Display Property

```
display: none;   —- html elements default visible

                 —- override default html position
display: inline;
display: block;

          —- responsive way to deal with positioning
display: flex;
display: grid;
```

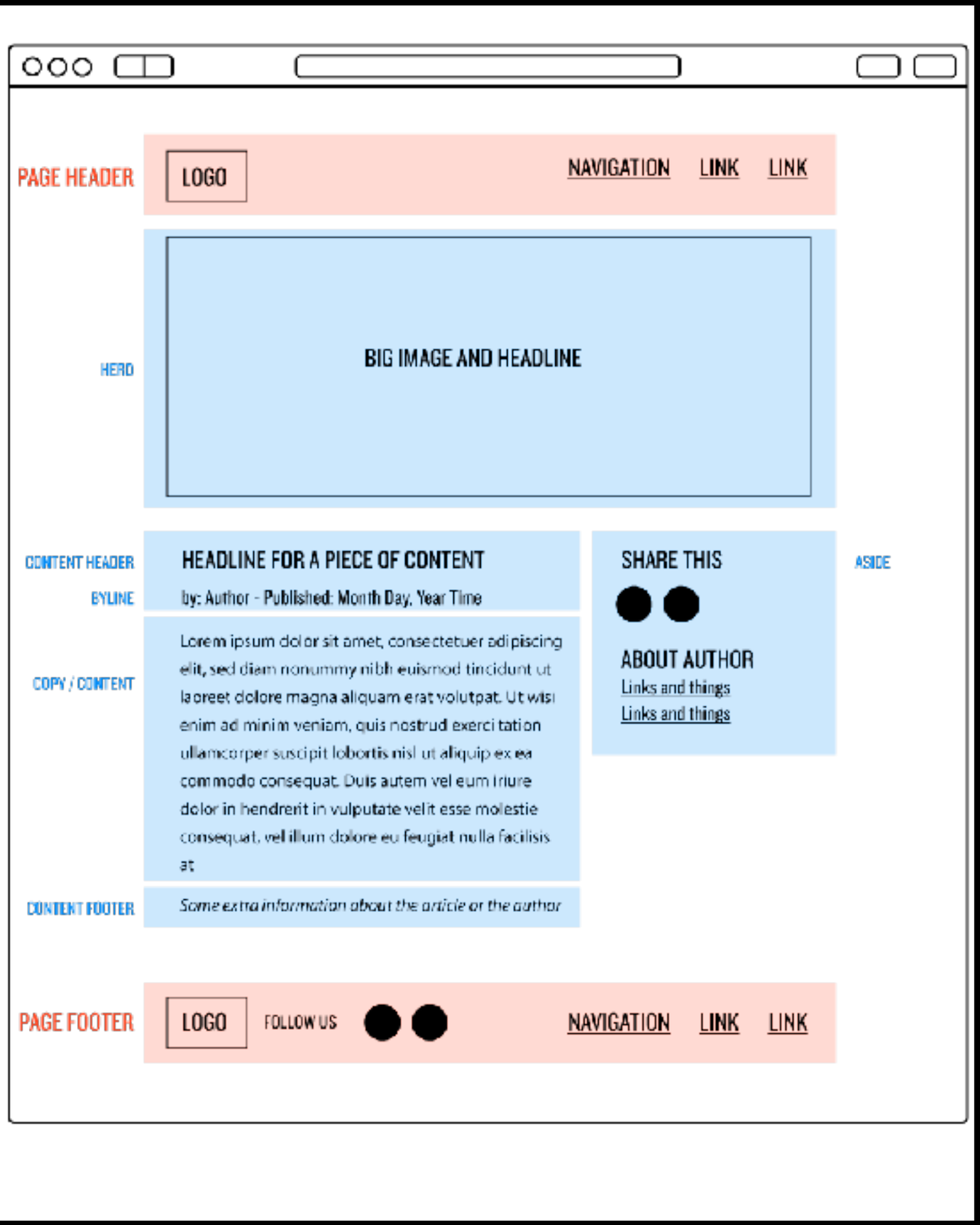
Overriding Default Display

Changing an inline element to a block element, or vice versa, can be useful for making the page look a specific way, and still follow the web standards.

```
li {
    display: inline;
}

span {
    display: block;
}
```

Note: Setting the display property of an element only changes how the element is displayed, NOT what kind of element it is. So, an inline element with display: block; is not allowed to have other block elements inside it.

css layout



— Learn Enough CSS + Layout

So basically up until now I've instructed to do things a particular way. Bc w/ html, git, unix, etc there is only one way to do something (or a piece of software over the process). W/ CSS - there is no "right" answer. When designing websites many solutions to yr problem will exist - which means subjective judgment is the rule rather than the exception.

— Learn Enough CSS + Layout

You have to get used to the idea that no site is going to be exactly the same when viewed by different people. You'll learn to design (or implement other people's designs) in a way that allows room for CSS's inherent ambiguity. Unlike the tightly constrained world of print design, getting things to look exactly the same in every browser and on every operating system is just something you have to give up worrying about.

— Learn Enough CSS + Layout

Font stack

It’s important to understand that the browser will only display font if it’s installed on user’s computer.

Font stack - a collection of more than one typeface in an order of preference to be displayed in the browser if some of the typefaces are not found.

```
{
  font-family: Georgia, Courier, serif;
}
```

Font

Padding is the space btw the border + the content.

Some Properties:

- font-family
- color
- font-size
- line-height
- text-align

Font

Padding is the space btw the border + the content.

text-decoration — underline, strike thru or none (eg to unset underline on hyperlinks

text-transform — change font **case** (eg uppercase, lower, capitalize, none)

font-style — set to italic or normal

font-weight — set to bold or normal

letter-spacing — controls the space btw letters

Custom web fonts: Google Fonts

Add link in **<head>** of HTML

```
<link href="https://fonts.googleapis.com/css?
family=Roboto" rel=“stylesheet">
```

Use with font-family property in CSS

```
font-family: 'Roboto', sans-serif;
```

Absolute length units

The following are all **absolute** length units — they are not relative to anything else, and are generally considered to always be the same size.

Unit	Name	Equivalent to
`cm`	Centimeters	1cm = 38px = 25/64in
`mm`	Millimeters	1mm = 1/10th of 1cm
`Q`	Quarter-millimeters	1Q = 1/40th of 1cm
`in`	Inches	1in = 2.54cm = 96px
`pc`	Picas	1pc = 1/6th of 1in
`pt`	Points	1pt = 1/72th of 1in
`px`	Pixels	1px = 1/96th of 1in

https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Values_and_units

Relative length units

Relative length units are relative to something else, perhaps the size of the parent element's font, or the size of the viewport. The benefit of using relative units is that with some careful planning you can make it so the size of text or other element scales relative to everything else on the page. Some of the most useful units for web development are listed in the table below.

Unit	Relative to
`em`	Font size of the parent, in the case of typographical properties like `font-size`, and font size of the element itself, in the case of other properties like `width`.
`ex`	x-height of the element's font.
`ch`	The advance measure (width) of the glyph "0" of the element's font.
`rem`	Font size of the root element.
`lh`	Line height of the element.
`vw`	1% of the viewport's width.
`vh`	1% of the viewport's height.
`vmin`	1% of the viewport's smaller dimension.
`vmax`	1% of the viewport's larger dimension.

https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Values_and_units

VIEWPORT WIDTH // VIEWPORT HEIGHT

- Use units **vh** and **vw** to set height and width to the percentage of the viewport's height and width, respectively

- 1vh = 1/100th of the viewport height
- 1vw = 1/100th of the viewport width

```
div {
   width:10vw;
   height: 10vw;
 }
```

responsive text

The text size can be set with a "vw" unit, which means the "viewport width".

That way the text size will follow the size of the browser window.

```
div {
 font-size:10vw
 }
```

Media Queries

the @media rule tells the browser to include a block of CSS properties only if a certain condition is true.

So this:

```
@media only screen and (max-width: 500px)  {
    body {
        background-color: light blue;
    }
}
```

Translates to:

```
if (the maximum width of the web page is 500 pixels) {
        then do this stuff
}
```

Media Queries

Breakpoint

```
/* For mobile phones: */
[class*="col-"] {
    width: 100%;
}
@media only screen and (min-width: 768px) {
    /* For desktop: */
    .col-1 {width: 8.33%;}
    .col-2 {width: 16.66%;}
    .col-3 {width: 25%;}
    .col-4 {width: 33.33%;}
    .col-5 {width: 41.66%;}
    .col-6 {width: 50%;}
    .col-7 {width: 58.33%;}
    .col-8 {width: 66.66%;}
    .col-9 {width: 75%;}
    .col-10 {width: 83.33%;}
    .col-11 {width: 91.66%;}
    .col-12 {width: 100%;
}
```

add a **breakpoint** where certain parts of the design will behave differently on each side of the breakpoint

many examples: https://www.w3schools.com/Css/css_rwd_mediaqueries.asp

Mobile-first! (Images)

```
/* For width smaller than 400px: */
body {
    background-image: url(‘void_newspaper.jpg’);
}

/* For width 400px and larger: */
@media only screen and (min-width: 400px) {
    body {
        background-image: url('void.jpg');
    }
}
```

responsive

"A pixel is not a pixel"

— Peter Paul Koch

“If the pixel density of the output device is very different from that of a typical computer display, the user agent should rescale pixel values. It is recommended that the pixel unit refer to the whole number of device pixels that best approximates the reference pixel. It is recommended that the reference pixel be the visual angle of one pixel on a device with a pixel density of 96dpi and a distance from the reader of an arm's length.” — w3 consortium

```
<!
—  - Tells the browser to match the device's width for the viewport
    - Sets an initial zoom value -->

<meta name="viewport" content="width=device-width, initial-scale=1.0”>
```

<!- Moving forward this line of code should be in EVERY web page you author. —>

<meta name="viewport" content="width=device-width, initial-scale=1.0”>

```
<!DOCTYPE html>
<html>

 <head>
  <title> 🖥️ Web Dev Week 06</title>
  <link href="https://fonts.googleapis.com/css?family=Spartan|Trade+Winds&display=swap" rel="stylesheet">
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" type="text/css" href="theStyle.css">
 </head>

 <body>
```

```
<!-- upcoming question - what is this? -->
```

<meta charset=“utf-8”>

<meta name="viewport" content="width=device-width, initial-scale=1.0”>

without

with

Metadata: `viewport`

The user's visible area of a web page

HTML5 introduced a method to let web designers take control over the viewport, through the **<meta>** tag.

Let's breakdown the `content` value:

+ Values are comma separated, letting you specify a list of values for `content`
+ The `width` value is set to `device-width`. This will cause the browser to render the page at the same width of the device's screen size.
+`initial-scale` set to `1` indicates the "zoom" value if your web page when it is first loaded. `1` means "no zoom."

There are other values you can specify for the `content` list -

```
<meta name="viewport" content="width=device-width, initial-scale=1.0”>
```

Metadata: `viewport`

There are other values you can specify for the `content` attribute -

```
<meta name="viewport" content="width=device-width, initial-scale=1.0”>
```

500px

minimum-scale
maximum-scale
user-scalable

flex display

Flex - different rendering model

When you set a container to **display: flex**, the direct children in that container are **flex items** + follow a new set of rules.

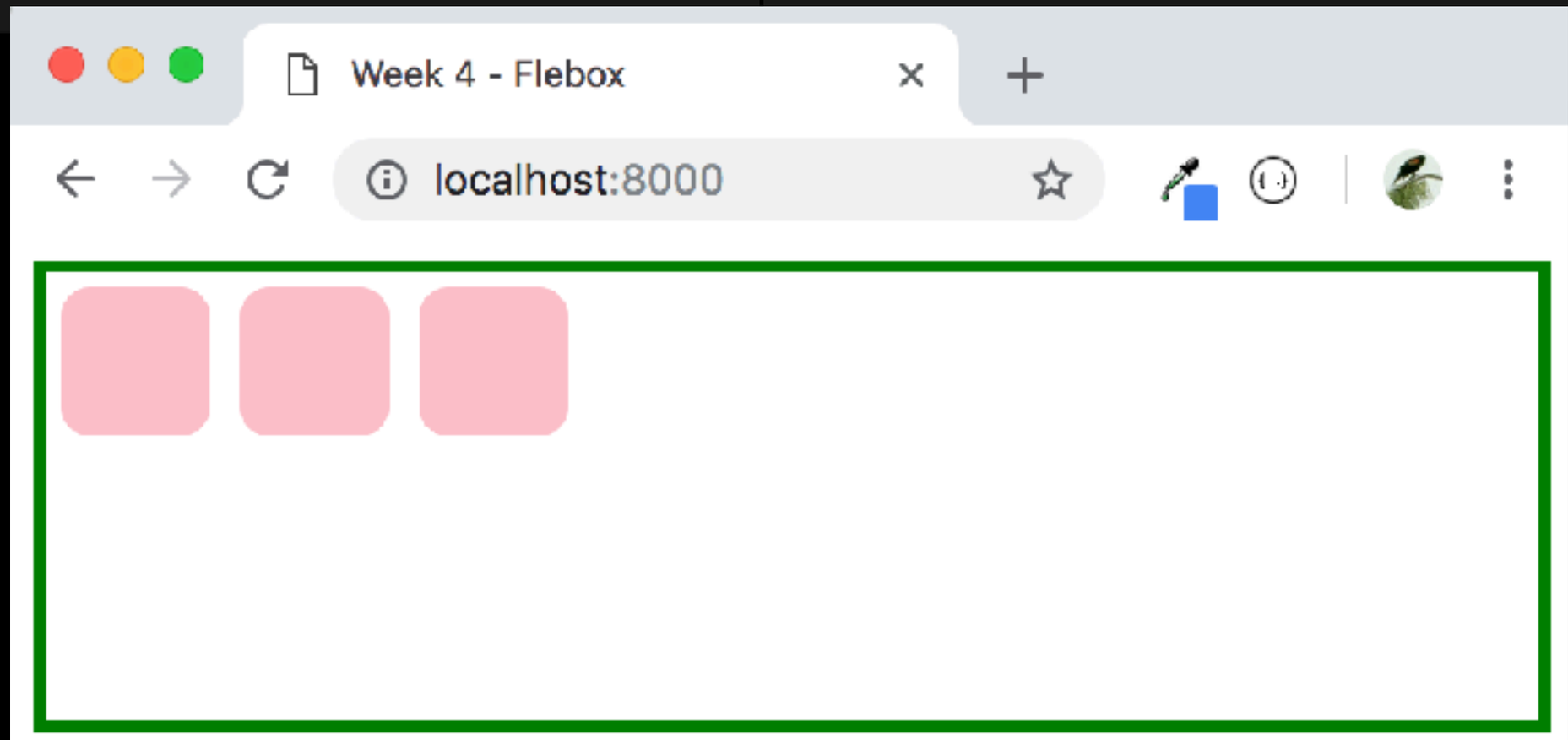
Flex items are not block or inline; they have different rules for their height, width + layout.

- The **contents** of a flex item follow the usual block/inline rules, relative to the flex item's boundary.

Flex Basics

```
</head>

<body>

    <div id="flexBox">
     <div class="flexThing"></div>
     <div class="flexThing"></div>
     <div class="flexThing"></div>

    </div>
</body>
```

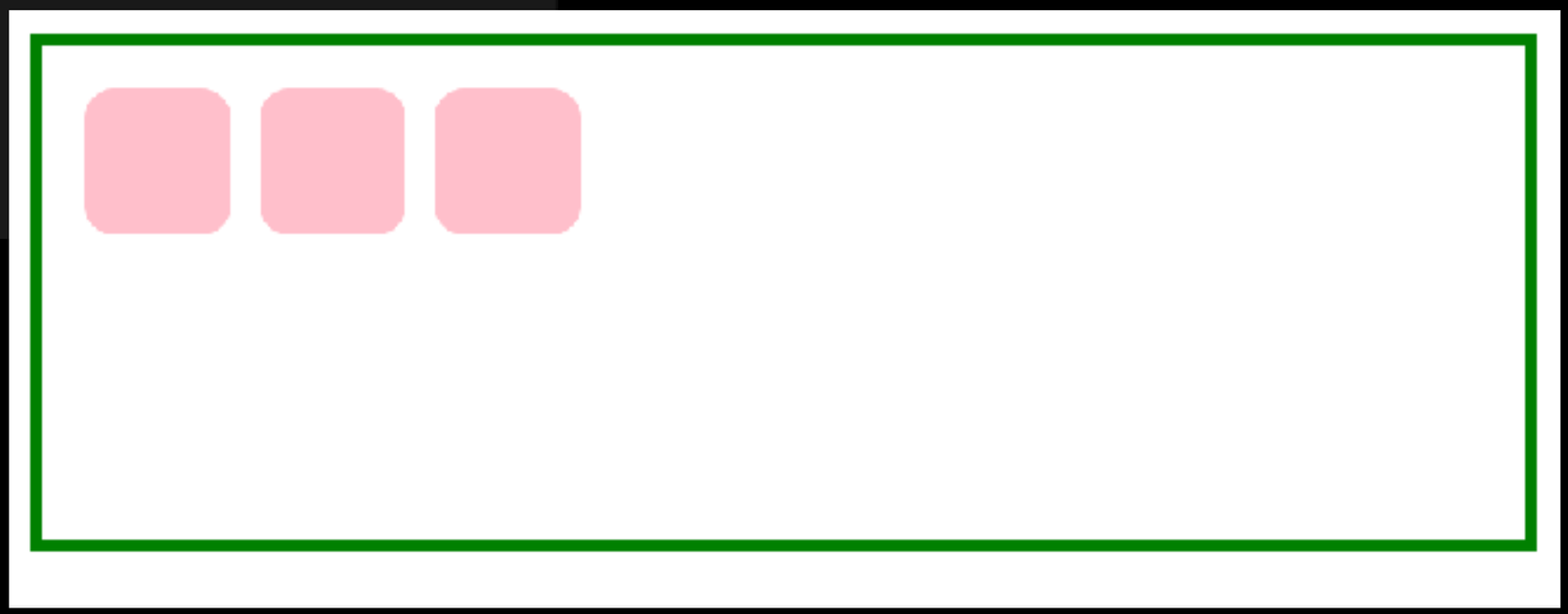
```
#flexBox {
    display: flex;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    border-radius: 10px;
    background-color: pink;
    height: 50px;
    width: 50px;
    margin: 5px;
}
```



Flex Basics: justify-content

You can control where the item is horizontally in the box by setting **justify-content** in the flex container.

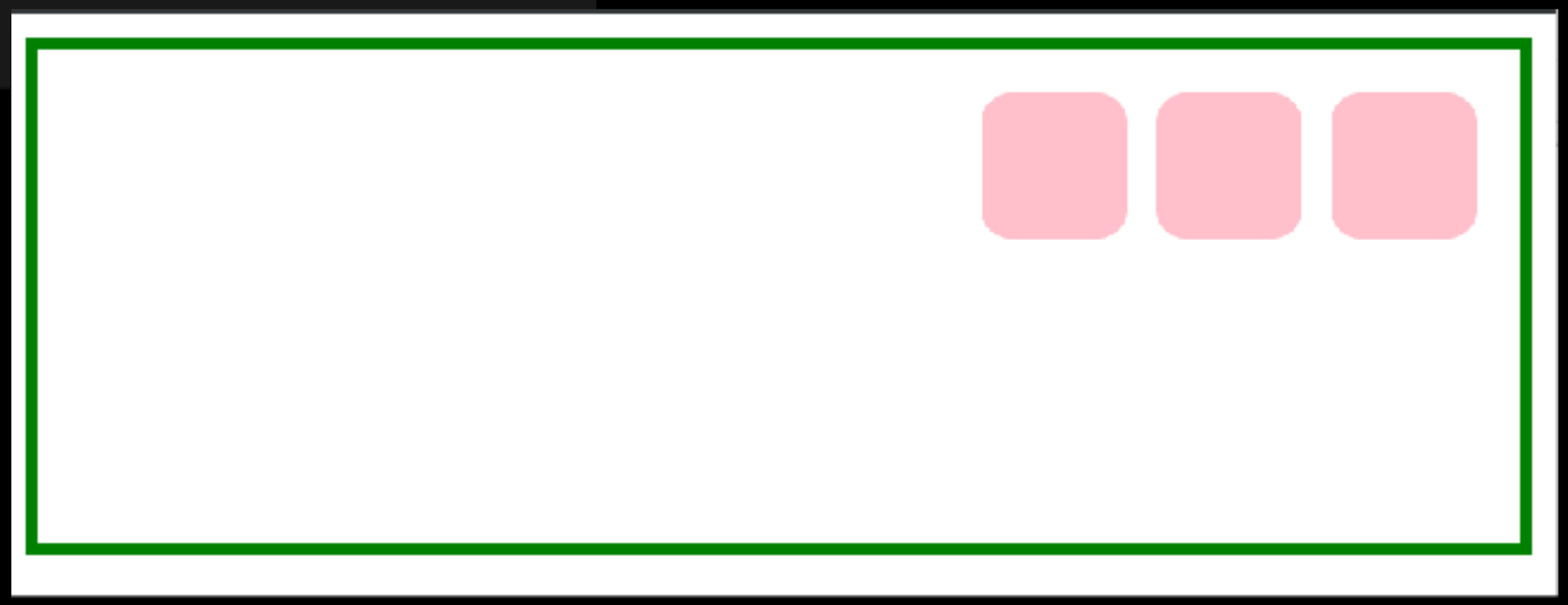
```
#flexBox {
    display: flex;
    border: 4px solid Green;
    justify-content: flex-start;
    padding: 10px;
    height: 150px;
}
```



Flex Basics: justify-content

You can control where the item is horizontally in the box by setting **justify-content** in the flex container.

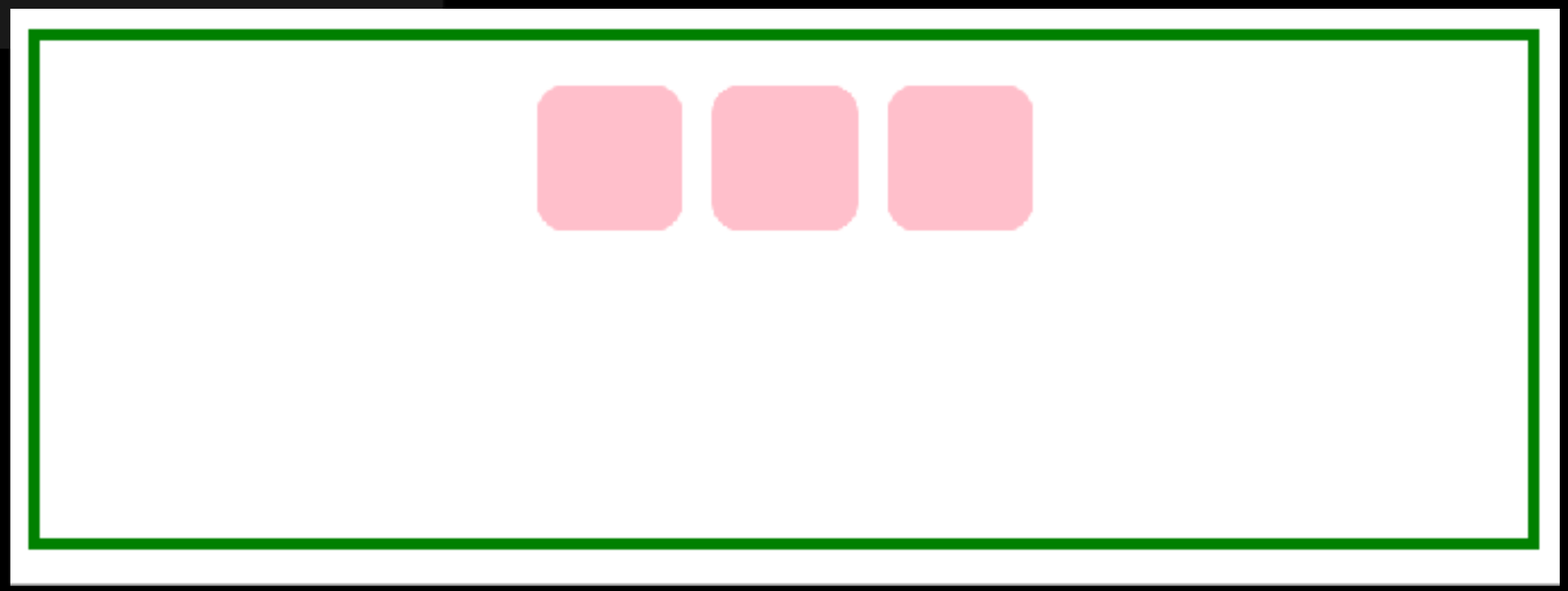
```
#flexBox {
    display: flex;
    justify-content: flex-end;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics: justify-content

You can control where the item is horizontally in the box by setting **justify-content** in the flex container.

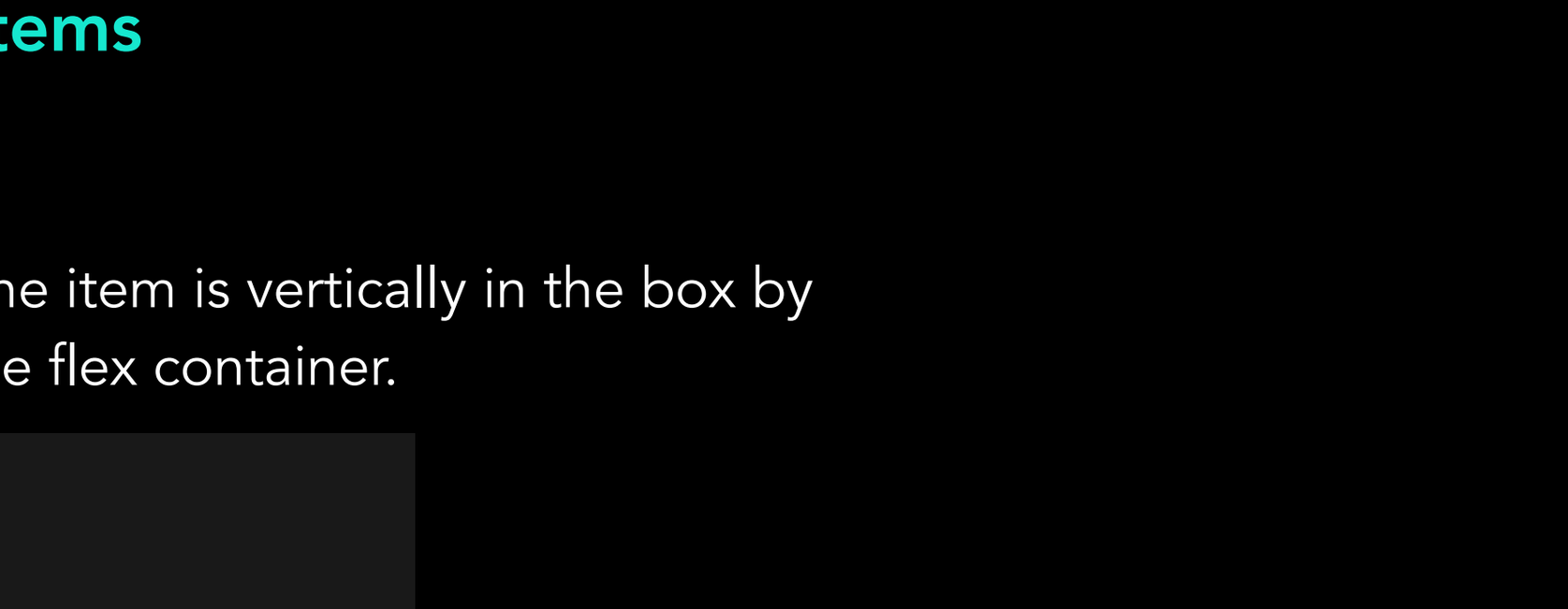
```
#flexBox {
    display: flex;
    justify-content: center;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics: align-items

You can control where the item is vertically in the box by setting **align-items** in the flex container.

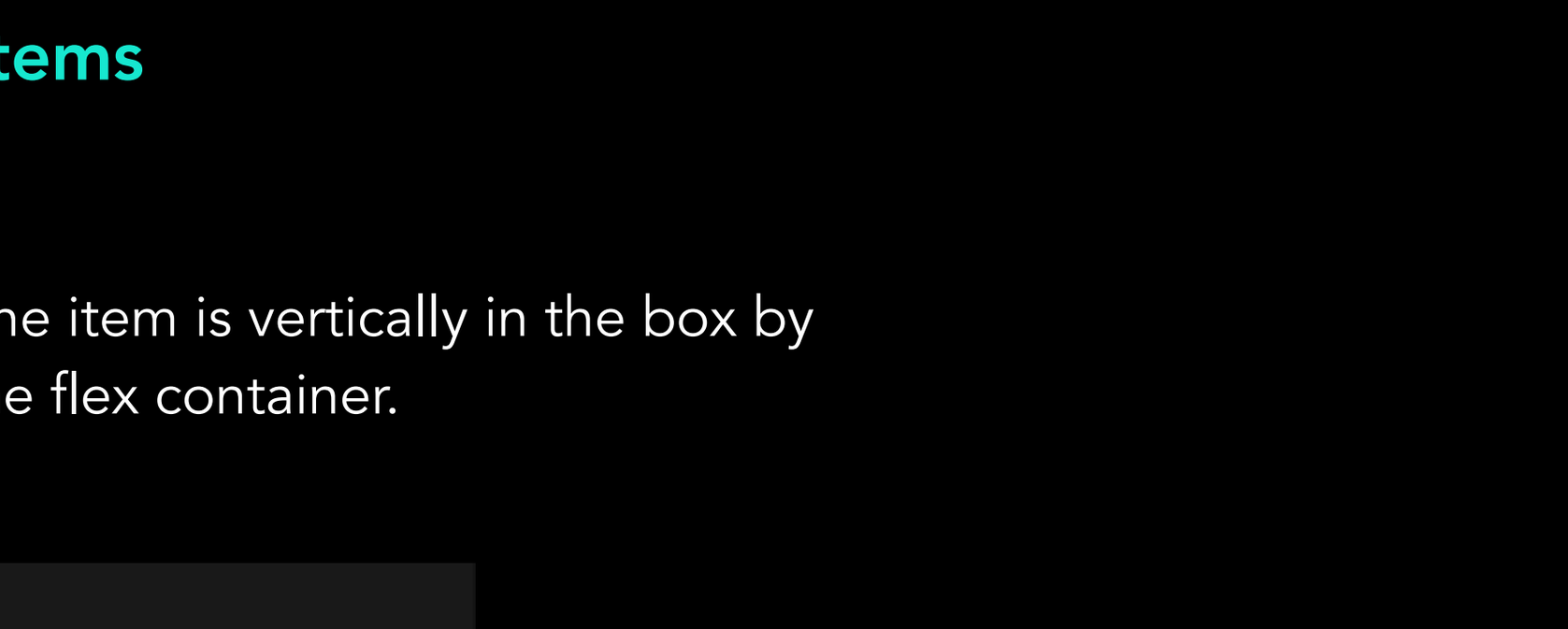
```
#flexBox {
    display: flex;
    align-items: flex-start;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics: align-items

You can control where the item is vertically in the box by setting **align-items** in the flex container.

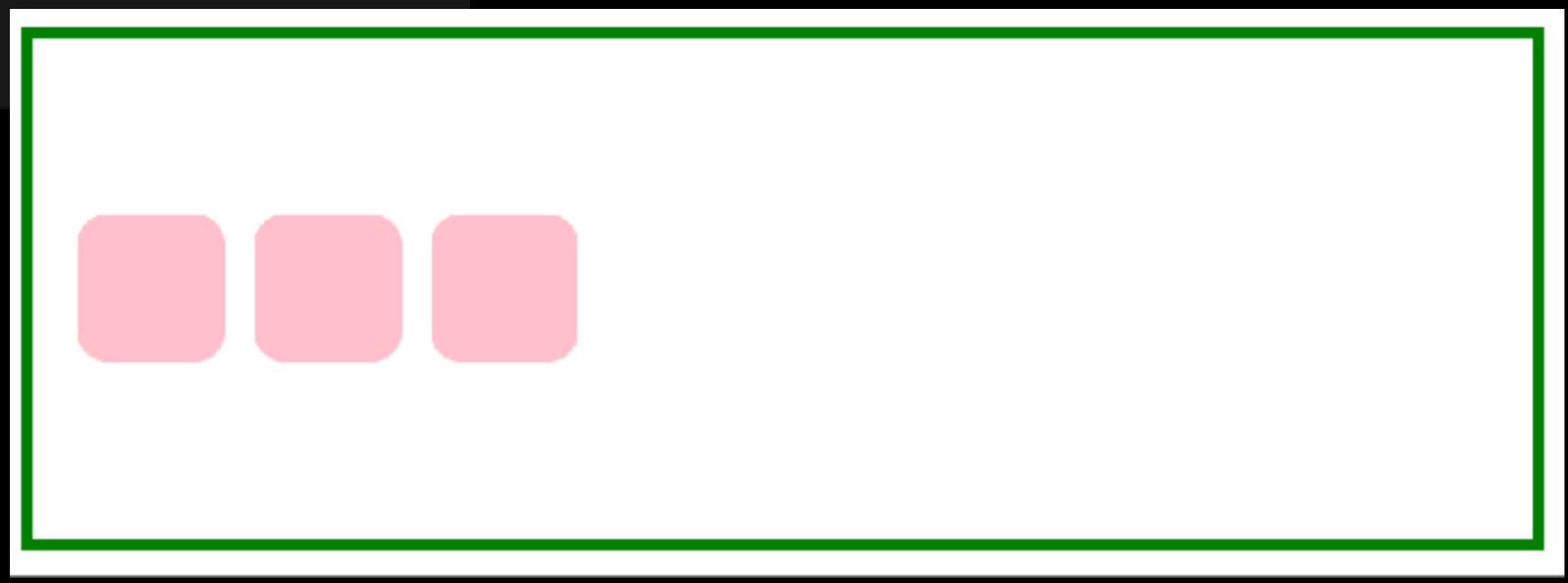
```
#flexBox {
    display: flex;
    align-items: flex-end;
    padding: 10px;
    height: 150px;
    border: 4px solid
}
```



Flex Basics: align-items

You can control where the item is vertically in the box by setting **align-items** in the flex container.

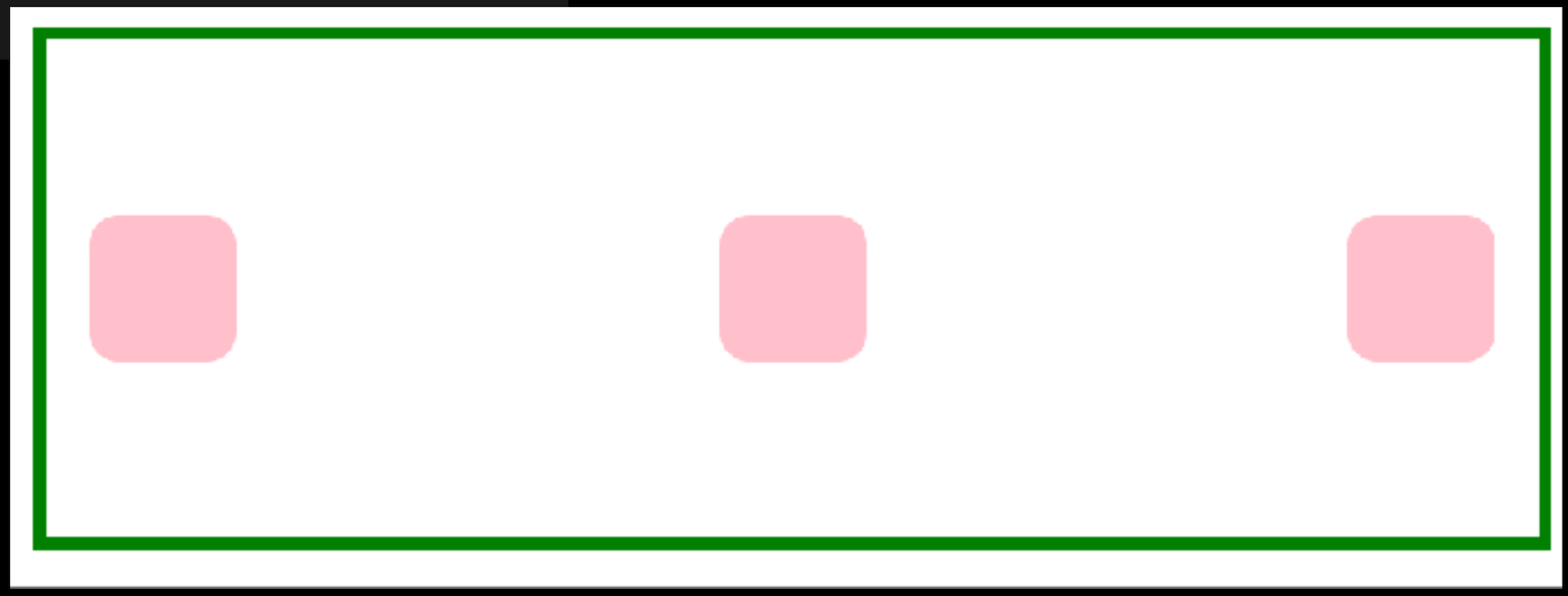
```
#flexBox {
    display: flex;
    align-items: center;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics:

justify-content: space-between + space-around

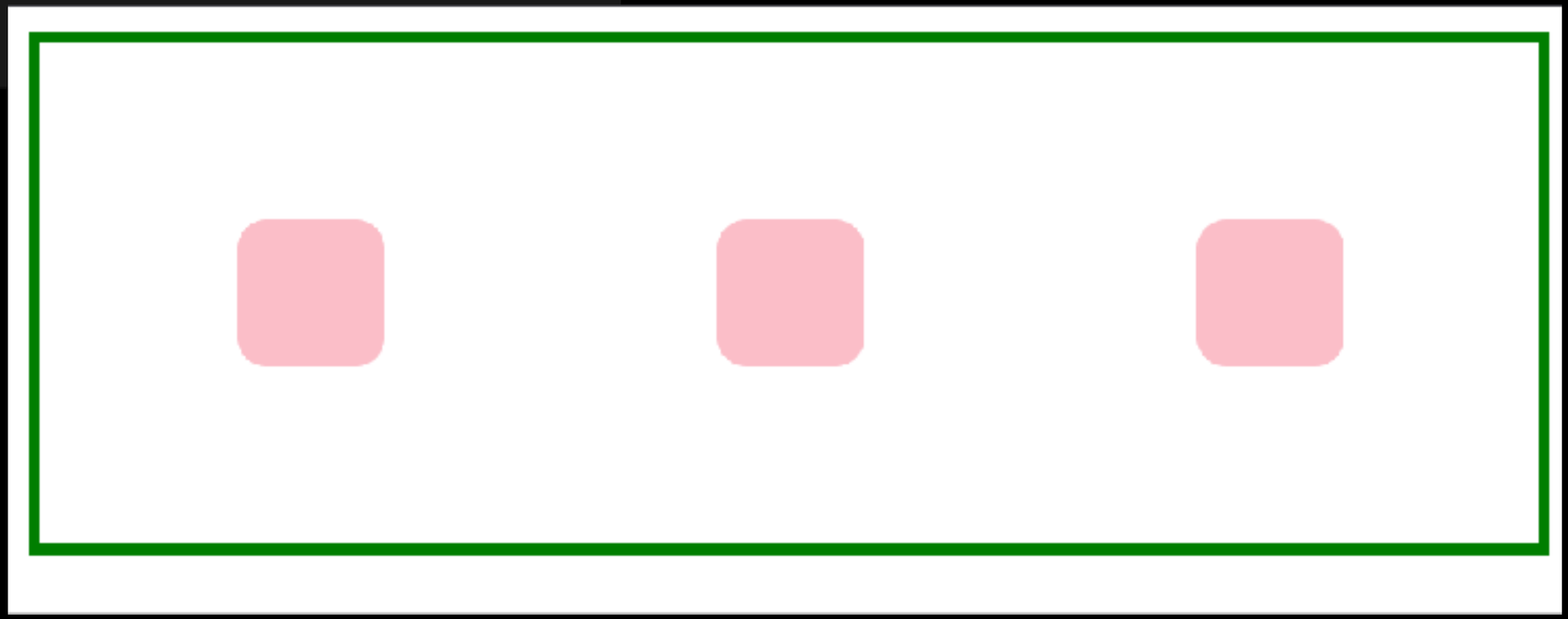
```
#flexBox {
    display: flex;
    justify-content: space-between;
    align-items: center;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics:

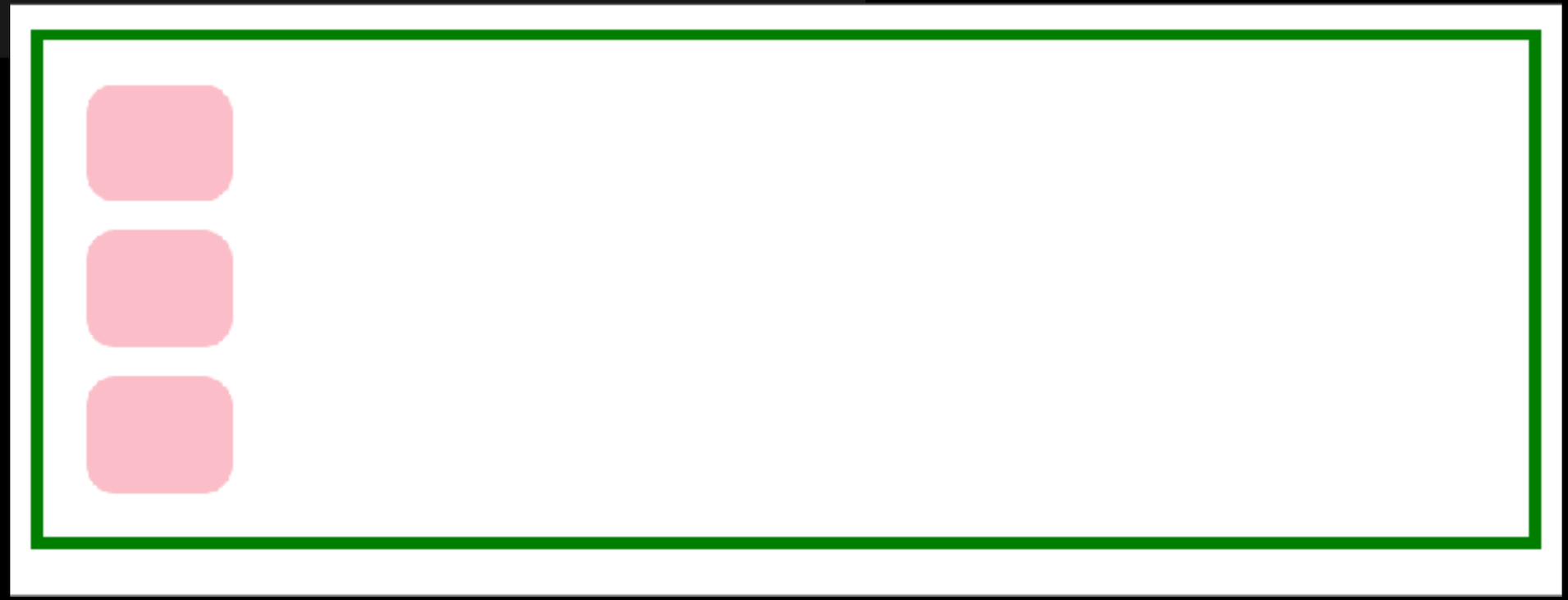
justify-content: space-between + space-around

```
#flexBox {
    display: flex;
    justify-content: space-around;
    align-items: center;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics: flex-direction

```
#flexBox {
    display: flex;
    flex-direction: column;
    padding: 10px;
    height: 150px;
    border: 4px solid Green;
}
```



Flex Basics: flex-direction

```
#flexBox {
    display: flex;
    flex-direction: column;
    justify-content: space-around;
    padding: 10px;
    height: 300px;
    border: 4px solid Green;
}
```

And you can also lay out columns instead of rows.

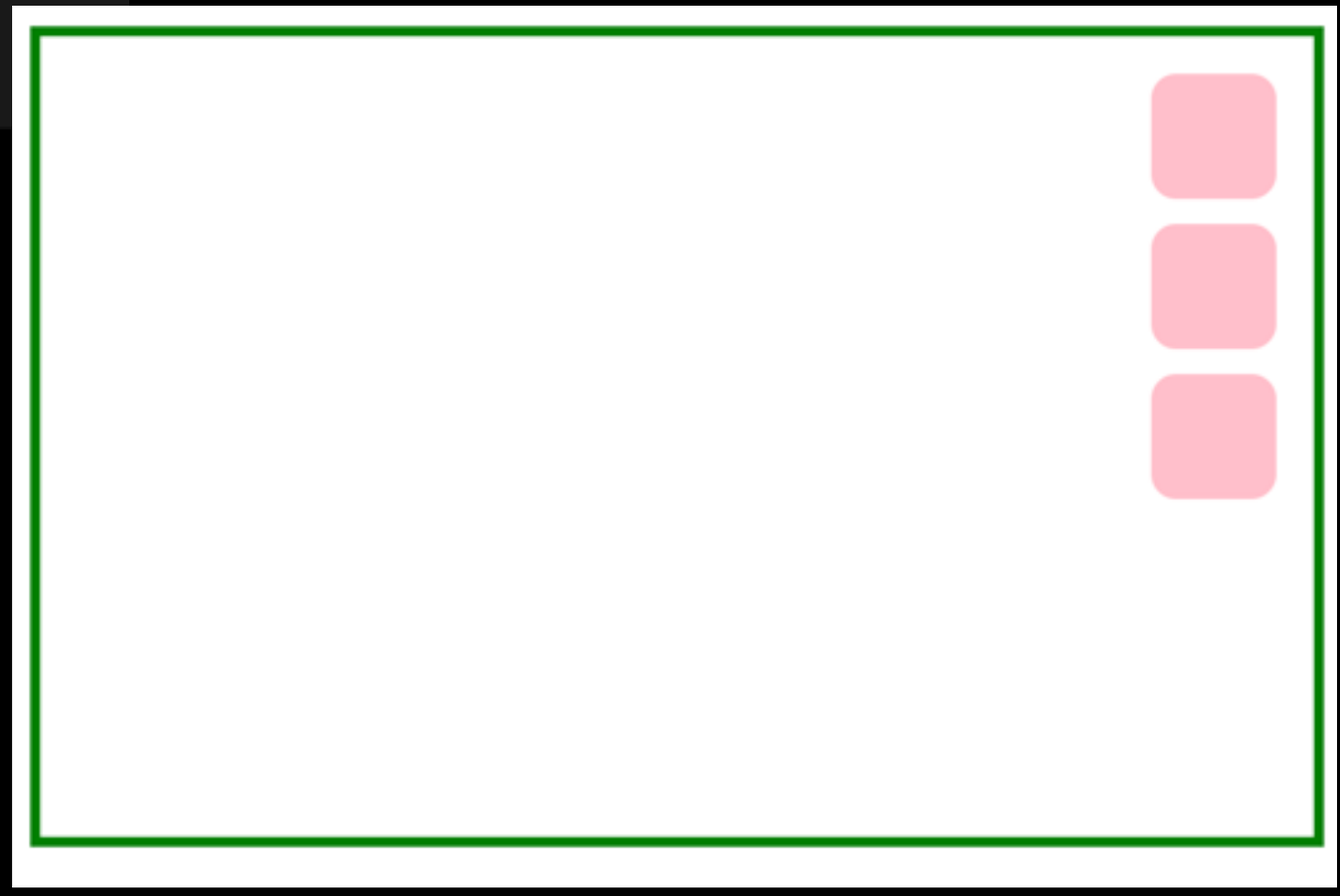
Now **justify-content** controls where the column is vertically in the box.

Flex Basics: flex-direction

```
#flexBox {
    display: flex;
    flex-direction: column;
    align-items: flex-end;
    padding: 10px;
    height: 300px;
    border: 4px solid Green;
}
```

And you can also lay out columns instead of rows.

Now **align-items** controls where the column is horizontally in the box.



Flex Basis

Flex items have an initial width*, which, by default is either:

- The content width, or
- The explicitly set **width** property of the element, or
- The explicitly set **flex-basis** property of the element

This initial width* of the flex item is called the **flex basis**.

The explicit width of a flex item is respected **for all flex items**, regardless of whether the flex item is inline, block, or inline-block.*

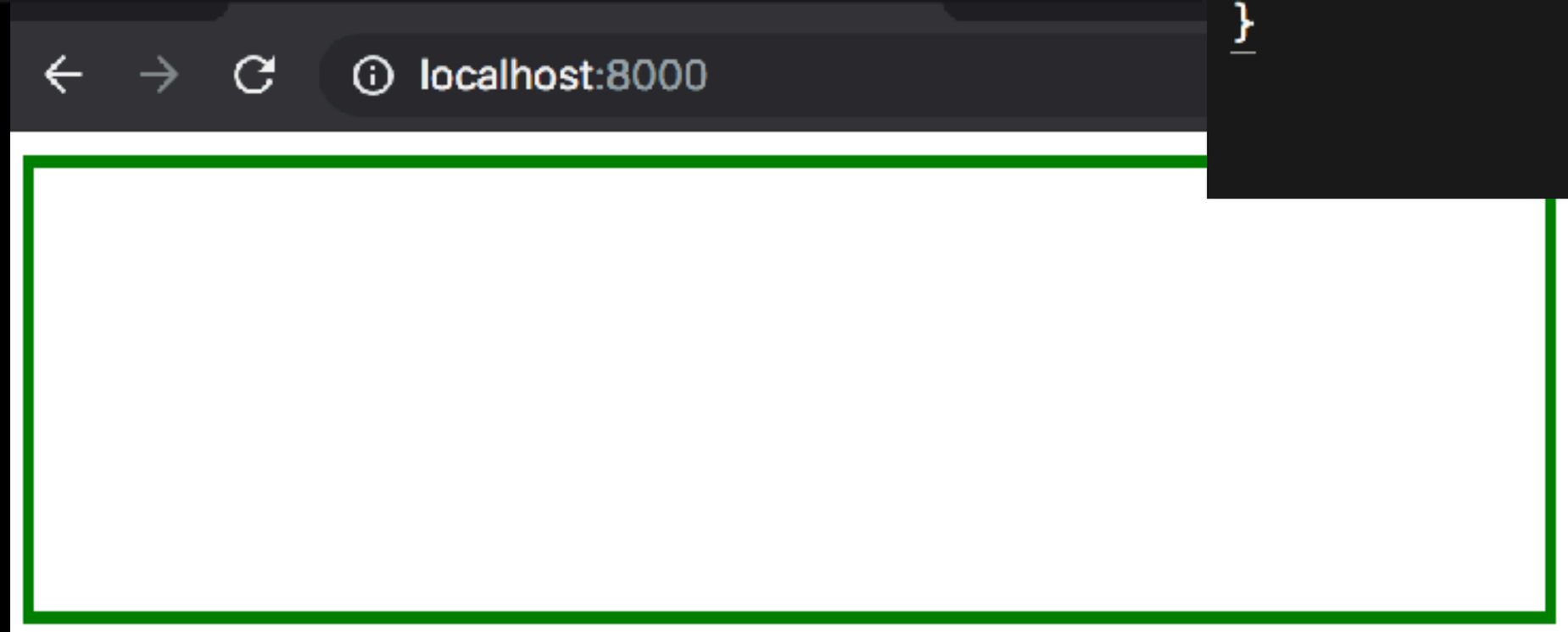
*width in the case of rows; height in the case of columns

Flex Basis

If we unset the height and width, our flex items disappears, because the **flex basis** is now the content size, which is empty:

```
<div id="flexBox">
 <span class="flexThing"></span>
 <div class="flexThing"></div>
 <span class="flexThing"></span>
</div>
```

```
#flexBox {
    display: flex;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```



flex-shrink

The width* of the flex item can automatically shrink **smaller** than the **flex basis** via the **flex-shrink** property:

flex-shrink:

- If set to **1**, the flex item shrinks itself as small as it can in the space available
- If set to **0**, the flex item does not shrink.

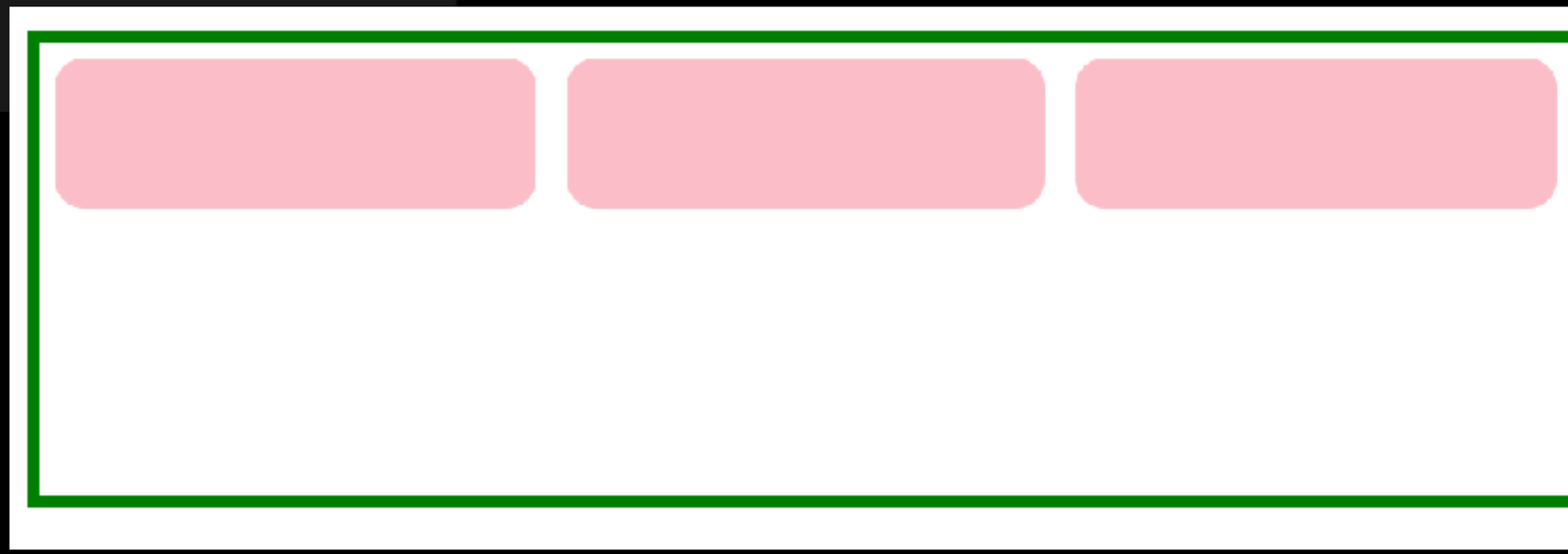
Flex items have **flex-shrink**: **1 by default**.

*width in the case of rows;
height in the case of columns

flex-shrink

```
#flexBox {
    display: flex;
    align-items: flex-start;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    width: 500px;
    height: 50px;
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```

The flex items' widths all shrink to fit the width of the container.



flex-shrink

```
.flexThing {
    width: 500px;
    height: 50px;
    flex-shrink: 0;
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```

Setting **flex-shrink**: **0**;
undoes the shrinking behavior,
and the flex items do not
shrink in any circumstance:

flex-grow

The width* of the flex item can automatically **grow larger** than the **flex basis** via the **flex-grow** property:

flex-grow:

- If set to **1**, the flex item grows itself as large as it can in the space remaining
- If set to **0**, the flex item does not grow

Flex items have **flex-grow**: **0 by default**.

*width in the case of rows;
height in the case of columns

flex-grow

Let’s unset the height + width of our flex items again.

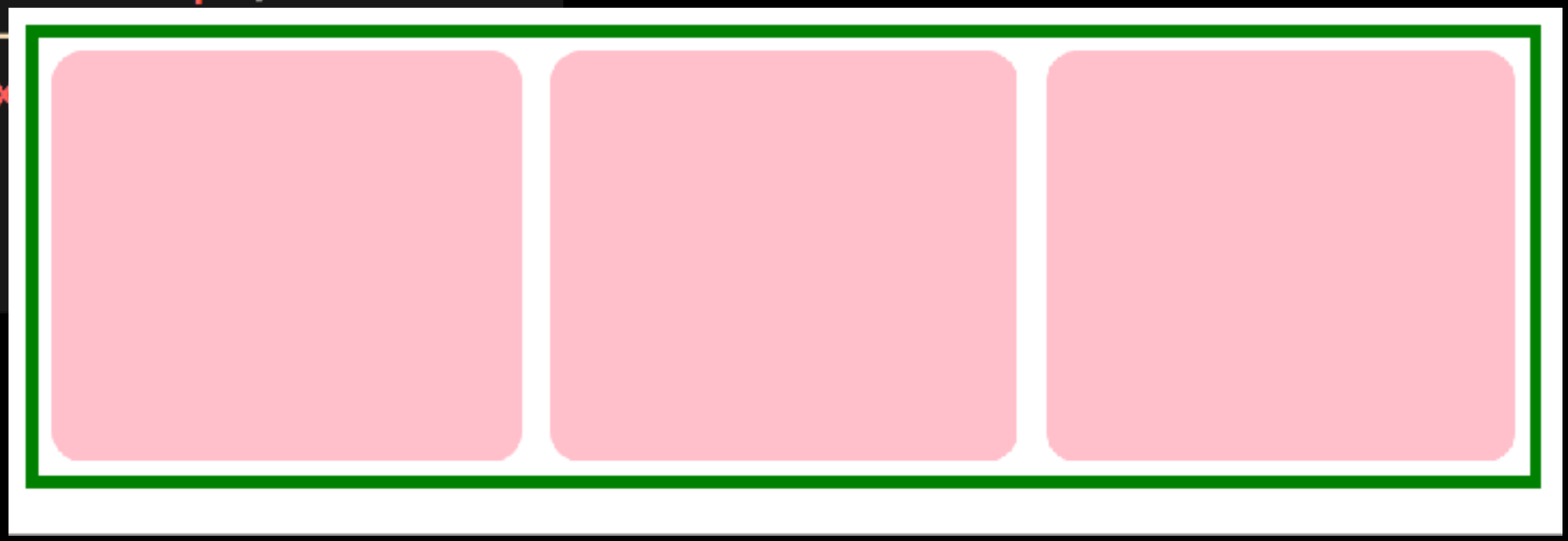
```
<div id="flexBox">
 <span class="flexThing"></span>
 <div class="flexThing"></div>
 <span class="flexThing"></span>
</div>
```

```
#flexBox {
    display: flex;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```

flex-grow

if we set **flex-grow: 1;**
the flex items fill the empty space.

```
#flexBox {
    display: flex;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    flex-grow: 1;
    border-radius: 10px;
    background-
    margin: 5px
}
```

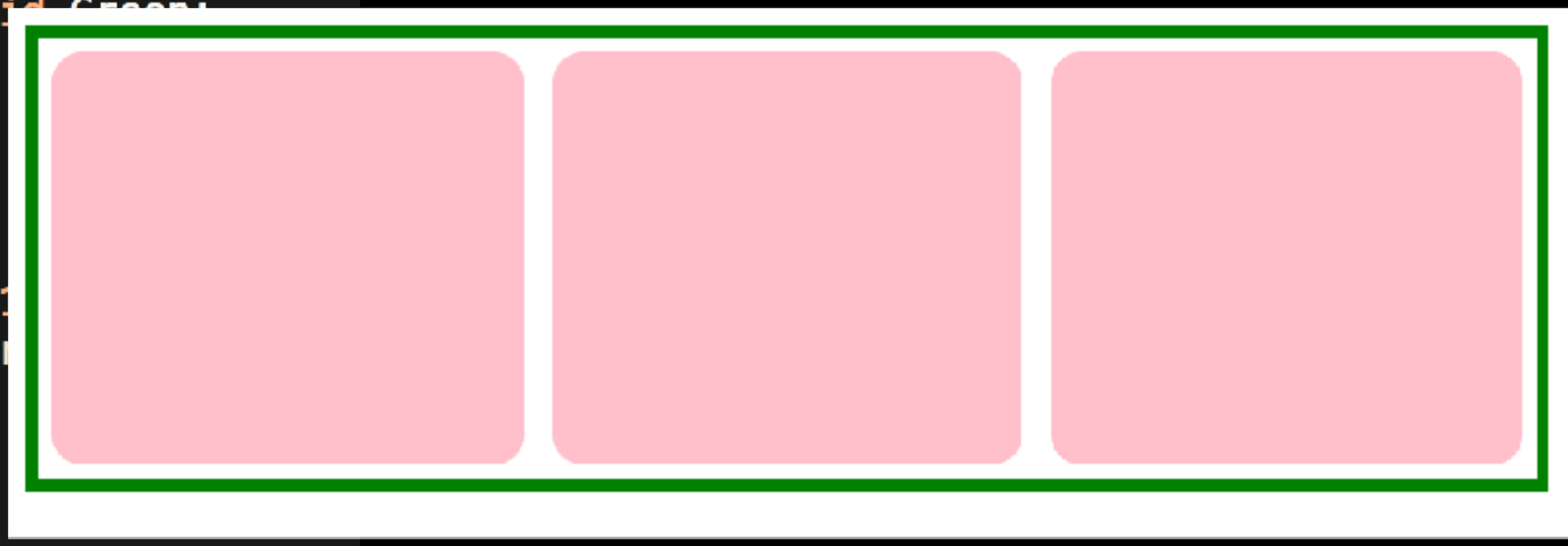


flex item height?**

note that **flex-grow** only controls width*

So why does the height** of the flex items seem to ‘grow’ as well?

```
#flexBox {
    display: flex;
    border: 4px soli
    height: 150px;
}

.flexThing {
    flex-grow: 1;
    border-radius:
    background-colo
    margin: 5px;
}
```



*width in the case of rows; height in the case of columns

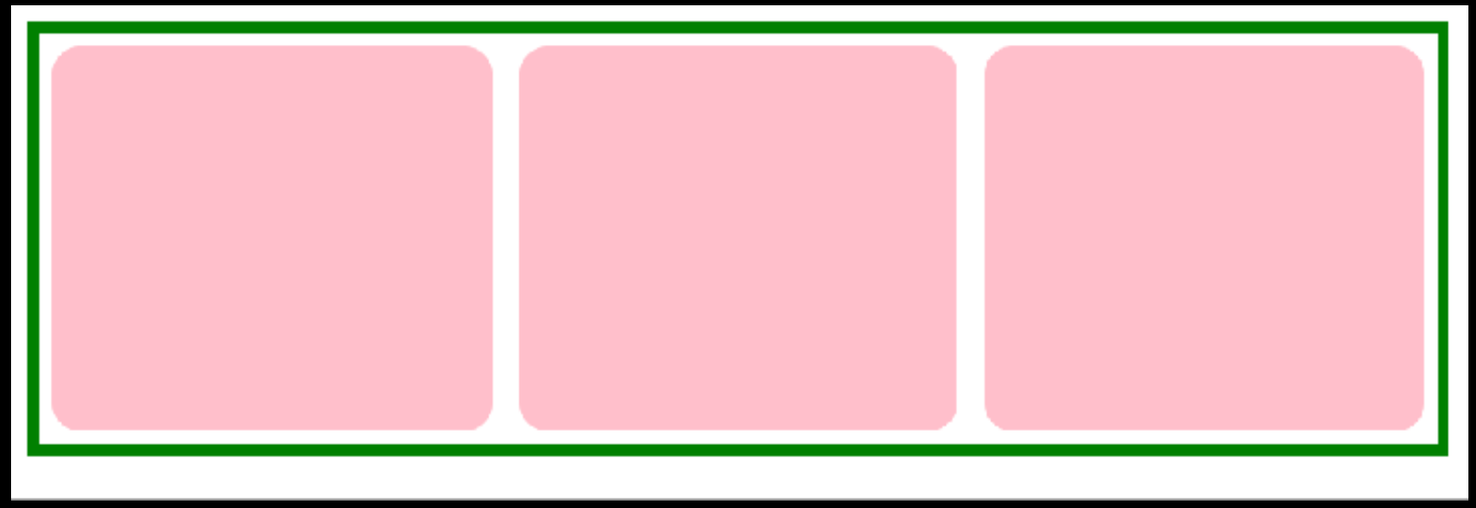
**height in the case of rows; width in the case of columns

align-items: stretch;

The default value of **align-items** is stretch, which means every flex item grows vertically* to fill the container by default.

(This will not happen if the height on the flex item is set)

```
#flexBox {
    display: flex;
    border: 4px solid Green;
    height: 150px;
}

.flexThing {
    flex-grow: 1;
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```



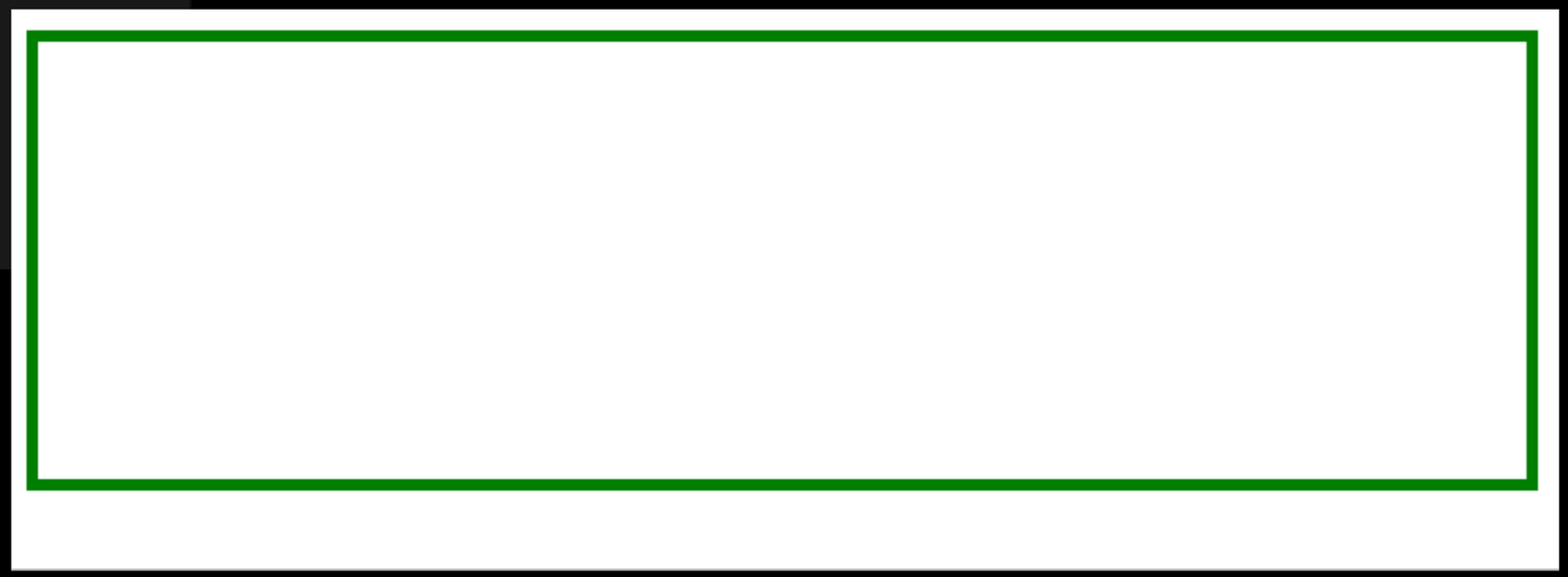
*veritcally in the case of rows; horizontally in the case of columns

align-items: stretch;

If we set another value for align-items, the flex items disappear again because the height is now content height, which is 0:

```
#flexBox {
    display: flex;
    align-items: flex-start;
    border: 4px solid Green;
    height: 150px;
}
```

```
.flexThing {
    flex-grow: 1;
    border-radius: 10px;
    background-color: pink;
    margin: 5px;
}
```



css grids

Flexbox & CSS Grid

"The basic difference between CSS Grid Layout and CSS Flexbox Layout is that flexbox was designed for layout in one dimension - either a row or a column. Grid was designed for two-dimensional layout - rows, and columns at the same time. The two specifications share some common features, however, and if you have already learned how to use flexbox, the similarities should help you get to grips with Grid."

MDN

The flex-direction property defines in which direction the container wants to stack the flex items - either flex-direction: row or flex-direction: column. However, by using flex-wrap property. Read all about **CSS Flexbox @ W3**.

CSS Grid

A grid is an intersecting set of horizontal and vertical lines - one set defining columns and the other rows. Elements can be placed onto the grid, respecting these column and row lines.

How Grid Layout Works

The process for using the CSS Grid Layout Module is fundamentally simple:

+ Use the display property to turn an element into a grid container. The element's children automatically become grid items.
+ Set up the columns and rows for the grid. You can set them up explicitly and/or provide directions for how rows and columns should get created on the fly (the css grid is very flexible).
+ Assign each grid item to an area on the grid. If you don't assign them explicitly, they flow into the cells sequentially.

The element that has the display: **grid property** applied to it becomes the grid container and defines the context for grid formatting. All of its direct child elements automatically become grid items that end up positioned in the grid. You can define an explicit grid with grid layout but the specification also deals with the content added outside of a declared grid, which adds additional rows and columns when needed. Features such as adding "as many columns that will fit into a container" are included.

Grid line

The horizontal and vertical dividing lines of the grid are called grid lines.

Grid cell

The smallest unit of a grid is a grid cell, which is bordered by four adjacent grid lines with no grid lines running through it.

Grid area

A grid area is a rectangular area made up of one or more adjacent grid cells.

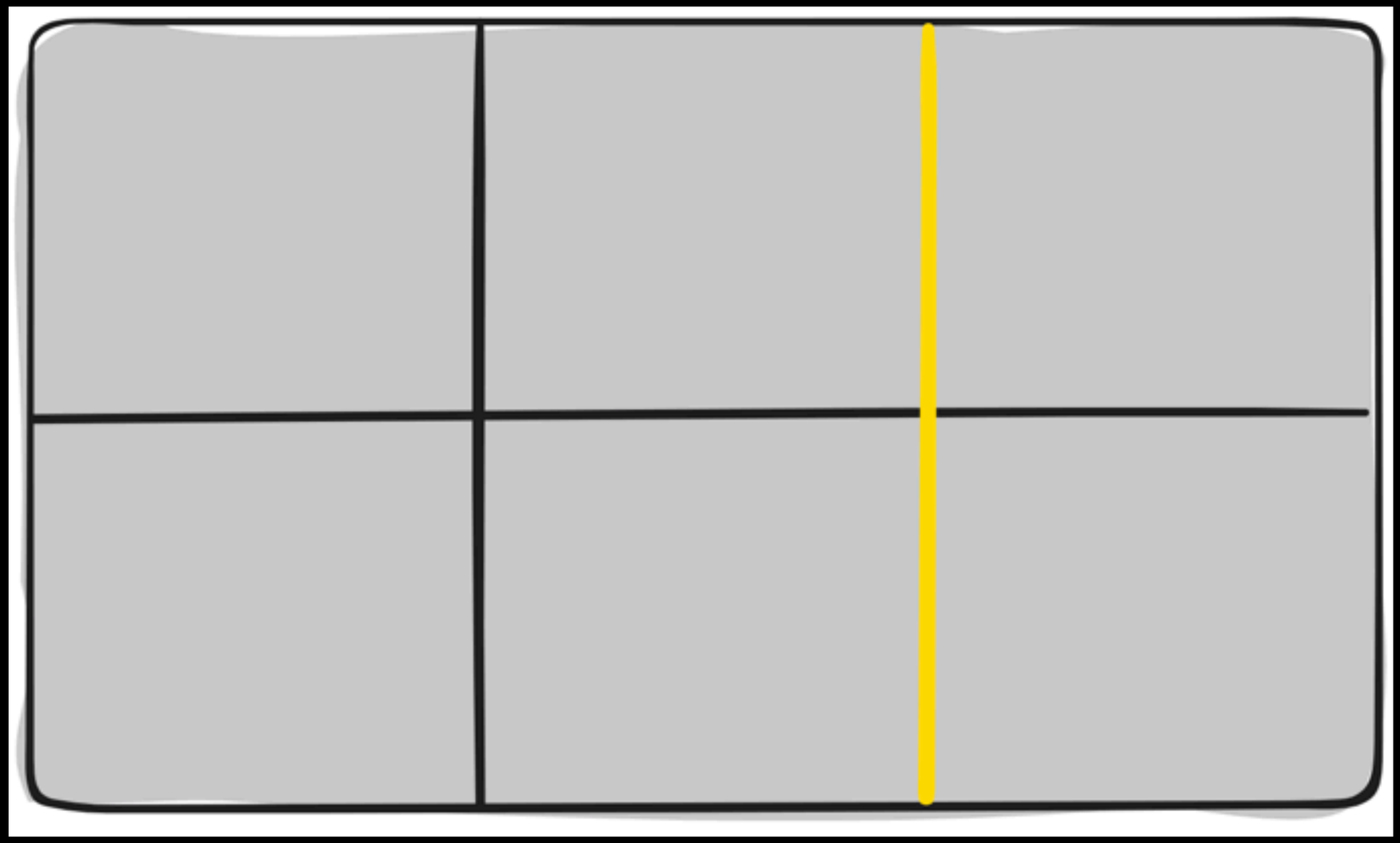
Grid track

The space between two adjacent grid lines is a grid track, which is a generic name for a grid column or a grid row. Grid columns are said to go along the block axis, which is vertical (as block elements are stacked) for languages written horizontally. Grid rows follow the inline (horizontal) axis.

The structure established for the grid is independent from the number of grid items in the container. You could place 4 grid items in a grid with 12 cells, leaving 8 of the cells as 'whitespace.' That's the flexibility of grids. You can also set up a grid with fewer cells than grid items, and the browser adds cells to the grid to accommodate them.

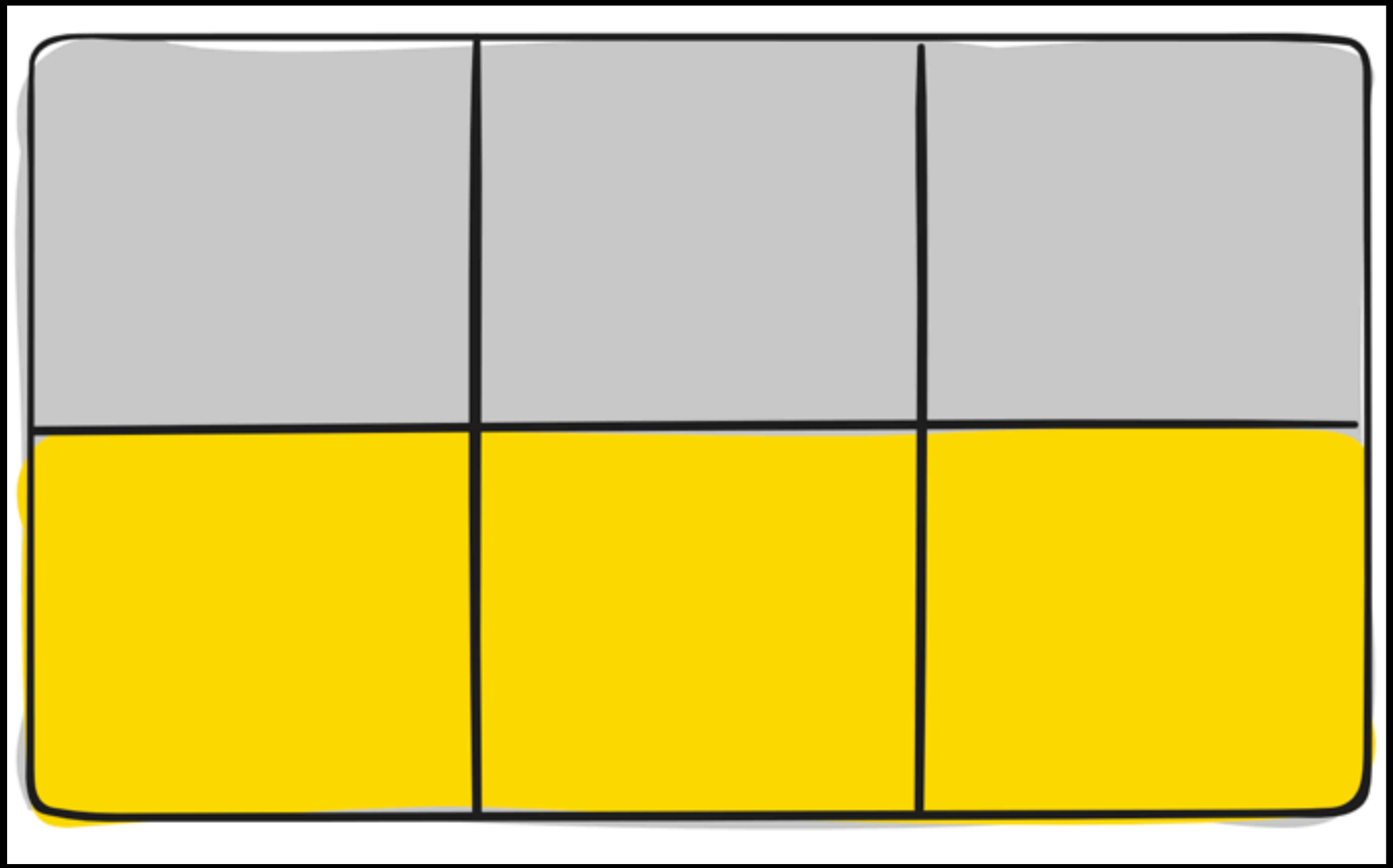
Grid line

The horizontal and vertical dividing lines of the grid are called grid lines. They can be either vertical ("column grid lines") or horizontal ("row grid lines") and reside on either side of a row or column. Here the yellow line is an example of a column grid line.



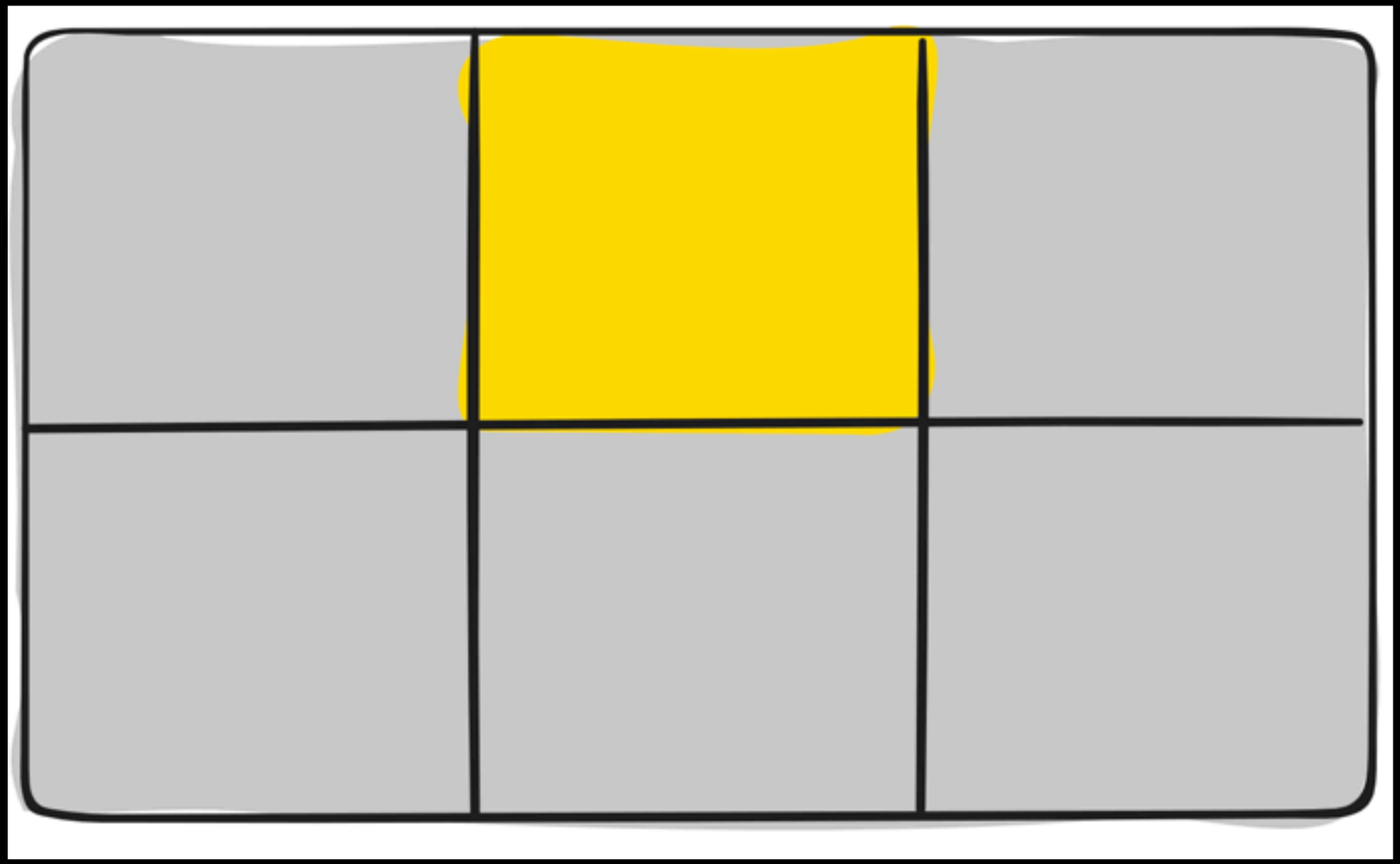
Grid track

The space between two adjacent grid lines is a grid track, which is a generic name for a grid column or a grid row. Grid columns are said to go along the block axis, which is vertical (as block elements are stacked) for languages written horizontally. Grid rows follow the inline (horizontal) axis. Here's the grid track between the second and third row grid lines.



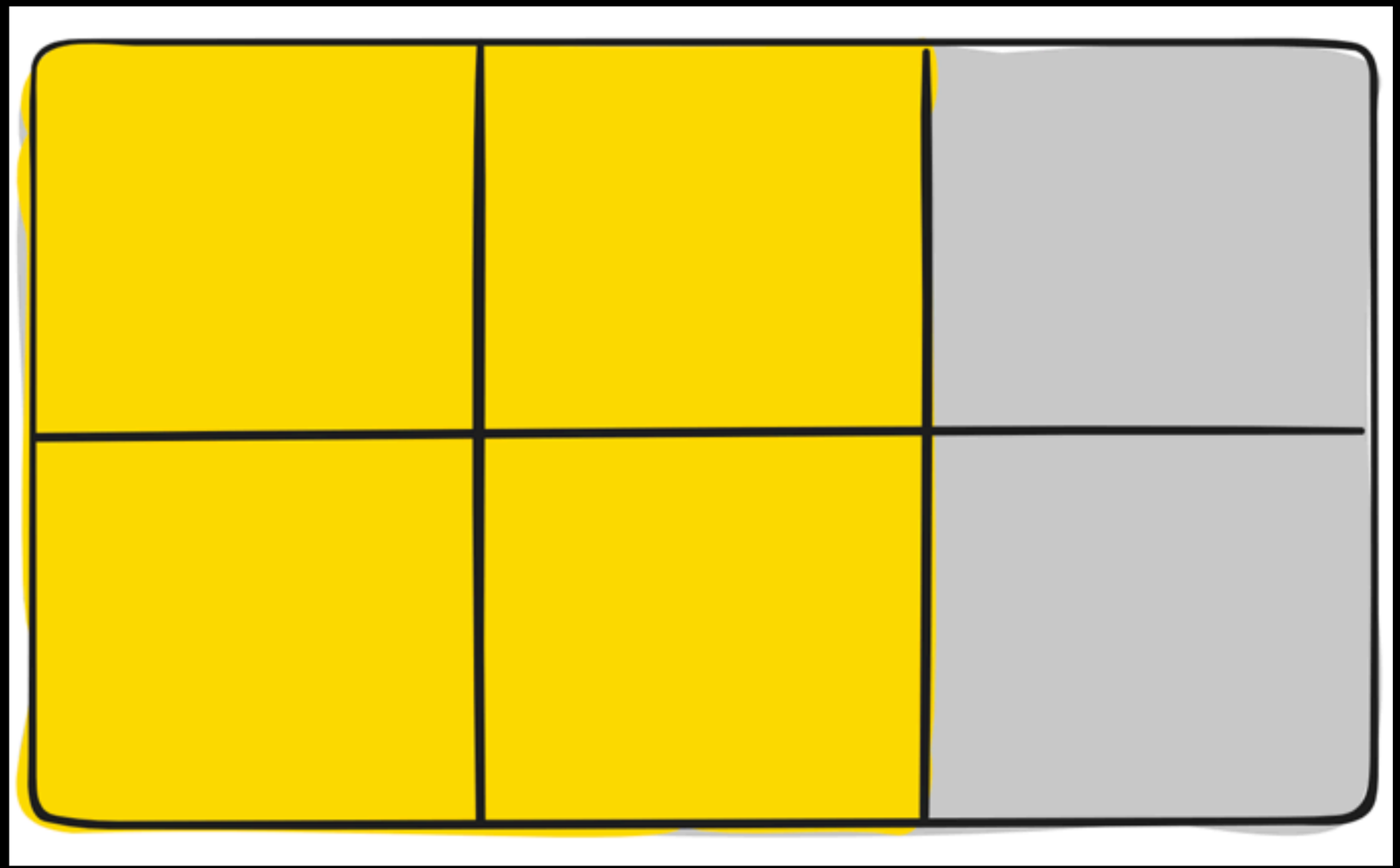
Grid cell

The smallest unit of a grid is a grid cell, which is bordered by four adjacent grid lines with no grid lines running through it. It's a single "unit" of the grid. Here's the grid cell between row grid lines 1 and 2, and column grid lines 2 and 3.



Grid area

A grid area is a rectangular area made up of one or more adjacent grid cells. A grid area may be comprised of any number of grid cells. Here's the grid area between row grid lines 1 and 3, and column grid lines 1 and 3.



Grid Container Properties:

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

CSS Tricks w/ links!

Grid Item Properites

grid-column-start

grid-column-end

grid-row-start

grid-row-end

grid-column

grid-row

grid-area

justify-self

align-self

place-self