31 May 2018, Utrecht
Front-end United

WORKSHOP

CSS Layout

Hidde de Vries
@hdv

Introductions

hiddedevries.nl


moz://a

Introduction

What's your name?
Where did you travel from?
What's your favourite CSS property?

schedule

09.30-09.45	CSS layout in context
09.45-10.15	Flexbox 101
10.15-12.30	Flexbox practice
11.00-12.30	Grid Layout 101, part 1
	– lunch –
13.30-14.15	Grid Layout 101, part 2
14.15-16.00	Grid Layout practice
16.00-17.00	Grid in PROD, fallbacks

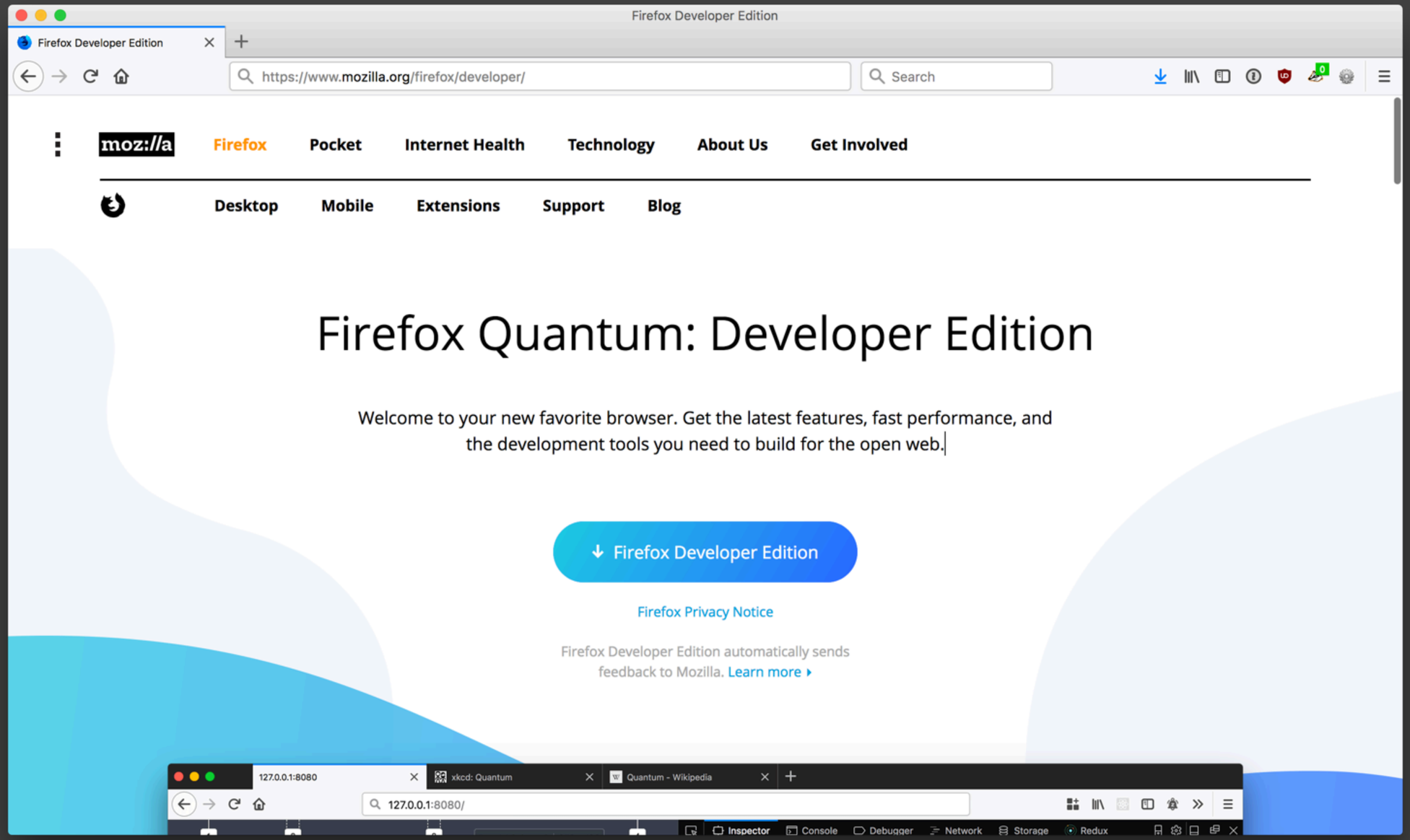
Requirements for today

Requirements for today

Your favourite text editor; Codepen/JSBin are fine, too

A browser with good layout tools

https://www.mozilla.org/firefox/developer/



Requirements for today

Your favourite text editor; Codepen/JSBin are fine, too

A browser with good layout tools

Code examples

https://github.com/hidde/workshop-css-layout/

Requirements for today

Your favourite text editor; Codepen/JSBin are fine, too

A browser with good layout tools

Code examples

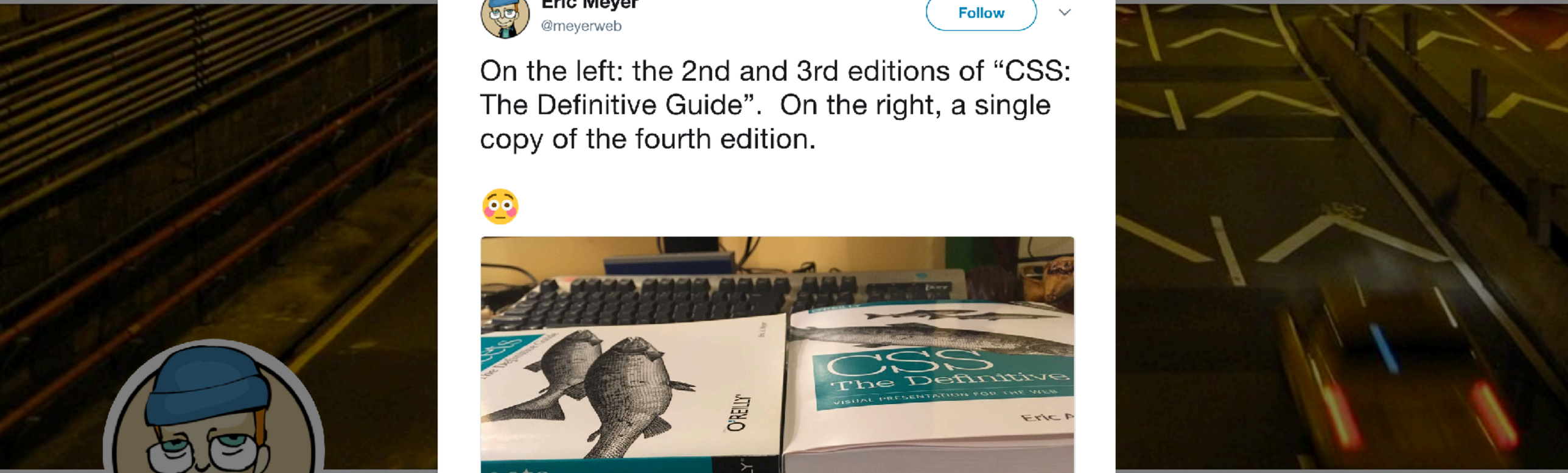
No conventions. Feel free to use IDs for styling, don't worry about maintainability (just yet).

CSS Layout in context

personalisation, and ads.

Home About

Have an account? Log in



Eric Meyer
@meyerweb

Web standards, HTML/CSS, microformats, community, writing, speaking, signing guy. Husband, father, agnostic in principle, atheist in practice. #663399becca

Cleveland Heights, OH

meyerweb.com

Eric Meyer
@meyerweb

Follow

On the left: the 2nd and 3rd editions of “CSS: The Definitive Guide”. On the right, a single copy of the fourth edition.

1:25 PM - 10 Nov 2017

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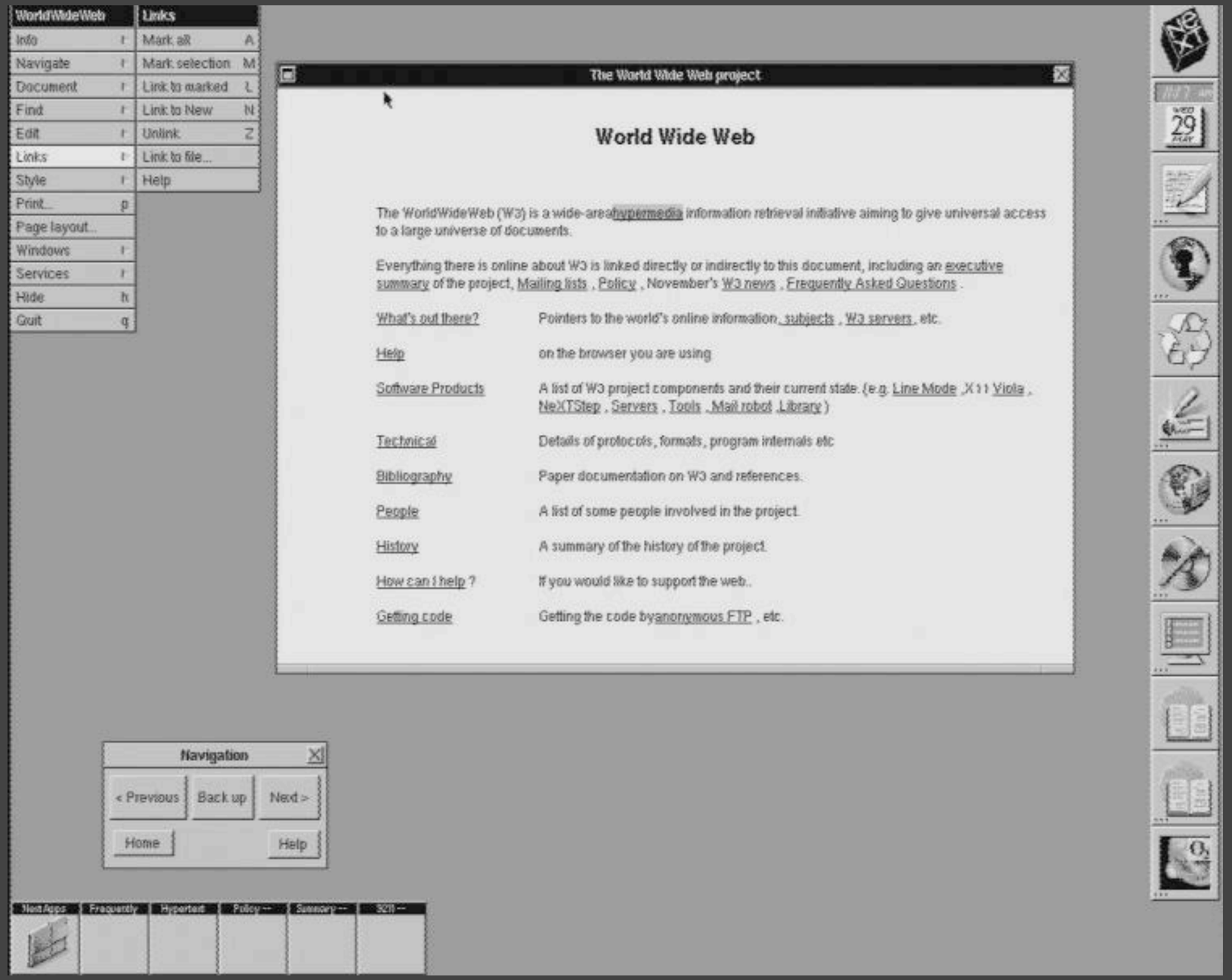
1 spec → many modules

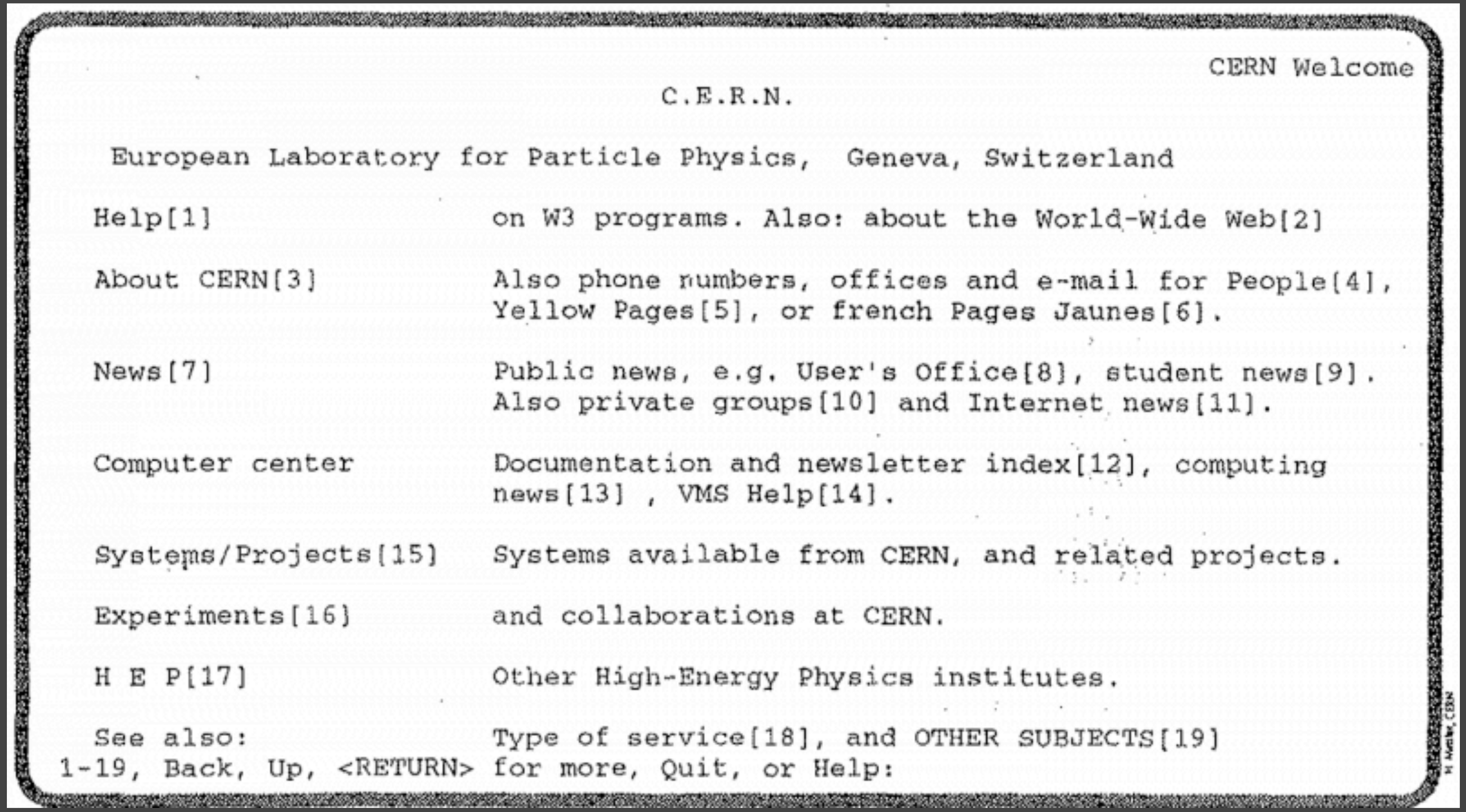
Specs are implemented much faster

We now have dedicated CSS for lay-out 

Flexibility is built into the web



CERN - first-website.web.cern.ch



CERN - first-website.web.cern.ch

Dan Noyes, CERN - first-website.web.cern.ch

Flexibility is built into the web

Flexibility is built into CSS

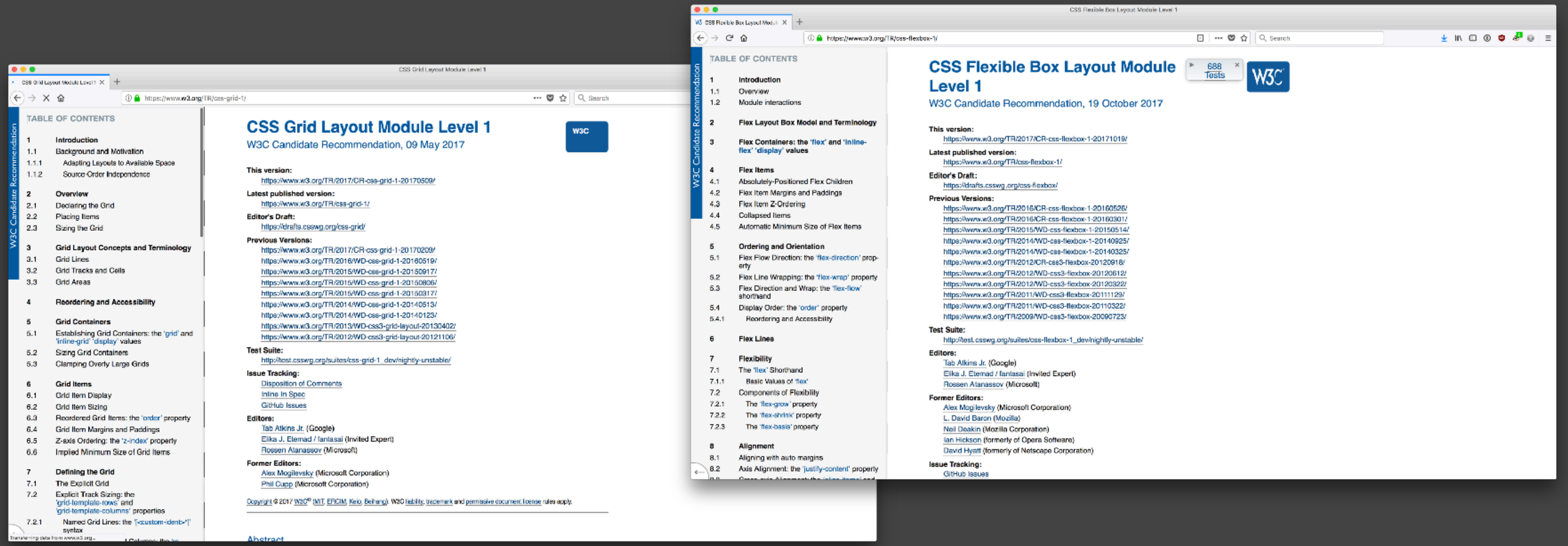
Medium-agnostic

> ***CSS is a language for describing the rendering of structured documents (such as HTML and XML) on screen, on paper, in speech, etc.***
>
> — every CSS spec

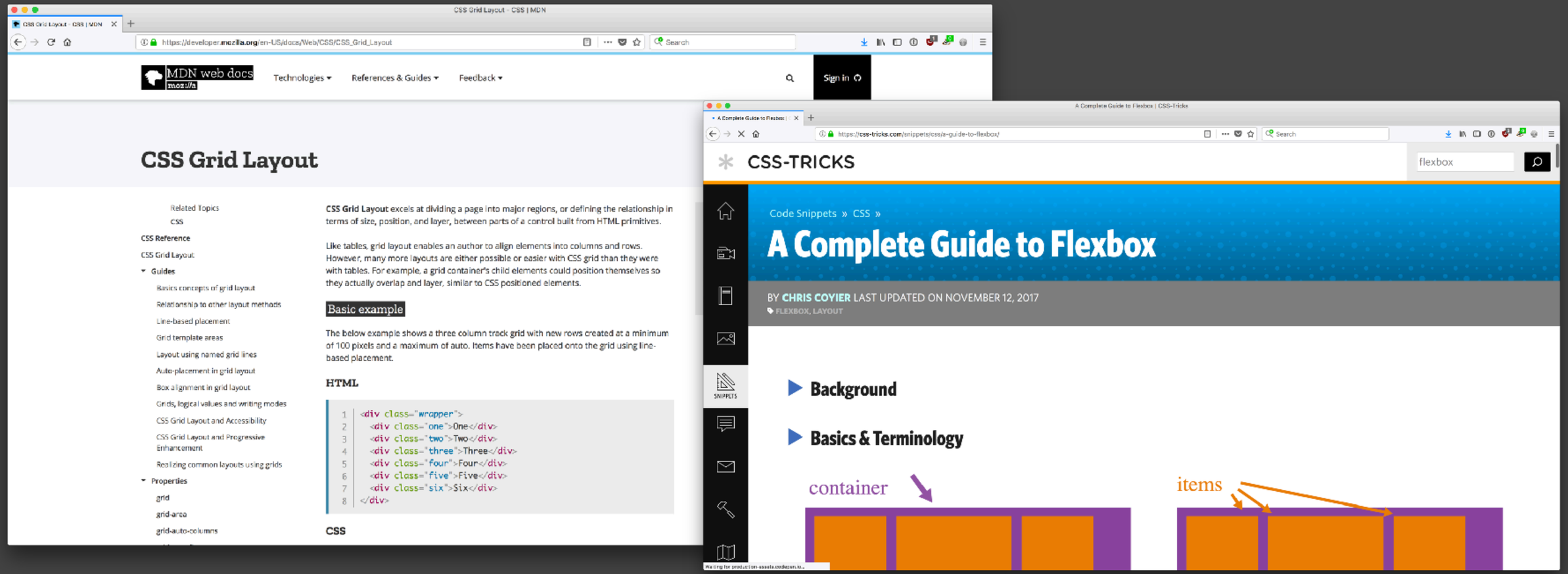
Not a programming language

HTML describes what's there

CSS describes what it looks like



If in doubt, consult the spec



Or MDN, CSS Tricks

layout modes

layout modes

inline

block

table

positioned

layout modes

inline

block

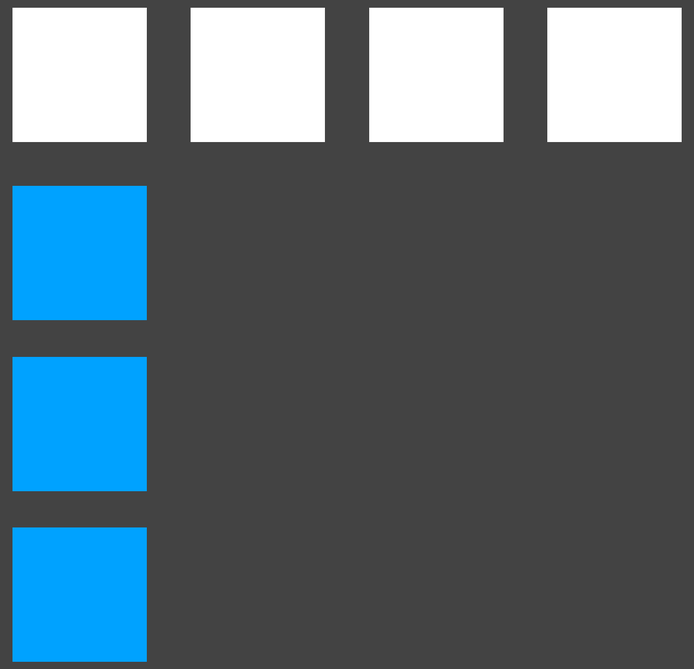
table

positioned

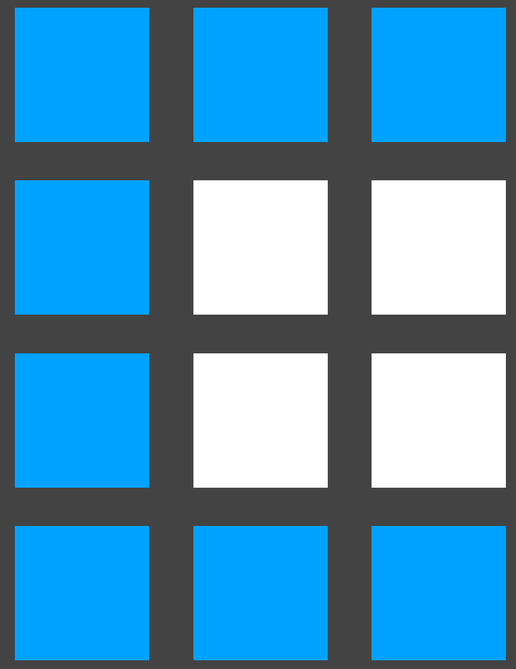
flex

grid

flex



grid



flex

from the
content out

sizes defined
on the item

grid

from the
container

areas defined on
the container

logical vs physical properties

BBC Arabic - الرئيسية

الرئيسية - BBC Arabic

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دخول مساعدات غذائية للغوطة رغم استمرار القتال والقصف

وكالات إغاثية أممية، تعلن دخول قافلة مساعدات إلى عدة مناطق بالغوطة الشرقية التي تشهد قتالا عنيفا بين فصائل وقوات الجيش السوري، وذلك رغم استمرار القصف والغارات الجوية للقوات الحكومية.

قبل 2 ساعة

قافلة مساعدات إنسانية تدخل الغوطة الشرقية

السعودية تقترب من إبرام صفقة مقاتلات تايفون مع بريطانيا

السعودية تقترب من التوصل إلى اتفاق بشأن شراء 48 مقاتلة من طراز تايفون، بحسب ما ذكرته شركة "بي ايه اي سيستمز" البريطانية.

9 مارس/ آذار 2018

قطر توقع اتفاقا لشراء 24 مقاتلة "تايفون" من بريطانيا

كيف باعت "بي أيه إي سيستمز" البريطانية أنظمة مراقبة منطورة لدول عربية؟

الحكم بسجن "أكثر شخص مكروه في أمريكا" 7 سنوات

محكمة أمريكية تحكم على قطب صناعة الأدوية السابق مارتن شكريلي، الذي أدين بالاحتيال على مجموعة من المستثمرين، بالسجن سبع سنوات.

قبل 5 ساعة

سجن رجل أعمال أمريكي غرض "مكافأة مقابل خصلة من شعر هيلاري كلينتون"

القوات التركية "قد تدخل عفرين في أي لحظة"

9 مارس/ آذار 2018

ترامب يقبل دعوة كيم جونغ أون زعيم كوريا الشمالية للقاء مباشر

9 مارس/ آذار 2018

بريطانيا تستدعي الجيش للمساعدة في التحقيق بمحاولة قتل الجاسوس الروسي

9 مارس/ آذار 2018

مباشر

مباشر تلفزيون

مباشر راديو

اخترنا لكم

ترامب وكيم جونغ أون: تاريخ من السباب المتبادل

مقامرة القرن: هل خدع زعيم كوريا الشمالية ترامب ومون؟

لماذا تزيد رواتب المغتربين في مومباي عن أي

فيديو >

www.bbc.com/arabic/middleeast-43353539

logical vs physical properties

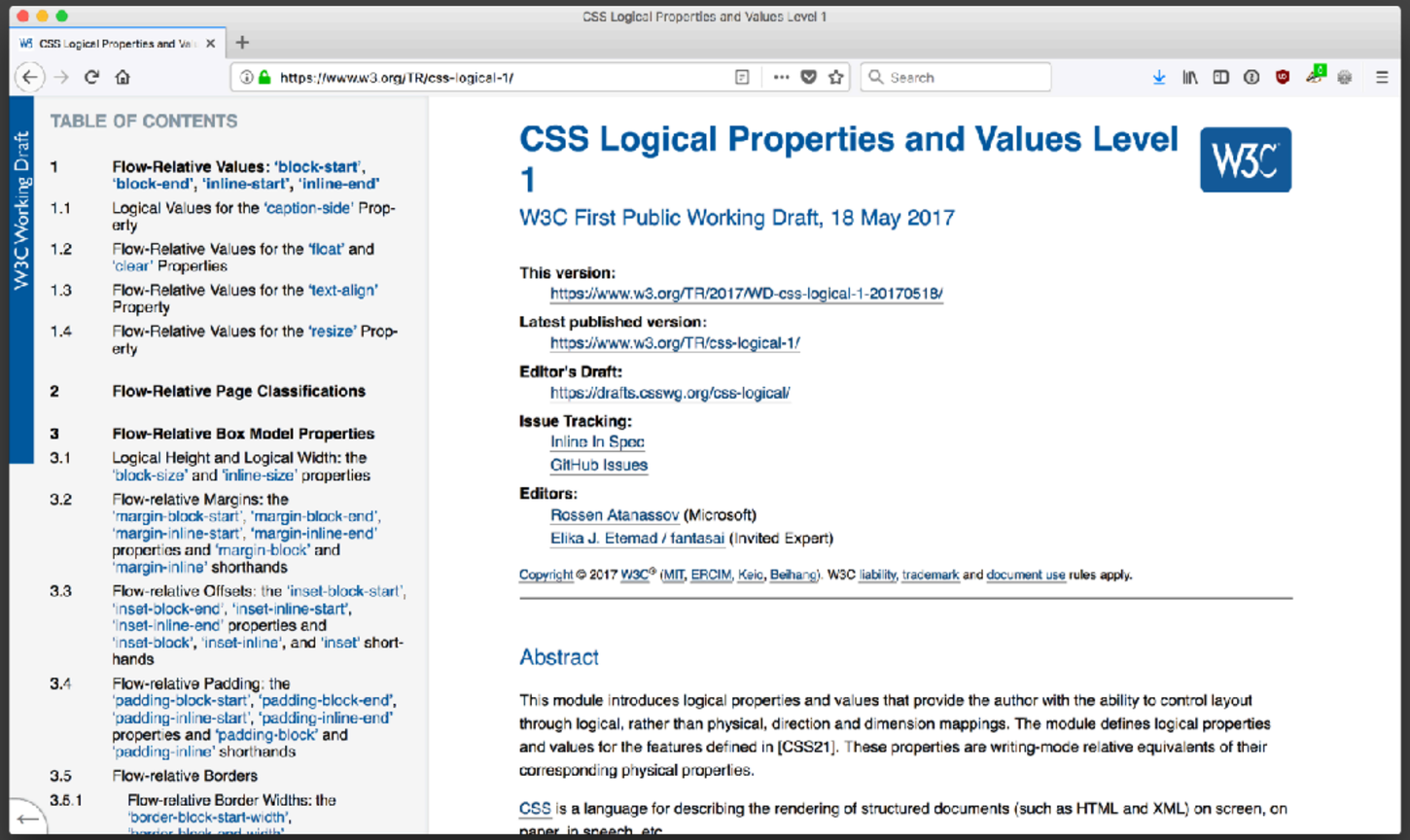
align-items: start

justify-self: end

margin-start / margin-end

Logical properties and values specification

https://www.w3.org/TR/css-logical-1/



Some CSS creates a block formatting context.

Some CSS creates a
block formatting context.

This means that from that point onwards, it is responsible for its own lay-out.

Sommige CSS creëert een block formatting context.

It is a context in which things are lined out.

Block formatting contexts are created by:

root element

float (behalve float: none)

position: absolute|fixed

display: inline-block

display: table-cell

display: table-caption

overflow (behalve overflow: visible)

Block formatting contexts are created by:

display: grid

display: flex

Takeaways

Flexibility is built into the web and CSS

CSS is not a programming languages

Consult the spec, or sources like MDN, CSS-Tricks

Flex and grid are two new layout modes

Logical properties replace physical properties

Some CSS creates a new BFC

Flexbox

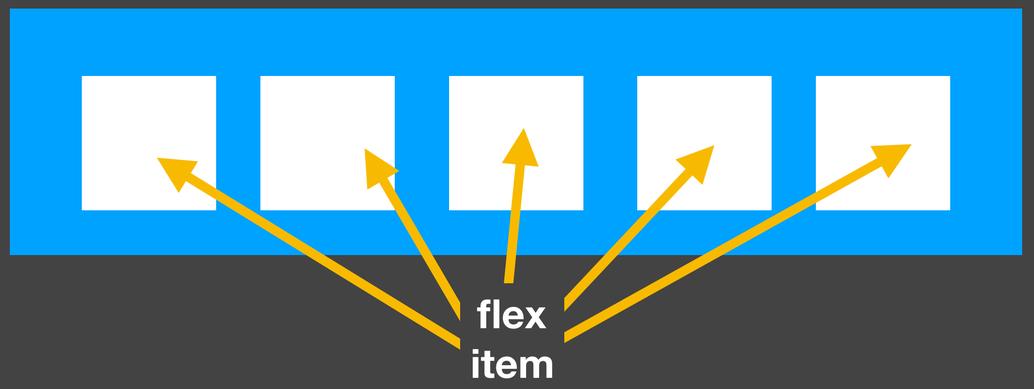
flexbox lets you align elements and use whitespace intentionally

flex container


```
#container { display: flex; }
```

flex container

all direct children become flex items



if they're
'in flow'

excludes
whitespace,
includes
loose text

```
#container { display: flex; }
```

flex container

all direct children become flex items

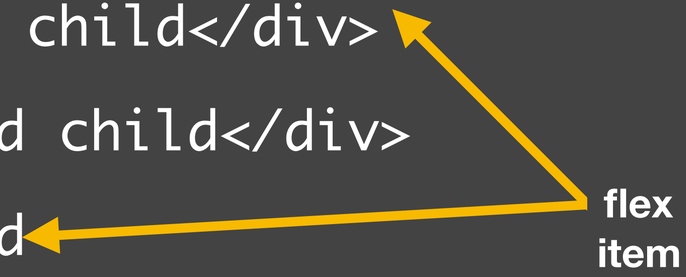
```
<div id="container">
    <div>First child</div>
    <div>Second child</div>
    Third child
</div>
```


```
#container { display: flex; }
```

flex container

all direct children become flex items

```
<div id="container">
    <div>First child</div>
    <div>Second child</div>
    Third child
</div>
```




```
#container { display: flex; }
div:nth-child(2) { position: absolute; }
```

when an element becomes a flex item, some CSS will behave differently

When something becomes a...

flex item

stops working:

- `vertical-align`
- `float`

now works:

- `flex`
- **automagical margins**
- `align-self`
- `order`

FLEX ITEM

flex

```
#item {
  flex-grow: 0;
  flex-shrink: 1;
  flex-basis: auto;
}
```

maximum growth factor

maximum shrink factor

initial size

FLEX ITEM

flex

```
#item { flex: [grow] [shrink] [basis]; }
```

grow: max growth factor

shrink: maximum shrink factor

basis: initial size

FLEX ITEM

flex

```
#item { flex: 0 1 auto; }
```

FLEX ITEM

flex

```
#item { flex: 1; }
```

EXERCISE 01

Create a page with on it:

- a row of 3 columns
- a row of 4 columns
- a row of 5 columns

EXERCISE

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Lorem ipsum dolor sit met

Extra:
Only do this on viewports that are 50em or wider

FLEX ITEM

```
#item { flex: initial; }
// equivalent to ‘0 1 auto’
```

let item niet shrink, but not grow

```
#item { flex: auto; }
// equivalent to ‘1 1 auto’
```

fully flexible – let item grow as well as shrink

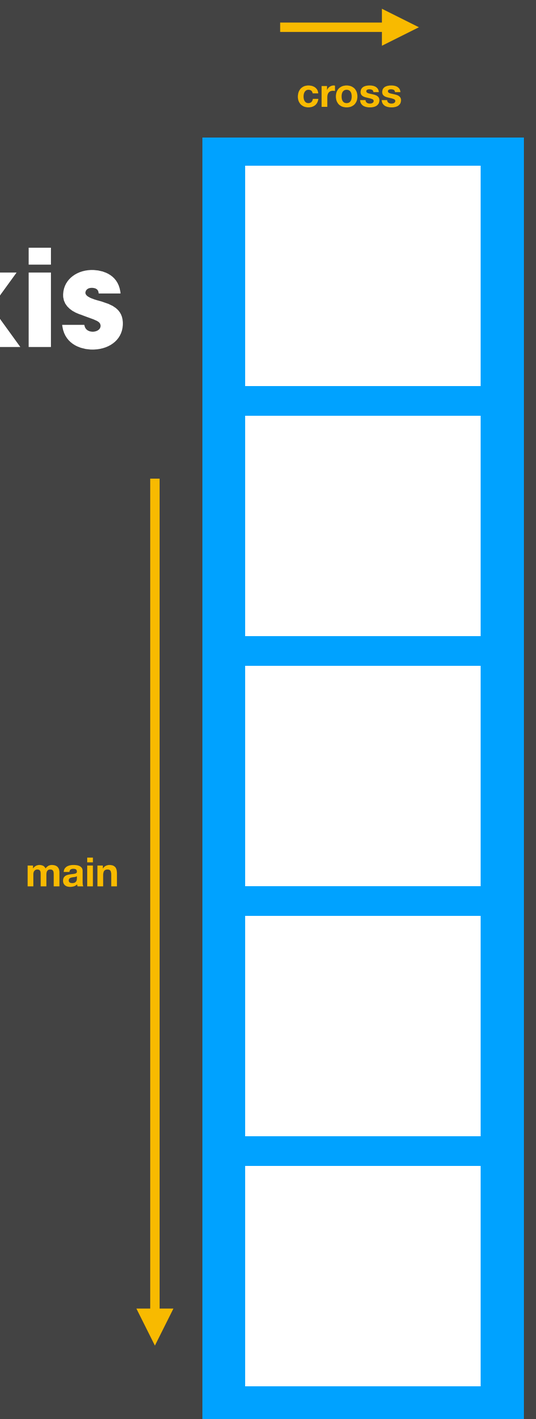
```
#item { flex: none; }
// equivalent to ‘0 0 auto’
```

not flexible – don't let item shrink or grow

FLEX CONTAINER

main axis vs cross axis

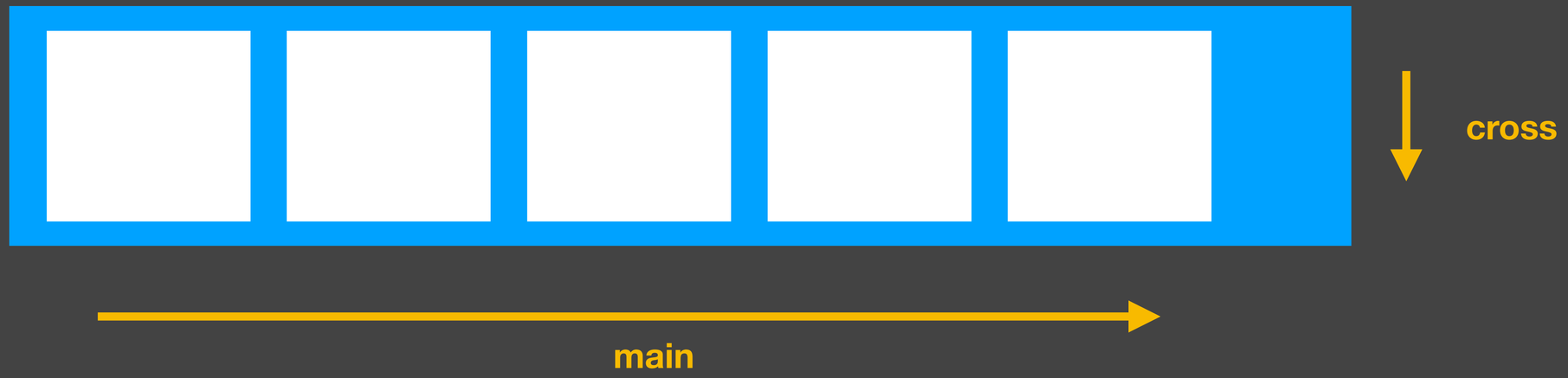
```
flex-direction: column;
```



FLEX CONTAINER

main axis vs cross axis

```
flex-direction: row;
```



FLEX CONTAINER

wrapping

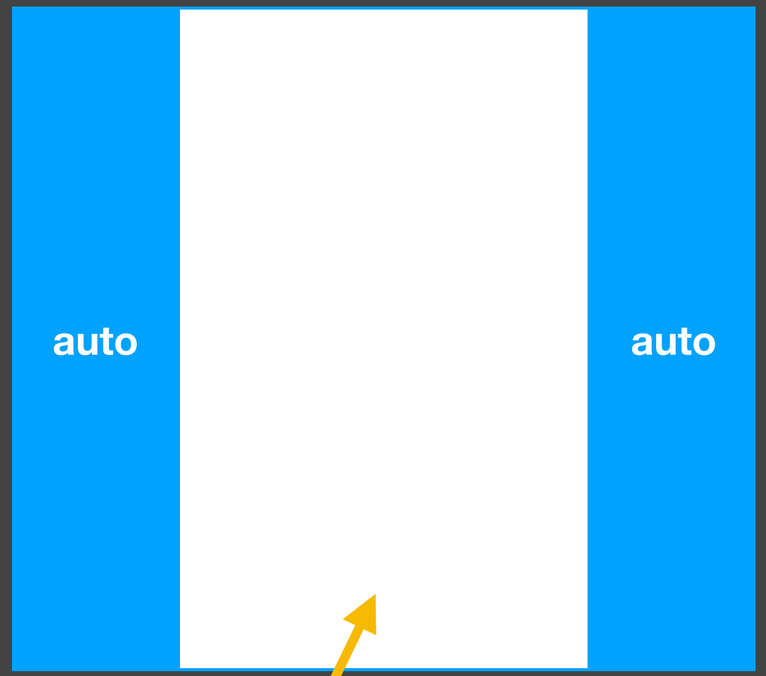
Do you want the items to wrap over multiple lines or not?

```
#container {
  flex-wrap: nowrap | wrap;
}
```

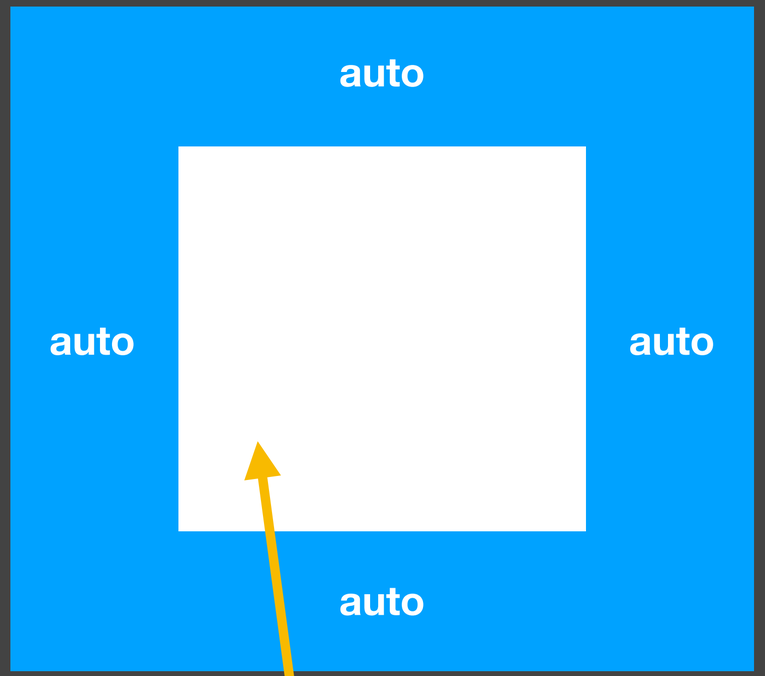
FLEX
ITEM

FLEX ITEM

automagical margins



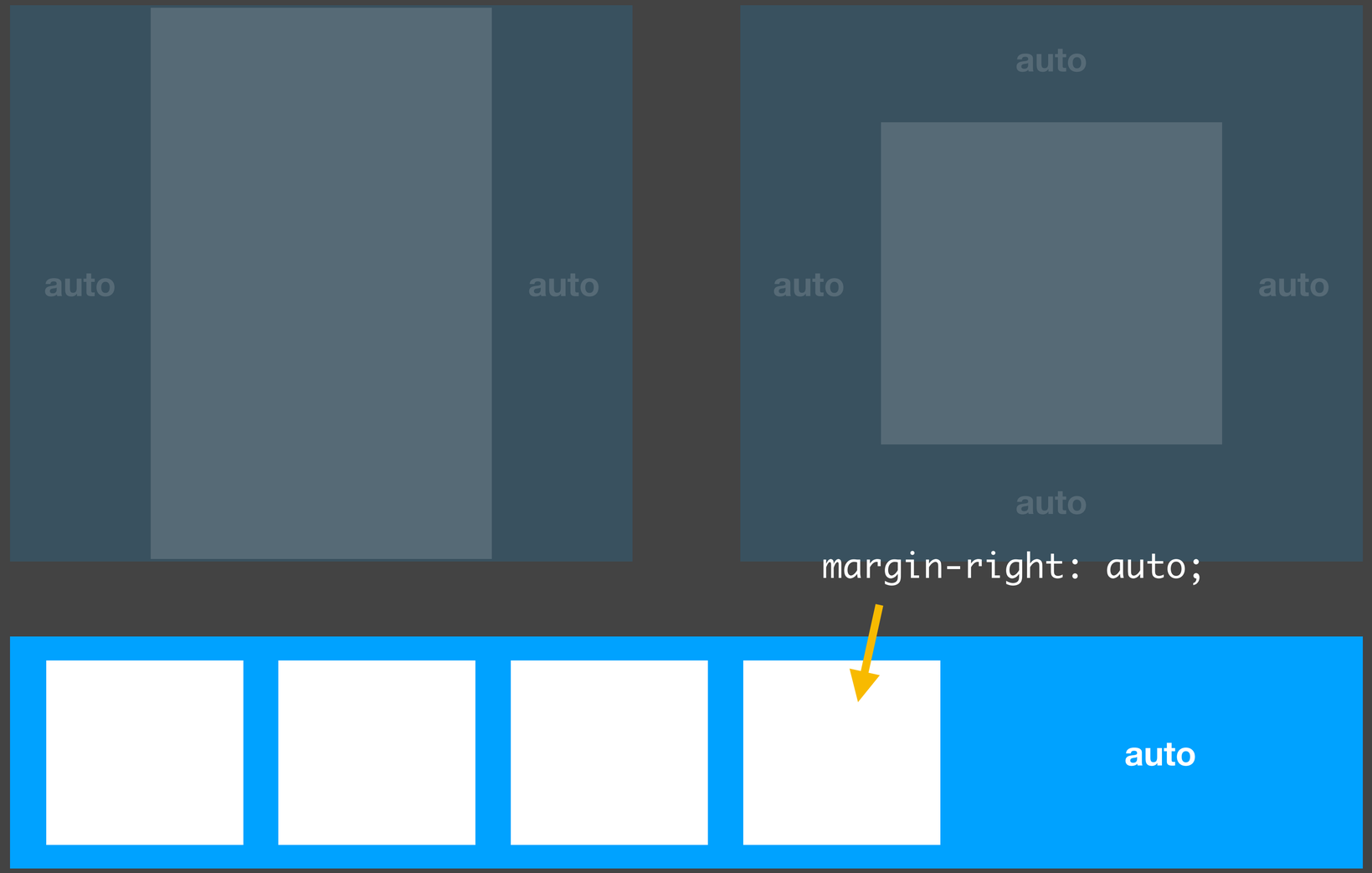
`margin: 0 auto;`



`margin: auto;`

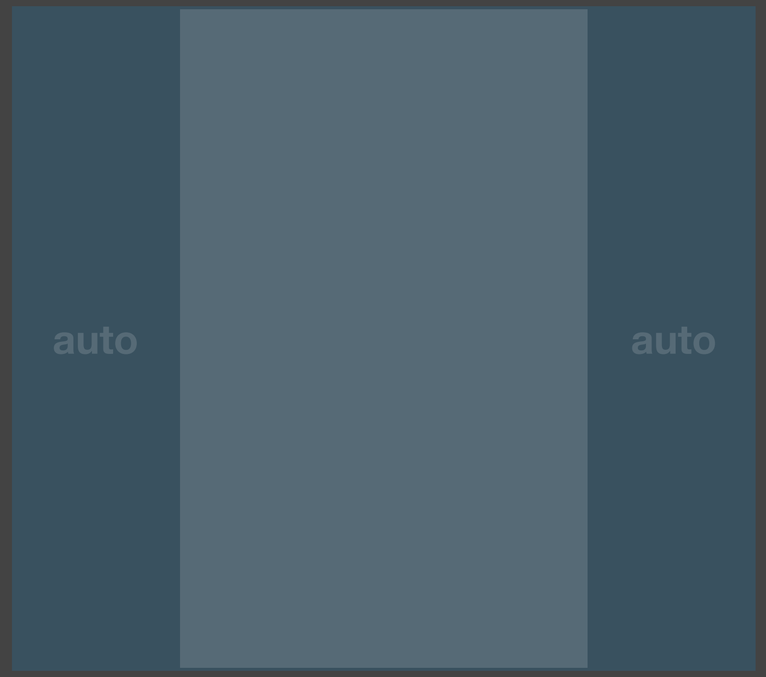
FLEX ITEM

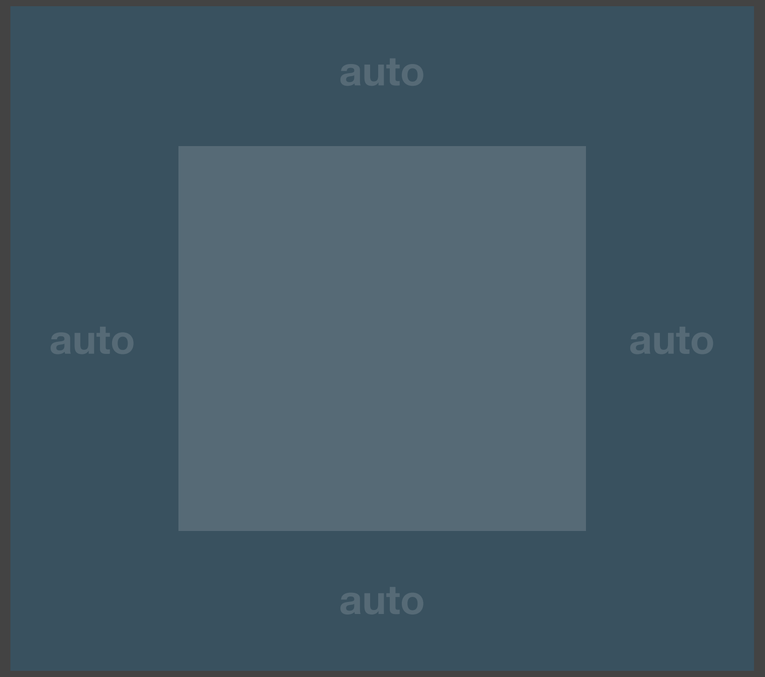
automagical margins



FLEX ITEM

automagical margins





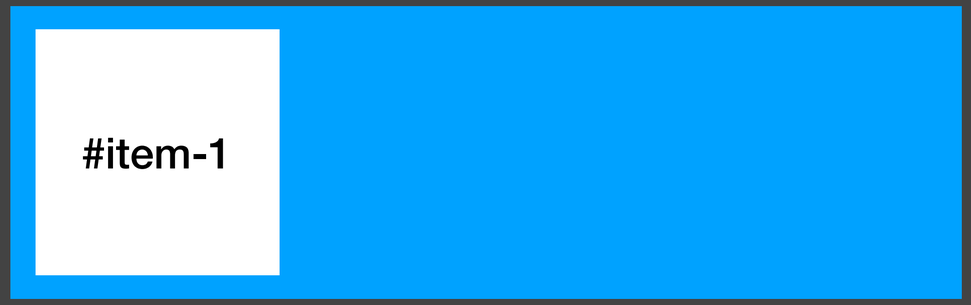
`margin-left: auto;`

FLEX
ITEM

aligning one item on the main axis

On columns if you're creating columns, on rows if you're creating rows.

Lets you align one item in a different way than the others, divides remaining space automatically.




```
#item-1 {
  margin-left: 0;
}
```

FLEX ITEM

aligning one item on the main axis

On columns if you're creating columns, on rows if you're creating rows.

Lets you align one item in a different way than the others, divides remaining space automatically.

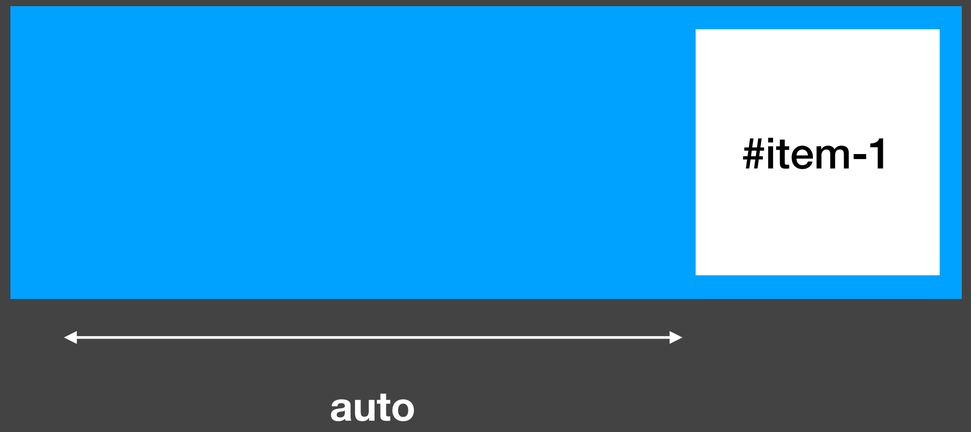

```
#item-1 {
  margin-left: 1em;
}
```

FLEX ITEM

aligning one item on the main axis

On columns if you're creating columns, on rows if you're creating rows.

Lets you align one item in a different way than the others, divides remaining space automatically.




```
#item-1 {
  margin-left: auto;
}
```

FLEX
ITEM

aligning one item on the main axis

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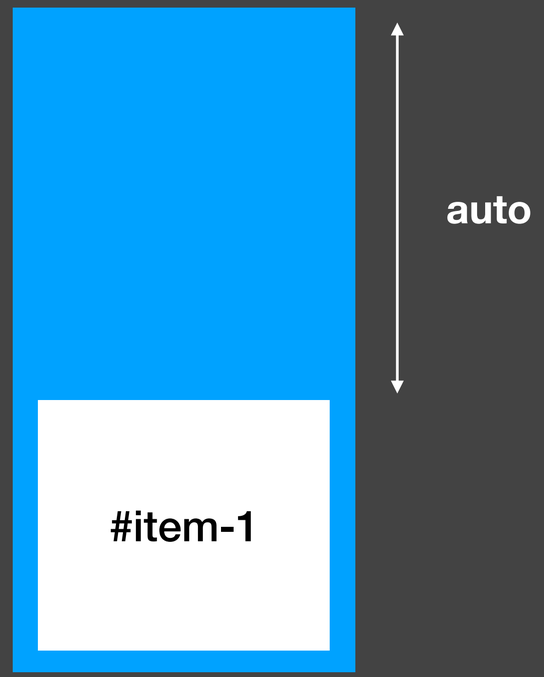


```
#item-1 {
  margin-top: auto;
}
```

FLEX
ITEM

aligning one item on the main axis

On columns if you're creating columns, on rows if you're creating rows.

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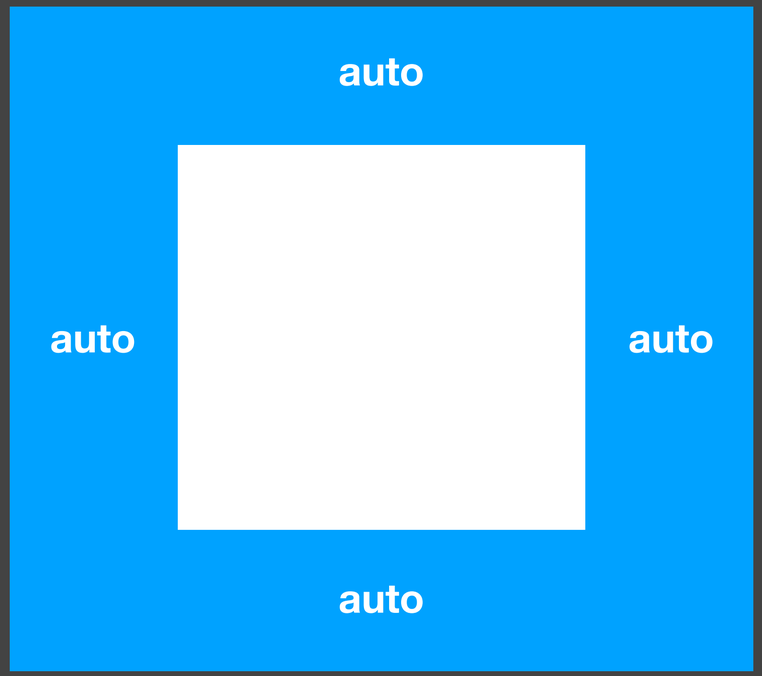


```
#item {
  margin: auto;
}
```

FLEX ITEM

aligning one item on the cross axis

On columns if you're creating rows, on rows if you're creating columns.

Lets you align one item in a different way than the others.


```
#item {
  align-self: flex-start
  | flex-end | center |
  baseline | stretch;
}
```

FLEX ITEM

aligning one item on the cross axis

On columns if you're creating rows, on rows if you're creating columns.

Lets you align one item in a different way than the others.


```
#item {
  align-self: flex-start
  | flex-end | center |
  baseline | stretch;
}
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FLEX ITEM

aligning one item on the cross axis

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Lets you align one item in a different way than the others.


```
#item {
  align-self: flex-start
  | flex-end | center |
  baseline | stretch;
}
```

FLEX CONTAINER

FLEX CONTAINER

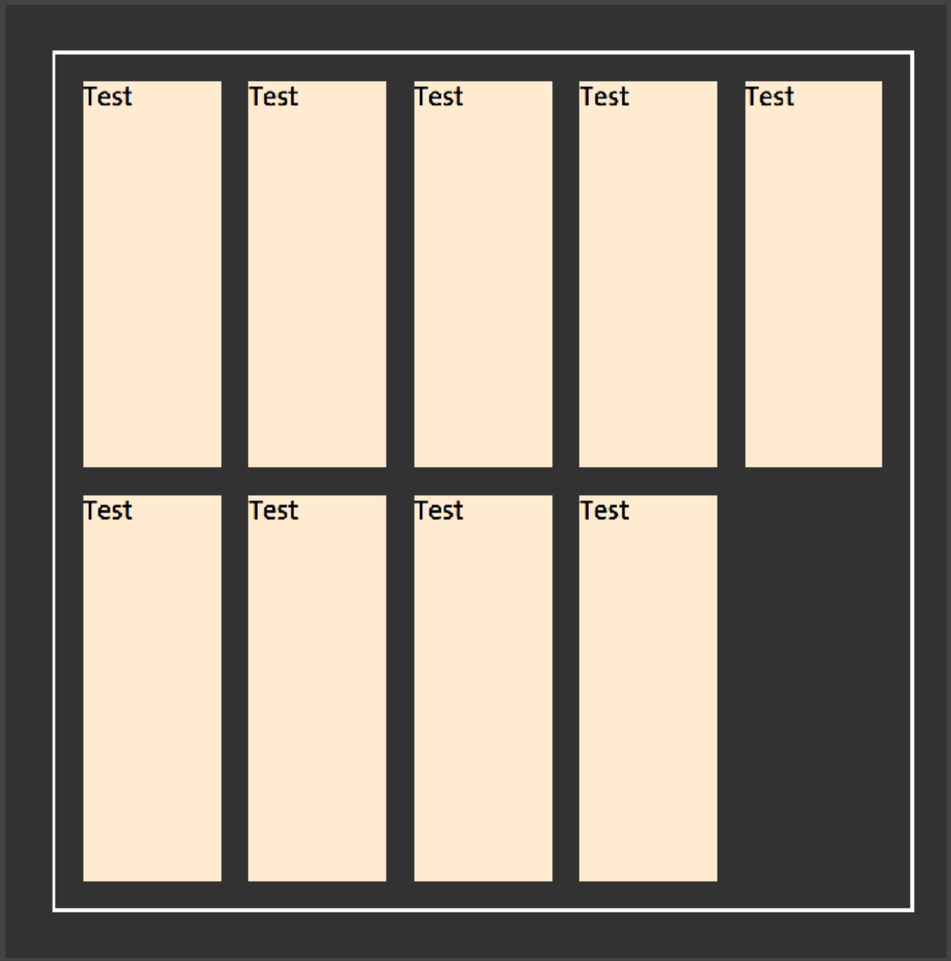
aligning content on the main axis

On columns if you're creating columns, on rows if you're creating rows.

Move all content this container has into one position.

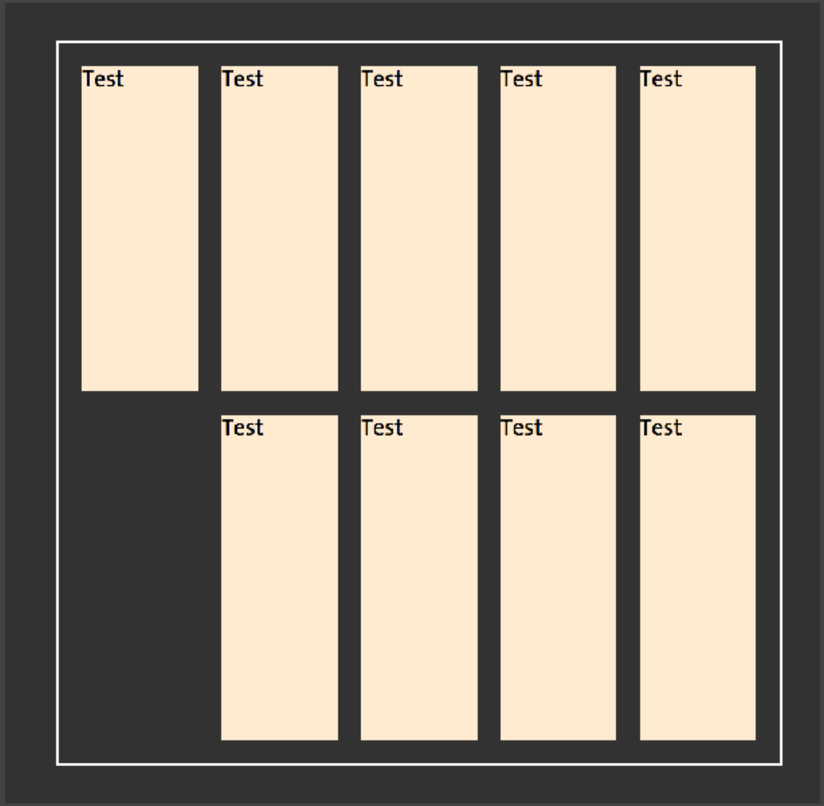
```
#container {
  justify-content:
    flex-start | flex-
    end | center |
    space-between |
    space-around;
}
```

FLEX CONTAINER



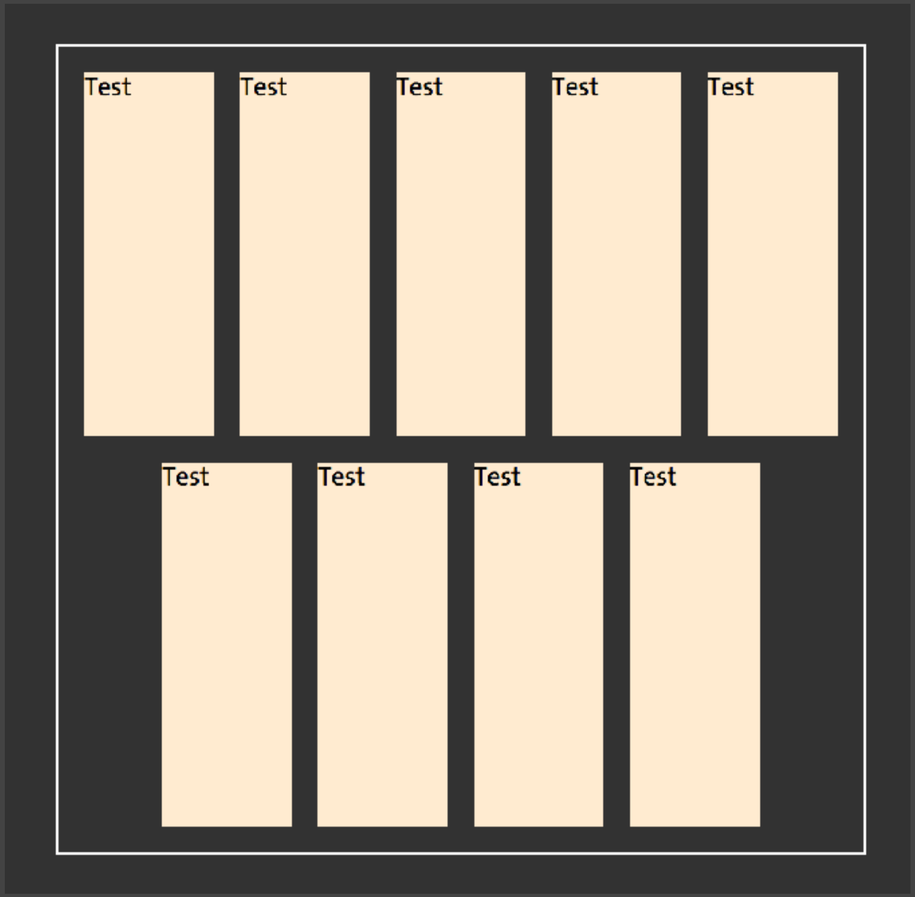

```
#container {
  justify-content:
    flex-start | flex-
    end | center |
    space-between |
    space-around;
}
```

FLEX CONTAINER



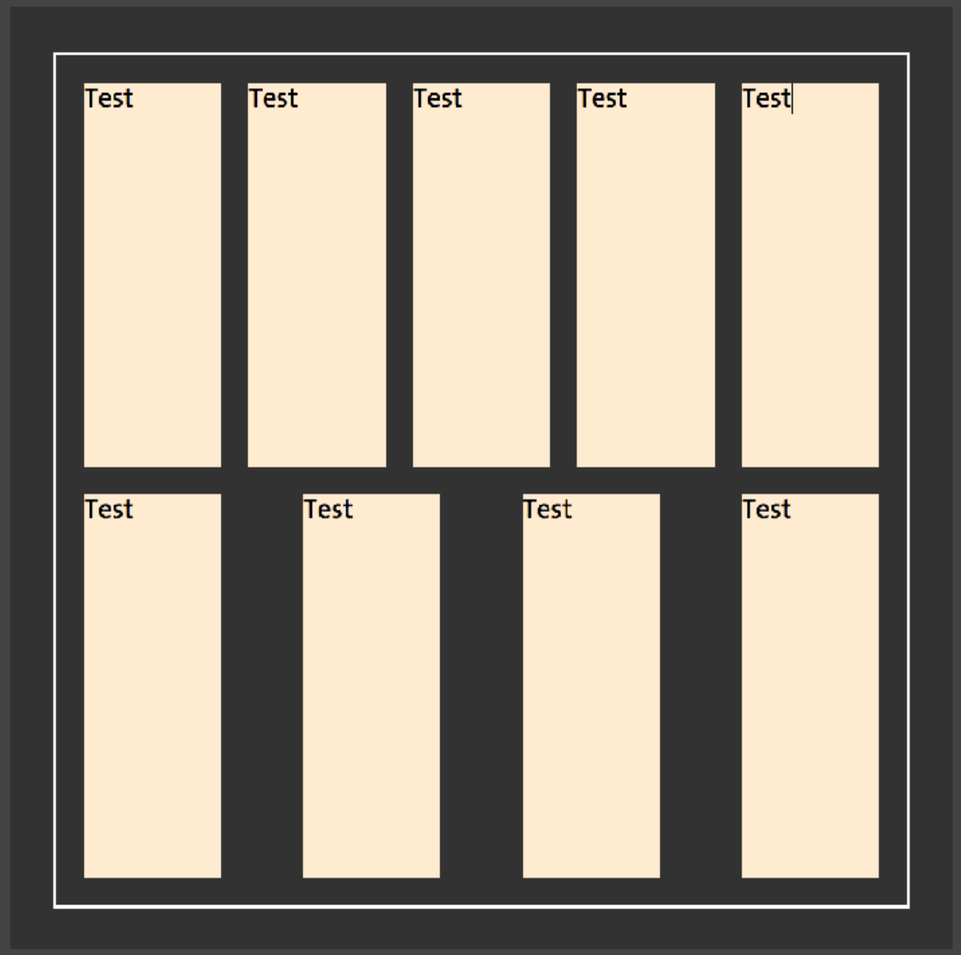

```
#container {
  justify-content:
    flex-start | flex-
    end | center |
    space-between |
    space-around;
}
```

FLEX CONTAINER



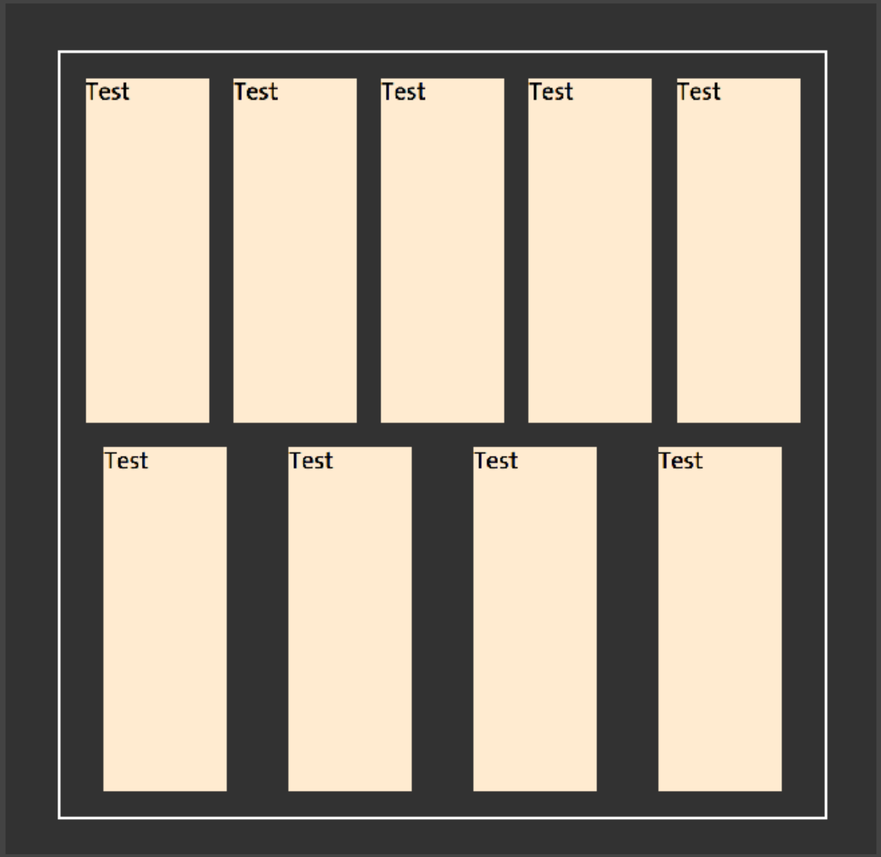

```
#container {
  justify-content:
     flex-start | flex-
     end | center |
     space-between |
     space-around;
}
```

FLEX CONTAINER




```
#container {
  justify-content:
     flex-start | flex-
     end | center |
     space-between |
     space-around;
}
```

FLEX CONTAINER




```
#container {
  justify-content:
    flex-start | flex-
    end | center |
    space-between |
    space-around;
}
```

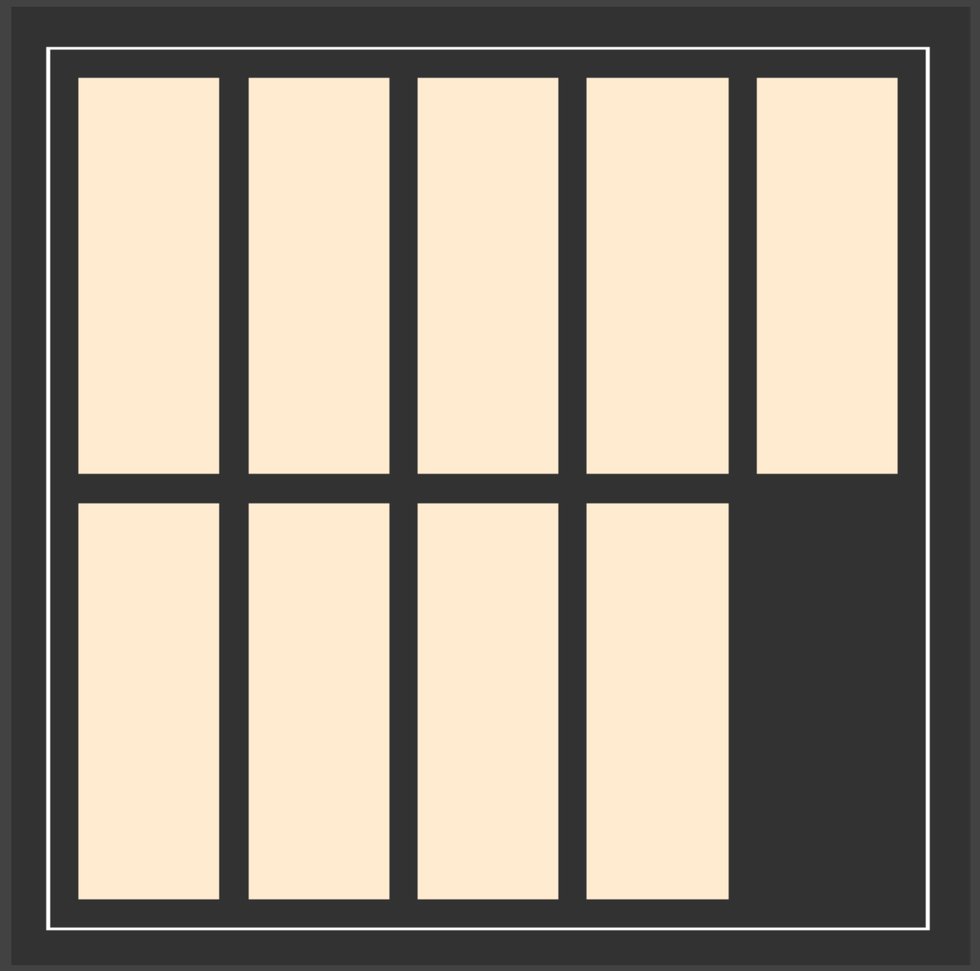
FLEX CONTAINER

aligning content on the cross axis

Works on columns if you're creating rows, works on rows if you're creating columns.

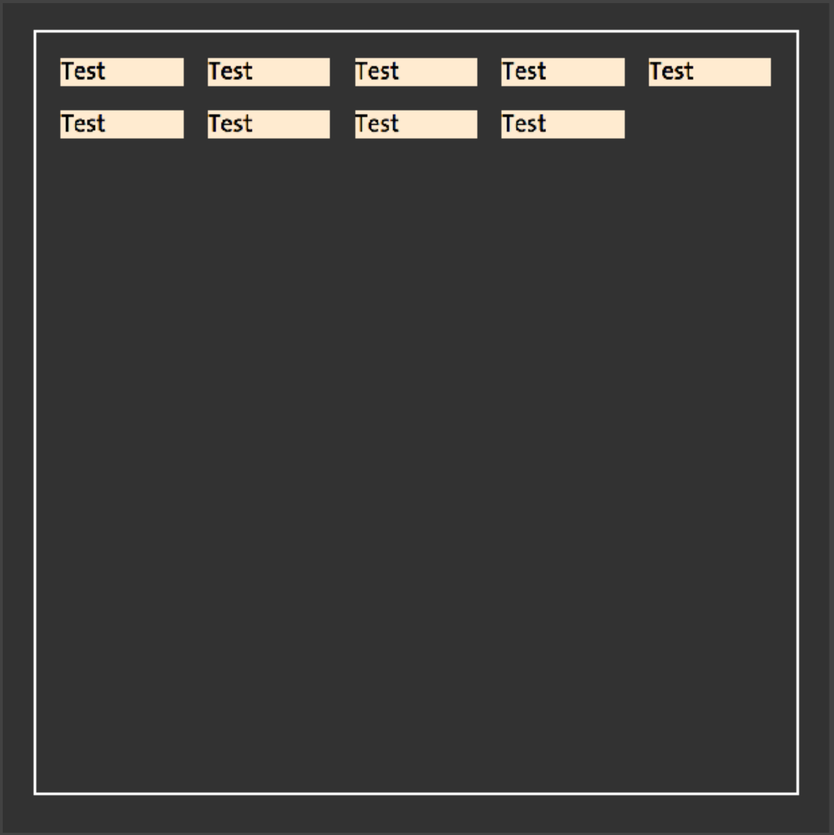
```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER



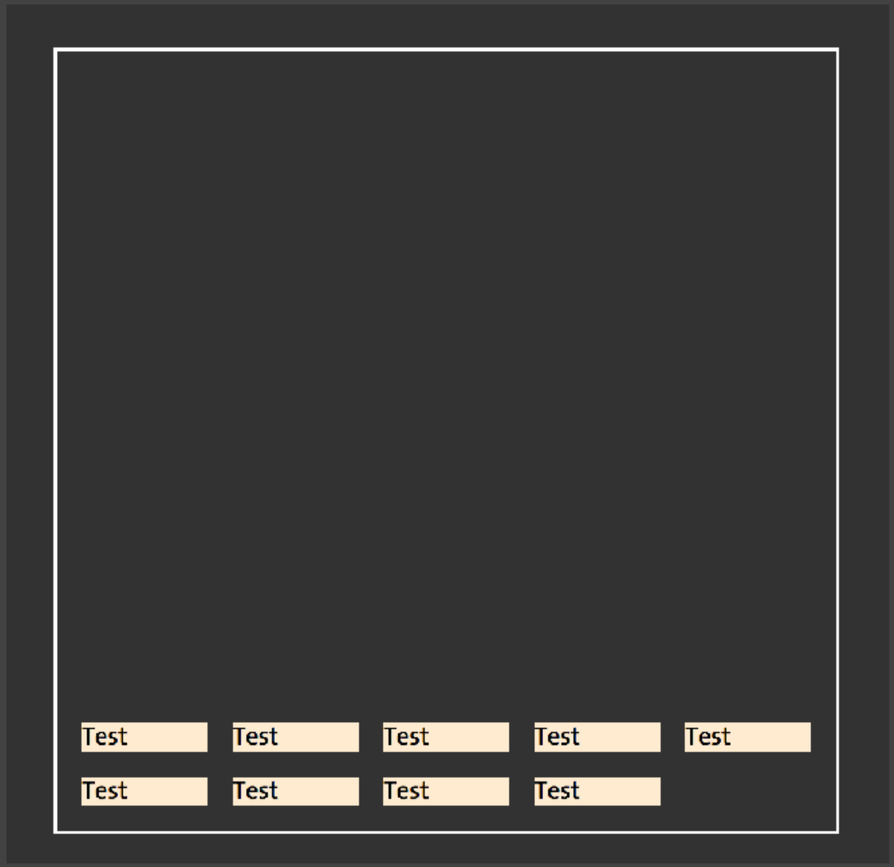
```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER



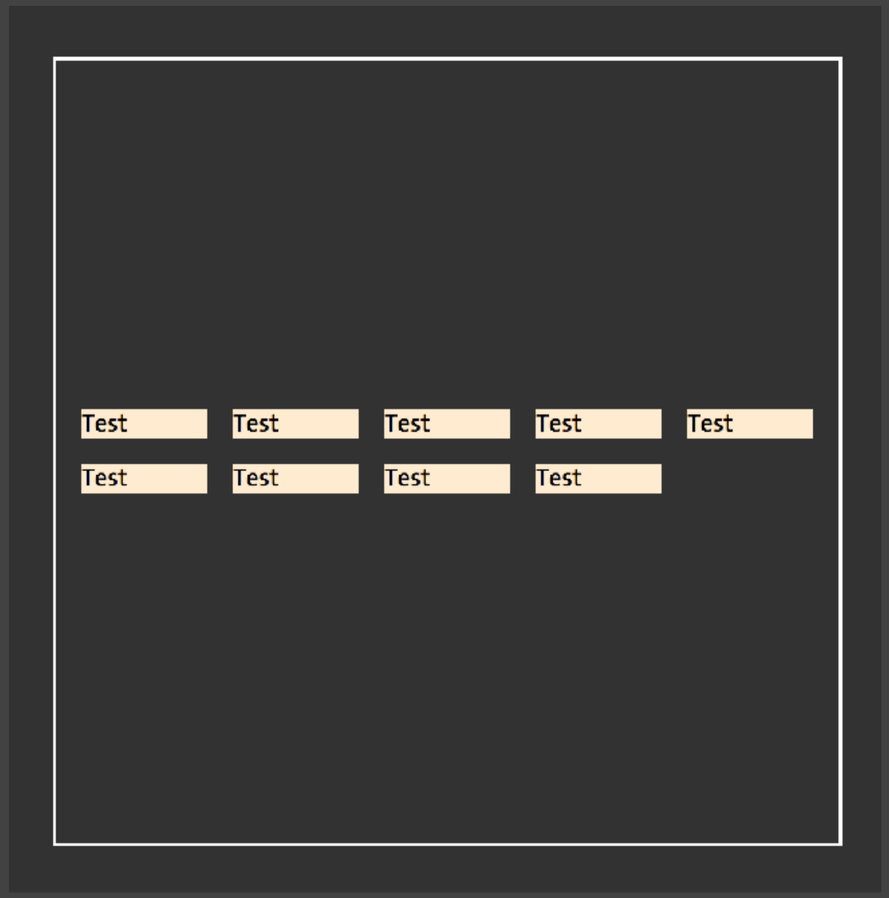

```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER



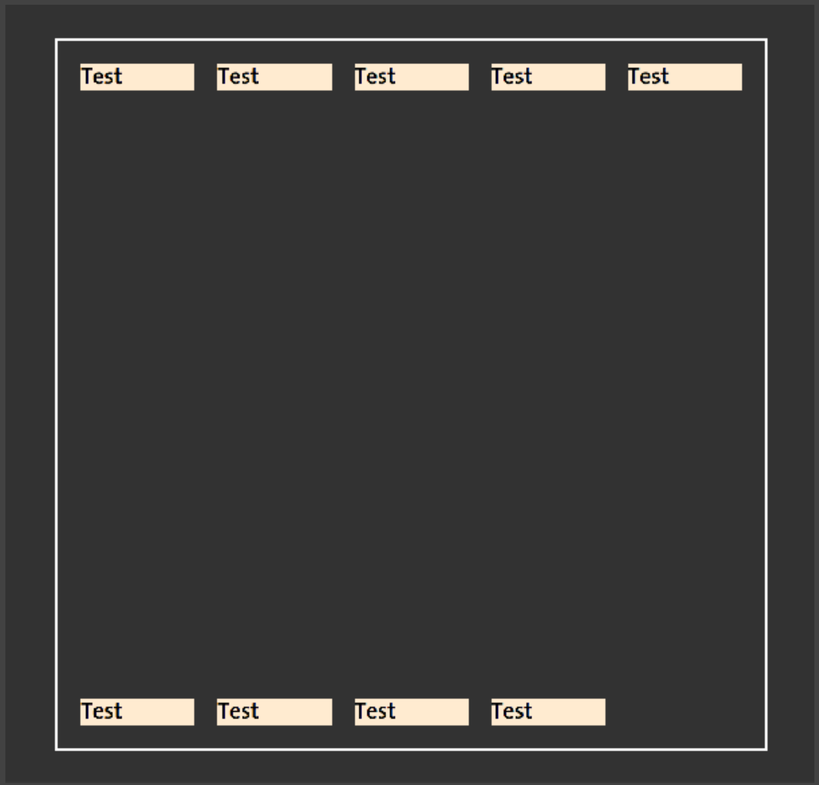

```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER



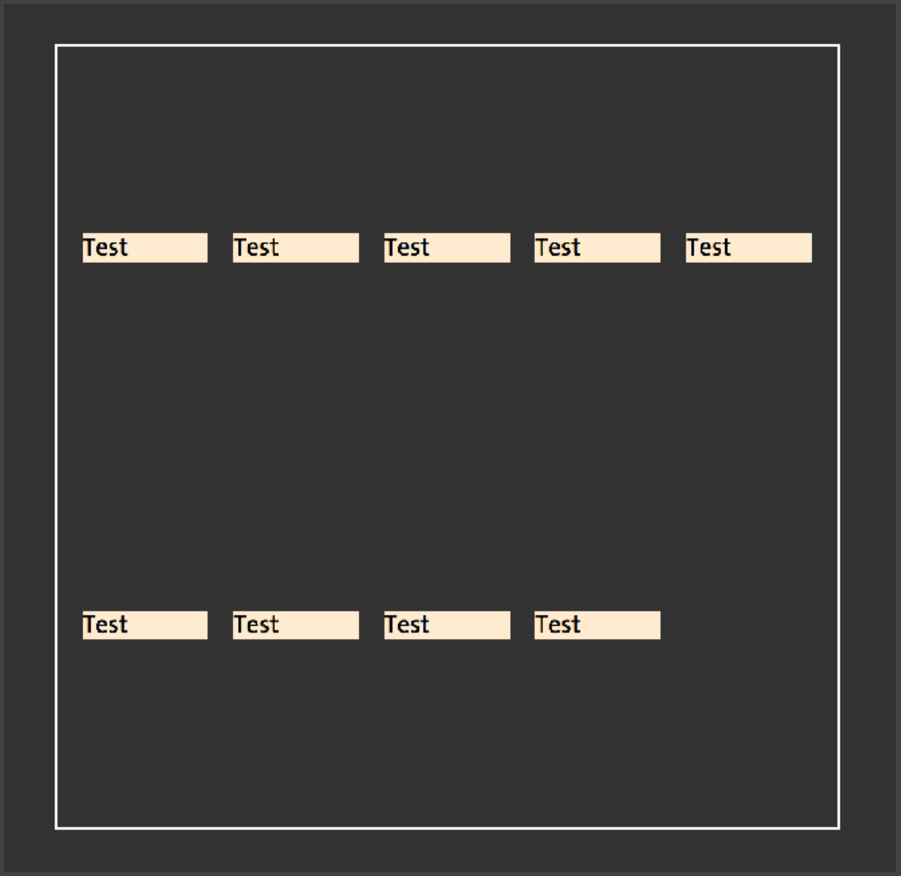

```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER




```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER




```
#container {
  align-content: stretch
  | flex-start | flex-
  end | center | space-
  between | space-
  around;
}
```

FLEX CONTAINER

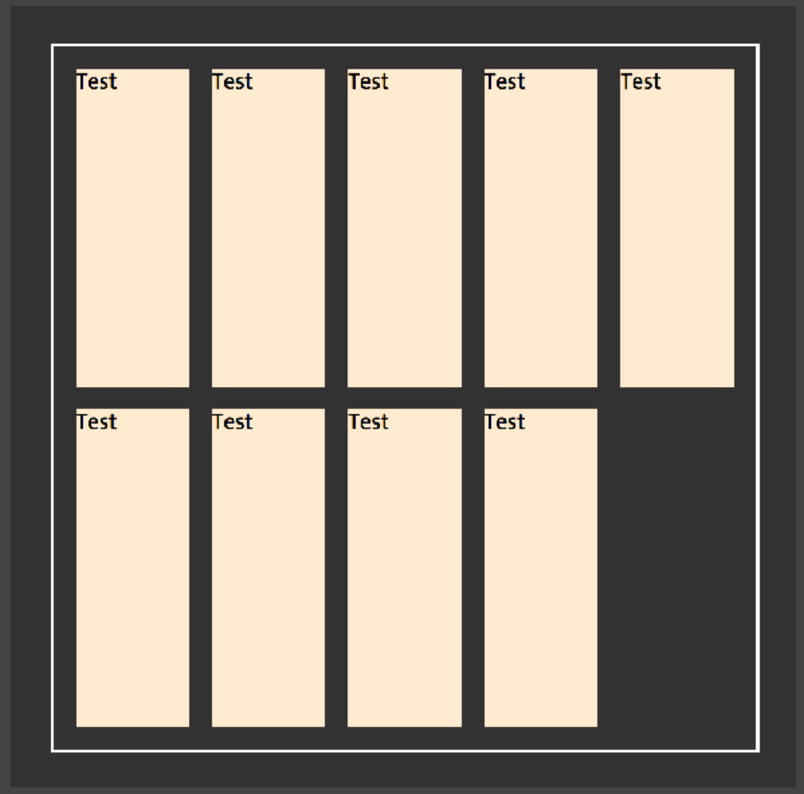
aligning items on the cross axis

Works on columns if you're creating rows, works on rows if you're creating columns.

Aligns items as a whole.

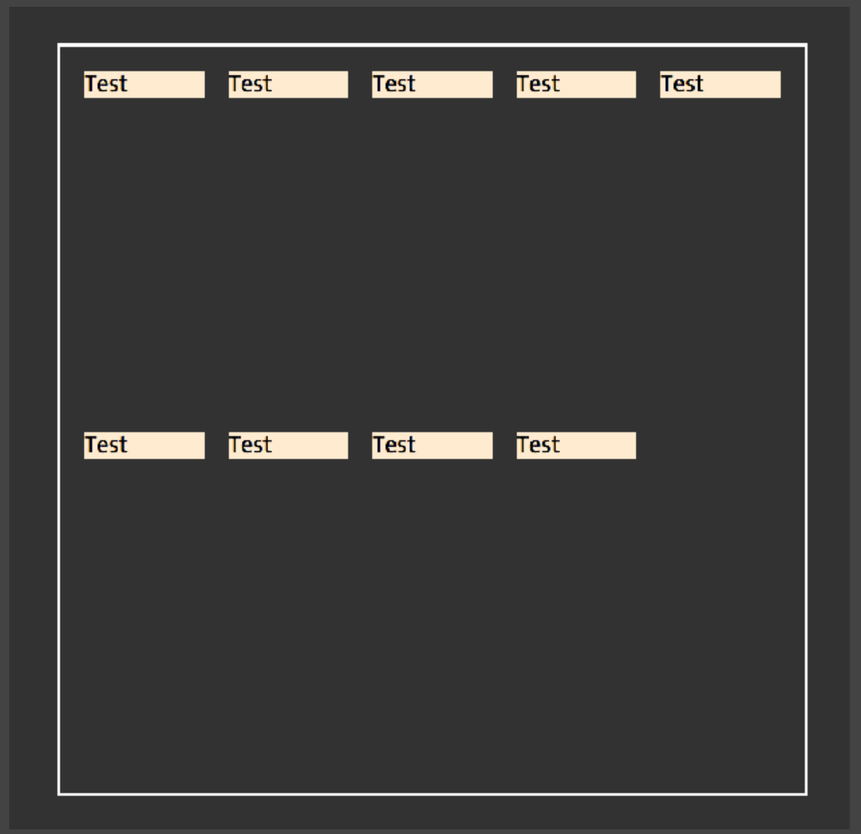
```
#container {
  align-items: stretch
  | flex-start | flex-end
  | center | baseline;
}
```

FLEX CONTAINER



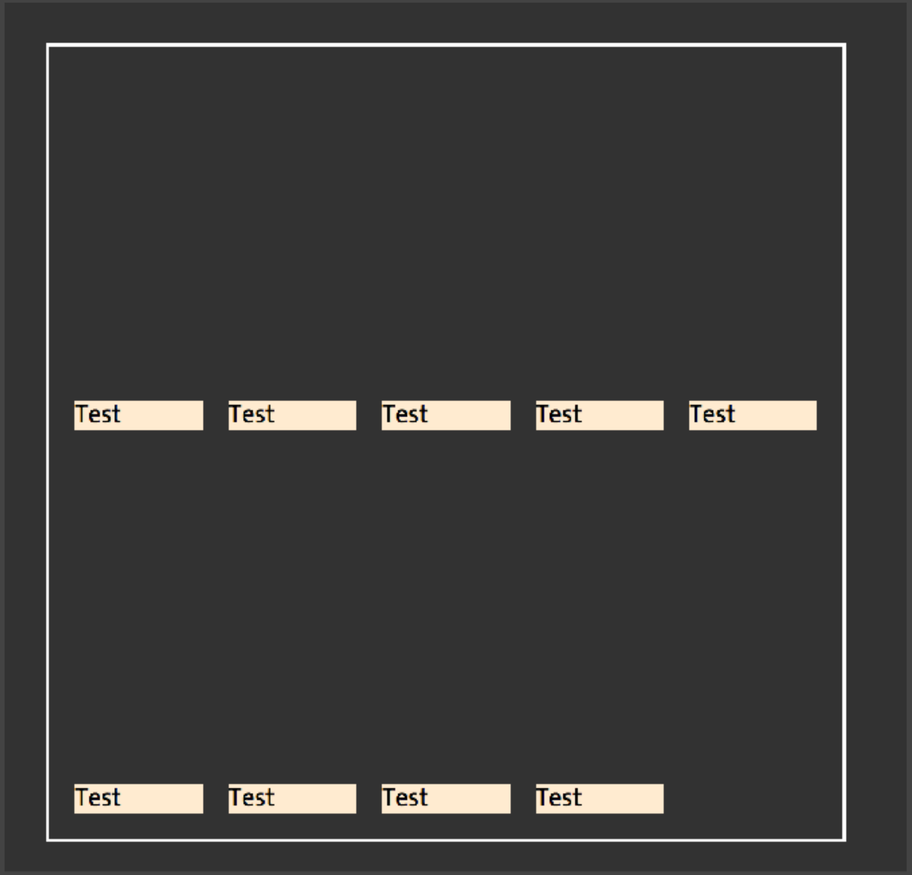

```
#container {
  align-items: stretch
  | flex-start | flex-end
  | center | baseline;
}
```

FLEX CONTAINER



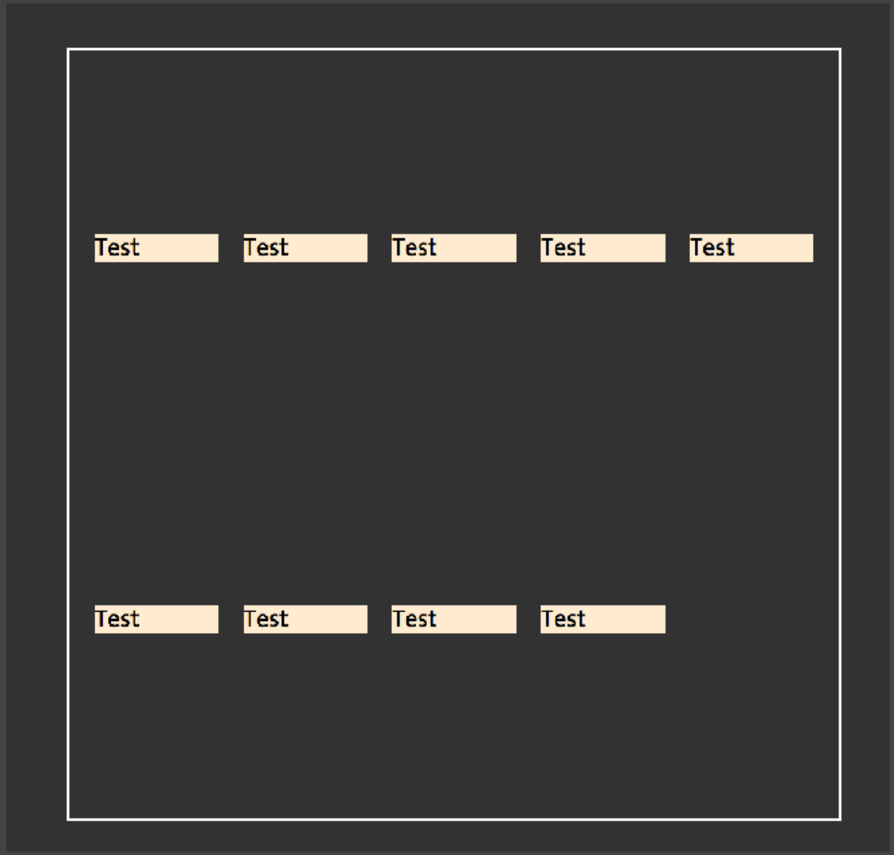

```
#container {
  align-items: stretch
  | flex-start | flex-end
  | center | baseline;
}
```

FLEX CONTAINER




```
#container {
  align-items: stretch
  | flex-start | flex-end
  | center | baseline;
}
```

FLEX CONTAINER




```
#container {
  align-items: stretch
  | flex-start | flex-end
  | center | baseline;
}
```

EXERCISE 02

The Daily Cascade: meta info

EXERCISE 03

The Daily Cascade: highlights

New box alignment spec in the works	Subgrid and the need for it

FLEX ITEM

order

#item1

#item2

#item3

#item4

```
#item3 { order: 2; }
```

When using `order`, note that the location of the items can be illogical for keyboard users.

EXERCISE 03

Move the second highlight
to the start of the container

Subgrid and the need for it

New box alignment spec in the works

Takeaways

With display:flex, you can turn an element into a flex container

Auto margins let you make use of remaining whitespace

With alignment properties you can align items

With ‘order’ you're able to change the visual order

Grid Layout

CSS Grid Layout lets you define areas and place content in them

new alphabet

a possibility for the new development

een mogelijkheid voor de nieuwe ontwikkeling

une possibilité pour le développement nouveau

eine möglichkeit für die neue entwicklung

an introduction to a programmed typography

abcdefgh
ijklmnop
qrstuvwy
xyz


jensen
jobhansen
saura
stedelijk museum amsterdam
RAYSSE
kinderspel
karel appel
stedelijk museum
amsterdam
25 juni t m
29 augustus 65
zeefdrukaffiches
een internationale selectie
4 maart tm 3 april 1966
vormen van de kleur
VIJFTIG
JAAR
ZITTEN
kupka
stedelijk museum amsterdam
RAUSCHEN
schöffer
henri
michaux
robert
muller
nul
negentienhonderd
vijf en zestig
amsterdam
stedelijk museum
15 april t m 7 juni
stedelijk museum
amsterdam
morris louis
corneille
stedelijk museum
amsterdam
Engels zilver
amsterdam
stedelijk
museum
bissiere
12 maart
jonge engelse beeldhouwers
hier
SM
9
SM
atelier
11
claes
oldenburg
max ernst
SM
SM

CSS Grid Layout Module Level 1

https://www.w3.org/TR/css-grid-1/

W3C Candidate Recommendation

TABLE OF CONTENTS

CSS Grid Layout Module Lev

W3C Candidate Recommendation, 09 May 201

This version:
https://www.w3.org/TR/2017/CR-css-grid-1-20170509/

Latest published version:
https://www.w3.org/TR/css-grid-1/

Editor's Draft:
https://drafts.csswg.org/css-grid/

Previous Versions:
https://www.w3.org/TR/2017/CR-css-grid-1-20170209/
https://www.w3.org/TR/2016/WD-css-grid-1-20160519/
https://www.w3.org/TR/2015/WD-css-grid-1-20150917/
https://www.w3.org/TR/2015/WD-css-grid-1-20150806/
https://www.w3.org/TR/2015/WD-css-grid-1-20150317/
https://www.w3.org/TR/2014/WD-css-grid-1-20140513/
https://www.w3.org/TR/2014/WD-css-grid-1-20140123/
https://www.w3.org/TR/2013/WD-css3-grid-layout-20130402/
https://www.w3.org/TR/2012/WD-css3-grid-layout-20121106/

Test Suite:
http://test.csswg.org/suites/css-grid-1_dev/nightly-unstable/

Issue Tracking:
Disposition of Comments
Inline In Spec
GitHub Issues

Editors:
Tab Atkins Jr. (Google)
Elika J. Etemad / fantasai (Invited Expert)
Rossen Atanassov (Microsoft)

Former Editors:
Alex Mogilevsky (Microsoft Corporation)
Phil Cupp (Microsoft Corporation)

The beauty of CSS Grid is that grid cells can grow with the content that lives inthem

defining a grid

```
#container { display: grid; }
```

grid container


```
#container { display: grid; }
```

When something becomes a...

grid container

stops working:

- column-*
- float
- clear
- vertical-align
- ::first-[item|letter]

can now be used:

- grid-template-columns
- grid-template-rows
- grid-auto-flow
- justify-content
- align-content

When something becomes a...

grid item

stops working:

- `vertical-align`
- `::first-[item|letter]`

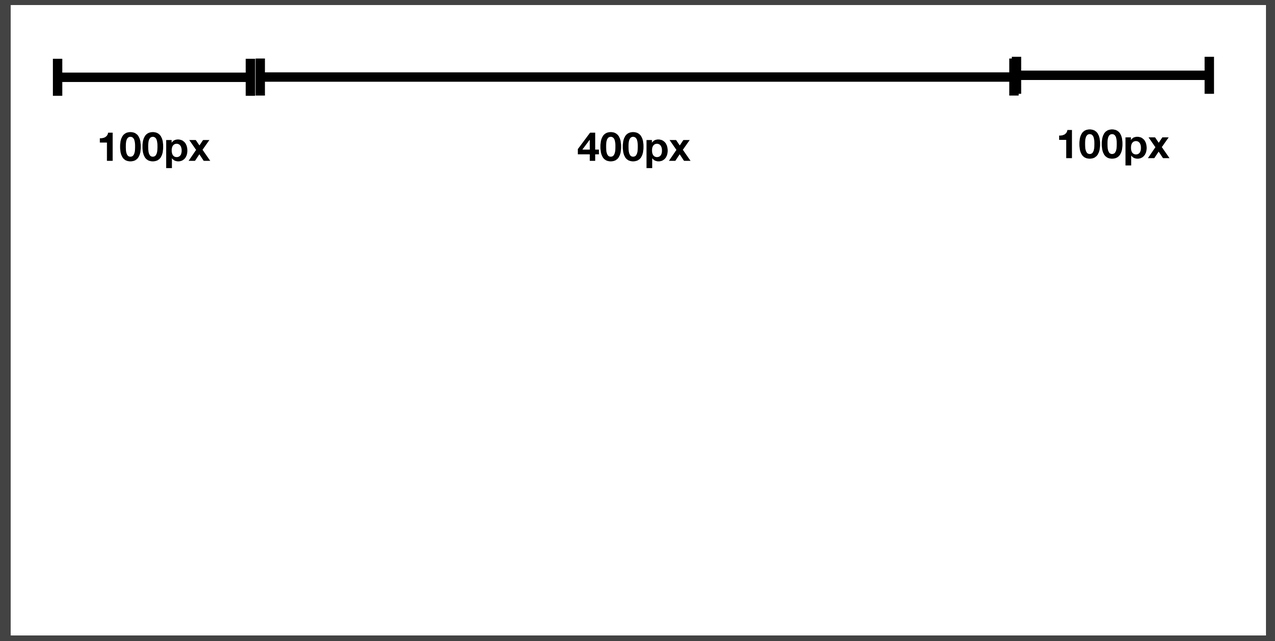
can now be used:

- `grid-area`
- `grid-[column|row]`
- `order`
- `align-self`
- `justify-self`

In Grid Layout you can use ~ the same alignment properties as in flexbox 🎉

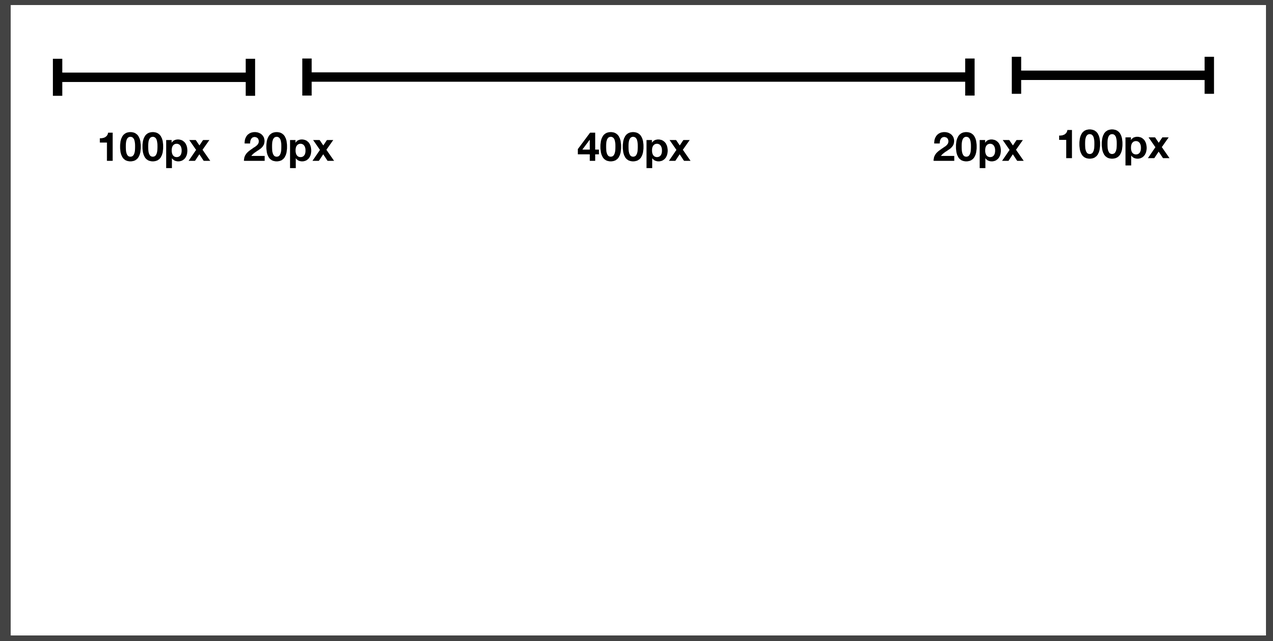
defining a grid

```
#container {
  display: grid;
  grid-template-columns:
    100px 400px 100px;
}
```



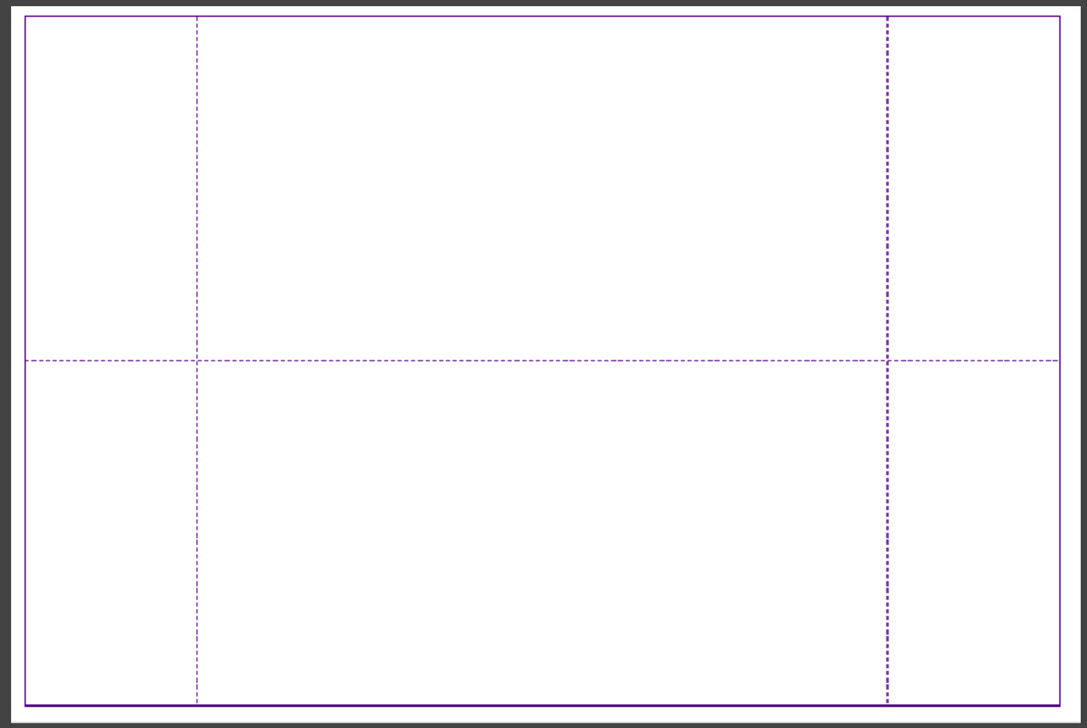
defining a grid

```
#container {
  display: grid;
  grid-template-columns:
    100px 400px 100px;
  grid-gap: 20px;
}
```



defining a grid

```
#container {
  display: grid;
  grid-template-columns:
    100px 400px 100px;
  grid-template-rows:
    200px 200px;
}
```

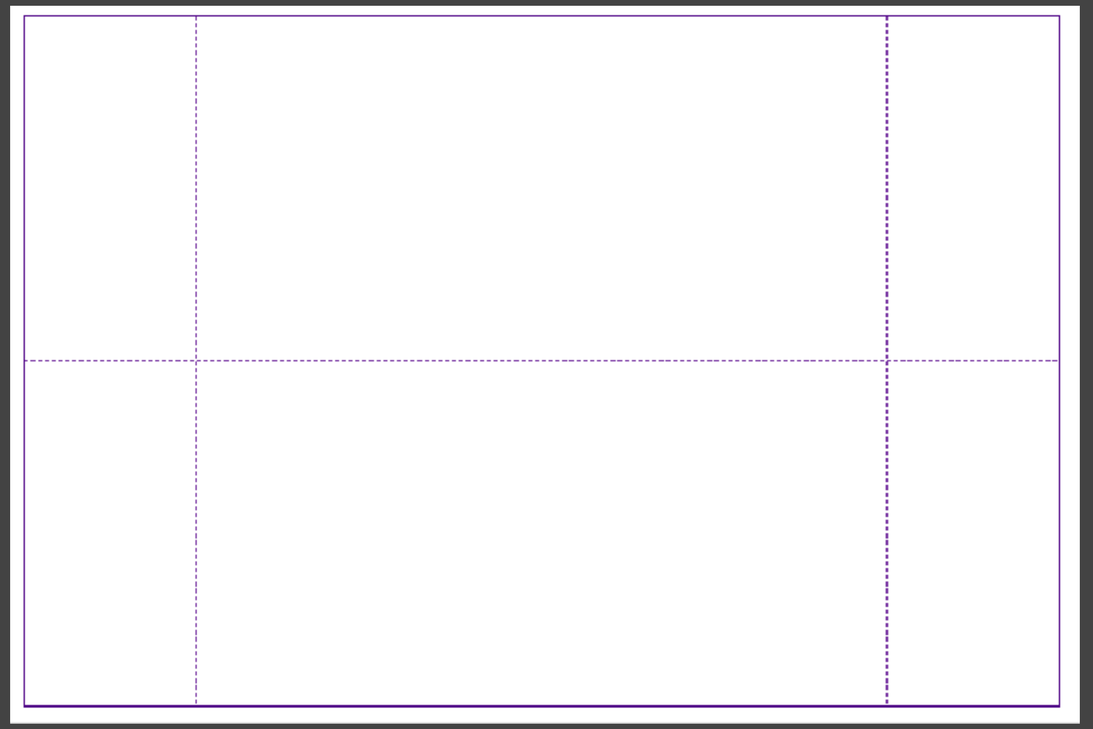


With flexible units, you can leave the details to the browser

The less precise your style hints are, the more a browser can make your content fit.

flexible units for grid tracks: `fr`

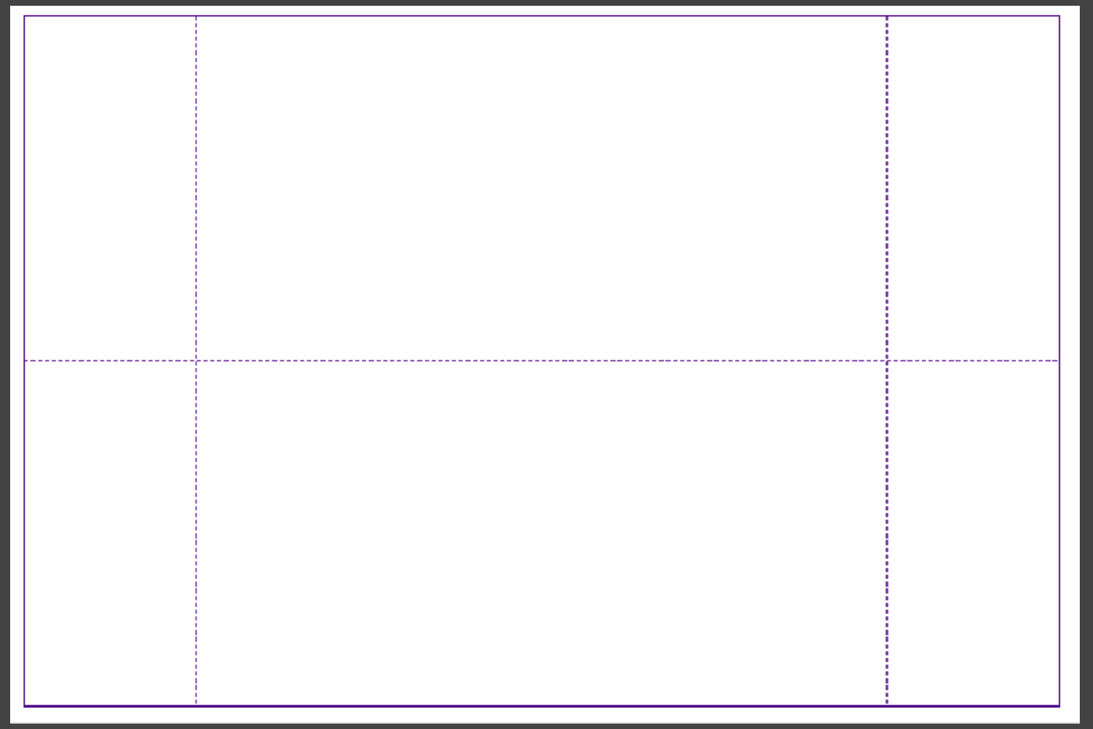
```
#container {
  display: grid;
}
```



flexible units for grid tracks: `fr`

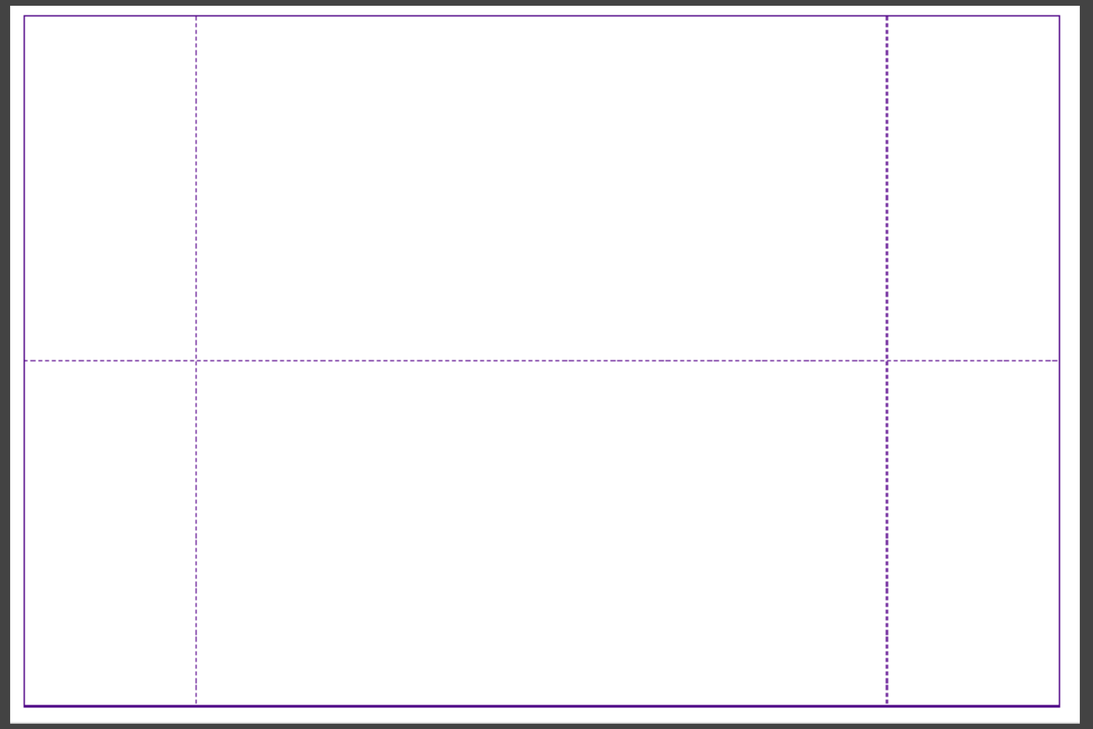
flexible units for grid tracks: fr

```
#container {
  display: grid;
  grid-template-columns:
    1fr 3fr 1fr;
  grid-template-rows:
    1fr 1fr;
}
```



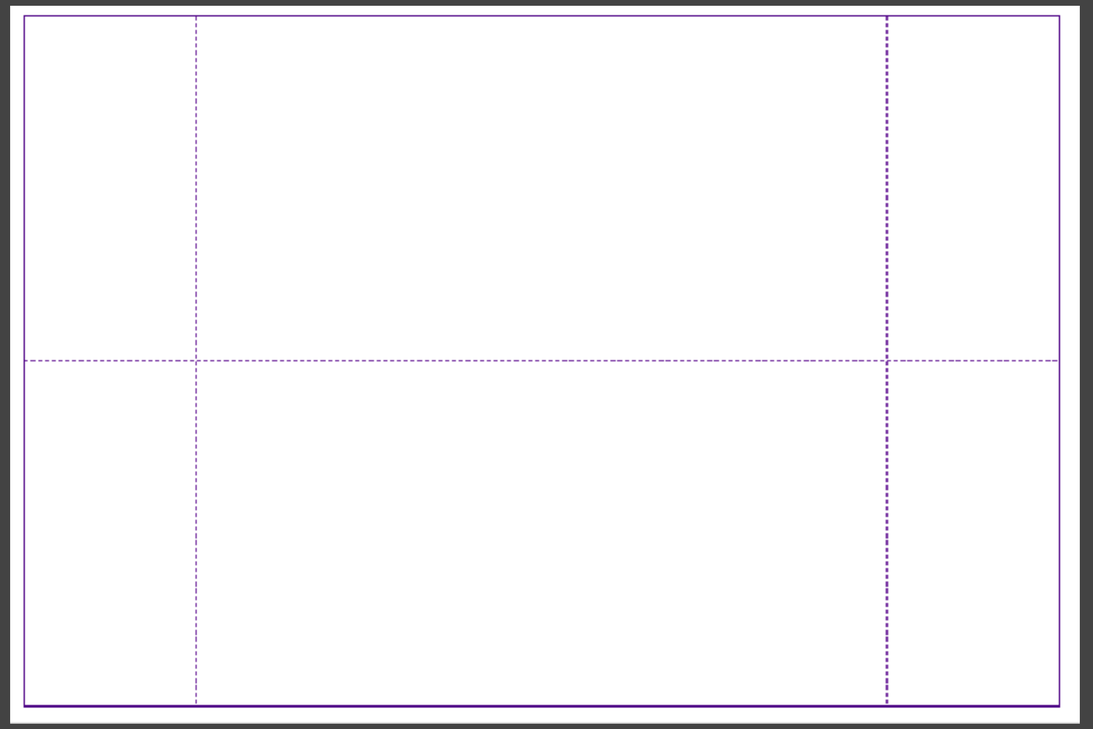
flexible units for grid tracks: ch

```
#container {
  display: grid;
  grid-template-columns:
    1fr 60ch 1fr;
  grid-template-rows:
    1fr 1fr;
}
```



flexible units for grid tracks: auto

```
#container {
  display: grid;
  grid-template-columns:
    auto 60ch auto;
}
```



grids in Firefox Dev Tools

From: Jen Simmons' layout experiments

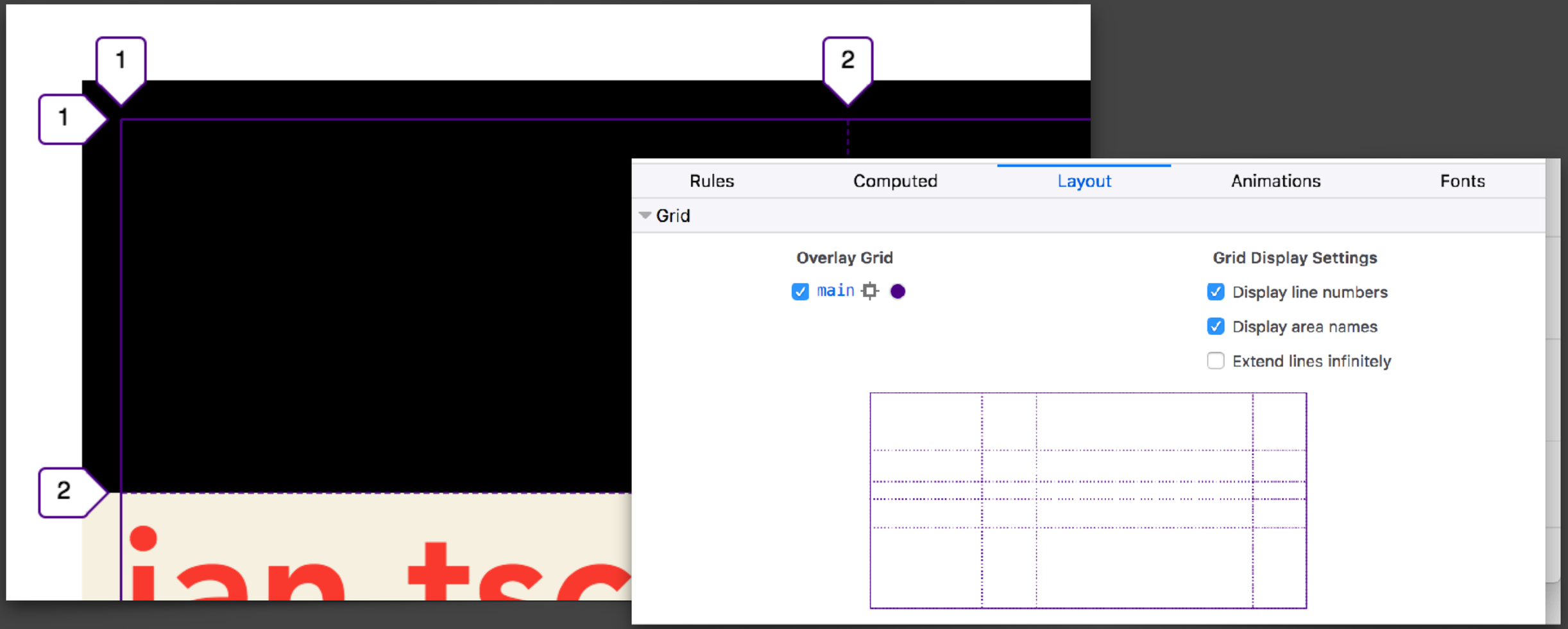
grids in Firefox Dev Tools

line numbers
grid area names
overlay
tweak line colours
implicit vs explicit grid

flexible units for grid tracks: `minmax()`

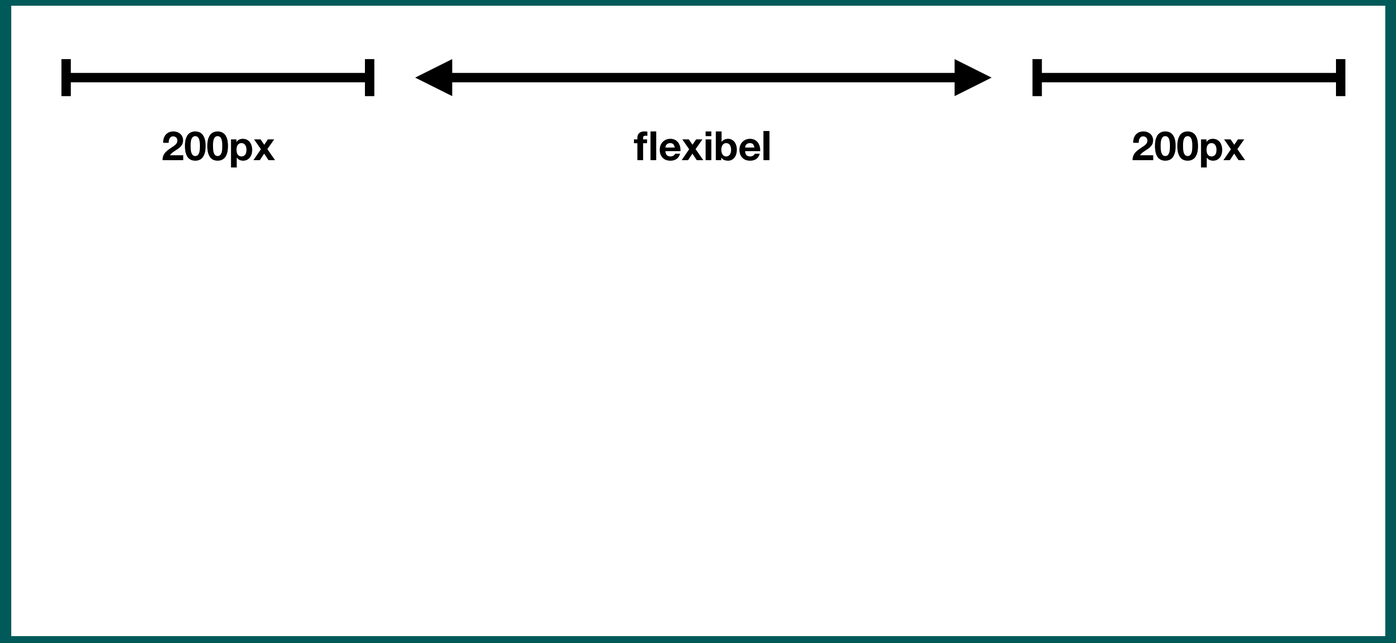
```
#container {
  display: grid;
  grid-template-columns:
    1fr minmax(40em, 50em) 1fr;
  grid-template-rows:
    1fr 1fr;
}
```

grids in Firefox Dev Tools



EXERCISE 04

The Daily Cascade: articles in "Holy Grail" layout



EXERCISE 05

THE DAILY CASCADE

Since 1994 · CSS news for all

24 November 2017

This daily is made with love.

The Story of CSS Grid, from Its Creators

by Aaron Gustafson · October 19, 2017

Designers have used grids for centuries. And after more than 20 years of waiting, they are finally here for the browser. This is the story of CSS Grid. It took a lot of people in the right place and at the right time to make it happen.

Practical CSS Grid: Adding Grid to an Existing Design

by Eric Meyer · March 23, 2017

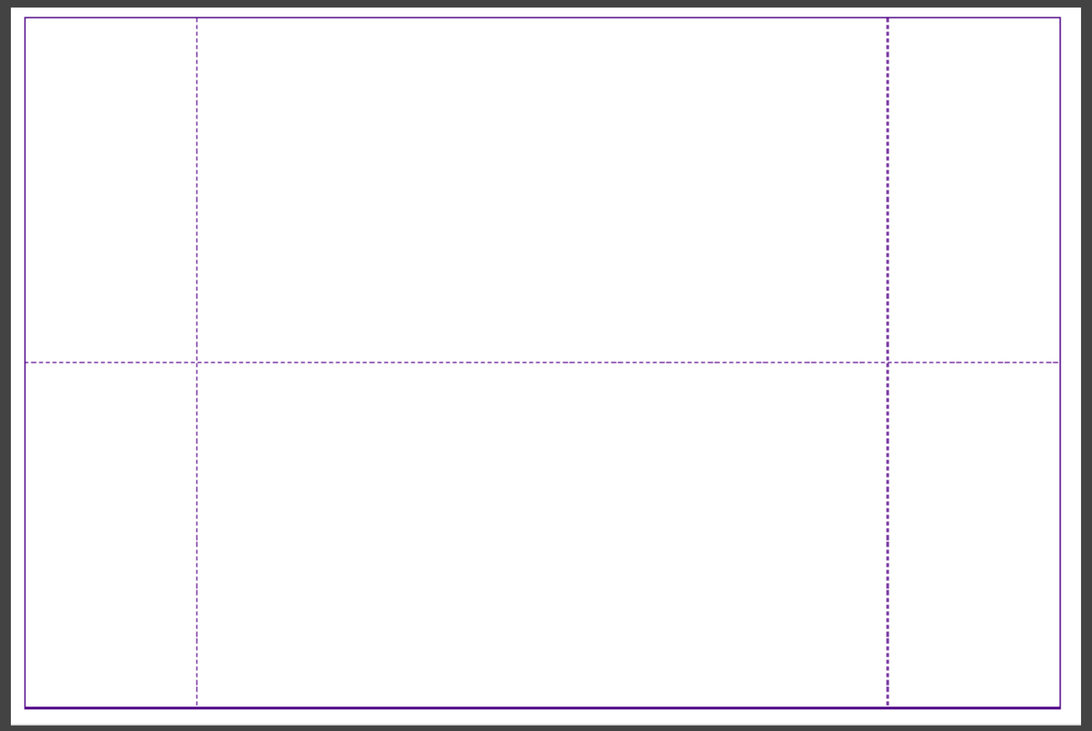
CSS Grid is here—and easier than you might expect. Eric Meyer shows us how to use Grid on an existing design without breaking things for non-grid browsers. With pictures! Also a couple of gotchas.

Learning from Lego: A Step Forward in Modular Web Design

by Samantha Zhang · December 22, 2016

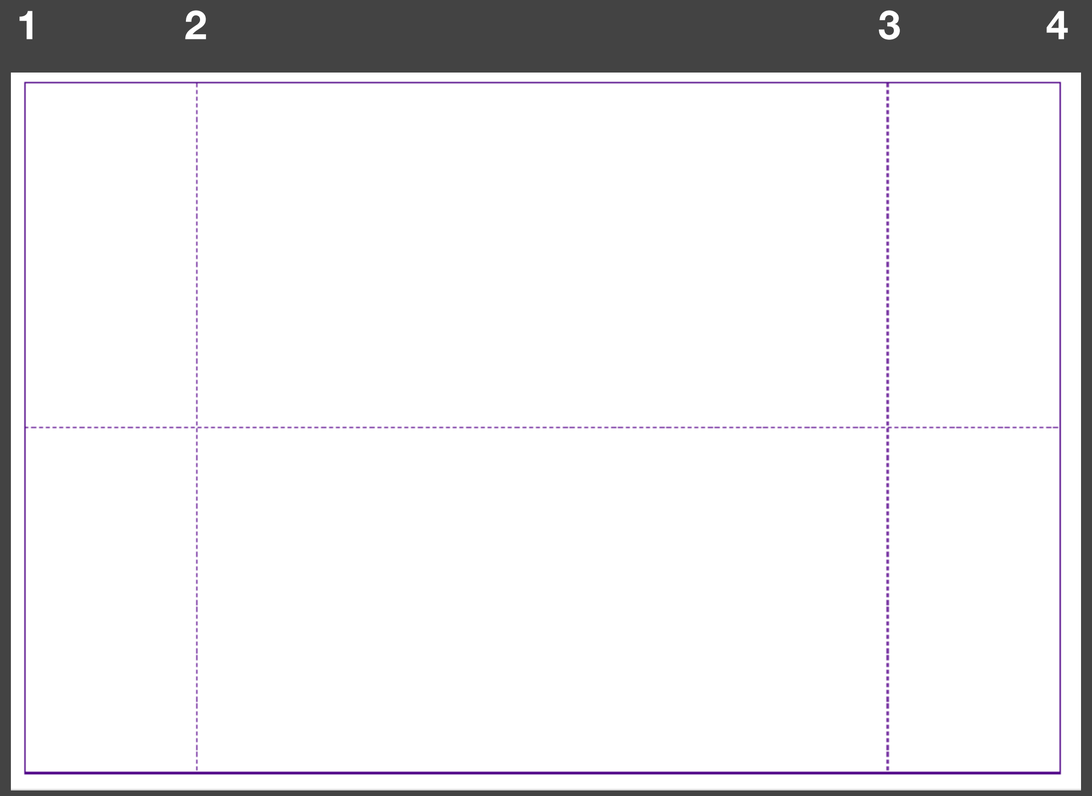
Please donate.

placing items on the grid



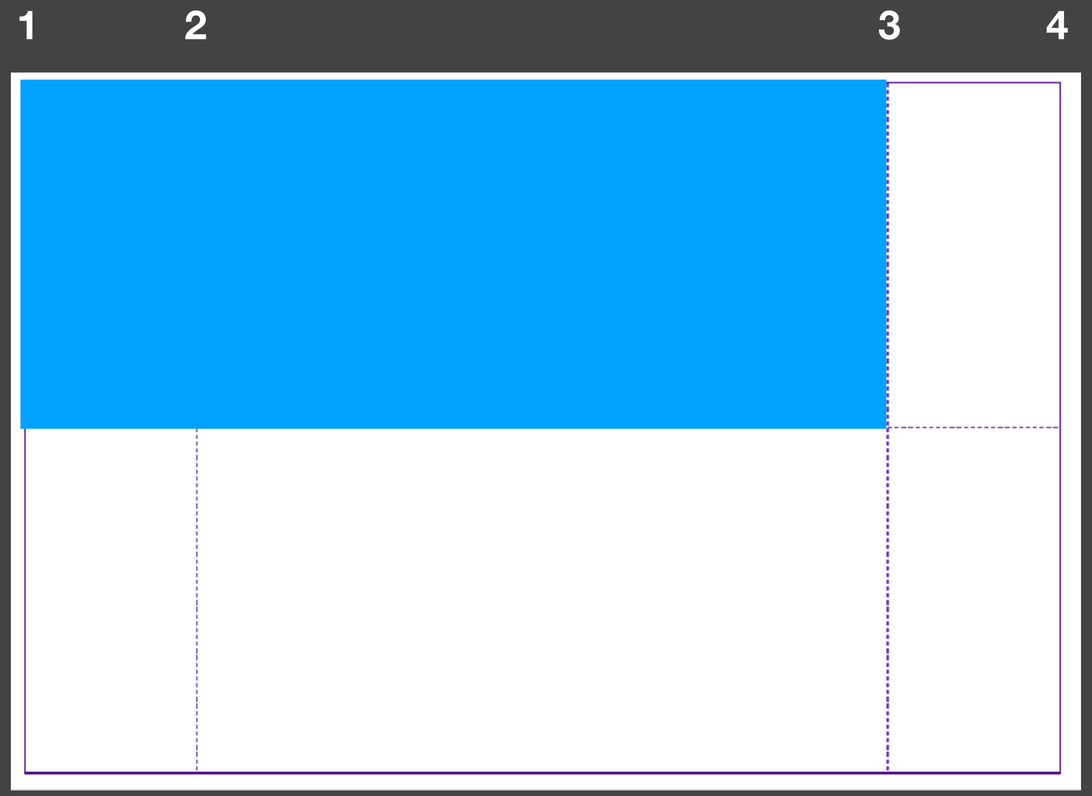
```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
}
```

placing items on the grid



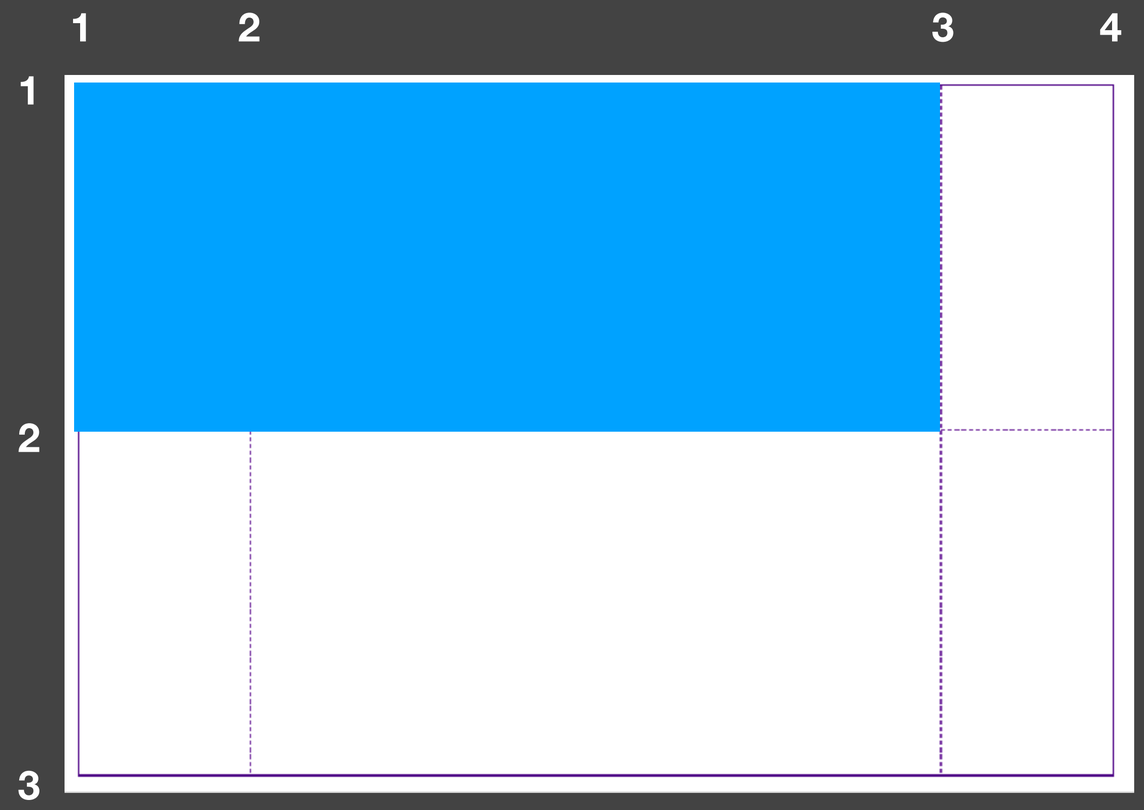

```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
}
```

placing items on the grid



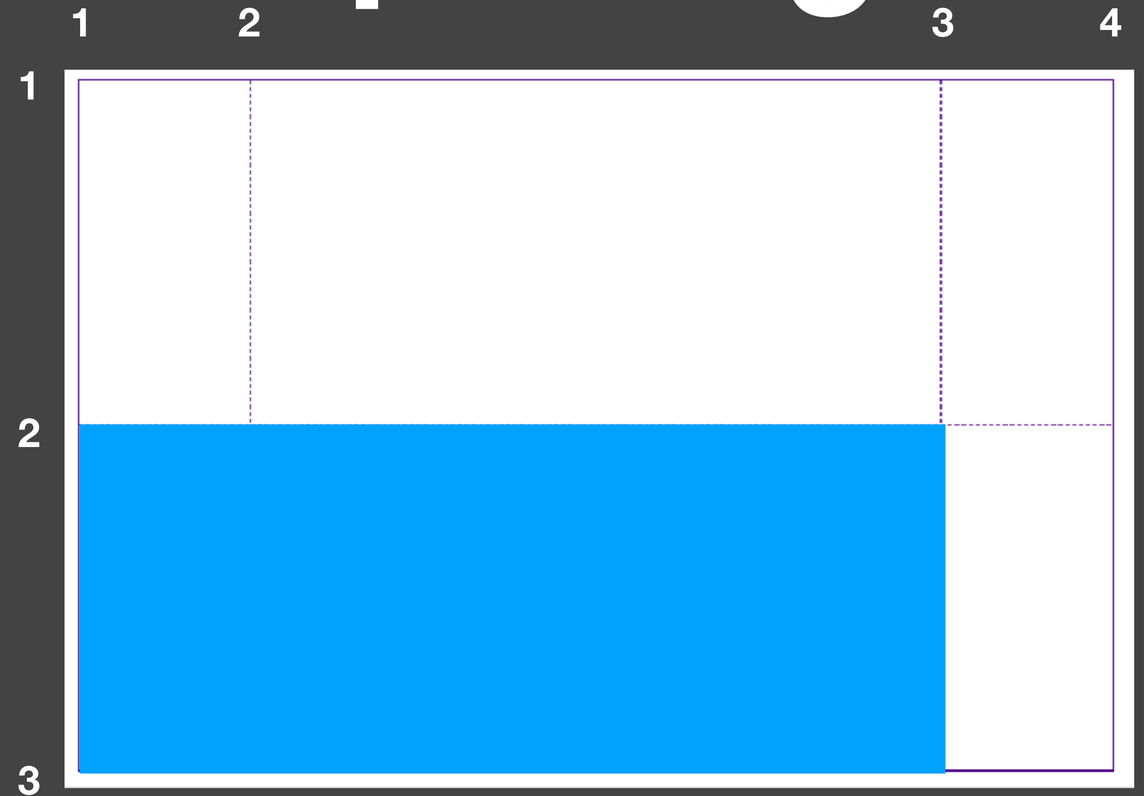

```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
}
```

placing items on the grid




```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
}
```

placing items on the grid




```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
  grid-row-start: 2;
  grid-row-end: 3;
}
```

EXERCISE

Wim Crouwel's Grids

stedelijk van abbemuseum eindhoven

dagelijks geopend
van 10-17 uur
zon- en feestdagen
van 13-17 uur
dinsdag- en
donderdagavond
van 20-22 uur

hiroshima

panelen van iri maruki en toshiko akamatsu

30 maart tot
15 april 1957

Georg Baselitz

Baselitz

1960–83

Schilderijen/Paintings

Lunch

you can also name grid lines

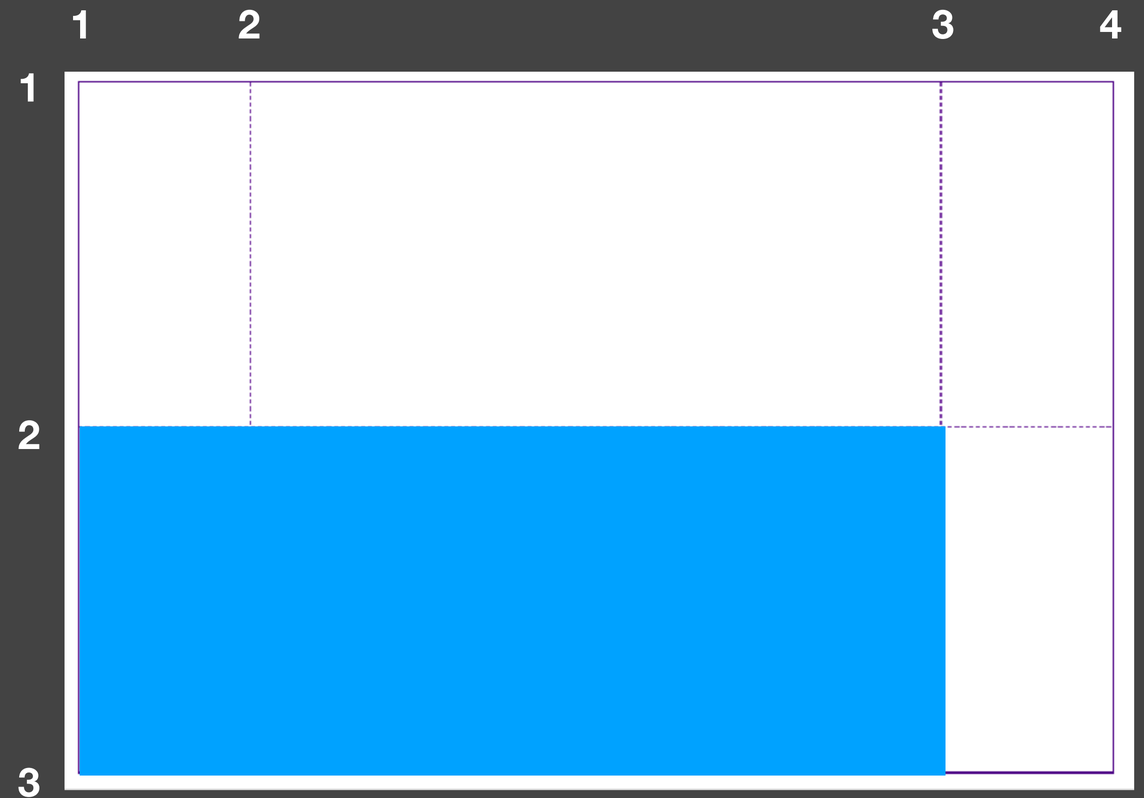
```
#container {
  grid-template-columns:
  [sidebar-start] 1fr [sidebar-end] 4fr;
}

#item {
   grid-column-start: sidebar-start;
   grid-column-end: sidebar-end;
}
```

```
#container {
  grid-template-columns:
  [sidebar-start] 1fr [sidebar-end] 4fr;
}

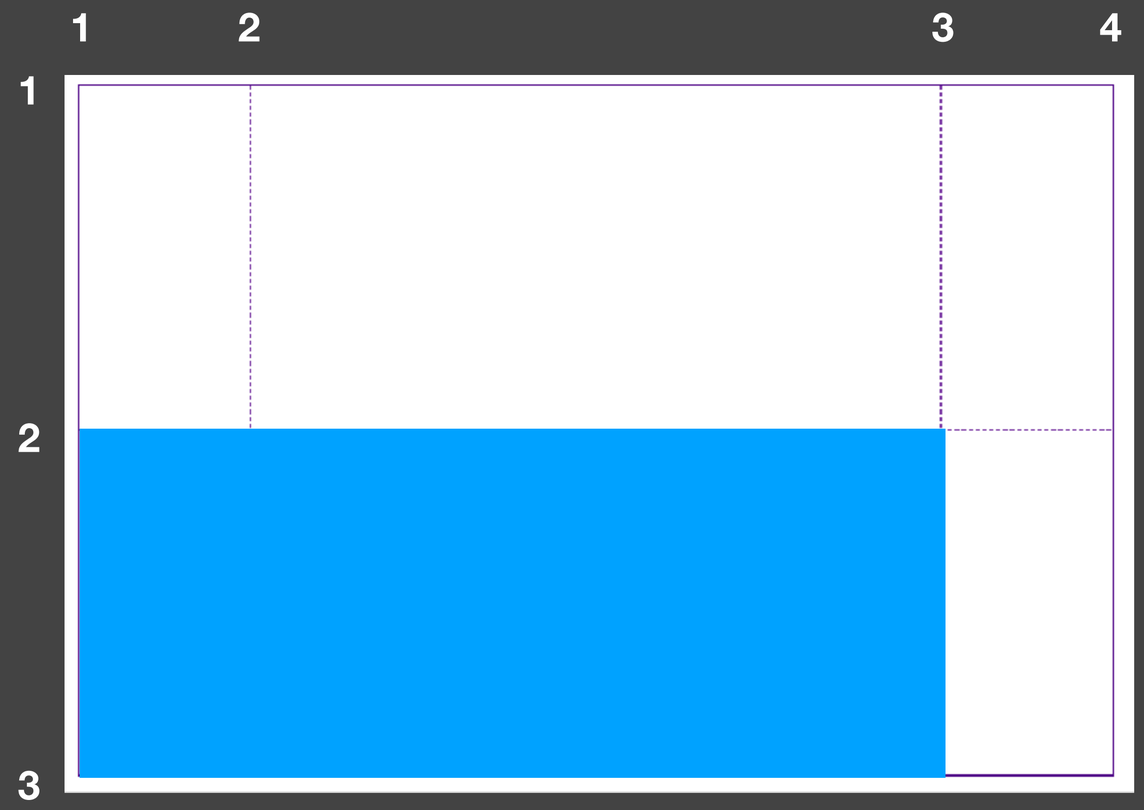
#item {
   grid-column: sidebar;
}
```

placing items on the grid (2)



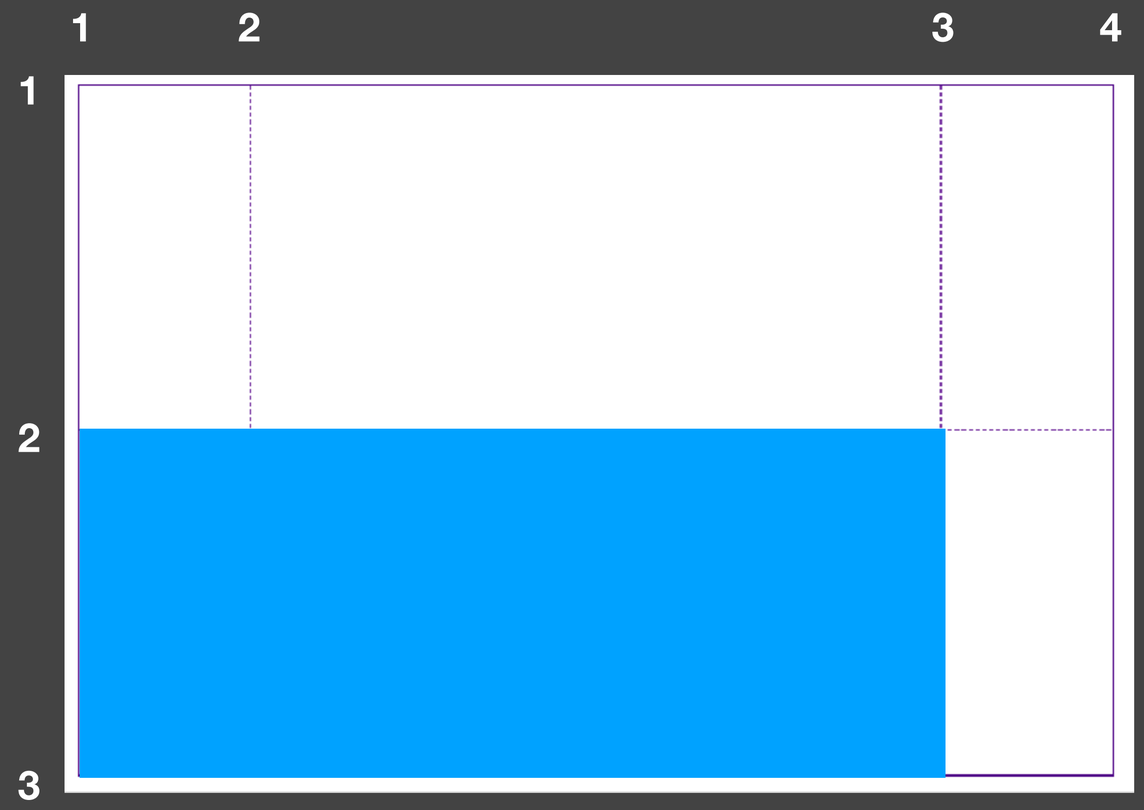

```
#item {
  grid-column-start: 1;
  grid-column-end: 3;
  grid-row-start: 2;
  grid-row-end: 3;
}
```

placing items on the grid (2)




```
#item {
  grid-column: 1 / 3;
  grid-row: 2 / 3;
}
```

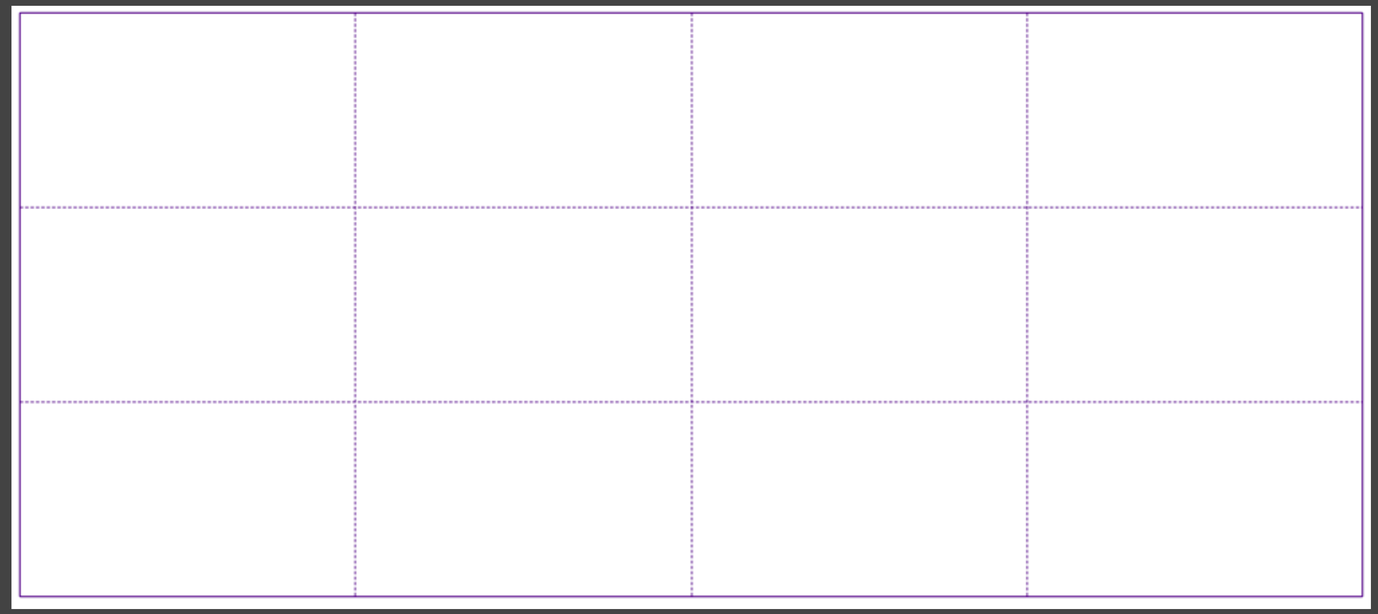
The span keyword




```
#item {
  grid-column: 1 / span 3;
  grid-row: 2 / span 1;
}
```

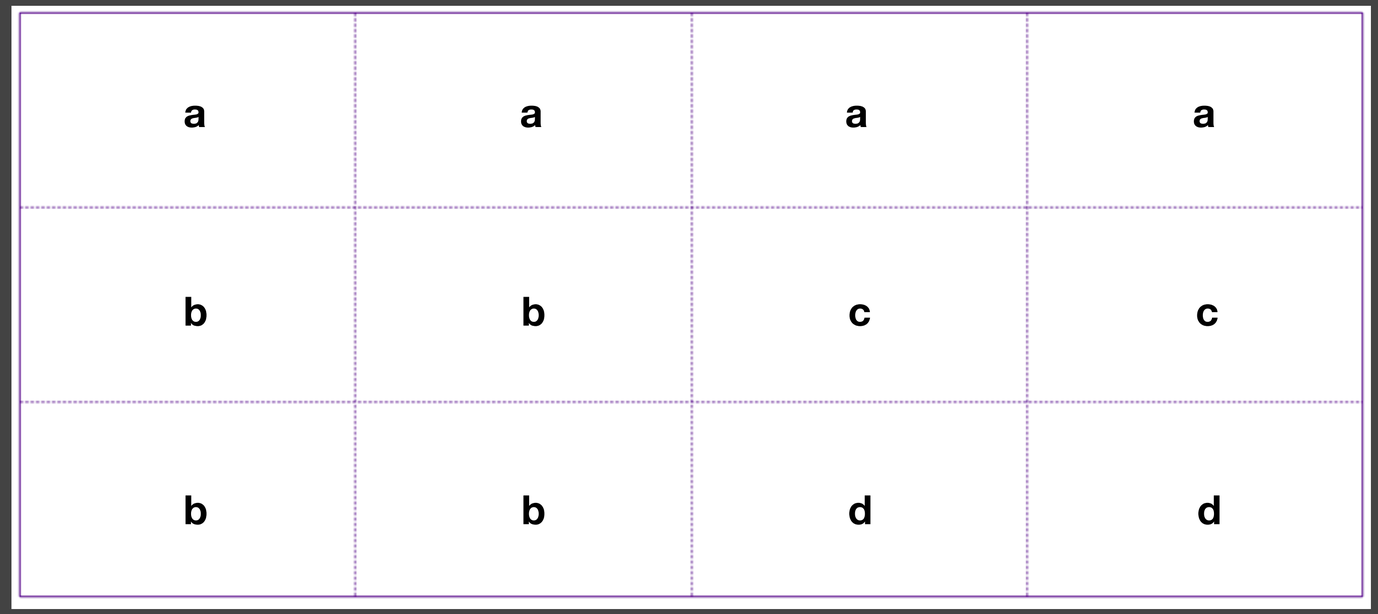
grids with named areas

```
#container {
  display: grid;
  grid-template-areas:
    "a a a a"
    "b b c c"
    "b b d d";
  }
```



grids with named areas

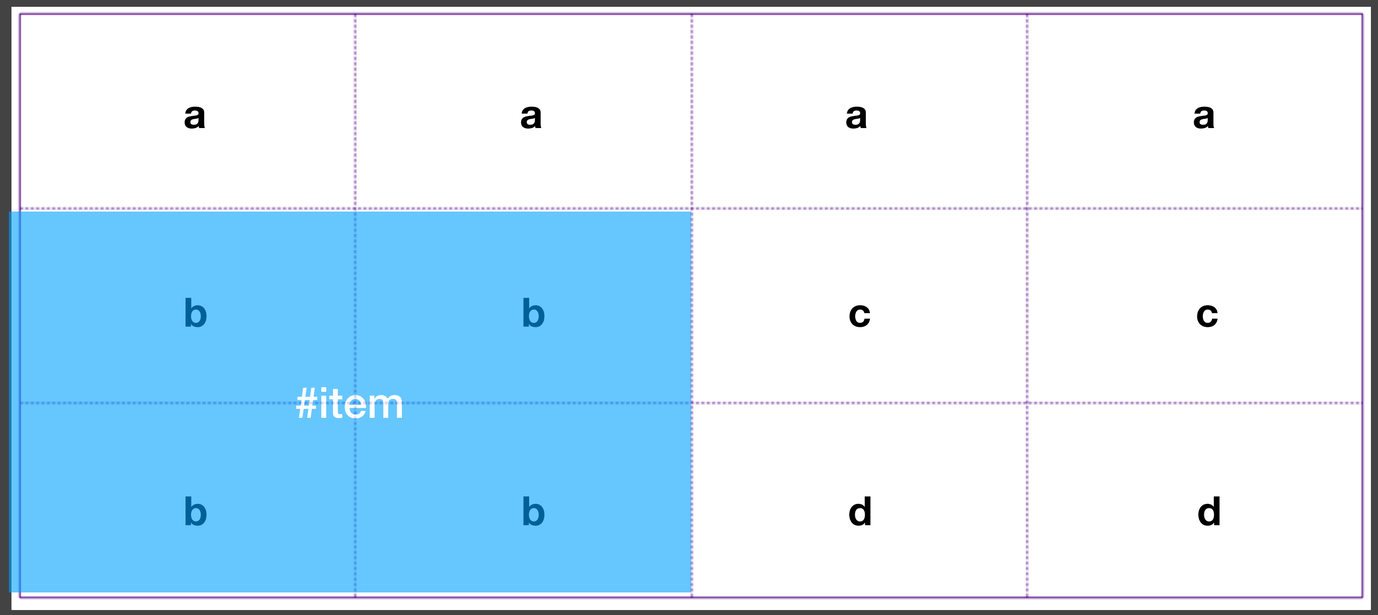
```
#container {
  display: grid;
  grid-template-areas:
    "a a a a"
    "b b c c"
    "b b d d";
  }
```



Note: areas should form squares

grids with named areas

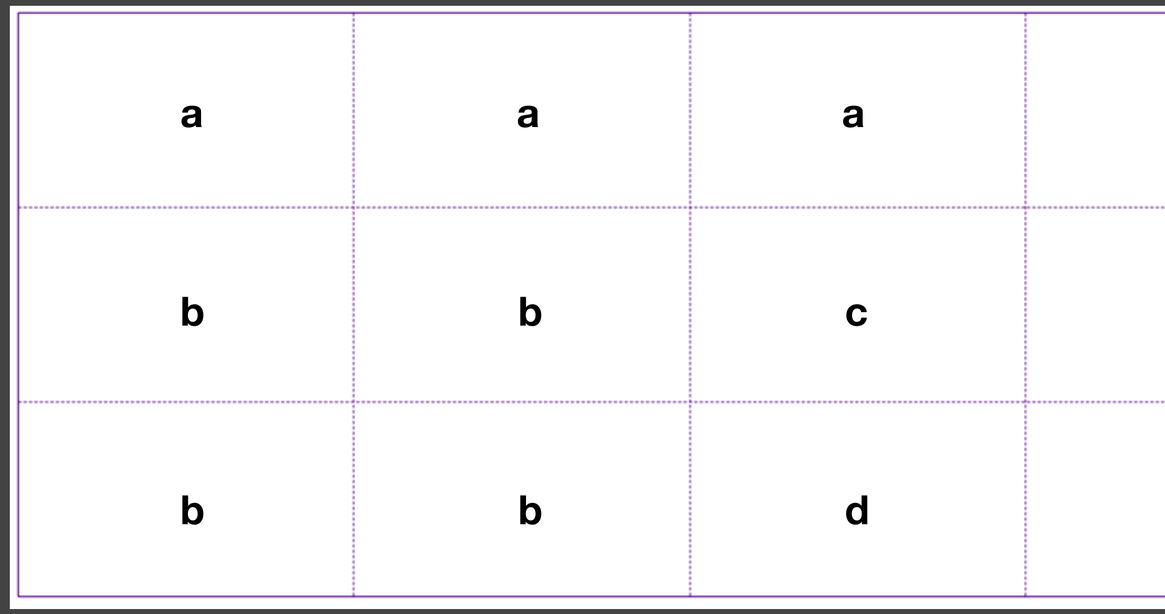
```
#item {
  grid-area: b;
}
```



grid lines are automatically named

grids with named areas

```
#item {
  grid-column-start: b-start;
  grid-column-end: b-end;
}
```



```
#container {
  grid-template-columns:
  [sidebar-start] 1fr [sidebar-end] 4fr;
}

#item {
   grid-column-start: sidebar-start;
   grid-column-end: sidebar-end;
}
```

```
#container {
  grid-template-columns:
  [sidebar-start] 1fr [sidebar-end] 4fr;
}

#item {
   grid-area: sidebar;
}
```

EXERCISE

The Daily Cascade: invent your own grid and place the articles on it

Note that in this exercise, the articles are wrapped in a div

repeating grid definitions using `repeat()`

repeating grid definitions

```
#container {
 grid-template-columns: repeat([count], [size]);
}
```

repeating grid definitions

```
#container {
  grid-template-columns: repeat(4, 1fr);
}
```

repeating with auto-fill

```
#container {
 grid-template-columns: repeat(auto-fill, 10em);
}
```

EXERCISE

Repeating grid items

picasso

braque chagall leger miro

ernst mondriaan

lipchitz

kandinsky kokoschka

zadkine appel bazaine

corneille delaunay

dubuffet

van abbemuseum eindhoven

autoplacement

Autoplacement is what the browser will do with grid items that are not explicitly placed on the grid.

If there aren't enough rows or columns, the browser will create them for you (‘implicit grid’)

sizing the implicit grid

```
grid-auto-rows: [size];
grid-auto-columns: [size];
```

direction of the implicit grid

```
grid-auto-flow: row | column;
```

filling up empty spaces automatically

```
grid-auto-flow: [row | column] dense;
```

Note: `auto-flow: dense` **can make the location of your items harder to understand for keyboard users.**

EXERCISE

Rebuild a section of your company (or personal) websites using Grid Layout!

Grid in production

be consistent between visual and source order

which grid properties to choose?

using grid in combination with other layout methods

use as many grids as you like

“Is there a polyfill?”

Simple fallbacks using the cascade

Feature queries

Feature queries

```
@supports ( display: grid ) {
  #item {
    margin: 0;
    width: auto;
  }
}
```

“Is there a Grid Layout framework?”

“What to use Grid Layout for?”

Show what you have on offer

Aardappel, groente, fruit online bestellen | AH.nl

Aardappel, groente, fruit online

https://www.ah.nl/producten/aardappel-groente-fruit

Search

Producten Bonus Allerhande box Recepten Winkels Acties Meer…

Online bestellen 0

Proef heerlijk herfstfruit

Bekijk Allerhande maaltijdkit

Eet een salade

Stevige soep na een wandeling

Maak zelf de lekkerste soep

De lekkerste producten voor de herfst ›

3.29

AH Verspakket pompoensoep
1,2 kg

2.99

AH Verse pureersoep pompoen-wortel
528 g

2.69

AH Verspakket erwtensoep
900 g

3.29

AH Verspakket tomatensoep
1,1 kg

2.99

AH Verse pureersoep tomaat-oregano
638 g

BONUS

~~2.99~~ 1.99

AH Romatomaten
750 g

3.29

AH Verspakket groentesoep
850 g

1.49

AH Fijne soepgroente
250 g

1.69

AH Erwtensoepgroente
500 g

Schiphol | Experience Schiphol

Schiphol | Experience Schiphol

Schiphol Telematics B.V. (NL) | https://www.schiphol.nl/en/what-to-do-at-schiphol

Search

Shops

Jackets and jeans, makeup and magazines. You can find it here!

Eat and drink

Take a mouth-watering culinary tour around the world

Relax and enjoy

Speed up with an activity or slow down with a massage

Reisgids - KLM.com

Reisgids - KLM.com

https://www.klm.com/destinations/nl/nl/search

90%

Search

Laat je inspireren

Filter & zoek

Zin in zon, zee en cultuur? Boek vliegtickets naar Alicante en ontdek deze levendige stad aan de Spaanse Costa Blanca. Ontspan op een van de fijne zandstranden of geniet van de vele watersportmogelijkheden die de Middellandse zee te bieden heeft. Alicante...

Lees alles over Alicante ›

2u 35m

Eten & drinken Geschiedenis Strand

Het barokke stadhuis van Alican...

Aruba
Aruba

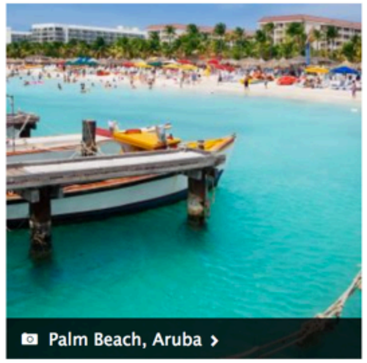
Retour vanaf:
EUR 549

Klinken zon, zee en ontspanning u als muziek in de oren? Boek vliegtickets naar Aruba en geniet op parelwitte stranden van een lekkere cocktail. Ga duiken of snorkelen en verken de kleurrijke onderwaterwereld rondom het eiland. Verblijf in luxe...

Lees alles over Aruba ›

10u 5m

Duiken & Snorkelen Strand Romantiek Surfen



Palm Beach, Aruba ›

Thailand
Bangkok

Retour vanaf:
EUR 605

Houdt u van winkelen, luxe hotels en een dynamisch nachtleven? Boek vliegtickets naar Bangkok en dwaal door eeuwenoude tempels, verken authentieke markten of bestel een cocosnoot in een van de vele barretjes. Bezoek het Koninklijk Paleis en probeer een...

Lees alles over Bangkok ›

Collecties

Collecties

https://www.bibliotheek.nl/onze-collectie.html

Search

Hoog contrast | Zet voorlezen aan

de Bibliotheek

home | collecties | in de Bibliotheek | jeugd & jongeren | meer van de bieb | word lid

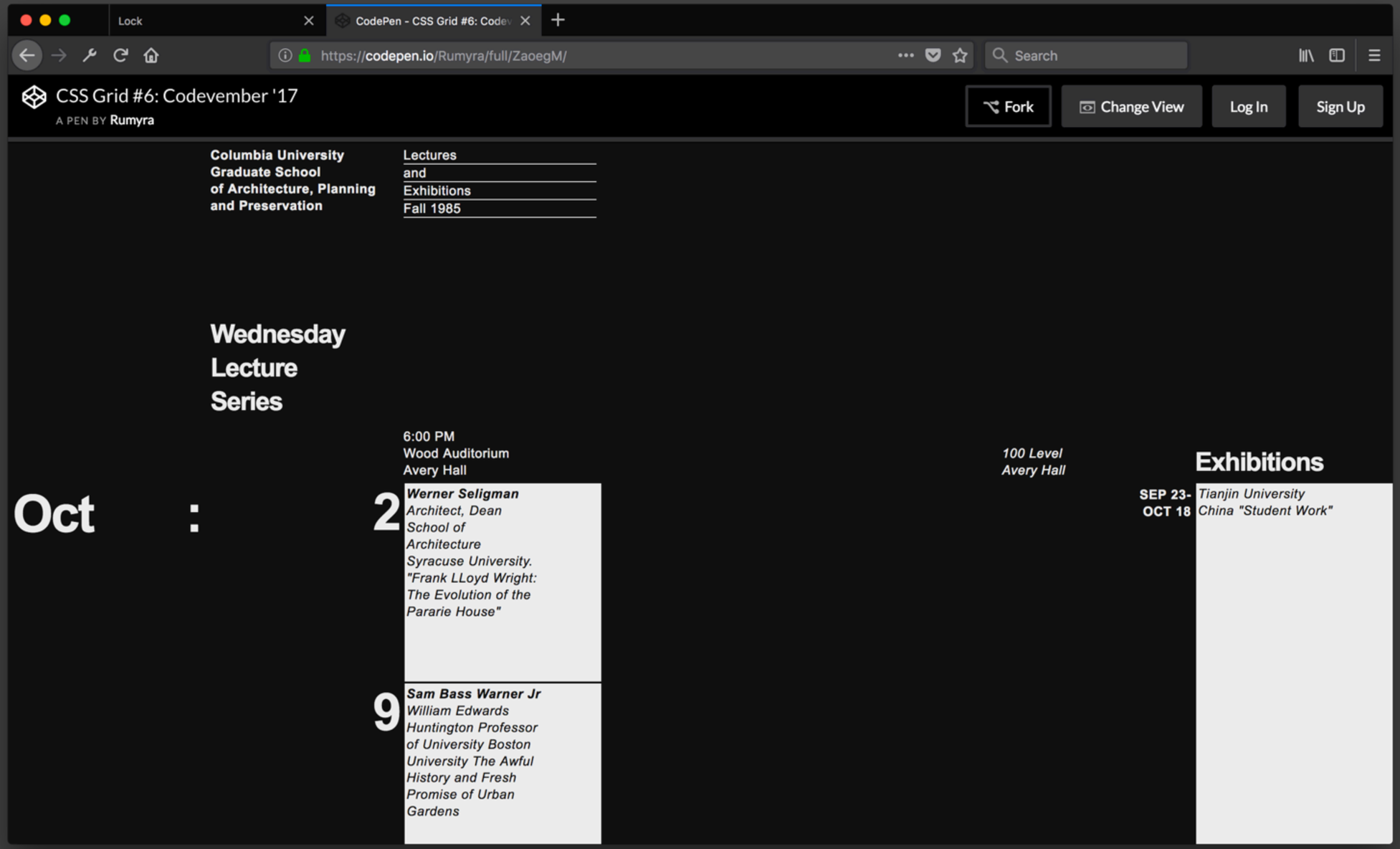
Waar ben je naar op zoek? Catalogus Vind

Meer dan 4,3 miljoen items

Hier kan je door het totale bezit van álle Nederlandse Bibliotheken bladeren. Van boeken tot films, van games tot e-books. Verbaas je over de rijkdom van onze collecties. Wil je iets lenen? Dan verwijzen we je graag door naar de website van jouw eigen Bibliotheek.

Zoeken op materiaal

For programmes


Lock
CodePen - CSS Grid #6: Codev
https://codepen.io/Rumyra/full/ZaoegM/
Search
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Graduate School
of Architecture, Planning
and Preservation
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and
Exhibitions
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Lecture
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Avery Hall
Werner Seligman
Architect, Dean
School of
Architecture
Syracuse University.
"Frank LLoyd Wright:
The Evolution of the
Pararie House"
9
Sam Bass Warner Jr
William Edwards
Huntington Professor
of University Boston
University The Awful
History and Fresh
Promise of Urban
Gardens
100 Level
Avery Hall
Exhibitions
SEP 23-
OCT 18
Tianjin University
China "Student Work"

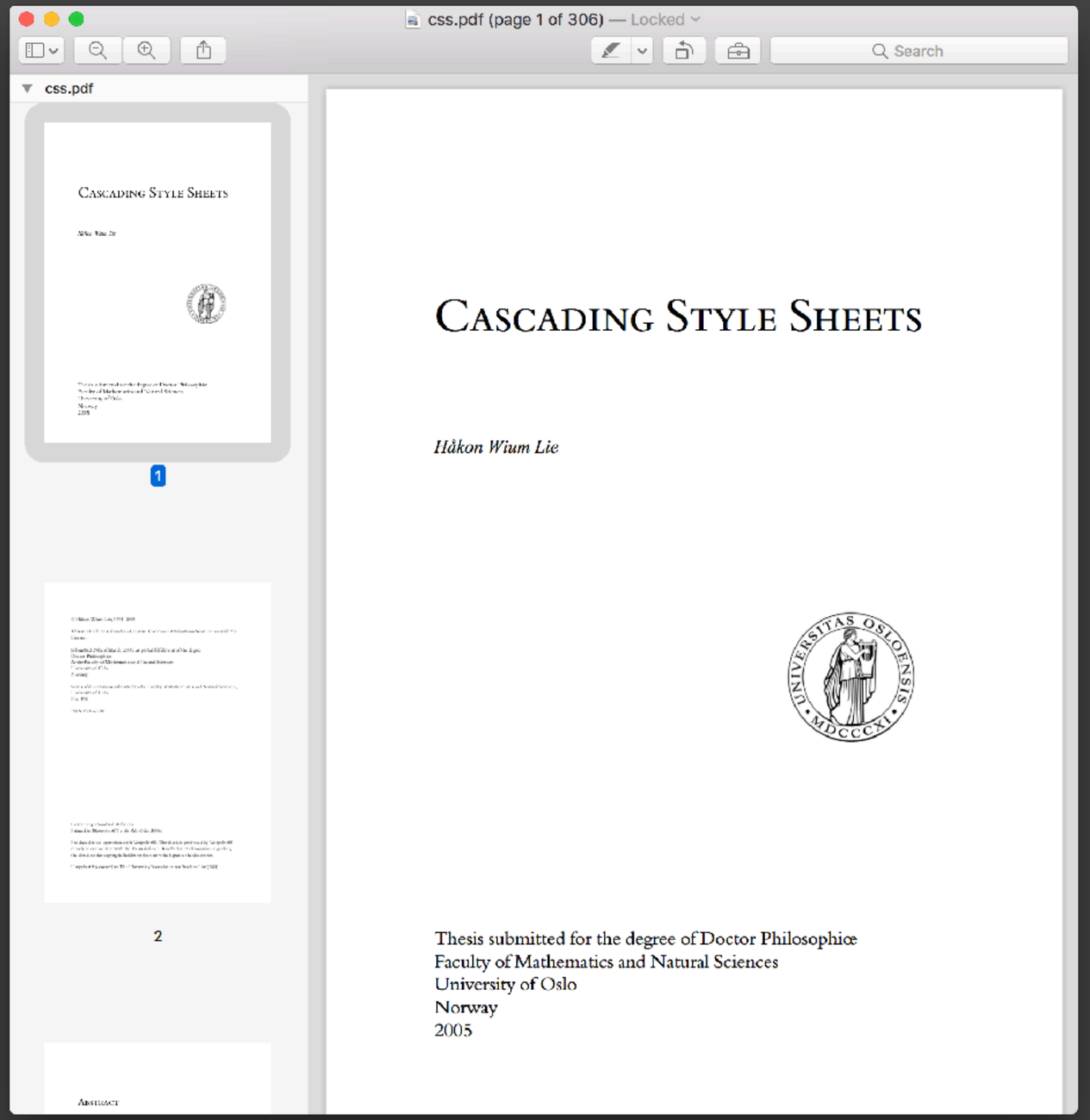
Want to learn more?

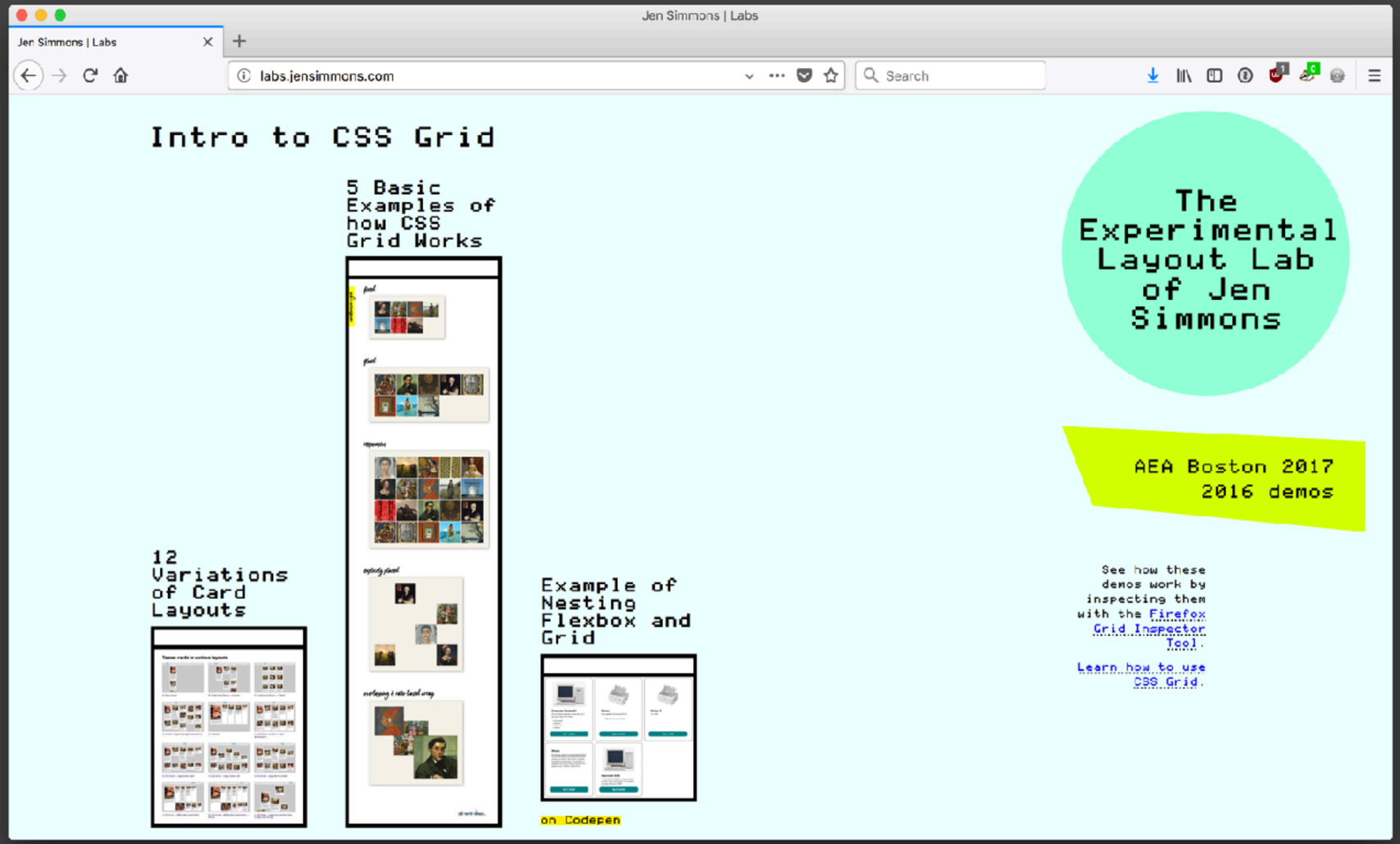
The New CSS Layout, Rachel Andrew

https://abookapart.com

Håkon Wium Lie's PhD thesis

http://www.wiumlie.no/2006/phd/css.pdf



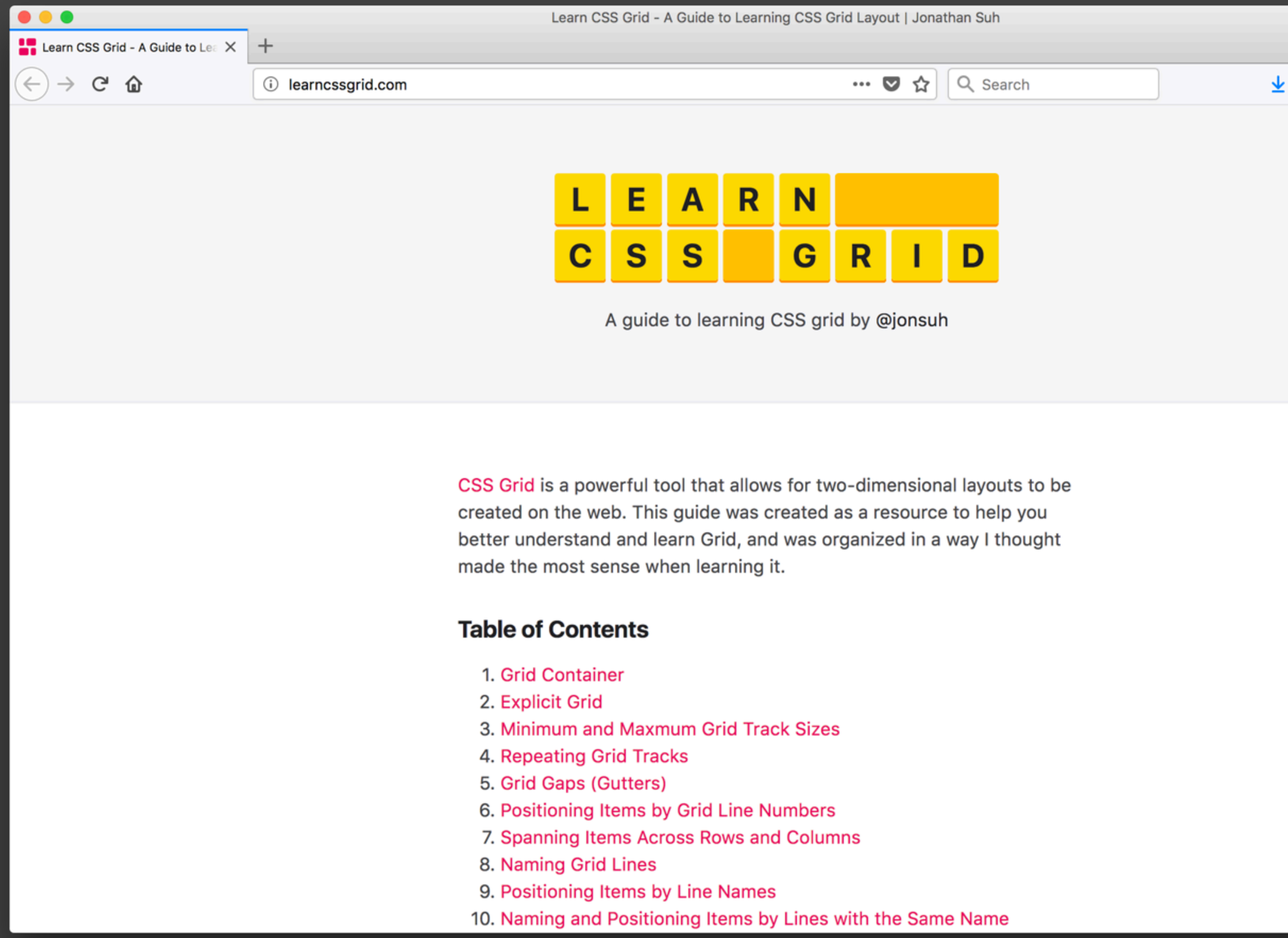


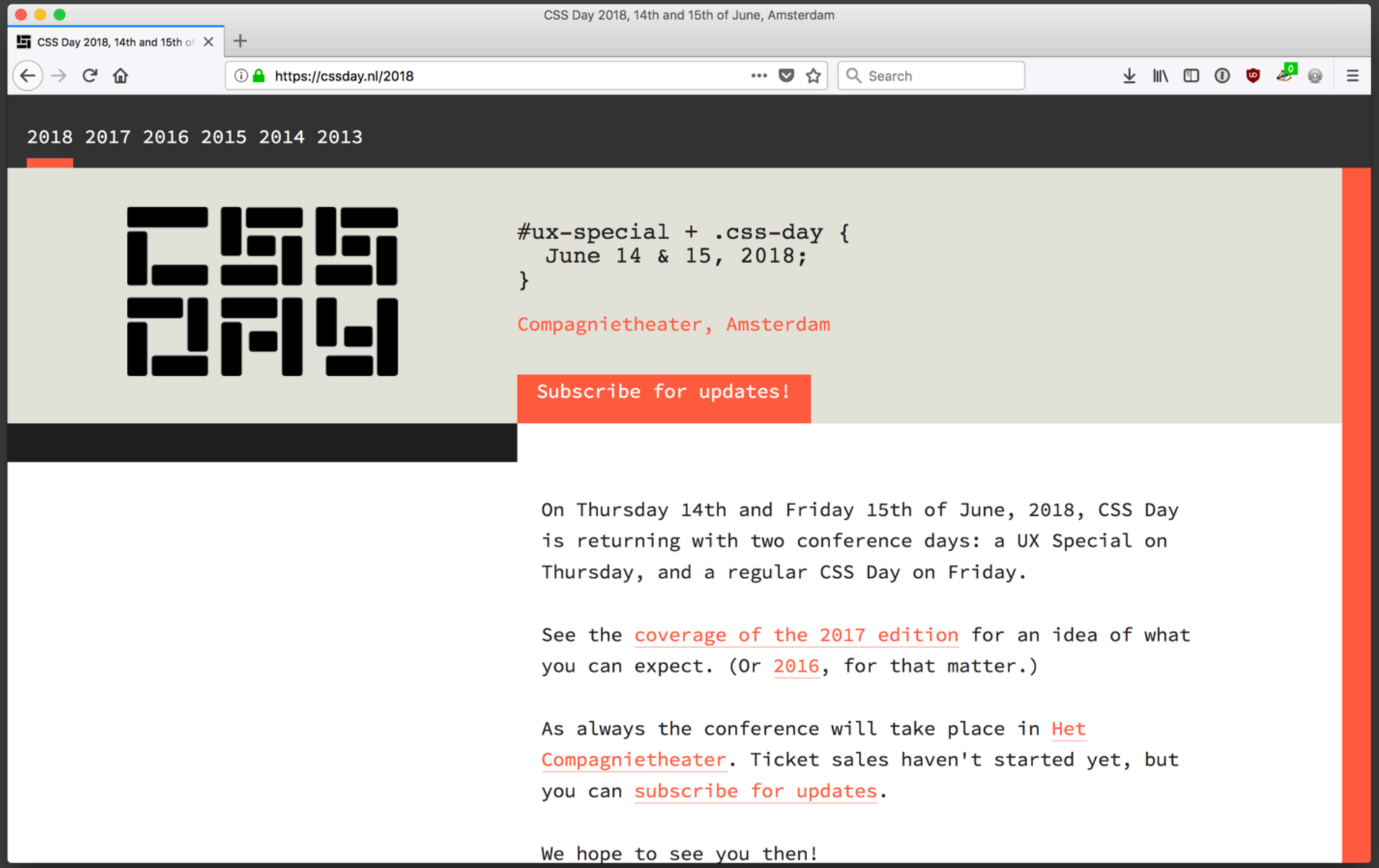
The Experimental Layout Lab of Jen Simmons

http://labs.jensimmons.com/

Learn CSS Grid

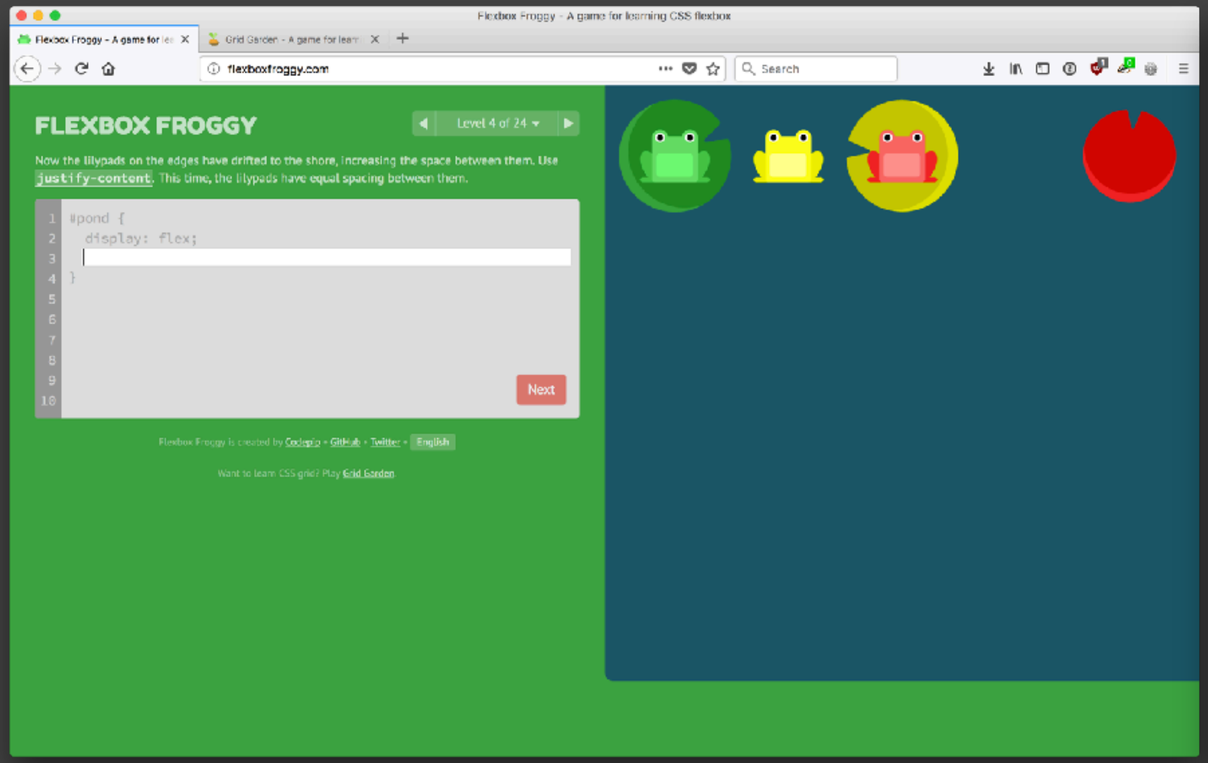
http://learncssgrid.com

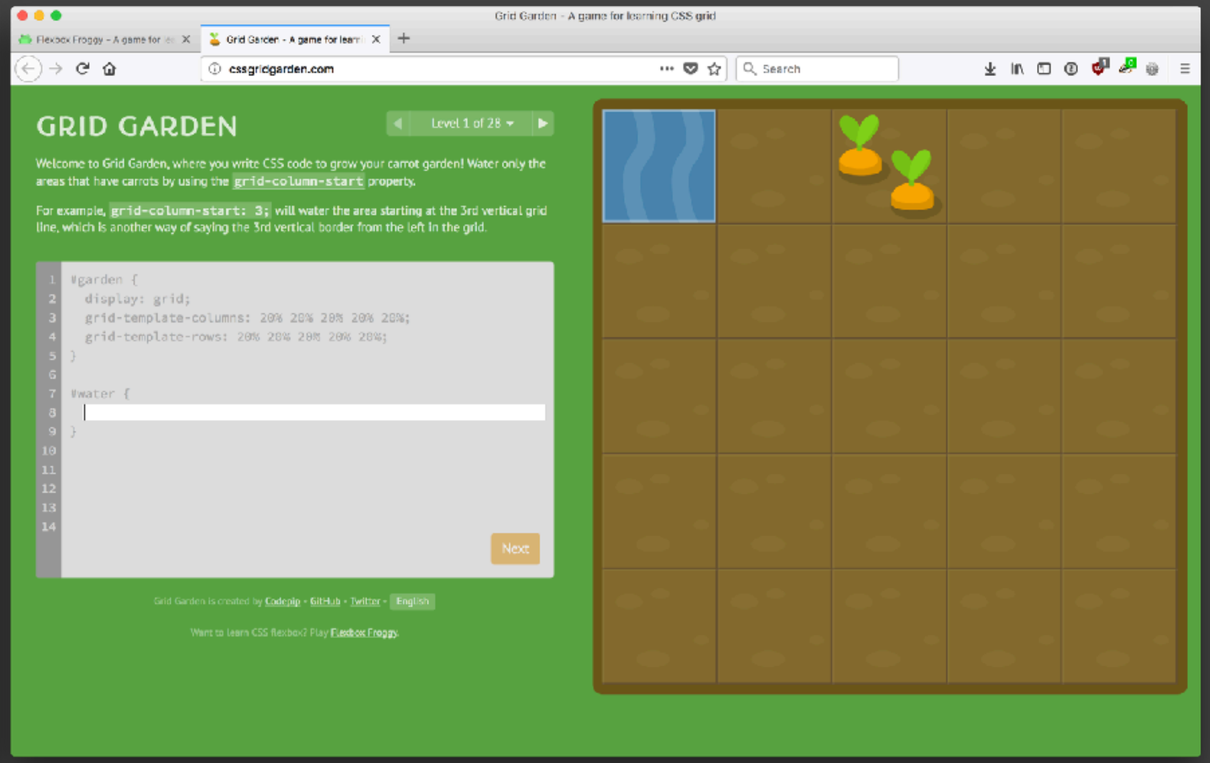




CSS Day

https://cssday.nl/2018





Flexbox Froggy / CSS Grid Garden

http://flexboxfroggy.com/

http://cssgridgarden.com/

Jen Simmons / @jensimmons

Rachel Andrew/ @rachelandrew

Elika J. Etemad / @fantasai

Tab Atkins / @tabatkins

Hui Jing Chen / @hj_chen

Mary Lou / @crnacura

Eric Meyer / @ericmeyer

CSS Working Group / @csswg

WORKSHOP

CSS Layout

Thanks for being here today! Any questions?

Feel free to contact me on:

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hidde@hiddedevries.nl