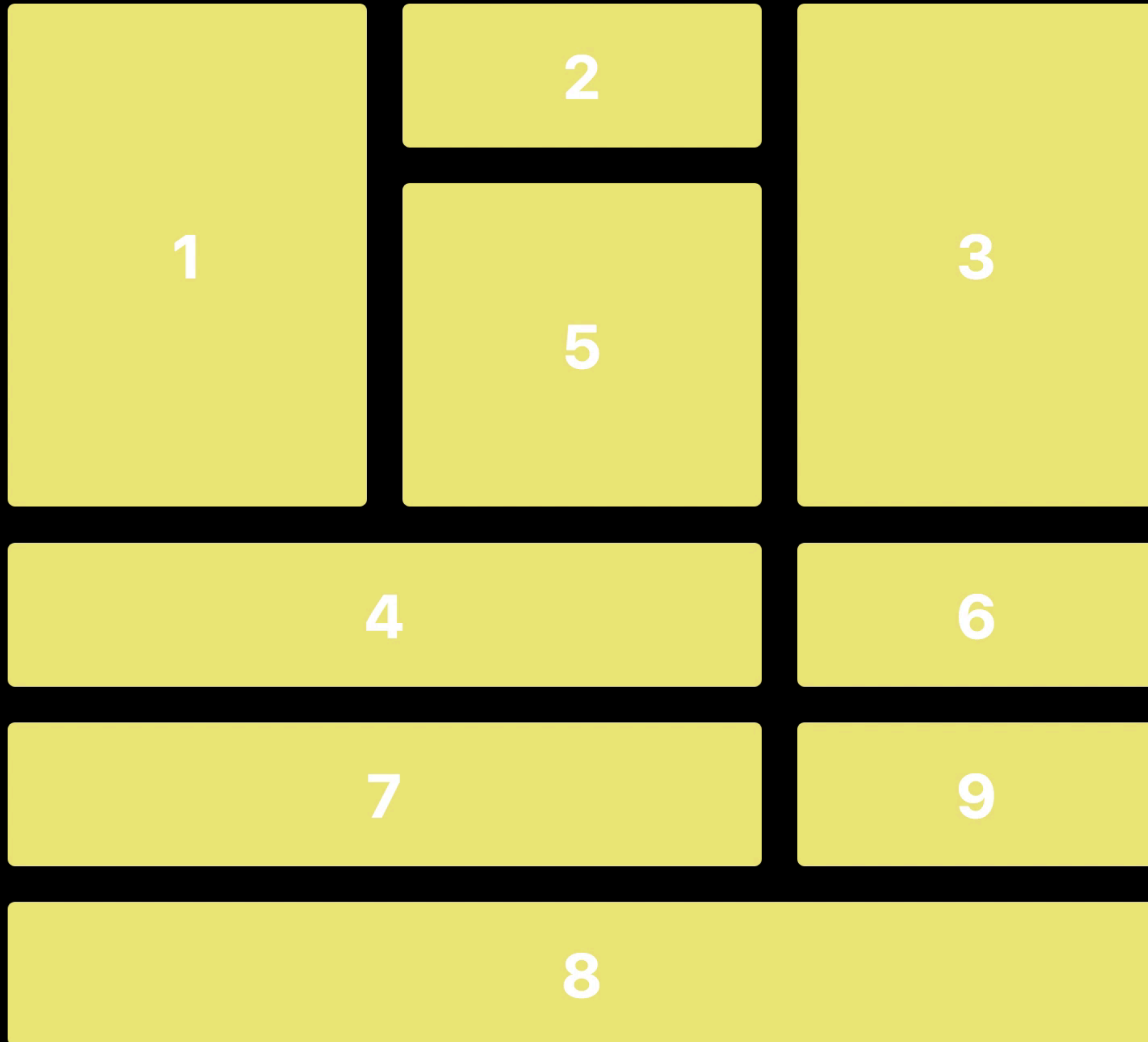
```
.grid {  
  display: grid;  
  grid-template-columns: repeat(3, 200px);  
  grid-auto-rows: 80px;  
  grid-gap: 20px;  
  
}
```



```
$ auto-flow
```

```
.grid {  
  display: grid;  
  grid-template-columns: repeat(3, 200px);  
  grid-auto-rows: 80px;  
  grid-gap: 20px;  
  grid-auto-flow: dense;  
}
```

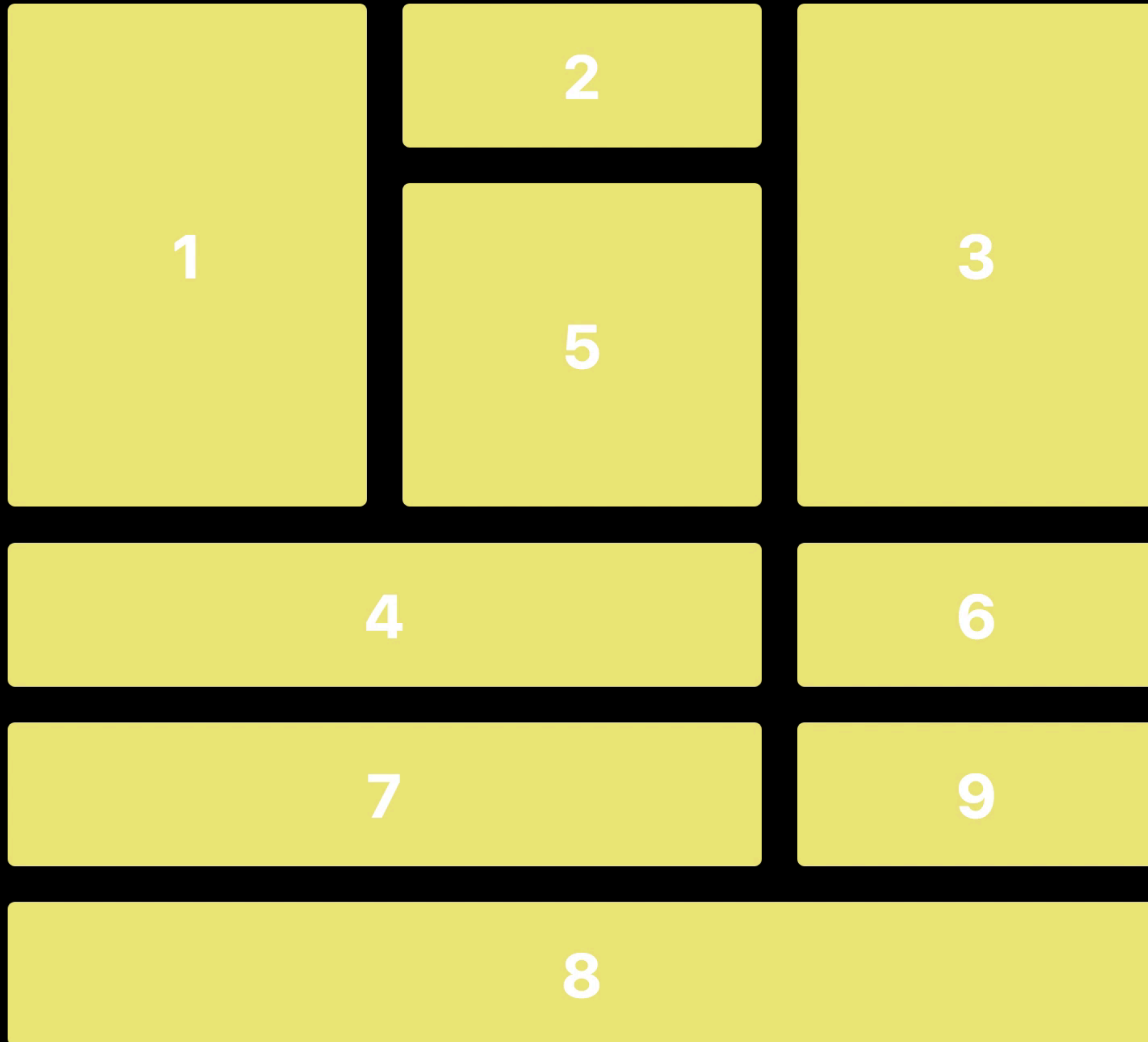




<https://s.codepen.io/matuzo/pen/pONEzJ>







<https://s.codepen.io/matuzo/pen/pONEzJ>



VISUELLE REIHENFOLGE

AREAS



**HEADER**

**MAIN CONTENT**

**ADS**

**NEWSLETTER**

**COMMENTS**

**RELATED ARTICLES**

**FOOTER**

**Beispiel: Mobiles Layout.**

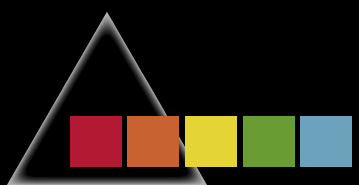
```
$ areas
```

```
body {
```

```
  display: grid;
```

```
  grid-template-columns: minmax(auto, 480px);
```

```
}
```



```
$ areas
```

```
body {
```

```
  display: grid;
```

```
  grid-template-columns: minmax(auto, 480px);
```

```
  grid-template-areas:
```

```
}
```



```
$ areas
```

```
body {  
  display: grid;  
  grid-template-columns: minmax(auto, 480px);  
  grid-template-areas:  
    "header"
```

```
}
```



```
$ areas
```

```
body {  
  display: grid;  
  grid-template-columns: minmax(auto, 480px);  
  grid-template-areas:  
    "header"  
    "content"
```

```
}
```



```
$ areas
```

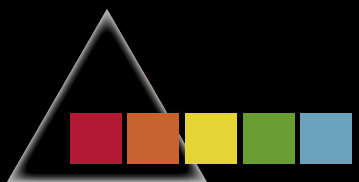
```
body {  
  display: grid;  
  grid-template-columns: minmax(auto, 480px);  
  grid-template-areas:  
    "header"  
    "content"  
    "ads"  
  
}
```





```
$ areas
```

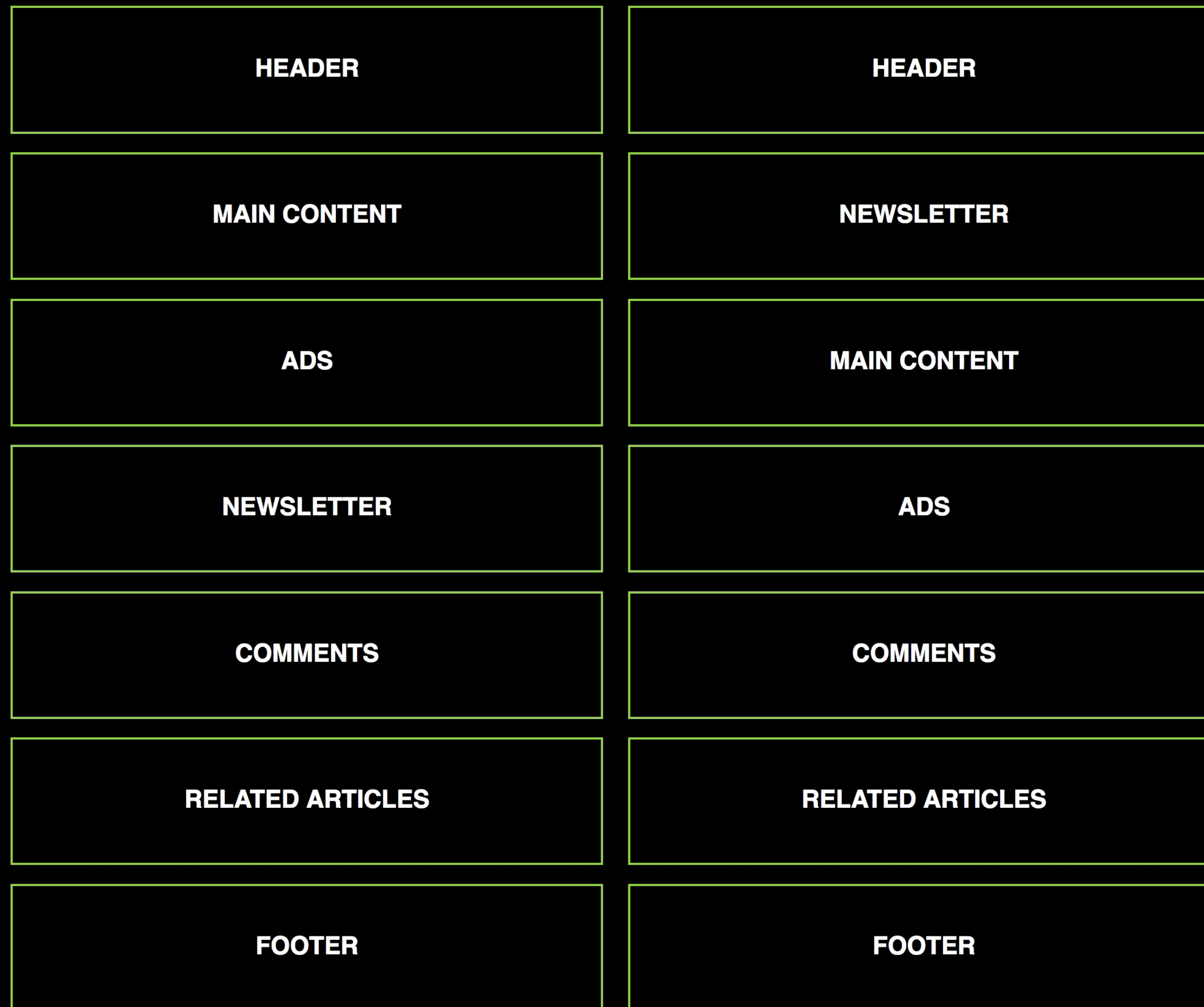
```
body {  
  display: grid;  
  grid-template-columns: minmax(auto, 480px);  
  grid-template-areas:  
    "header"  
    "content"  
    "ads"  
    "newsletter"  
    "comments"  
    "related"  
    "footer";  
}
```



```
$ areas
```

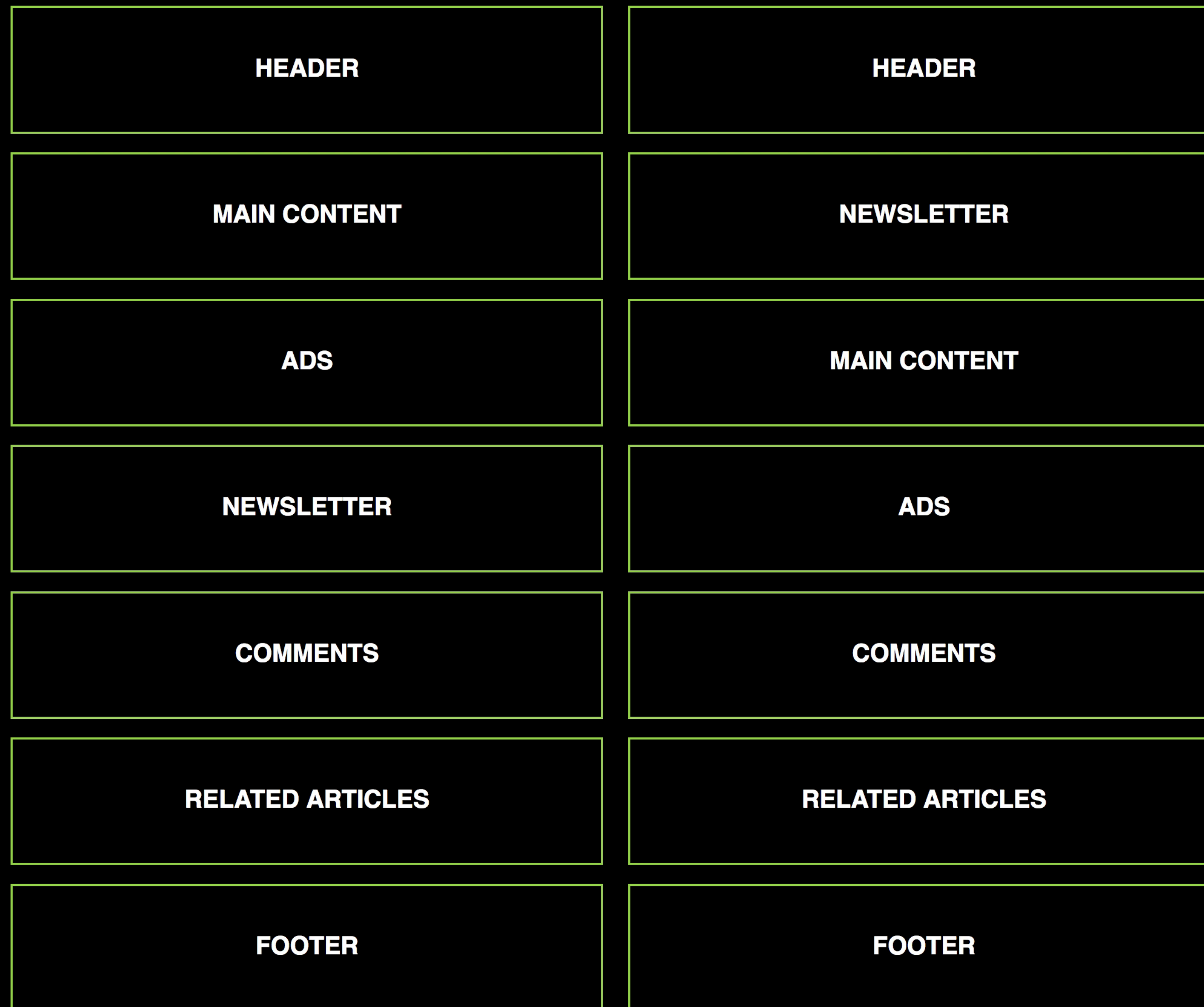
```
body {  
  display: grid;  
  grid-template-columns: minmax(auto, 480px);  
  grid-template-areas:  
    "header"  
    "newsletter"  
    "content"  
    "ads"  
    "comments"  
    "related"  
    "footer";  
}
```





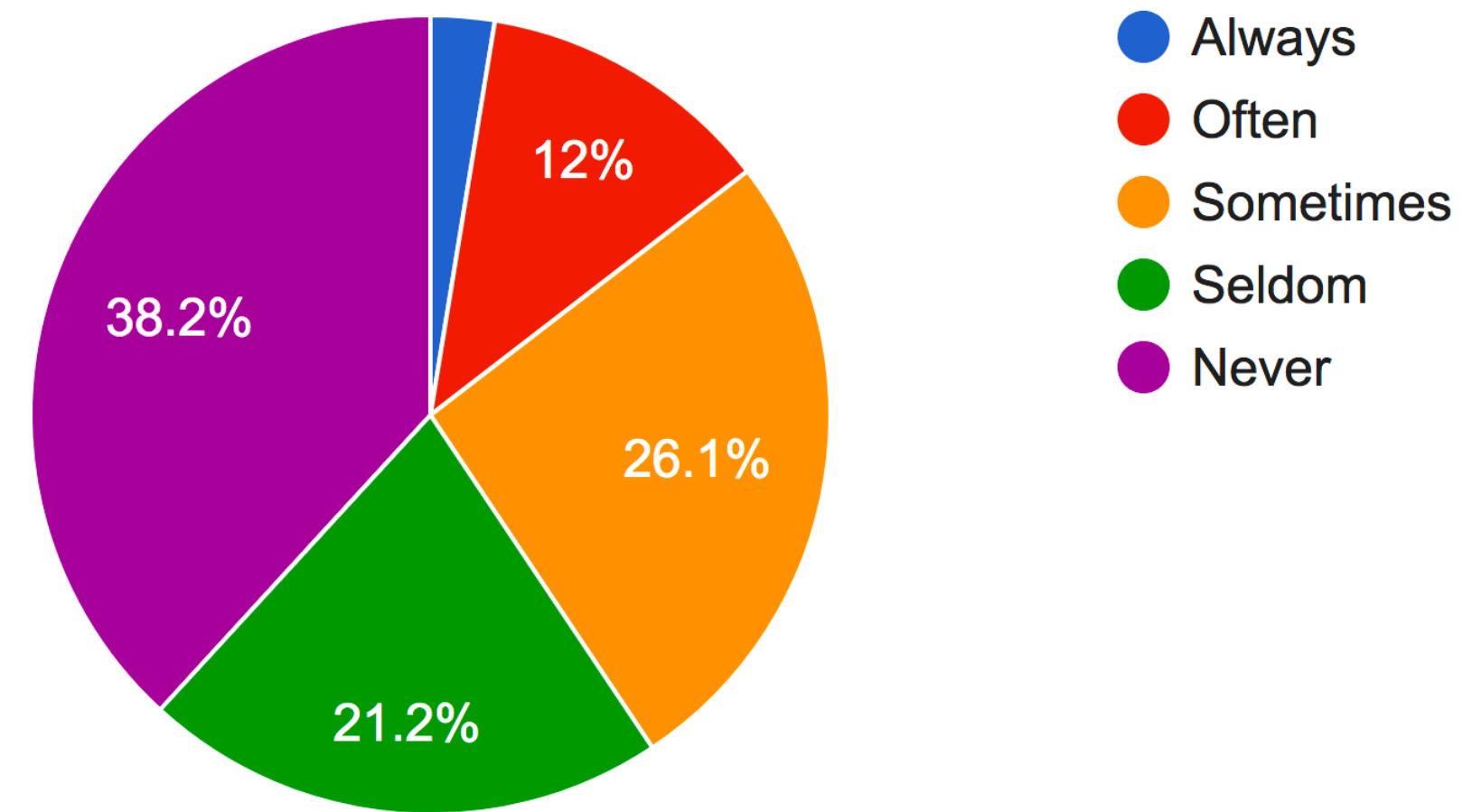
<https://s.codepen.io/matuzo/debug/ZMLpML>





<https://s.codepen.io/matuzo/debug/ZMLpML>





When using a mobile screen reader how often do you use an external keyboard?

Response	# of Respondents	% of Respondents
Always	39	3.9%
Often	181	11.8%
Sometimes	394	25.7%
Seldom	320	20.9%
Never	577	37.7%

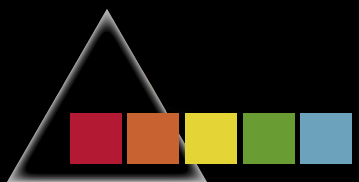
15,7% der befragten Screenreaderuser verwenden immer oder oft ein Keyboard auf ihrem mobilen Endgerät.

```
$ areas
```

```
body {
```

```
  grid-template-columns: 1fr 400px;
```

```
}
```



```
$ areas
```

```
body {  
  grid-template-columns: 1fr 400px;  
  grid-template-areas:
```

```
}
```



```
$ areas
```

```
body {  
  grid-template-columns: 1fr 400px;  
  grid-template-areas:  
    "header header"  
  
}
```





```
$ areas
```

```
body {  
  grid-template-columns: 1fr 400px;  
  grid-template-areas:  
    "header header"  
    "newsletter newsletter"  
  
}
```



```
$ areas
```

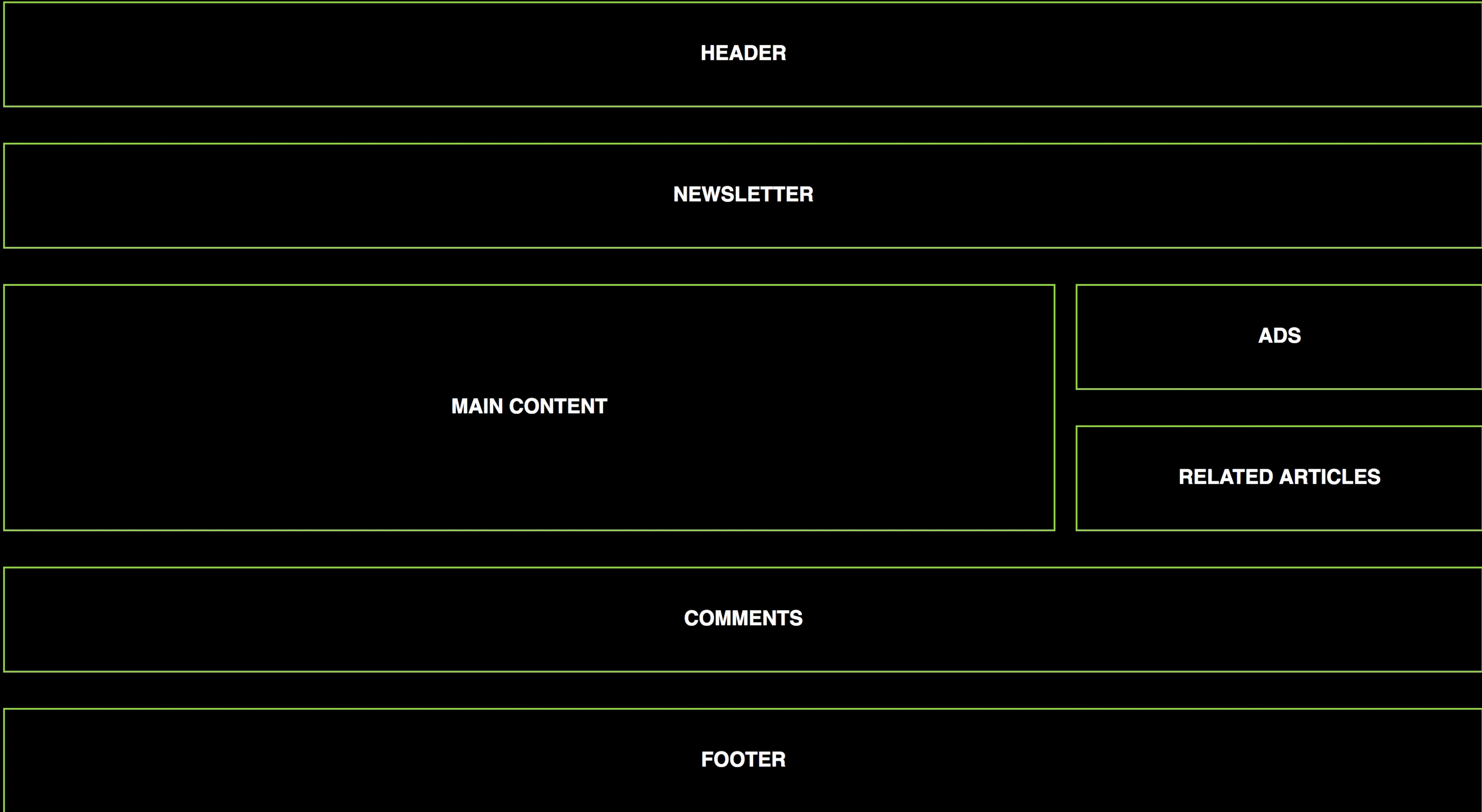
```
body {  
  grid-template-columns: 1fr 400px;  
  grid-template-areas:  
    "header header"  
    "newsletter newsletter"  
    "content partners"  
}
```



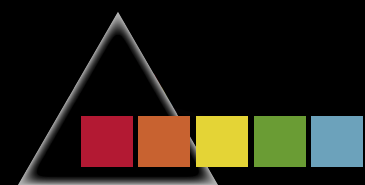
```
$ areas
```

```
body {  
  grid-template-columns: 1fr 400px;  
  grid-template-areas:  
    "header header"  
    "newsletter newsletter"  
    "content partners"  
    "content related"  
    "comments comments"  
    "footer footer";  
}
```

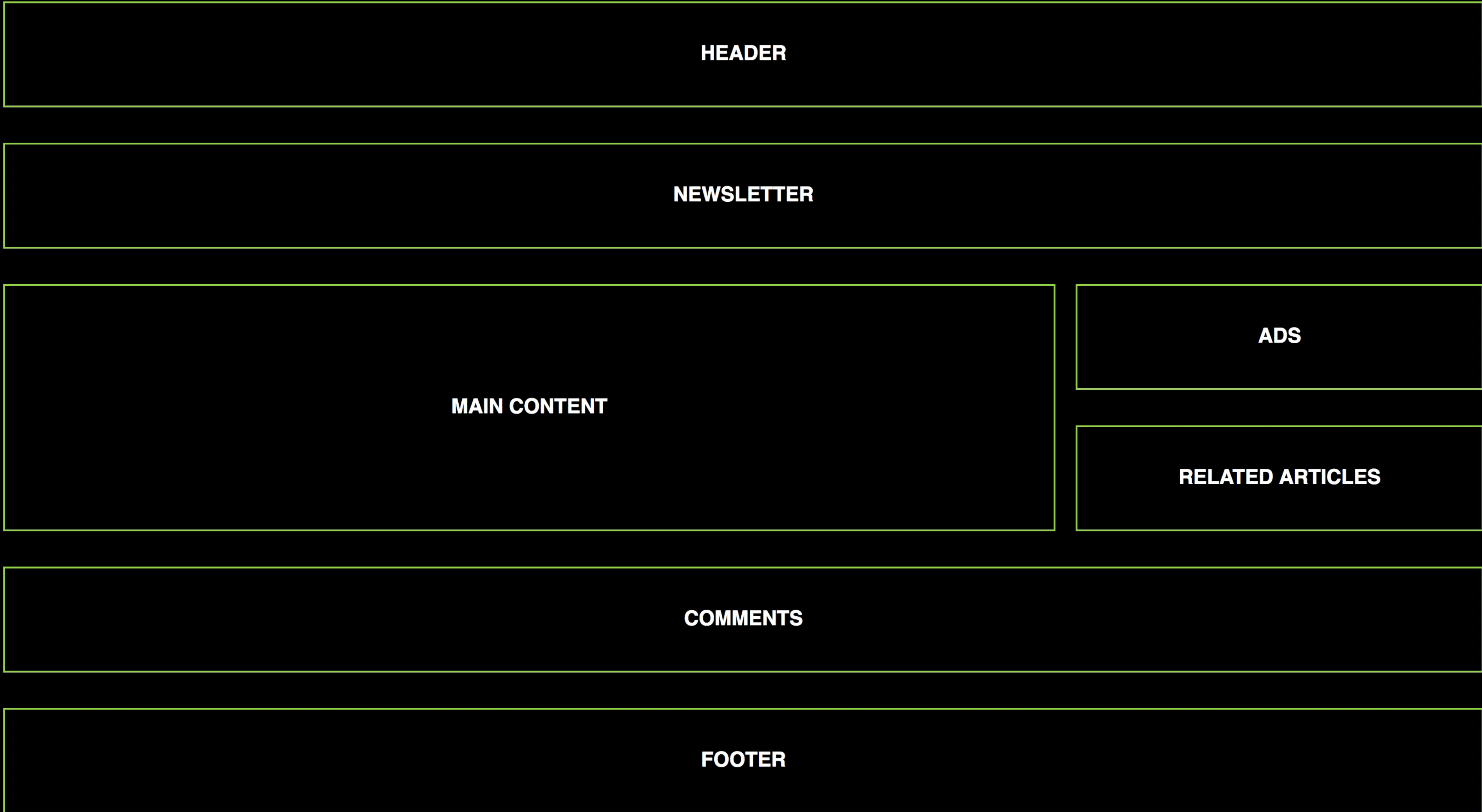




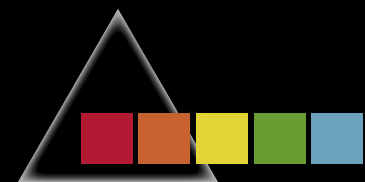
<https://codepen.io/matuzo/pen/QVOXdR>



@mmatuzo



<https://codepen.io/matuzo/pen/QVOXdR>

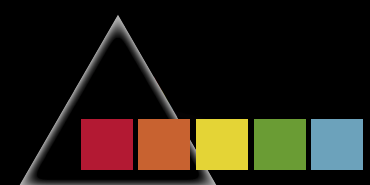


@mmatuzo

**B E I W E M L I E G T D I E  
V E R A N T W O R T U N G ?**



# Unsere Optionen



# Unsere Optionen

- Source Order dynamisch bei jedem Breakpoint mit JS anpassen. 🤔





# Unsere Optionen

- Source Order dynamisch bei jedem Breakpoint mit JS anpassen. 🙄
- **tabindex** oder **aria-flow-to** allen Elementen zuweisen und entsprechend ordnen. 😭



# Unsere Optionen

- Source Order dynamisch bei jedem Breakpoint mit JS anpassen. 🙄
- **tabindex** oder **aria-flow-to** allen Elementen zuweisen und entsprechend ordnen. 😭
- Browsersniffing – Je nach Client/Gerätetyp unterschiedliches HTML ausliefern. 🙄



# Unsere Optionen



# Unsere Optionen

- Das Problem mindern indem man Skiplinks zur Verfügung stellt. 😐



# Unsere Optionen

- Das Problem mindern indem man Skiplinks zur Verfügung stellt. 😐
- Die visuelle Reihenfolge nicht ändern. 🙄



„Authors must use order and the grid-placement properties only for visual, not logical, reordering of content.“

- <https://drafts.csswg.org/css-grid/#order-accessibility>

Brilliant on the one hand for them trying to at least advise everybody in the right direction but really — come on. [...] Suggesting that we don't all use it just because of this, i think, is wishful thinking.

-Léonie Watson FF Conf 2016 <https://www.youtube.com/watch?v=spxT2CmHoPk>

# Was machen wir also?





# Was machen wir also?

- Über die Reihenfolge Gedanken machen noch bevor HTML oder CSS geschrieben wird. So früh wie möglich eng mit den DesignerInnen zusammenarbeiten.



# Was machen wir also?

- Über die Reihenfolge Gedanken machen noch bevor HTML oder CSS geschrieben wird. So früh wie möglich eng mit den DesignerInnen zusammenarbeiten.
- Mit sauber strukturiertem HTML beginnen.



# Was machen wir also?

- Über die Reihenfolge Gedanken machen noch bevor HTML oder CSS geschrieben wird. So früh wie möglich eng mit den DesignerInnen zusammenarbeiten.
- Mit sauber strukturiertem HTML beginnen.
- CSS mobile first schreiben und entsprechend das Layout anpassen.



# Was machen wir also?



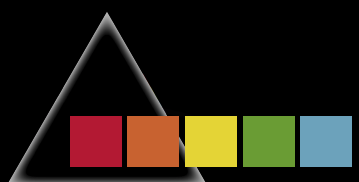
# Was machen wir also?

- Das Layout testen indem man mit der Tab-Taste auf unterschiedlichen Bildschirmgrößen durch die Seiten navigiert.



# Was machen wir also?

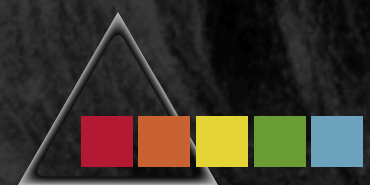
- Das Layout testen indem man mit der Tab-Taste auf unterschiedlichen Bildschirmgrößen durch die Seiten navigiert.
- Wenn es Diskrepanzen in der Reihenfolge gibt, zurück zum Source Code und das HTML anpassen.





PINK FLOYD FUN FACT #2

**736 Wochen in den Charts**



@mmatuzo

PINK FLOYD FUN FACT #2

**736 Wochen in den Charts**

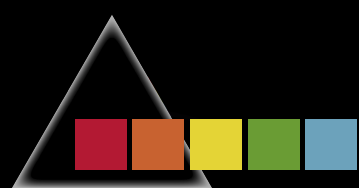
The Dark Side of The Moon war 736 Wochen in den amerikanischen Billboard Charts. Das sind mehr als 14 Jahre!





**D O K U M E N T S T R U K T U R**

**A B F L A C H E N**



„I believe there will be a strong temptation, especially with Grid, to flatten out document structure in order that all elements become a child of the element with the Grid declared. Making layout simple, but at what cost?“

-Rachel Andrew

[\(https://rachelandrew.co.uk/archives/2015/07/28/modern-css-layout-power-and-responsibility/\)](https://rachelandrew.co.uk/archives/2015/07/28/modern-css-layout-power-and-responsibility/)

\$ dokumentstruktur abflachen

```
<form>
  <div>
    <label for="name">What's your name?</label>
    <input type="text" id="name" />
  </div>
  <div>
    <label for="email">E-Mail</label>
    <input type="email" id="email" />
  </div>
  ...

```



# \$ dokumentstruktur abflachen

...

```
<fieldset>
  <legend>Shirt size</legend>
  <div>
    <input type="radio" id="s" name="r">
    <label for="s">S</label>
  </div>
  <div>
    <input type="radio" id="m" name="r">
    <label for="m">M</label>
  </div>
</fieldset>
</form>
```



What's your name?

E-Mail

Shirt size

S

M

<https://s.codepen.io/matuzo/pen/BOWYLB?editors=1100>



@mmatuzo

\$ dokumentstruktur abflachen

```
form {  
  display: grid;  
  grid-template-columns: max-content minmax(auto, 600px);  
  grid-gap: 10px 20px;  
}
```



What's your name?

E-Mail

Shirt size

S

M

<https://s.codepen.io/matuzo/pen/BOWYLB?editors=1100>



@mmatuzo

\$ dokumentstruktur abflachen

```
<div>  
  <label for="name">What's your name?</label>  
  <input type="text" id="name" />  
</div>  
<div>  
  <label for="email">E-Mail</label>  
  <input type="email" id="email" />  
</div>
```





\$ dokumentstruktur abflachen

~~<div>~~

<label for="name">What's your name?</label>

<input type="text" id="name" />

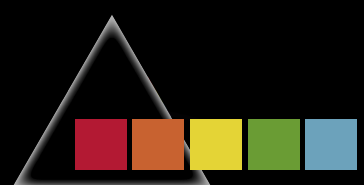
~~</div>~~

~~<div>~~

<label for="email">E-Mail</label>

<input type="email" id="email" />

~~</div>~~



\$ dokumentstruktur abflachen

```
<fieldset>  
  <legend      >Shirt size</legend      >  
  
  <div>  
    <input type="radio" id="s">  
    <label for="s">S</label>  
  </div>  
  <div>  
    <input type="radio" id="m">  
    <label for="m">M</label>  
  </div>  
  
</fieldset>
```



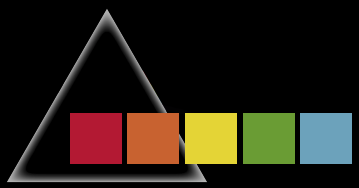
\$ dokumentstruktur abflachen

```
<fieldset>  
  <del>legend strongShirt size</del strong>  
  <div>  
    <div>  
      <input type="radio" id="s">  
      <label for="s">S</label>  
    </div>  
    <div>  
      <input type="radio" id="m">  
      <label for="m">M</label>  
    </div>  
  </div>  
</fieldset>
```



What's your name?	<input type="text"/>
E-Mail	<input type="text"/>
Shirt size	<input type="radio"/> S <input type="radio"/> M

<https://s.codepen.io/matuzo/pen/BOWYLB?editors=1100>



What's your name?  E-Mail  **Shirt size**

- S
- M

D O K U M E N T S T R U K T U R   A B F L A C H E N

S U B G R I D



„A grid container that is itself a grid item can defer the definition of its rows and columns to its parent grid container, making it a subgrid.“

- <https://drafts.csswg.org/css-grid-2/>

```
$ dokumentstruktur abflachen
```

```
div {  
    display: grid;  
  
}
```





\$ dokumentstruktur abflachen

```
div {  
  display: grid;  
  grid-template-columns: subgrid;  
}
```



Can I use subgrid ?  Settings

0 results found.

Why not [suggest this feature be added?](#)

Detected your country as "Austria". Would you like to import usage data for that country?

Import

No thanks

Subgrid kommt erst mit Level 2 der Spezifikation

```
$ dokumentstruktur abflachen
```

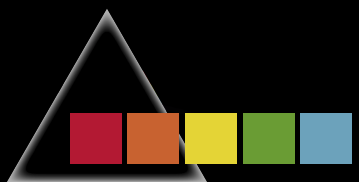
```
form > div,  
fieldset {
```

```
}
```



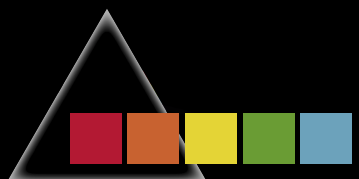
```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  display: inherit;  
  
}
```



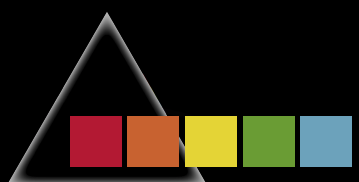
```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  display: inherit;  
  grid-template-columns: inherit;  
  
}
```



```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  display: inherit;  
  grid-template-columns: inherit;  
  grid-gap: inherit;  
  
}
```



```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  display: inherit;  
  grid-template-columns: inherit;  
  grid-gap: inherit;  
  grid-column: 1 / -1;  
}
```



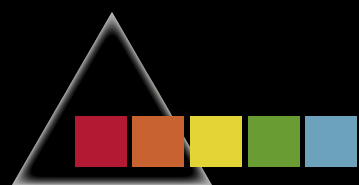
What's your name?

E-Mail

Shirt size

- S
- M

<https://s.codepen.io/matuzo/pen/XPVMKe>





„**display: contents** causes an element's children to appear as if they were direct children of the element's parent, ignoring the element itself“

- <https://caniuse.com/#search=contents>

```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  
}
```



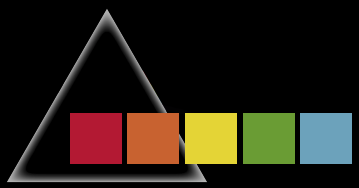
```
$ dokumentstruktur abflachen
```

```
form > div,  
fieldset {  
  display: contents;  
}
```



What's your name?	<input type="text"/>
E-Mail	<input type="text"/>
Shirt size	<input type="radio"/> S <input type="radio"/> M

<https://codepen.io/matuzo/pen/Mqrpbm>



# CSS display: contents - WD

Usage

% of all users

Global

0.1% + 72.91% = 73.01%

**display: contents** causes an element's children to appear as if they were direct children of the element's parent, ignoring the element itself. This can be useful when a wrapper element should be ignored when using CSS grid or similar layout techniques.

Current aligned Usage relative Date relative Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Chrome for Android	UC Browser for Android	Samsung Internet
			49							
			<sup>1</sup> 63							
			<sup>2</sup> 67			10.3				
		<sup>2</sup> 61	<sup>2</sup> 68		<sup>2</sup> 54	11.2				4
11	17	62	<sup>2</sup> 69	<sup>2</sup> 11.1	<sup>2</sup> 55	<sup>2</sup> 11.4	all	<sup>2</sup> 67	11.8	7.2
	18	63	<sup>2</sup> 70	<sup>2</sup> 12		<sup>2</sup> 12				
		64	<sup>2</sup> 71	<sup>2</sup> TP						
			<sup>2</sup> 72							

Notes Known issues (1) Resources (6) Feedback

<sup>1</sup> Enabled in Chrome through the "experimental Web Platform features" flag in chrome://flags

<sup>2</sup> Partial support refers to severe implementation bug that renders the content inaccessible. <https://hiddedevries.nl/en/blog/2018-04-21-more-accessible-markup-with-display-contents>

**display: contents; wird in allen großen Browsern außer Edge unterstützt**



**Léonie**  
@LeonieWatson

Following

⚠️ **#CSS** `display:contents;` will remove the element from the accessibility tree, so please don't use it when the semantics of the element are important. More on this from [@Aardrian](#)



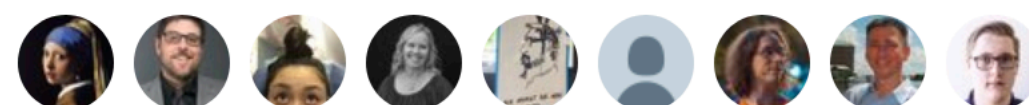
#### Display: Contents Is Not a CSS Reset

CSS resets are a collection of CSS styles that undo the default browser styling of many or most HTML elements. Recently I have seen cases of developers using `display: contents` on lists and...

[adrianroselli.com](http://adrianroselli.com)

5:55 PM - 31 Jul 2018

8 Retweets 12 Likes



1



8



12



Wegen eines Bugs entfernt `display: contents;` Elemente aus dem Accessibility-Tree.

What's your name?

E-Mail   

Shirt size

S

M

To open the autofill menu, press the up or down arrow key, then press the return key to enter it into the form., You are currently on a text field, inside of web content. To enter text in thi...

Ohne display: contents; wird das legend Element vorgelesen.

What's your name?

E-Mail   

Shirt size

S

M

To open the autofill menu, press the up or down arrow key, then press the return key to enter it into the form., You are currently on a text field, inside of web content. To enter text in thi...

Ohne display: contents; wird das legend Element vorgelesen.



What's your name?

E-Mail

Shirt size

S  
 M

E-Mail, edit text with autofill menu

Mit `display: contents;` wird das legend Element nicht vorgelesen.

What's your name?

E-Mail

Shirt size

S  
 M

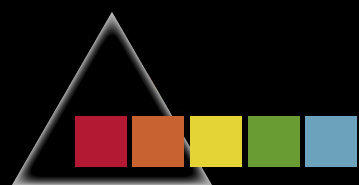
E-Mail, edit text with autofill menu

Mit `display: contents;` wird das legend Element nicht vorgelesen.

\$ dokumentstruktur abflachen

## **display: block**

- Element 1
- Element 2
- Element 3
- Element 4



\$ dokumentstruktur abflachen

## **display: block**

- Element 1
- Element 2
- Element 3
- Element 4

```
.contents {  
    display: contents;  
}
```



\$ dokumentstruktur abflachen

## display: block

- Element 1
- Element 2
- Element 3
- Element 4

```
.contents {  
  display: contents;  
}
```

## display: contents

Element 1  
Element 2  
Element 3  
Element 4



PINK FLOYD FUN FACT #3

# Monty Python and the Holy Grail



PINK FLOYD FUN FACT #3

## Monty Python and the Holy Grail

Pink Floyd haben 1975 dabei geholfen, den Monty Python Film „Die Ritter der Kokosnuß“ zu finanzieren.

Andere Investoren waren unter anderem Led Zeppelin und Genesis.



**CROSS BROWSER  
SUPPORT**





# Kurze Wiederholung der Geschichte



# Kurze Wiederholung der Geschichte

- 2011: Microsoft liefert die erste Implementierung von Grid hinter dem **-ms-** Browserprefix in IE 10.



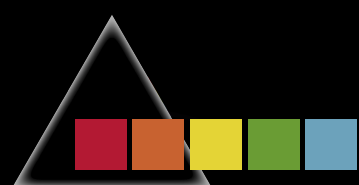
# Kurze Wiederholung der Geschichte

- 2011: Microsoft liefert die erste Implementierung von Grid hinter dem **-ms-** Browserprefix in IE 10.
- Chrome, Firefox, Opera, Safari und Edge implementieren Grid im Laufe des Jahres 2017.



# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns		grid-row	
grid-template-rows		grid-column	
grid-template-areas		grid-area	
grid-template		grid-row-gap	
grid-auto-columns		grid-column-gap	
grid-auto-rows		grid-auto-flow	
grid-auto-flow		grid-gap	
grid		-	
grid-row-start		-	
grid-column-start		align-self	
grid-row-end		justify-self	
grid-column-end			



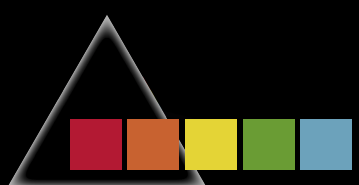
# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows		grid-column	
grid-template-areas		grid-area	
grid-template		grid-row-gap	
grid-auto-columns		grid-column-gap	
grid-auto-rows		grid-auto-flow	
grid-auto-flow		grid-gap	
grid		-	
grid-row-start		-	
grid-column-start		align-self	
grid-row-end		justify-self	
grid-column-end			



# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows	-ms-grid-rows	grid-column	
grid-template-areas		grid-area	
grid-template		grid-row-gap	
grid-auto-columns		grid-column-gap	
grid-auto-rows		grid-auto-flow	
grid-auto-flow		grid-gap	
grid		-	
grid-row-start		-	
grid-column-start		align-self	
grid-row-end		justify-self	
grid-column-end			



# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows	-ms-grid-rows	grid-column	
grid-template-areas	X	grid-area	
grid-template		grid-row-gap	
grid-auto-columns		grid-column-gap	
grid-auto-rows		grid-auto-flow	
grid-auto-flow		grid-gap	
grid		-	
grid-row-start		-	
grid-column-start		align-self	
grid-row-end		justify-self	
grid-column-end			



# Eigenschaften: Level 1 vs. MS Spezifikation

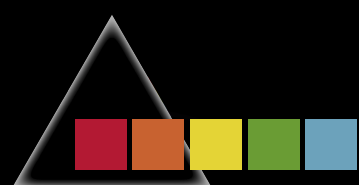
CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows	-ms-grid-rows	grid-column	
grid-template-areas	X	grid-area	
grid-template	X	grid-row-gap	
grid-auto-columns	X	grid-column-gap	
grid-auto-rows	X	grid-auto-flow	
grid-auto-flow	X	grid-gap	
grid	X	-	
grid-row-start		-	
grid-column-start		align-self	
grid-row-end		justify-self	
grid-column-end			





# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows	-ms-grid-rows	grid-column	
grid-template-areas	X	grid-area	
grid-template	X	grid-row-gap	
grid-auto-columns	X	grid-column-gap	
grid-auto-rows	X	grid-auto-flow	
grid-auto-flow	X	grid-gap	
grid	X	-	
grid-row-start	-ms-grid-row	-	
grid-column-start	-ms-grid-column	align-self	
grid-row-end		justify-self	
grid-column-end			



# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	
grid-template-rows	-ms-grid-rows	grid-column	
grid-template-areas	X	grid-area	
grid-template	X	grid-row-gap	
grid-auto-columns	X	grid-column-gap	
grid-auto-rows	X	grid-auto-flow	
grid-auto-flow	X	grid-gap	
grid	X	-	
grid-row-start	-ms-grid-row	-	
grid-column-start	-ms-grid-column	align-self	
grid-row-end	X	justify-self	
grid-column-end	X		



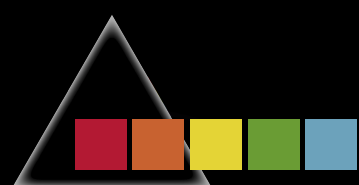
# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	X
grid-template-rows	-ms-grid-rows	grid-column	X
grid-template-areas	X	grid-area	X
grid-template	X	grid-row-gap	X
grid-auto-columns	X	grid-column-gap	X
grid-auto-rows	X	grid-auto-flow	X
grid-auto-flow	X	grid-gap	X
grid	X	-	
grid-row-start	-ms-grid-row	-	
grid-column-start	-ms-grid-column	align-self	
grid-row-end	X	justify-self	
grid-column-end	X		



# Eigenschaften: Level 1 vs. MS Spezifikation

CR Level 1 Eigenschaft	IE10 Implementation	CR Level 1 Eigenschaft	IE10 Implementation
grid-template-columns	-ms-grid-columns	grid-row	X
grid-template-rows	-ms-grid-rows	grid-column	X
grid-template-areas	X	grid-area	X
grid-template	X	grid-row-gap	X
grid-auto-columns	X	grid-column-gap	X
grid-auto-rows	X	grid-auto-flow	X
grid-auto-flow	X	grid-gap	X
grid	X	-	-ms-grid-column-span
grid-row-start	-ms-grid-row	-	-ms-grid-row-span
grid-column-start	-ms-grid-column	align-self	-ms-grid-column-align
grid-row-end	X	justify-self	-ms-grid-row-align
grid-column-end	X		



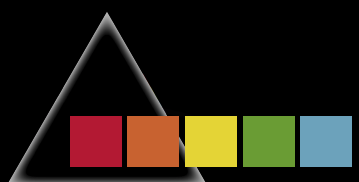
# Features: Level 1 vs. MS Spezifikation

Grid Features	IE10 Implementation
Box Alignment Module	
Gaps	
Areas	
Auto-placement	



# Features: Level 1 vs. MS Spezifikation

Grid Features	IE10 Implementation
Box Alignment Module	<code>-ms-grid-column-align</code> , <code>-ms-grid-row-align</code>
Gaps	
Areas	
Auto-placement	



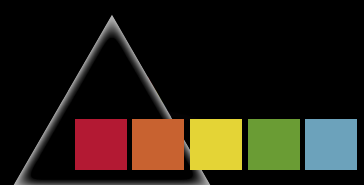
# Features: Level 1 vs. MS Spezifikation

Grid Features	IE10 Implementation
Box Alignment Module	<code>-ms-grid-column-align</code> , <code>-ms-grid-row-align</code>
Gaps	X
Areas	
Auto-placement	



# Features: Level 1 vs. MS Spezifikation

Grid Features	IE10 Implementation
Box Alignment Module	<code>-ms-grid-column-align</code> , <code>-ms-grid-row-align</code>
Gaps	x
Areas	Nicht implementiert
Auto-placement	





# Features: Level 1 vs. MS Spezifikation

Grid Features	IE10 Implementation
Box Alignment Module	<code>-ms-grid-column-align</code> , <code>-ms-grid-row-align</code>
Gaps	x
Areas	Nicht implementiert
Auto-placement	Nur Explizite Platzierung



```
$ browser support
```

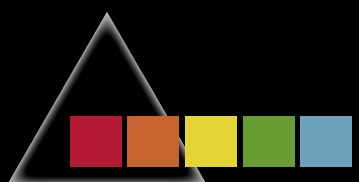
```
.grid {
```

```
  display: grid;
```

```
  grid-template-columns: 200px 200px;
```

```
  grid-template-rows: 130px 130px;
```

```
}
```



```
$ browser support
```

```
.grid {  
  display: -ms-grid;
```

```
  display: grid;  
  grid-template-columns: 200px 200px;  
  grid-template-rows: 130px 130px;  
}
```



```
$ browser support
```

```
.grid {  
  display: -ms-grid;  
  -ms-grid-columns: 200px 200px;  
  
  display: grid;  
  grid-template-columns: 200px 200px;  
  grid-template-rows: 130px 130px;  
}
```

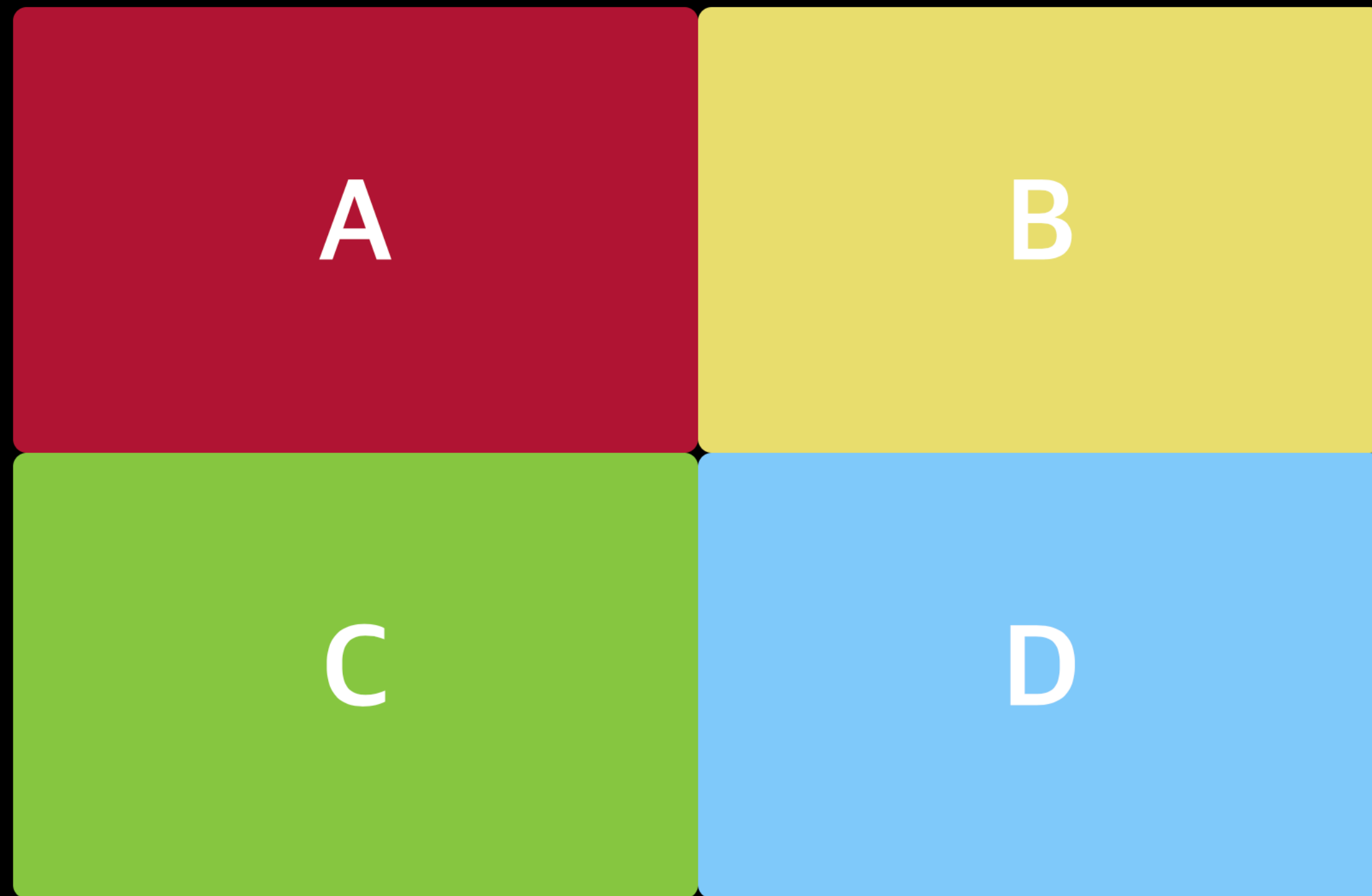


```
$ browser support
```

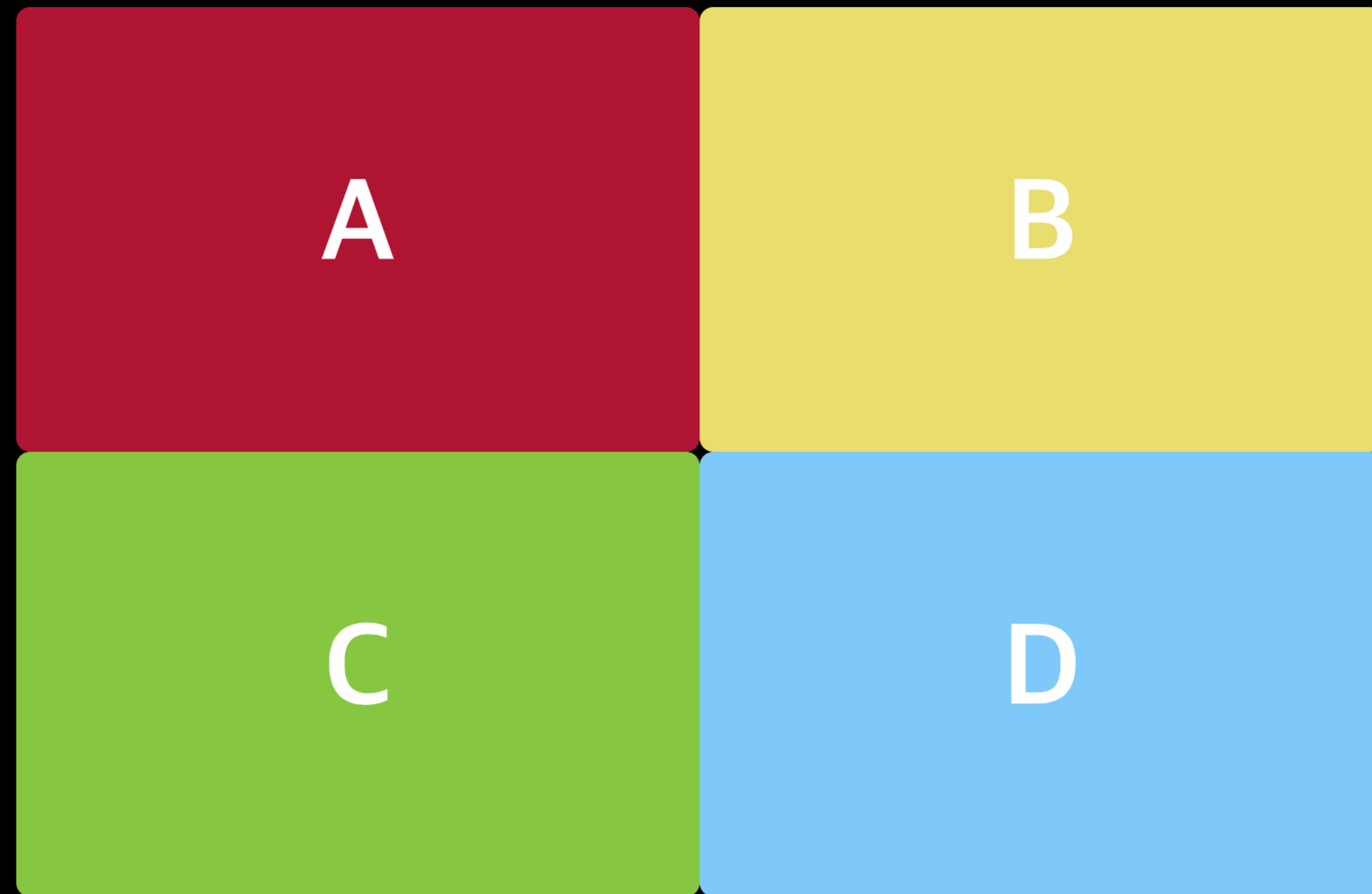
```
.grid {  
  display: -ms-grid;  
  -ms-grid-columns: 200px 200px;  
  -ms-grid-rows: 130px 130px;  
  
  display: grid;  
  grid-template-columns: 200px 200px;  
  grid-template-rows: 130px 130px;  
}
```



## Chrome



## Chrome



## IE 11



4 Elemente in einem 2 x 2 Grid ohne explizite Platzierung: Darstellung in Chrome und IE11

```
$ browser support
```

```
.item:nth-child(1) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 1;  
}
```

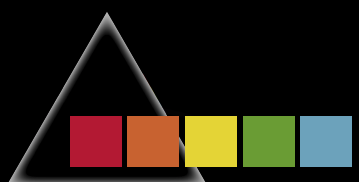




```
$ browser support
```

```
.item:nth-child(1) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 1;  
}
```

```
.item:nth-child(2) {  
  -ms-grid-column: 2;  
  -ms-grid-row: 1;  
}
```

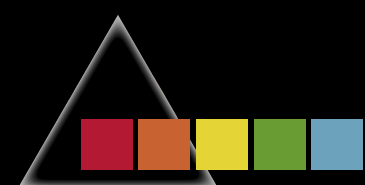


```
$ browser support
```

```
.item:nth-child(1) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 1;  
}
```

```
.item:nth-child(3) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 2;  
}
```

```
.item:nth-child(2) {  
  -ms-grid-column: 2;  
  -ms-grid-row: 1;  
}
```



\$ browser support

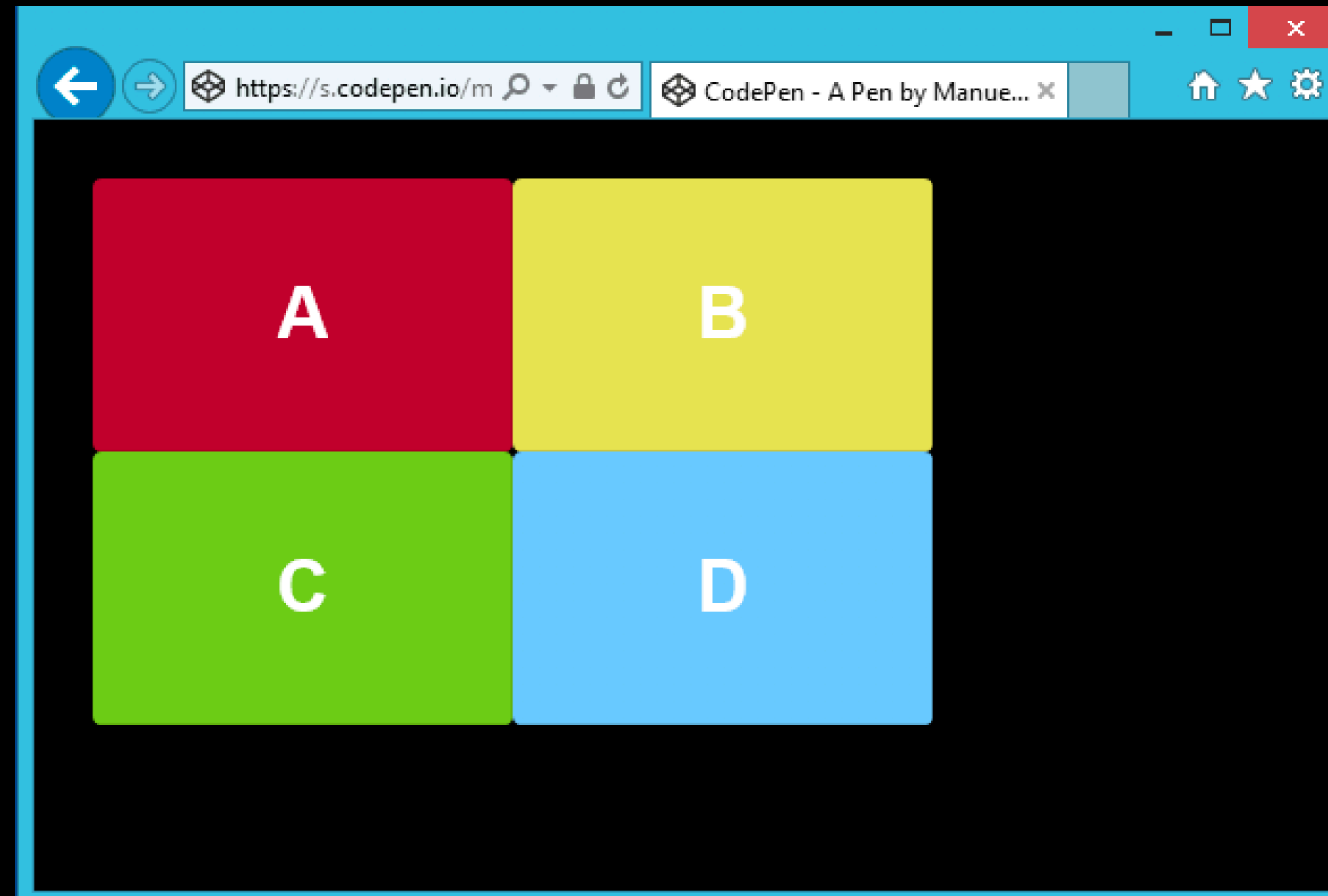
```
.item:nth-child(1) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 1;  
}
```

```
.item:nth-child(2) {  
  -ms-grid-column: 2;  
  -ms-grid-row: 1;  
}
```

```
.item:nth-child(3) {  
  -ms-grid-column: 1;  
  -ms-grid-row: 2;  
}
```

```
.item:nth-child(4) {  
  -ms-grid-column: 2;  
  -ms-grid-row: 2;  
}
```

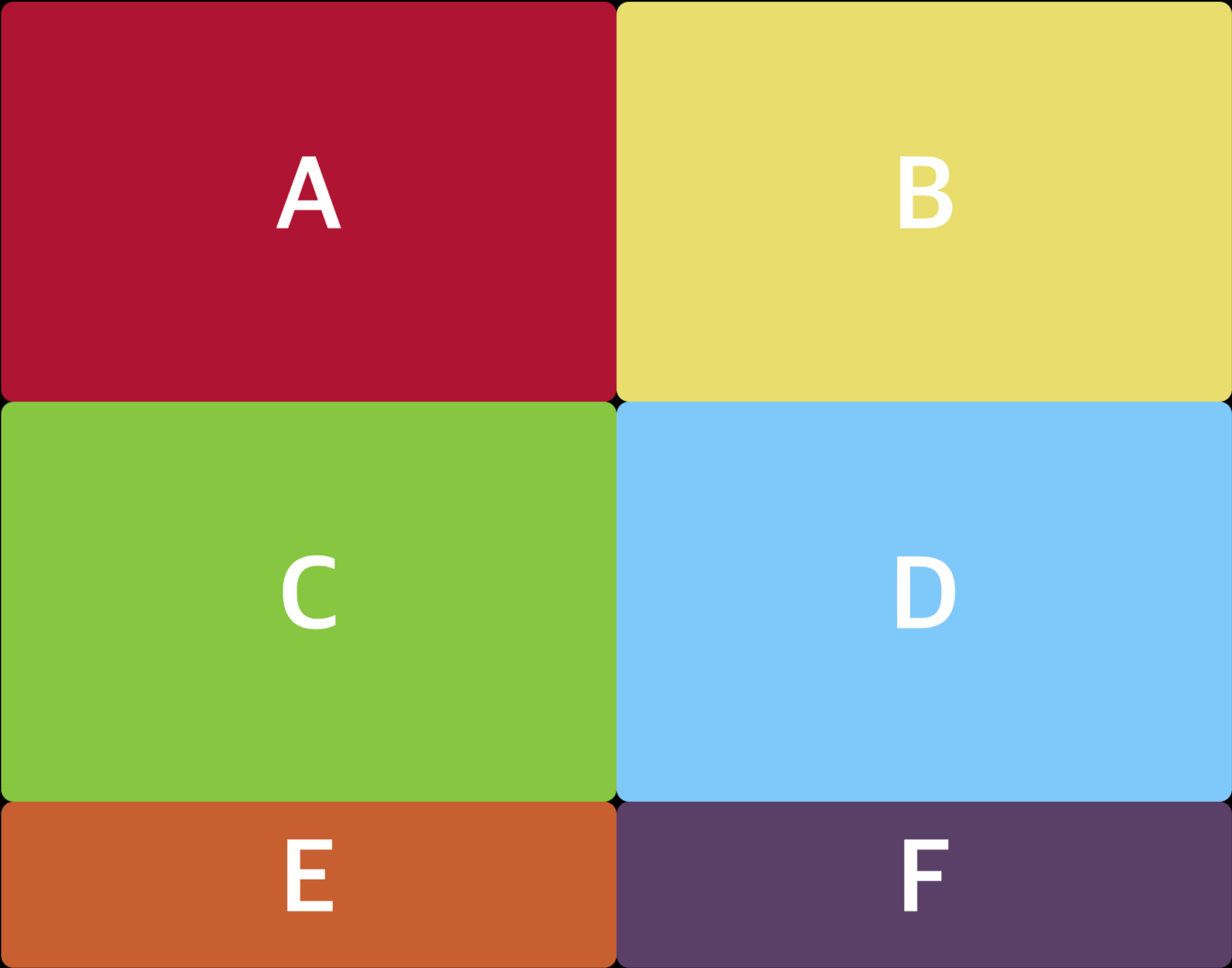




4 Elemente in einem 2 x 2 Grid mit expliziter Platzierung: Darstellung in IE11

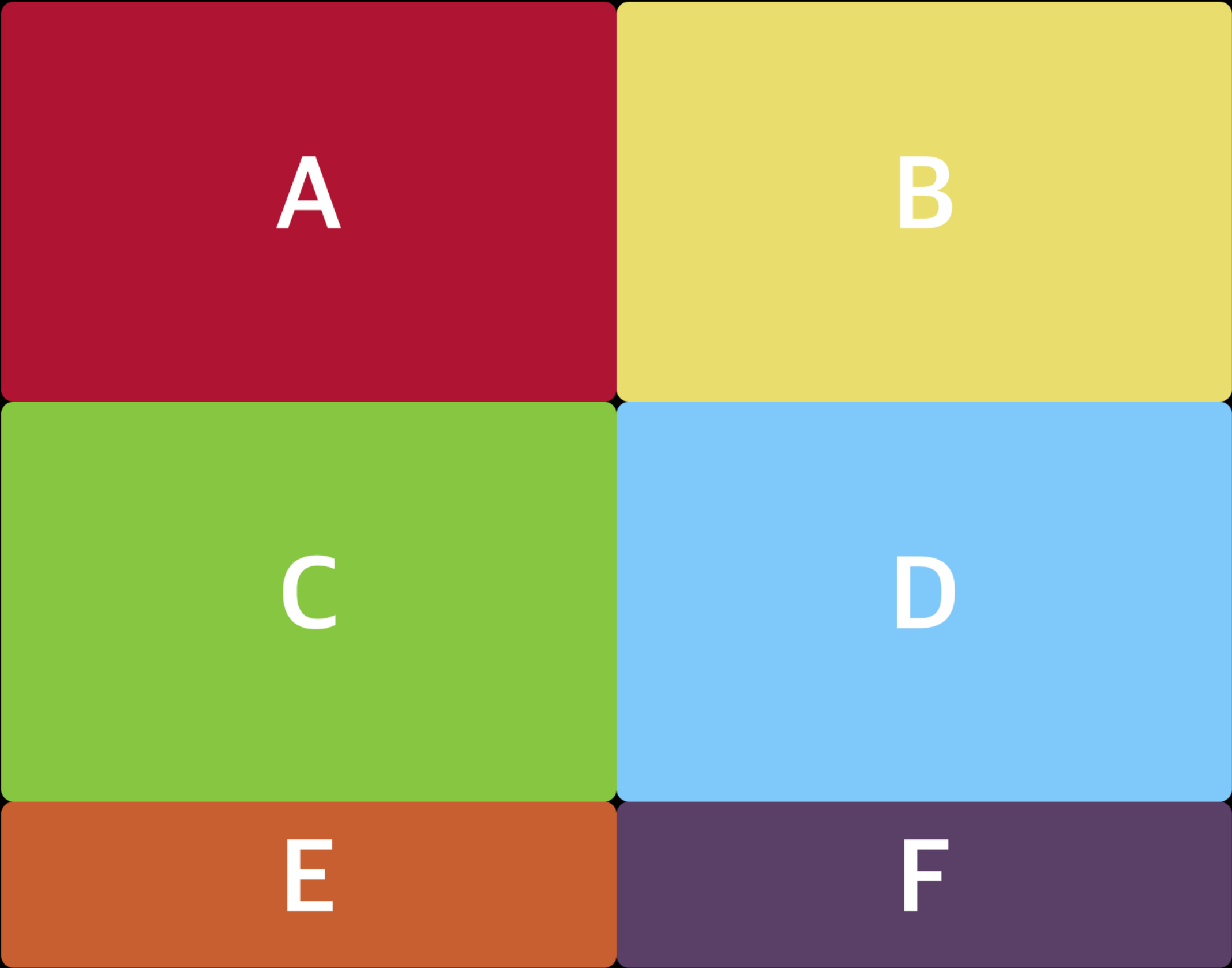
Chrome

IE 11

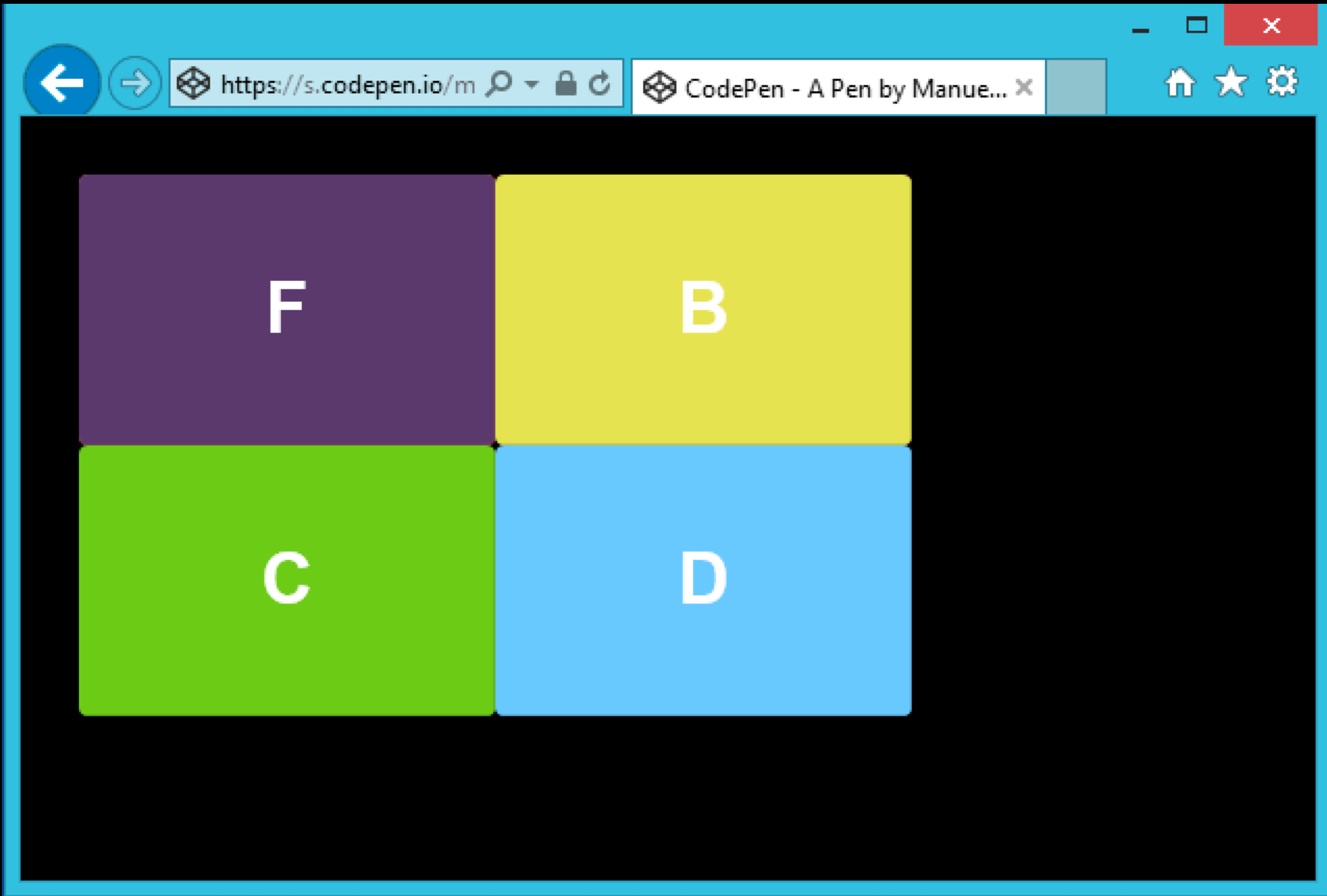


6 Elemente in einem 2 x 2 Grid: Darstellung in Chrome und in IE11

# Chrome



# IE 11



6 Elemente in einem 2 x 2 Grid: Darstellung in Chrome und in IE11

BROWSER SUPPORT

AUTOPREFIXER?



```
main.css — darksideofthegrid
# main.css x
1 .grid {
2   display: grid;
3   grid-template-columns: 100px 100px 100px;
4   grid-template-rows: 200px 200px 200px;
5   grid-gap: 10px;
6 }
7

# main.prefixed.css x
1
2
3
4
5
6
7

Ln 1, Col 8 Spaces: 2 UTF-8 LF CSS Prettier
```

Autoprefixer ignoriert standardmäßig Grid-Eigenschaften.



```
main.css — darksideofthegrid
# main.css x
1 .grid {
2   display: grid;
3   grid-template-columns: 100px 100px 100px;
4   grid-template-rows: 200px 200px 200px;
5   grid-gap: 10px;
6 }
7

# main.prefixed.css x
1 .grid {
2   display: grid;
3   grid-template-columns: 100px 100px 100px;
4   grid-template-rows: 200px 200px 200px;
5   grid-gap: 10px;
6 }
7

Ln 1, Col 8 Spaces: 2 UTF-8 LF CSS Prettier
```

Autoprefixer ignoriert standardmäßig Grid-Eigenschaften.

```
$ autoprefixer
```

```
module.exports = {  
  plugins: [  
    require('autoprefixer')({  
      grid: true,  
    })  
  ]  
}
```



main.prefixed.css — darksideofthegrid

```
# main.css x ... # main.prefixed.css
```

```
1 .grid {
2   display: grid;
3   grid-template-columns: 100px 100px 100px;
4   grid-template-rows: 200px 200px 200px;
5   grid-gap: 10px;
6 }
7
```

```
1
2
3
4
5
6
7
8
9
10
11
12
13
```

Ln 1, Col 8 Spaces: 2 UTF-8 LF CSS Prettier

Autoprefixer mit grid: true Setting.

main.prefixed.css — darksideofthegrid

```
# main.css x # main.prefixed.css
```

```
1 .grid {
2   display: grid;
3   grid-template-columns: 100px 100px 100px;
4   grid-template-rows: 200px 200px 200px;
5   grid-gap: 10px;
6 }
7
```

```
1 .grid {
2   display: -ms-grid;
3   display: grid;
4
5   -ms-grid-columns: 100px 100px 100px;
6   grid-template-columns: 100px 100px 100px;
7
8   -ms-grid-rows: 200px 200px 200px;
9   grid-template-rows: 200px 200px 200px;
10
11  grid-gap: 10px;
12 }
13
```

Ln 1, Col 8 Spaces: 2 UTF-8 LF CSS Prettier

Autoprefixer mit grid: true Setting.

```
main.prefixed.css — darksideofthegrid
# main.css x
1 .grid {
2   display: grid;
3   grid-template: 100px 100px 100px / 200px 200px 200px;
4   grid-gap: 10px;
5 }
6

# main.prefixed.css •
1
2
3
4
5
6
7
8
9
10
11

Ln 5, Col 1 (94 selected) Spaces: 2 UTF-8 LF CSS Prettier
```

Gaps werden in IE 10 und 11 durch Spalten bzw. Reihen imitiert.

```
main.prefixed.css — darksideofthegrid

# main.css x
1 .grid {
2   display: grid;
3   grid-template: 100px 100px 100px / 200px 200px 200px;
4   grid-gap: 10px;
5 }
6

# main.prefixed.css •
1 .grid {
2   display: -ms-grid;
3   display: grid;
4
5   -ms-grid-rows: 100px 10px 100px 10px 100px;
6   -ms-grid-columns: 200px 10px 200px 10px 200px;
7
8   grid-template: 100px 100px 100px / 200px 200px 200px;
9   grid-gap: 10px;
10 }
11
```

Gaps werden in IE 10 und 11 durch Spalten bzw. Reihen imitiert.

# Autoprefixer Gotchas



# Autoprefixer Gotchas

- `grid-template` oder `grid-template-areas` + `grid-template-columns` verpflichtend für Gap-Support.





# Autoprefixer Gotchas

- `grid-template` oder `grid-template-areas` + `grid-template-columns` verpflichtend für Gap-Support.
- Area Bezeichnungen müssen einzigartig sein.



# Autoprefixer Gotchas

- **grid-template** oder **grid-template-areas** + **grid-template-columns** verpflichtend für Gap-Support.
- Area Bezeichnungen müssen einzigartig sein.
- Negative Liniennummern wie **grid-column: 1 / -1;** werden nicht unterstützt.



# Autoprefixer Gotchas



# Autoprefixer Gotchas

- Die **grid** Kurzschreibweise wird nicht unterstützt.



# Autoprefixer Gotchas

- Die **grid** Kurzschreibweise wird nicht unterstützt.
- Die Verwendung von benannten Linien ist nicht möglich.



# Autoprefixer Gotchas

- Die **grid** Kurzschreibweise wird nicht unterstützt.
- Die Verwendung von benannten Linien ist nicht möglich.
- Man kann Endlinien nicht definieren.



# Autoprefixer Gotchas

- Die **grid** Kurzschreibweise wird nicht unterstützt.
- Die Verwendung von benannten Linien ist nicht möglich.
- Man kann Endlinien nicht definieren.
- Kein Auto-Placement.



Chrome

38.77%

Firefox

30.46%

IE

11.42%

Edge

7.34%

Safari

6.96%

Opera

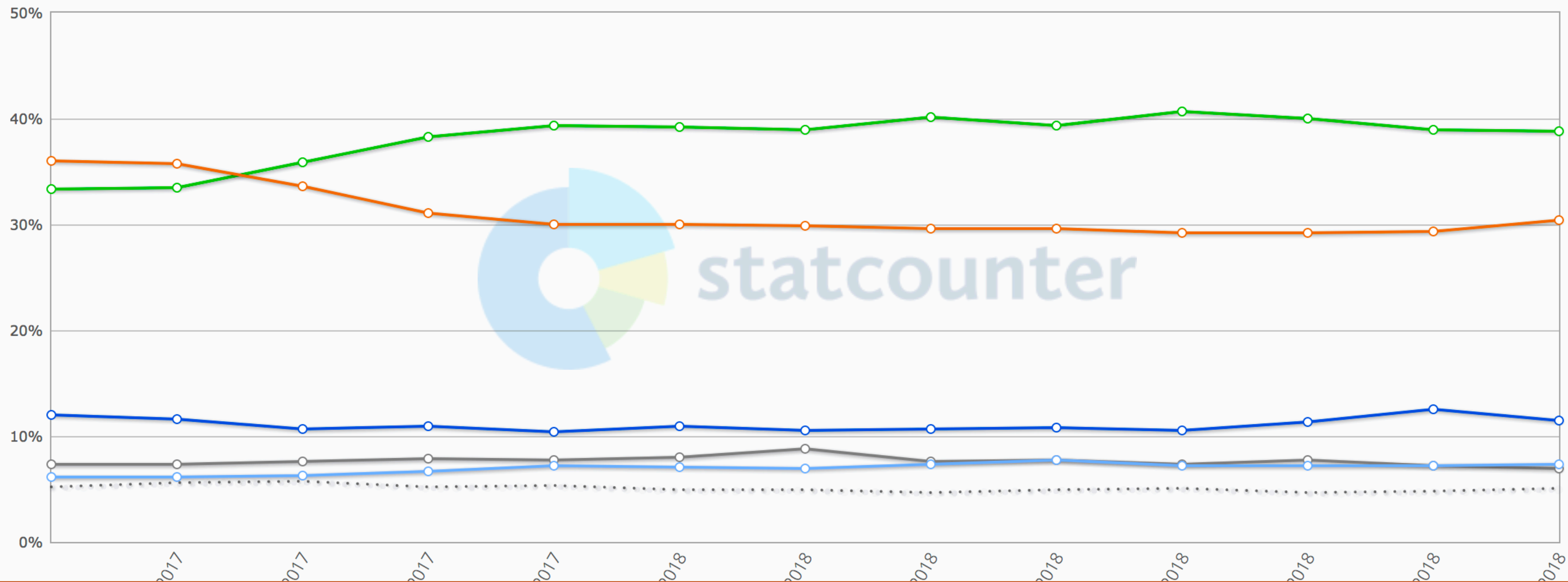
3.88%

Desktop Browser Market Share in Germany - August 2018

## Desktop Browser Market Share Germany

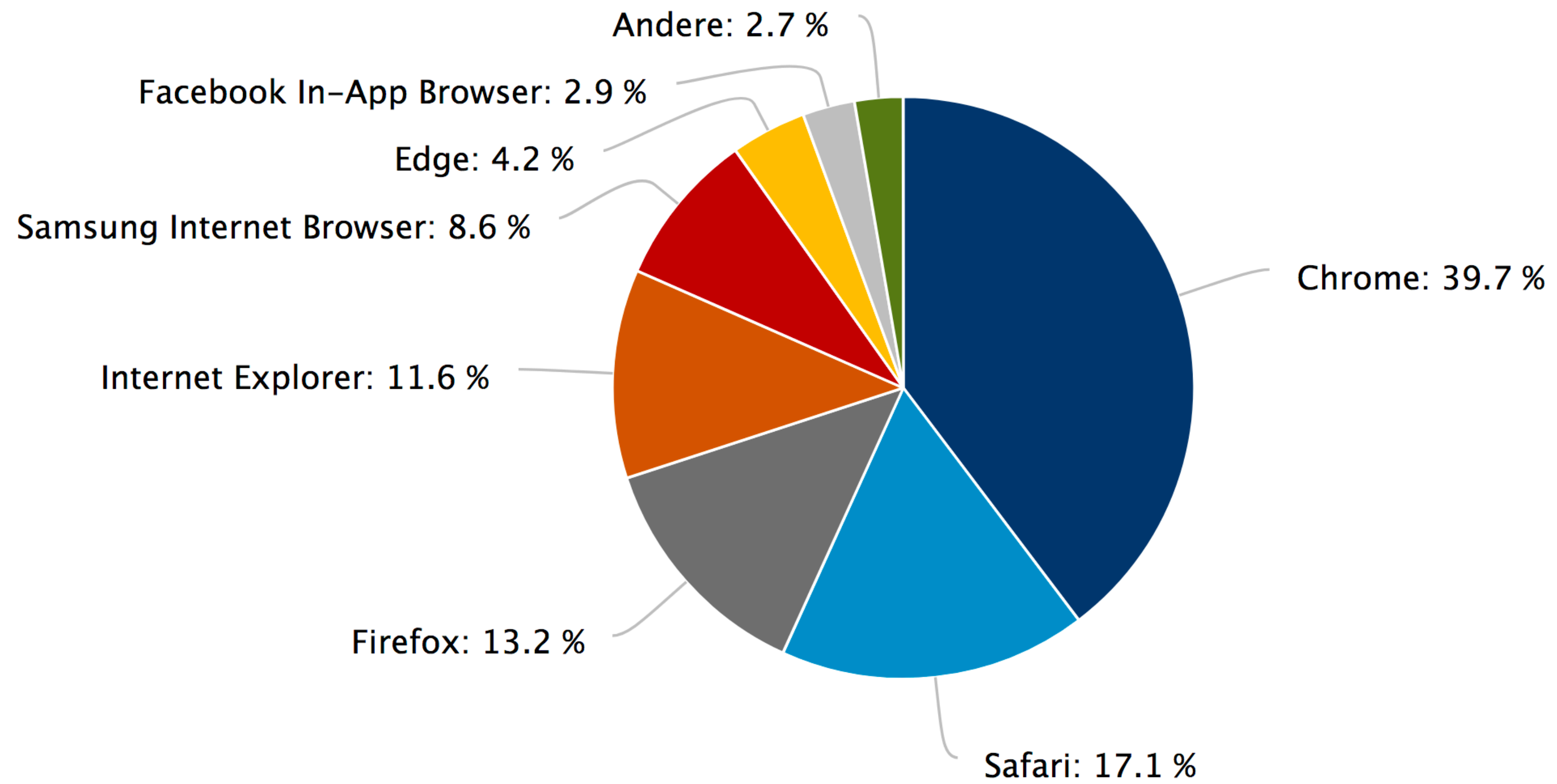
Aug 2017 - Aug 2018

[Edit Chart Data](#)



11,42% IE Nutzer in Deutschland





11,6% IE Nutzer in Österreich.



**Benjamin De Cock**

@bdc

Following



If you haven't used CSS Grid yet, it's because:

30% IE support

19% Steep learning curve

42% Flexbox is fine

9% Never heard of it

441 votes • Final results

11:49 PM - 5 Jul 2018

Internet Explorer Unterstützung stellt für viele EntwicklerInnen noch eine große Hürde da.

„I don't think we owe it to any users to make it all exactly the same. Therefore we can get away with keeping fallbacks very simple. My hypothesis: users don't mind, they've come for the content.“

-Hidde de Vries

<https://hiddedevries.nl/en/blog/2018-08-11-lets-serve-everyone-good-looking-content>



**There is no dark side of the ~~moon~~ grid really.  
Matter of fact it's all dark.**

PINK FLOYD: ECLIPSE



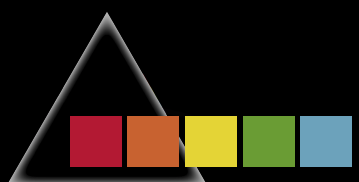
@mmatuzo

# Verantwortlicher Umgang mit Grid



# Verantwortlicher Umgang mit Grid

- Eigenschaften wie **grid-auto-flow: dense;** oder andere Techniken, die die visuelle Reihenfolge verändern, bei interaktionsintensiven Komponenten vermeiden.



# Verantwortlicher Umgang mit Grid

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- Komponenten mit dem Keyboard testen.



# Verantwortlicher Umgang mit Grid

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- Komponenten mit dem Keyboard testen.
- Nicht die Semantik verschlechtern und die Dokumentstruktur abflachen.





# Verantwortlicher Umgang mit Grid



# Verantwortlicher Umgang mit Grid

- Wenn man Autoprefixer verwendet, dann so, dass zu jeder Zeit für jede/n im Team klar ist, was warum passiert.



# Verantwortlicher Umgang mit Grid

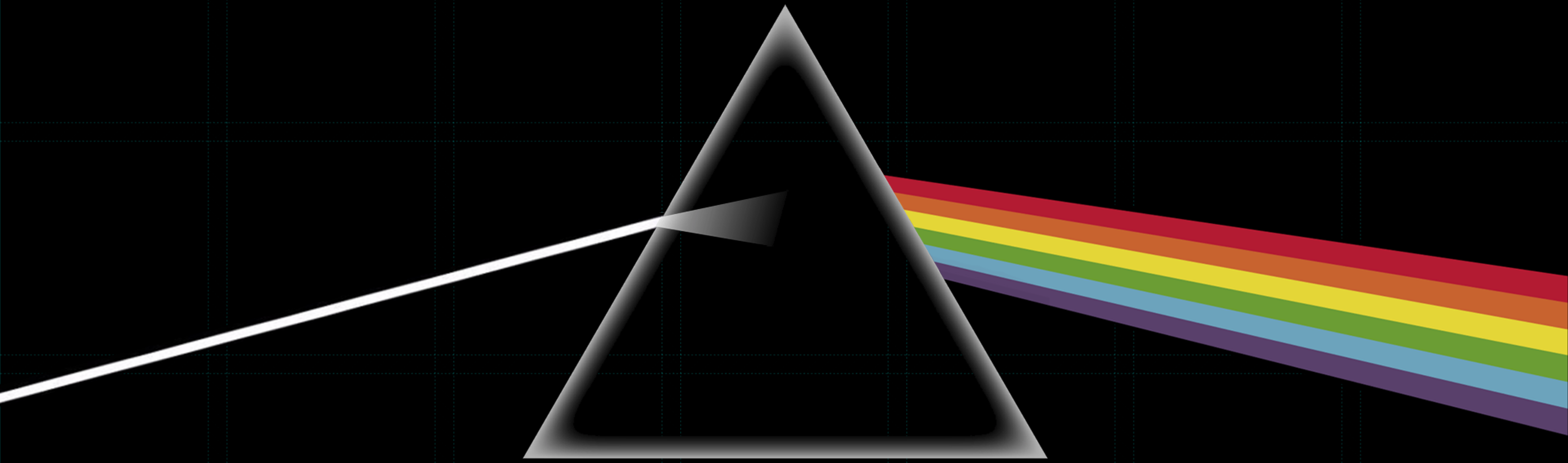
- Wenn man Autoprefixer verwendet, dann so, dass zu jeder Zeit für jede/n im Team klar ist, was warum passiert.
- Sicher gehen, dass die Komponenten auch in älteren / eingeschränkteren Browsern funktionieren.



# Verantwortlicher Umgang mit Grid

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- Sicher gehen, dass die Komponenten auch in älteren / eingeschränkteren Browsern funktionieren.
- Die Macht von Progressive Enhancement ausnutzen.





*Danke*

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