SECTION 04 — LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

JONAS.IO
SCHMEDTMANN

BUILD RESPONSIVE REAL-WORLD WEBSITES WITH HTML AND CSS

SECTION

LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

LECTURE

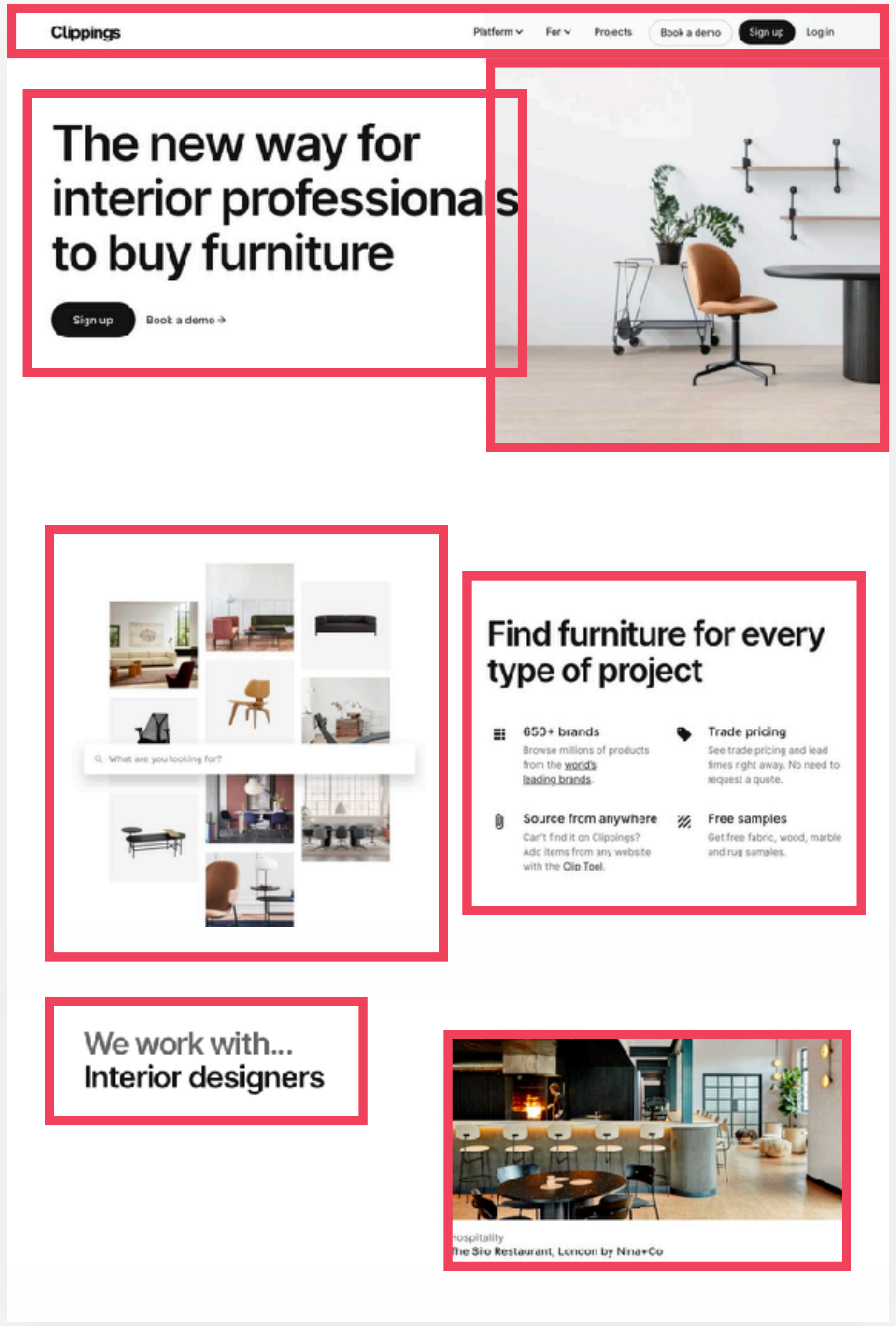
THE 3 WAYS OF BUILDING LAYOUTS

@JONASSCHMEDTMAN

WHAT DOES "**LAYOUT**" MEAN?

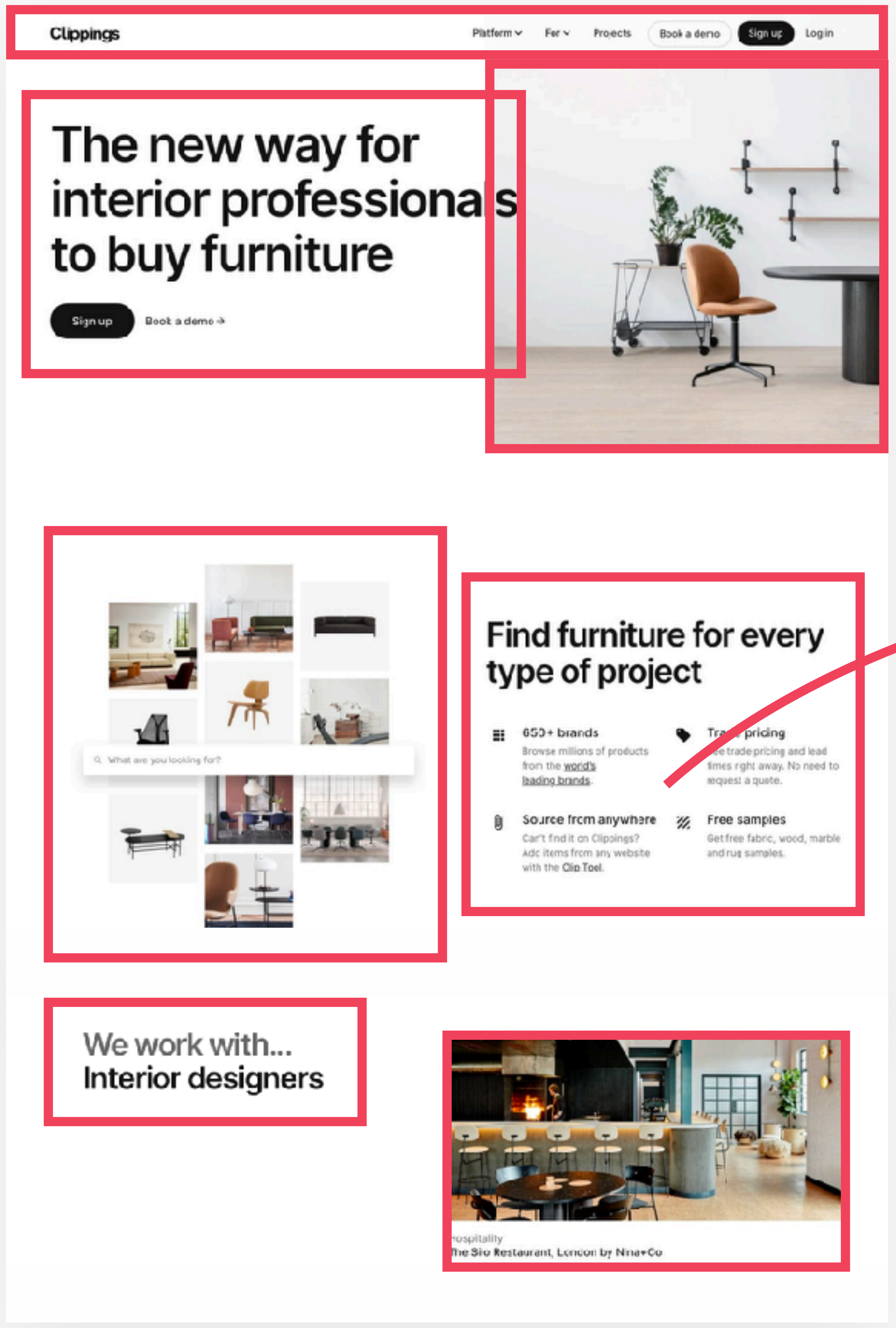
LAYOUT

- 👉 Layout is the way text, images and other content is placed and arranged on a webpage
- 👉 Layout gives the page a visual structure, into which we place our content
- 👉 **Building a layout:** arranging page elements into a visual structure, instead of simply having them placed one after another (normal flow)



PAGE LAYOUT **VS.** COMPONENT LAYOUT

PAGE LAYOUT


Clippings

Platform For Projects Book a demo Sign up Log in

The new way for interior professionals to buy furniture

Sign up Book a demo →

What are you looking for?

Find furniture for every type of project

650+ brands
Browse millions of products from the world's leading brands.

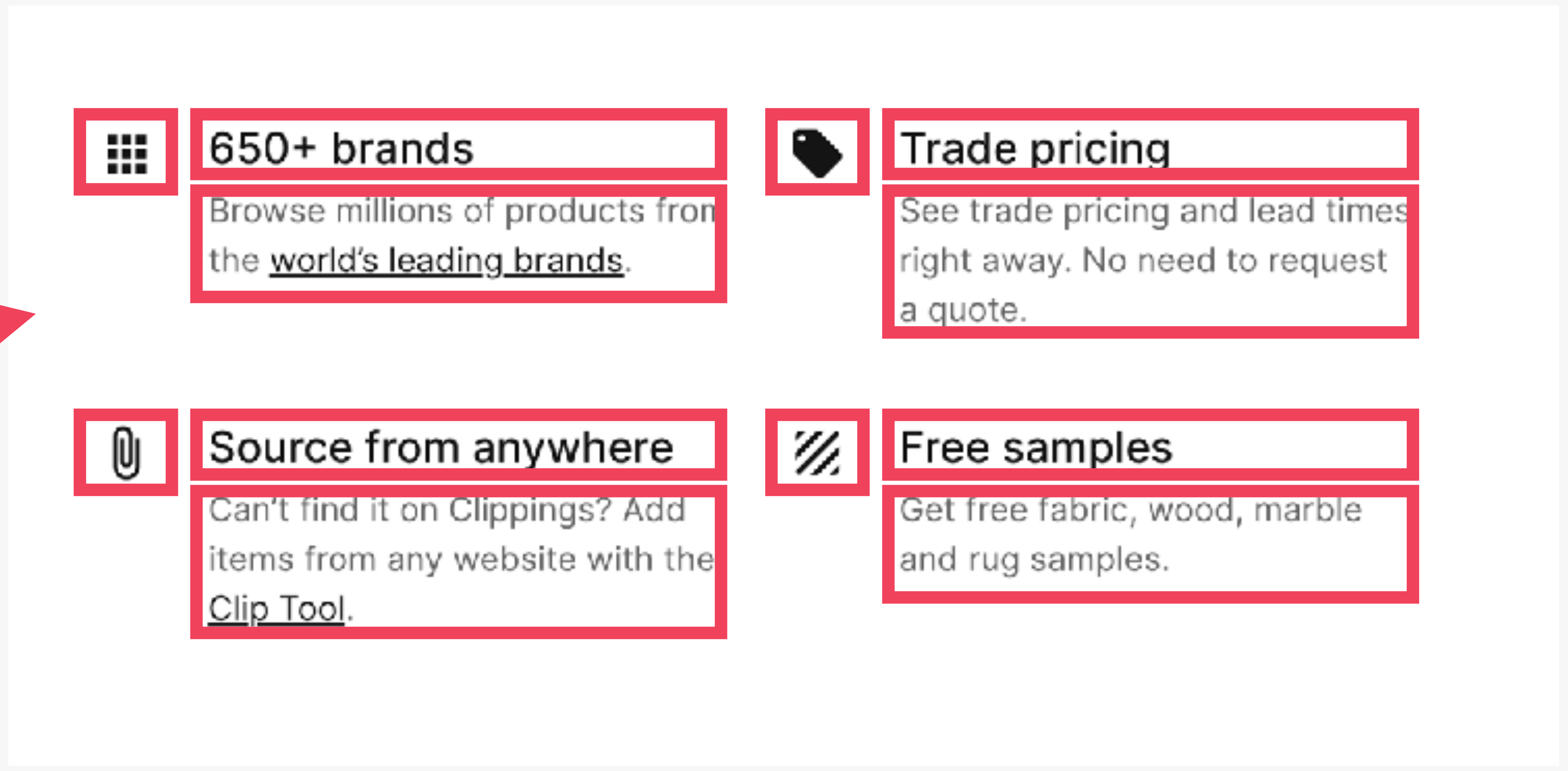
Trade pricing
See trade pricing and lead times right away. No need to request a quote.

Source from anywhere
Can't find it on Clippings? Add items from any website with the Clip Tool.

Free samples
Get free fabric, wood, marble and rug samples.

We work with...
Interior designers

Hospitality
The Sio Restaurant, London by Nina+Co


650+ brands

Browse millions of products from the world's leading brands.

Trade pricing

See trade pricing and lead times right away. No need to request a quote.

Source from anywhere

Can't find it on Clippings? Add items from any website with the Clip Tool.

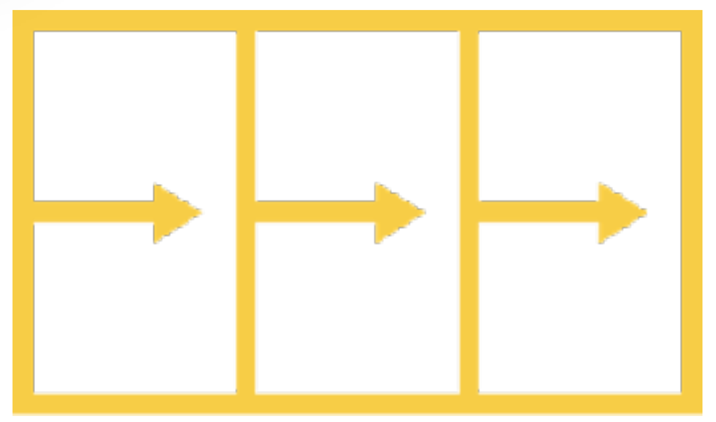
Free samples

Get free fabric, wood, marble and rug samples.

COMPONENT LAYOUT

THE **3 WAYS** OF BUILDING LAYOUTS WITH CSS

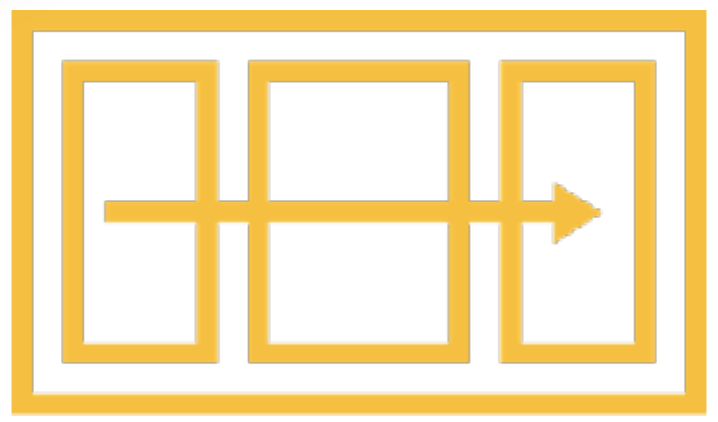
1



FLOAT LAYOUTS

The **old way of building layouts** of all sizes, using the `float` CSS property. Still used, but getting outdated fast.

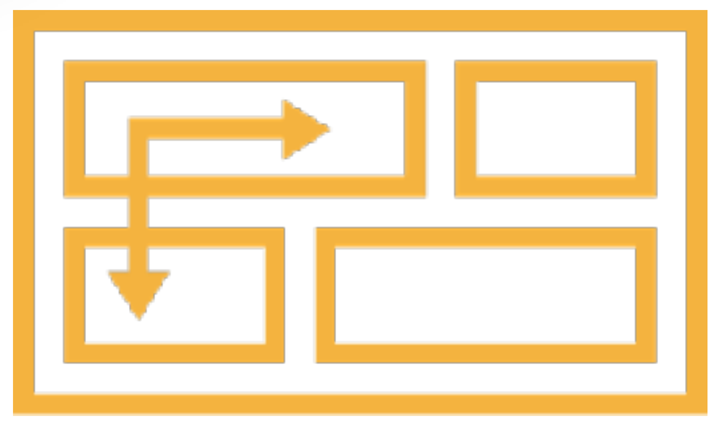
2



FLEXBOX

Modern way of laying out elements in a **1-dimensional row** without using floats. Perfect for **component layouts**.

3

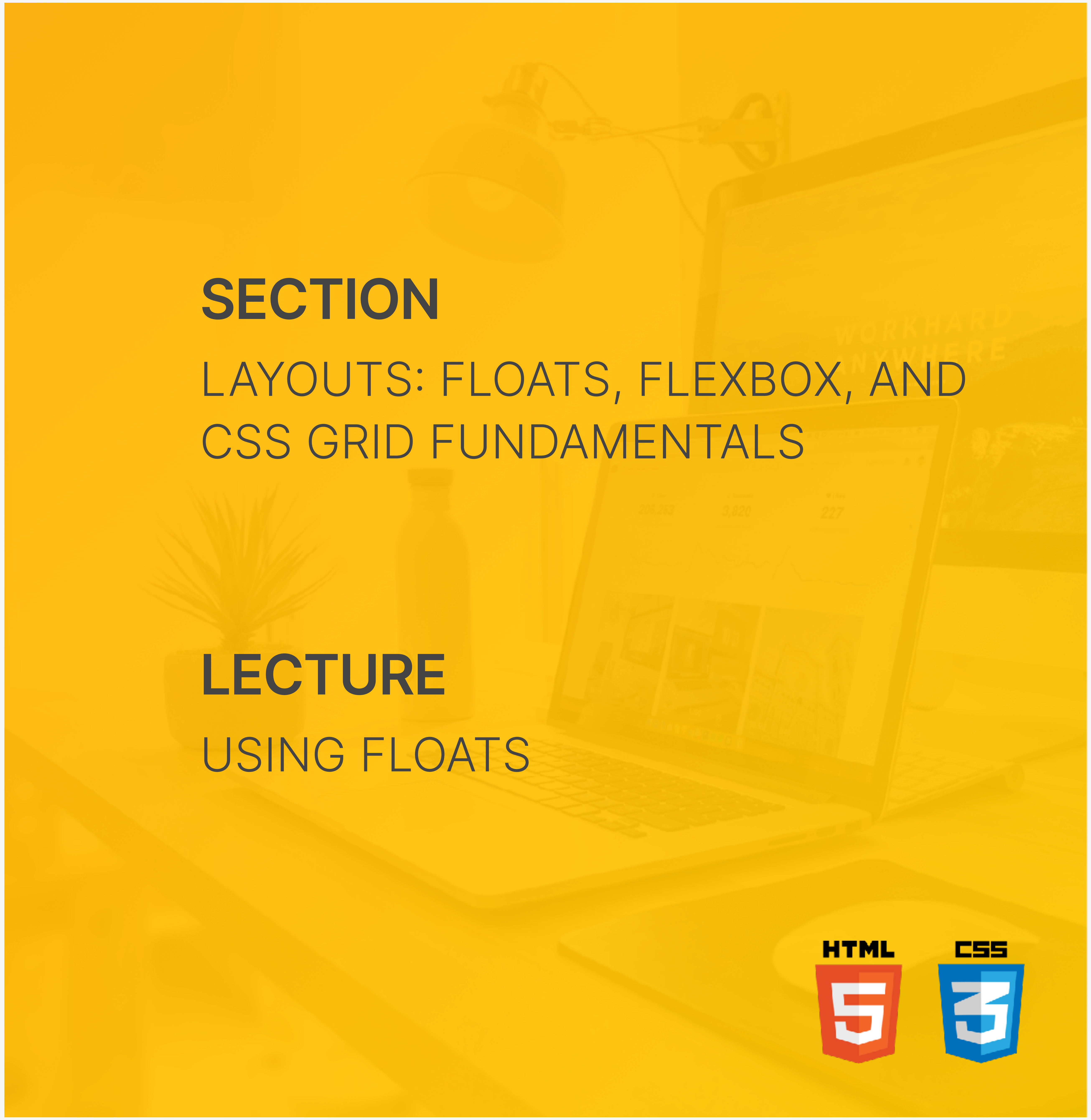


CSS GRID

For laying out element in a fully-fledged **2-dimensional grid**. Perfect for **page layouts and complex components**.

JONAS.IO
SCHMEDTMANN

BUILD RESPONSIVE REAL-WORLD WEBSITES WITH HTML AND CSS



SECTION

LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

LECTURE

USING FLOATS

HTML CSS

@JONASSCHMEDTMAN

ABSOLUTE POSITIONING **VS.** FLOATS

NORMAL FLOW

- 👉 Default positioning
- 👉 Element is “**in** flow”
- 👉 Elements are simply laid out according to their order in the HTML code

```
Default positioning
position: relative
```

ABSOLUTE POSITIONING

- 👉 Element is removed from the normal flow: “**out of** flow”
- 👉 No impact on surrounding elements, might overlap them
- 👉 We use `top`, `bottom`, `left`, or `right` to offset the element from its **relatively positioned container**

```
position: absolute
```

FLOATS

=

- 👉 Element is removed from the normal flow: “**out of** flow”

≠

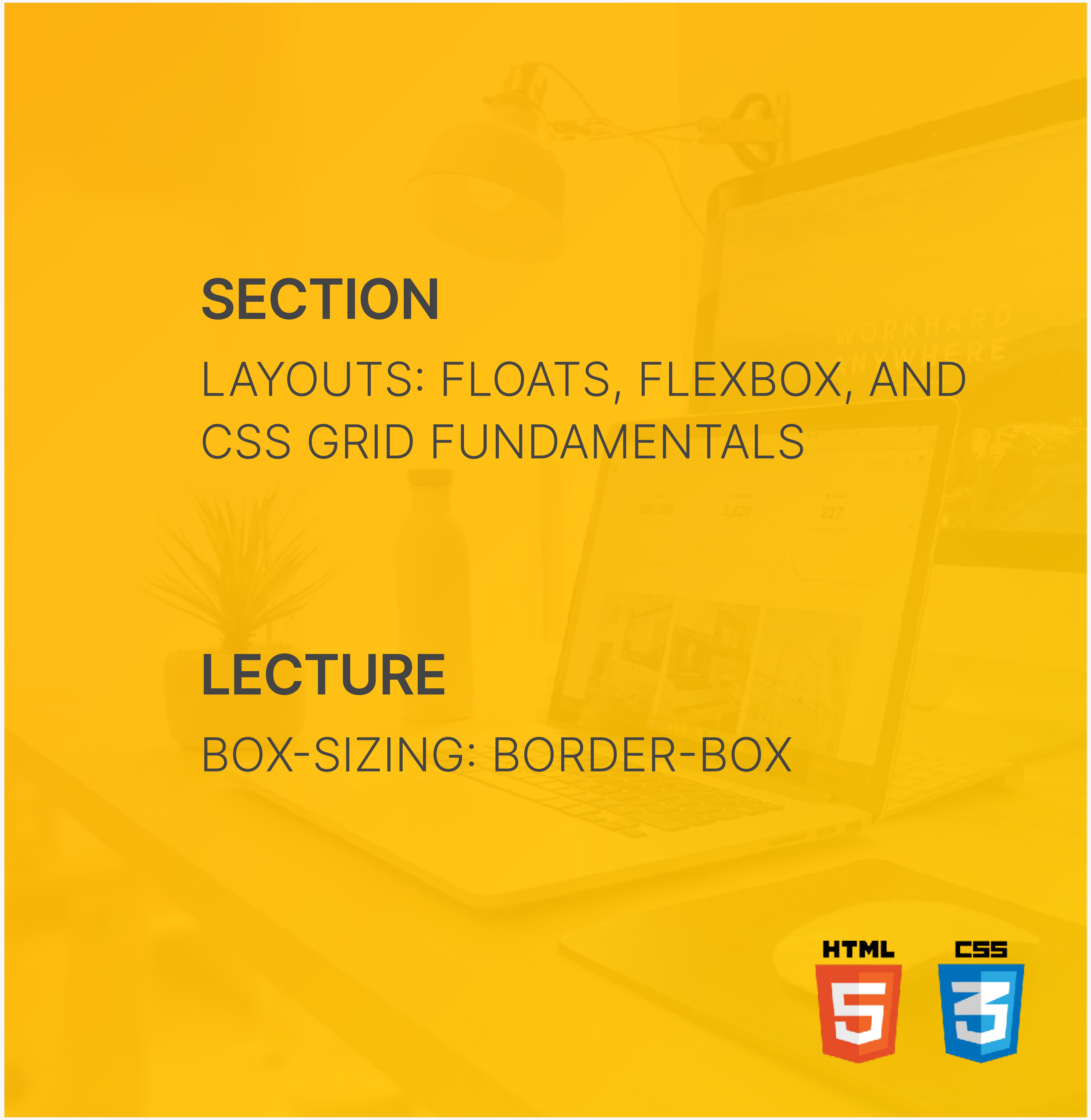
- 👉 Text and inline elements will wrap around the floated element
- 👉 The container will **not** adjust its height to the element

```
float: left
float: right
```

JONAS.IO
SCHMEDTMANN

BUILD RESPONSIVE REAL-WORLD WEBSITES WITH HTML AND CSS

@JONASSCHMEDTMAN



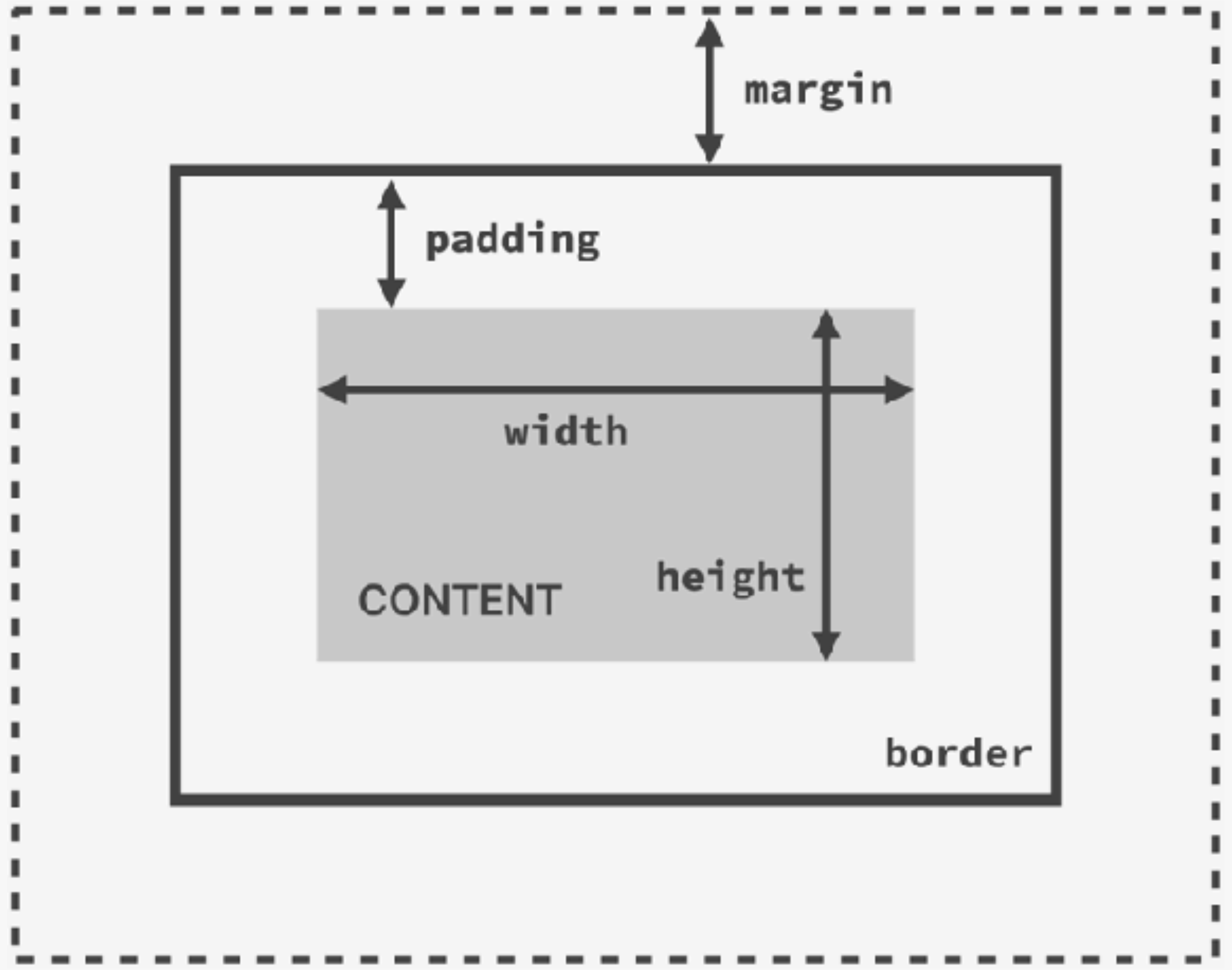
SECTION

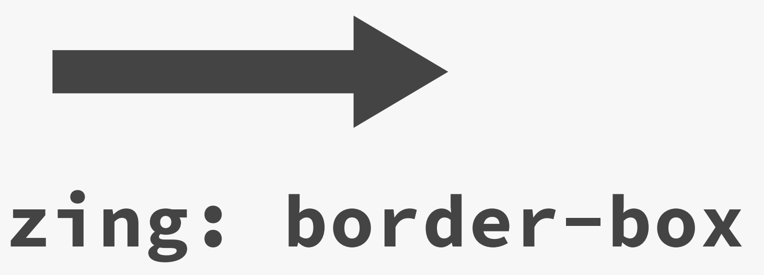
LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

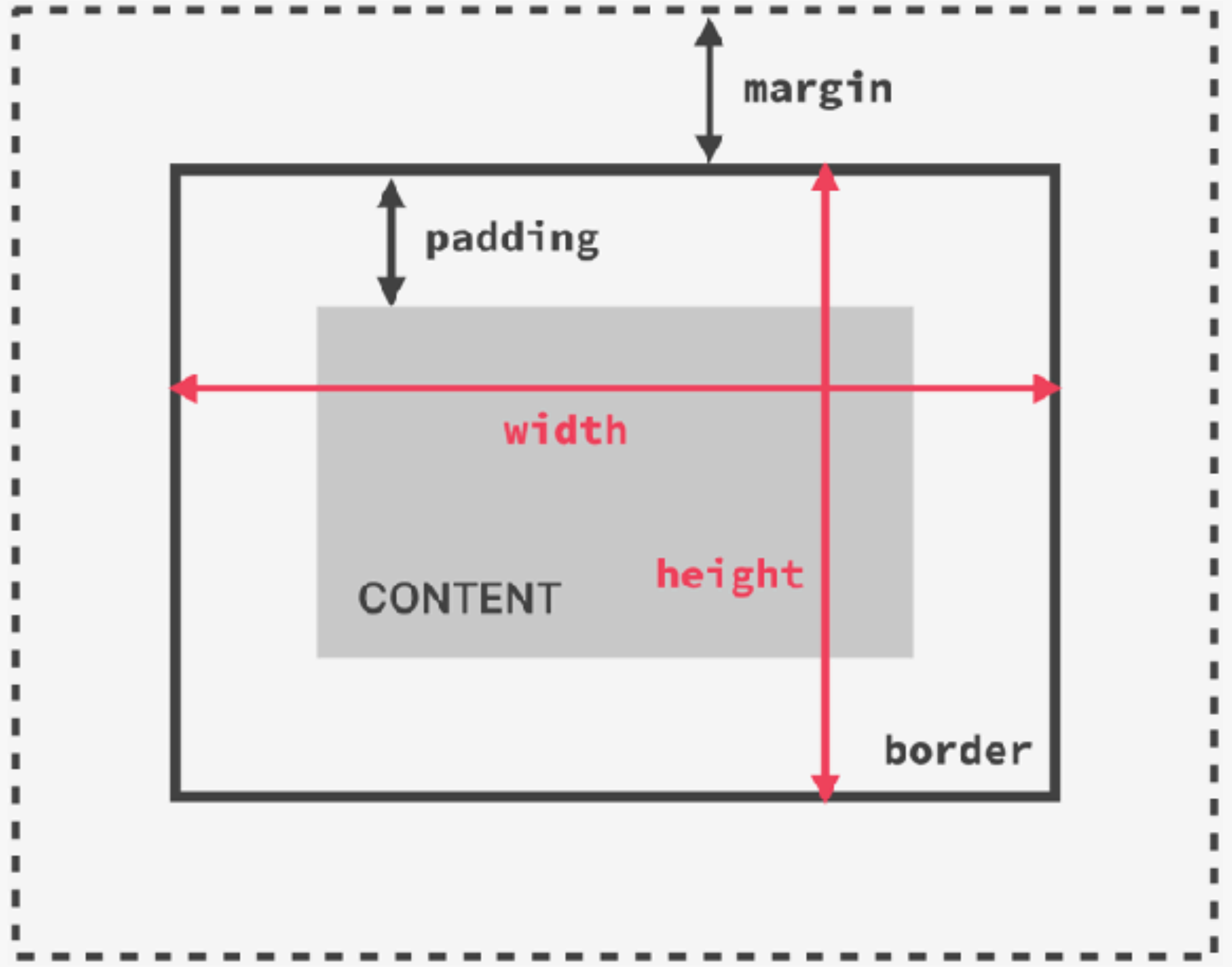
LECTURE

BOX-SIZING: BORDER-BOX

THE BOX MODEL WITH **BOX-SIZING: BORDER-BOX**







Final element width = ~~right border~~ + ~~right padding~~ + $\boxed{\text{width}}$ + ~~left padding~~ + ~~left border~~

Final element height = ~~top border~~ + ~~top padding~~ + $\boxed{\text{height}}$ + ~~bottom padding~~ + ~~bottom border~~

JONAS.IO
SCHMEDTMANN

BUILD RESPONSIVE REAL-WORLD WEBSITES WITH HTML AND CSS

@JONASSCHMEDTMAN

SECTION

LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

LECTURE

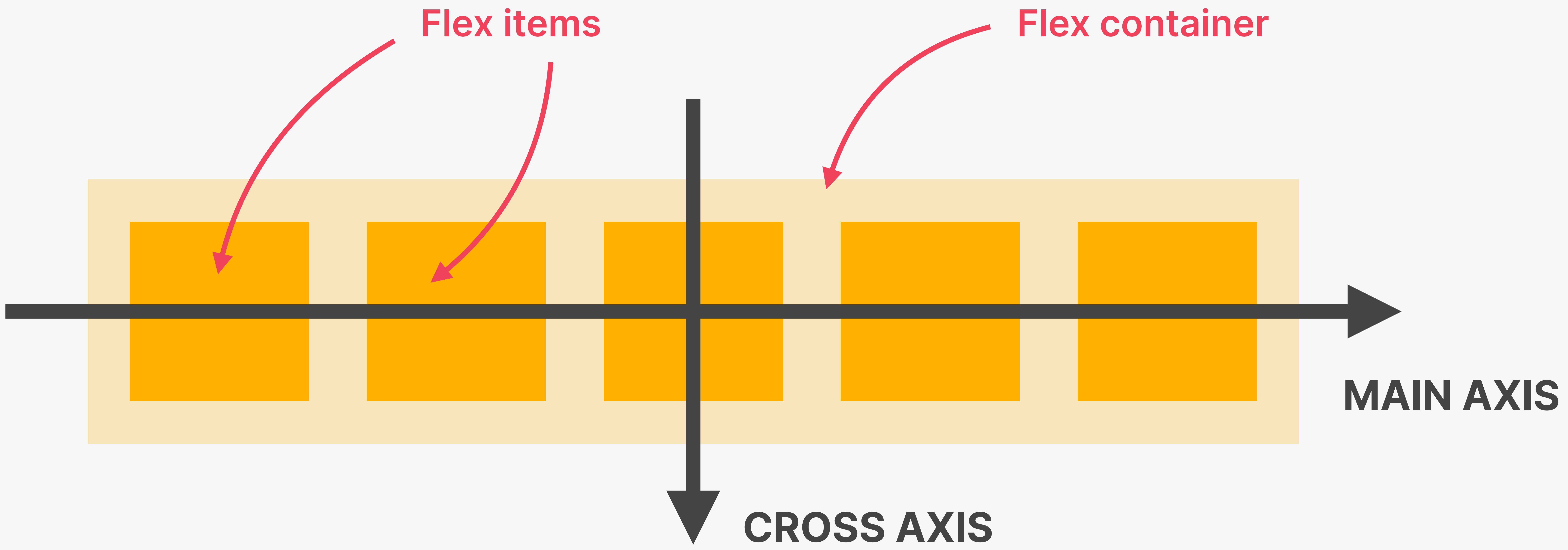
A FLEXBOX OVERVIEW

WHAT IS **FLEXBOX?**

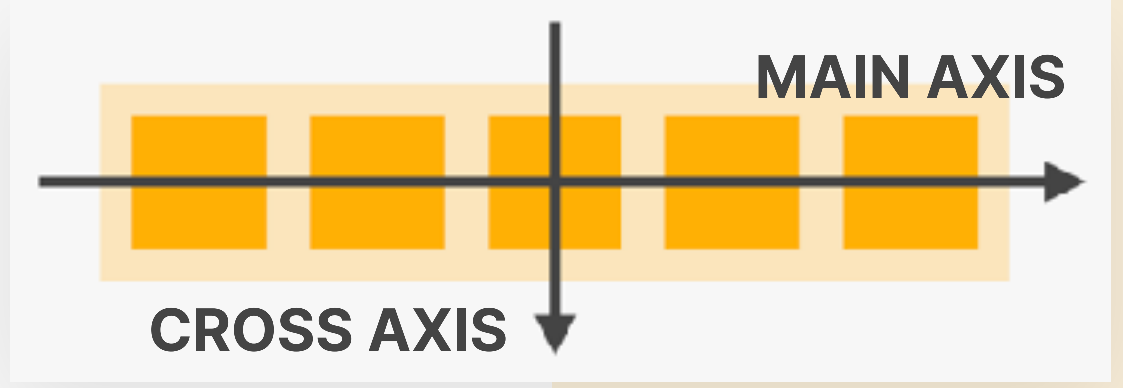
FLEXBOX

- 👉 Flexbox is a set of related **CSS properties** for **building 1-dimensional layouts**
- 👉 The main idea behind flexbox is that empty space inside a container element can be **automatically divided** by its child elements
- 👉 Flexbox makes it easy to automatically **align items to one another** inside a parent container, both horizontally and vertically
- 👉 Flexbox solves common problems such as **vertical centering** and creating **equal-height columns**
- 👉 Flexbox is perfect for **replacing floats**, allowing us to write fewer and cleaner HTML and CSS code

FLEXBOX **TERMINOLOGY**



```
display: flex
```



FLEX CONTAINER

1. `gap: 0 | <length>`

   👉 *To create **space between items**, without using `margin`*

2. `justify-content: flex-start | flex-end | center | space-between | space-around | space-evenly`

   👉 *To align items along main axis (**horizontally**, by default)*

3. `align-items: stretch | flex-start | flex-end | center | baseline`

   👉 *To align items along cross axis (**vertically**, by default)*

4. `flex-direction: row | row-reverse | column | column-reverse`

   👉 *To define which is the **main axis***

5. `flex-wrap: nowrap | wrap | wrap-reverse`

   👉 *To allow items to **wrap into a new line** if they are too large*

6. `align-content: stretch | flex-start | flex-end | center | space-between | space-around`

   👉 *Only applies when there are **multiple lines** (`flex-wrap: wrap`)*

FLEX ITEMS

1. `align-self: auto | stretch | flex-start | flex-end | center | baseline`

   👉 *To **overwrite** `align-items` for individual flex items*

2. `flex-grow: 0 | <integer>`

   👉 *To allow an element **to grow** (0 means no, 1+ means yes)*

3. `flex-shrink: 1 | <integer>`

   👉 *To allow an element **to shrink** (0 means no, 1+ means yes)*

4. `flex-basis: auto | <length>`

   👉 *To define an item's width, **instead of the `width`** property*

5. `flex: 0 1 auto | <int> <int> <len>`

   👉 ***Recommended** shorthand for `flex-grow`, `-shrink`, `-basis`.*

6. `order: 0 | <integer>`

   👉 *Controls order of items. -1 makes item **first**, 1 makes it **last***

JONAS.IO
SCHMEDTMANN

BUILD RESPONSIVE REAL-WORLD WEBSITES WITH HTML AND CSS

@JONASSCHMEDTMAN

SECTION

LAYOUTS: FLOATS, FLEXBOX, AND CSS GRID FUNDAMENTALS

LECTURE

A CSS GRID OVERVIEW

HTML CSS

WHAT IS **CSS GRID?**

CSS GRID

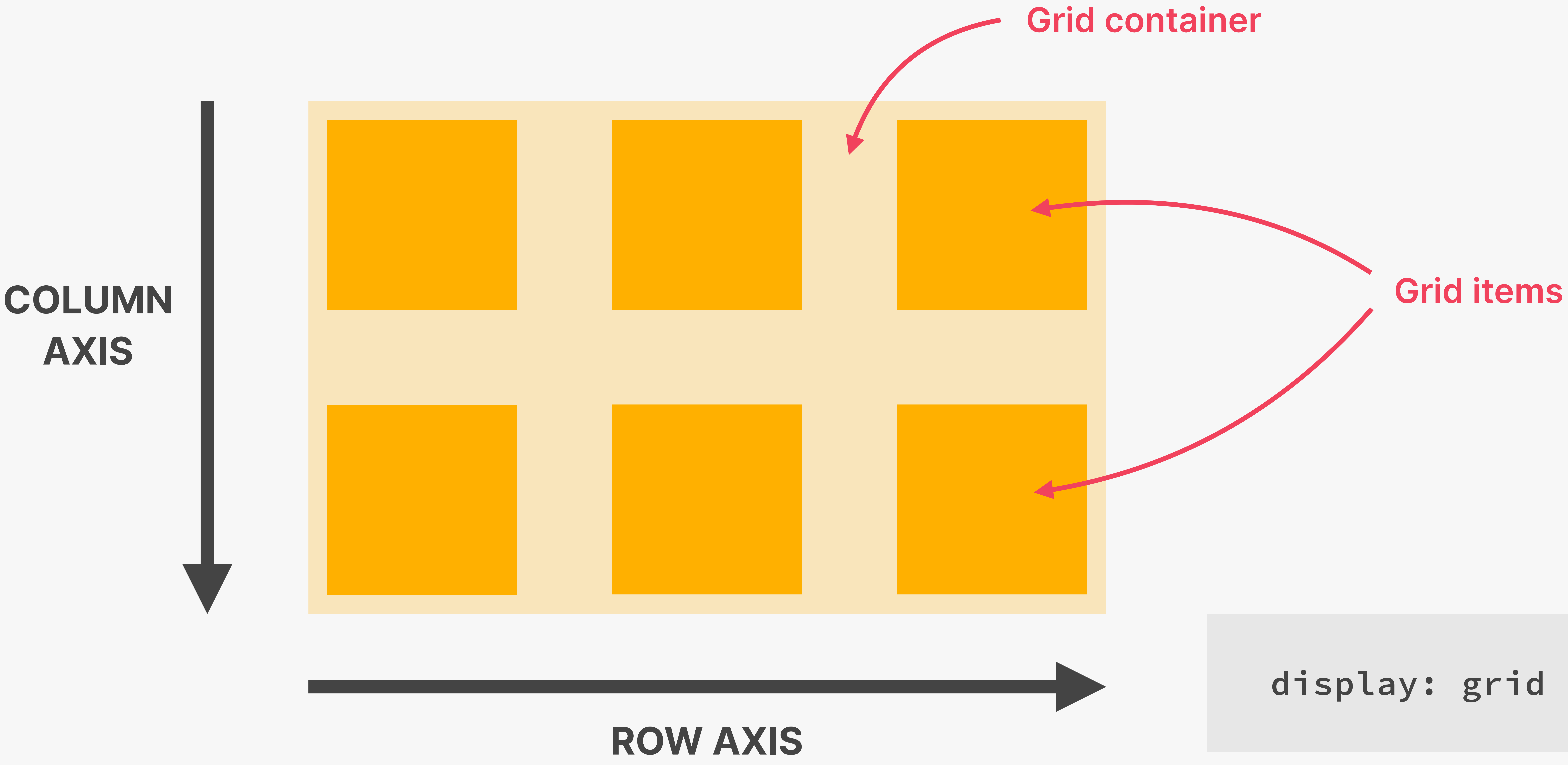
👉 CSS Grid is a set of **CSS properties** for **building 2-dimensional layouts**

👉 The main idea behind CSS Grid is that we **divide a container element into rows and columns** that can be filled with its child elements

👉 In two-dimensional contexts, CSS Grid allows us to write **less nested HTML** and **easier-to-read CSS**

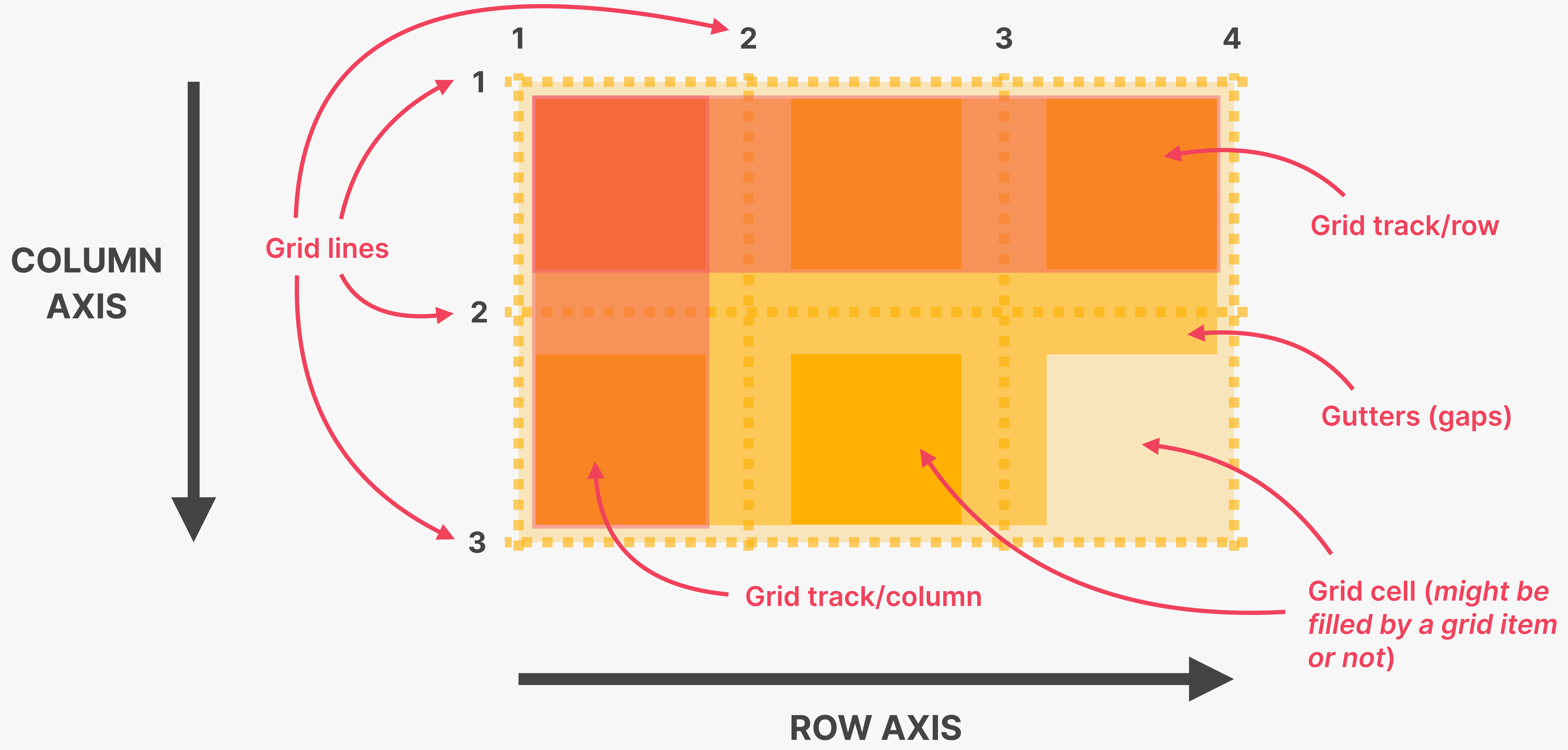
👉 CSS Grid is **not meant to replace flexbox**! Instead, they work perfectly together. Need a **1D** layout? Use flexbox. Need a **2D** layout? Use CSS Grid.

BASIC CSS GRID **TERMINOLOGY**



```
display: grid
```

MORE CSS GRID **TERMINOLOGY**



GRID CONTAINER

1

```
grid-template-rows: <track size>*
grid-template-columns: <track size>*
```

👉 *To establish the grid **row and column tracks**. One length unit for each track. Any unit can be used, new **fr** fills unused space*

2

```
row-gap: 0 | <length>
column-gap: 0 | <length>
```
```
gap: 0 | <length>
```

👉 *To **create empty space** between tracks*

3

```
justify-items: stretch | start | center | end
align-items: stretch | start | center | end
```

👉 *To align items inside rows / columns (**horizontally** / **vertically**)*

4

```
justify-content: start | start | center | end | ...
align-content: start | start | center | end | ...
```

👉 *To align entire **grid inside grid container**. Only applies if container is larger than the grid*

GRID ITEMS

1

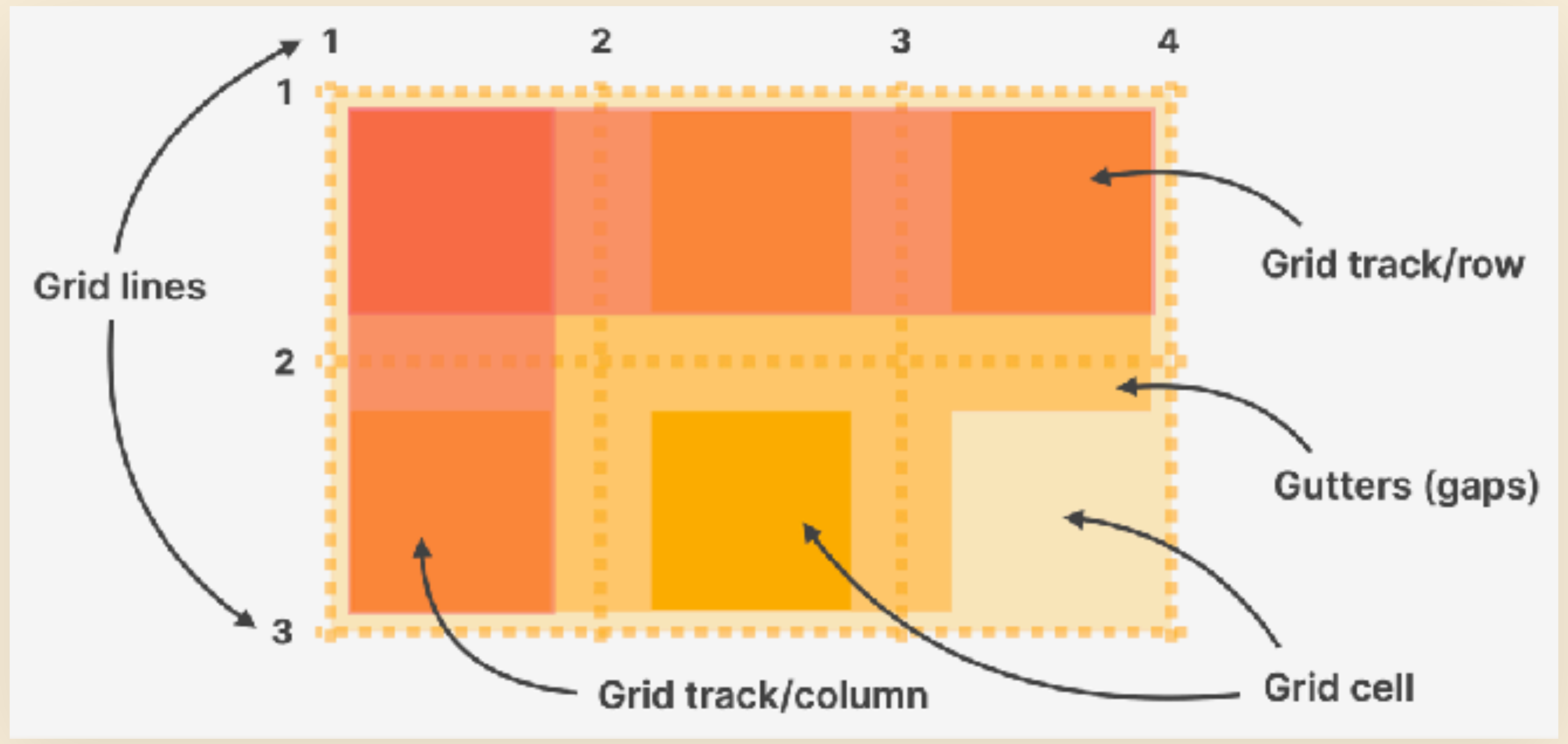
```
grid-column: <start line> / <end line> | span <number>
grid-row: <start line> / <end line> | span <number>
```

👉 *To **place a grid item** into a specific cell, based on line numbers. span keyword can be used to span an item across more cells*

2

```
justify-self: stretch | start | center | end
align-self: stretch | start | center | end
```

👉 *To **overwrite** `justify-items` / `align-items` for single items*



☝️ *This list of CSS Grid properties is not exhaustive, but enough to get started.*