

CSS Layout

Examining page layout methods with CSS

Learning Objectives

- Define the box model, understand how it works
- Learn the difference between display types
- Be able to create multiple forms of layout using HTML and CSS

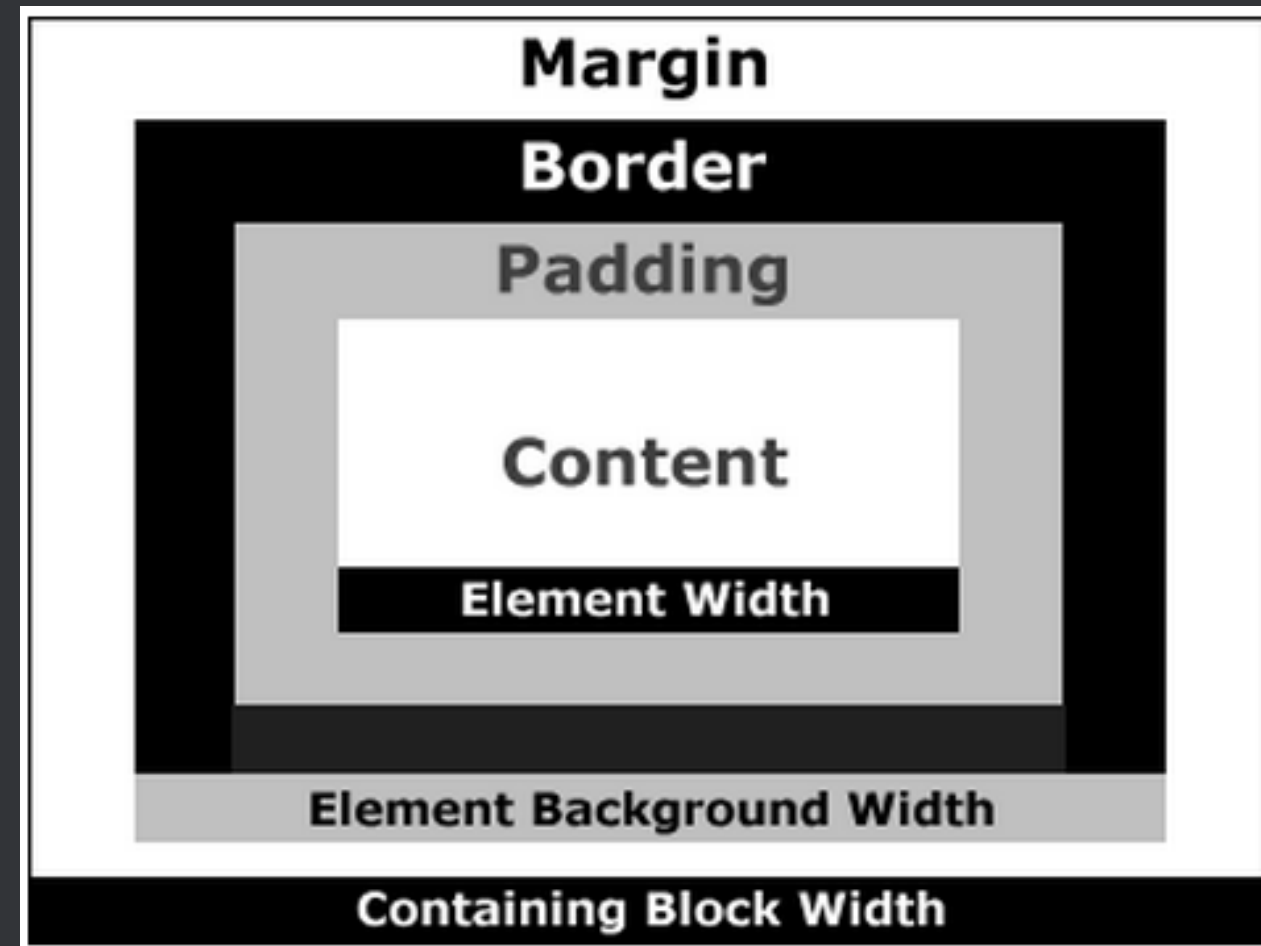
Our plan:

- The Box Model
- Display Types
- Floats
- Positioning

The Box Model

All HTML elements can be considered as boxes.

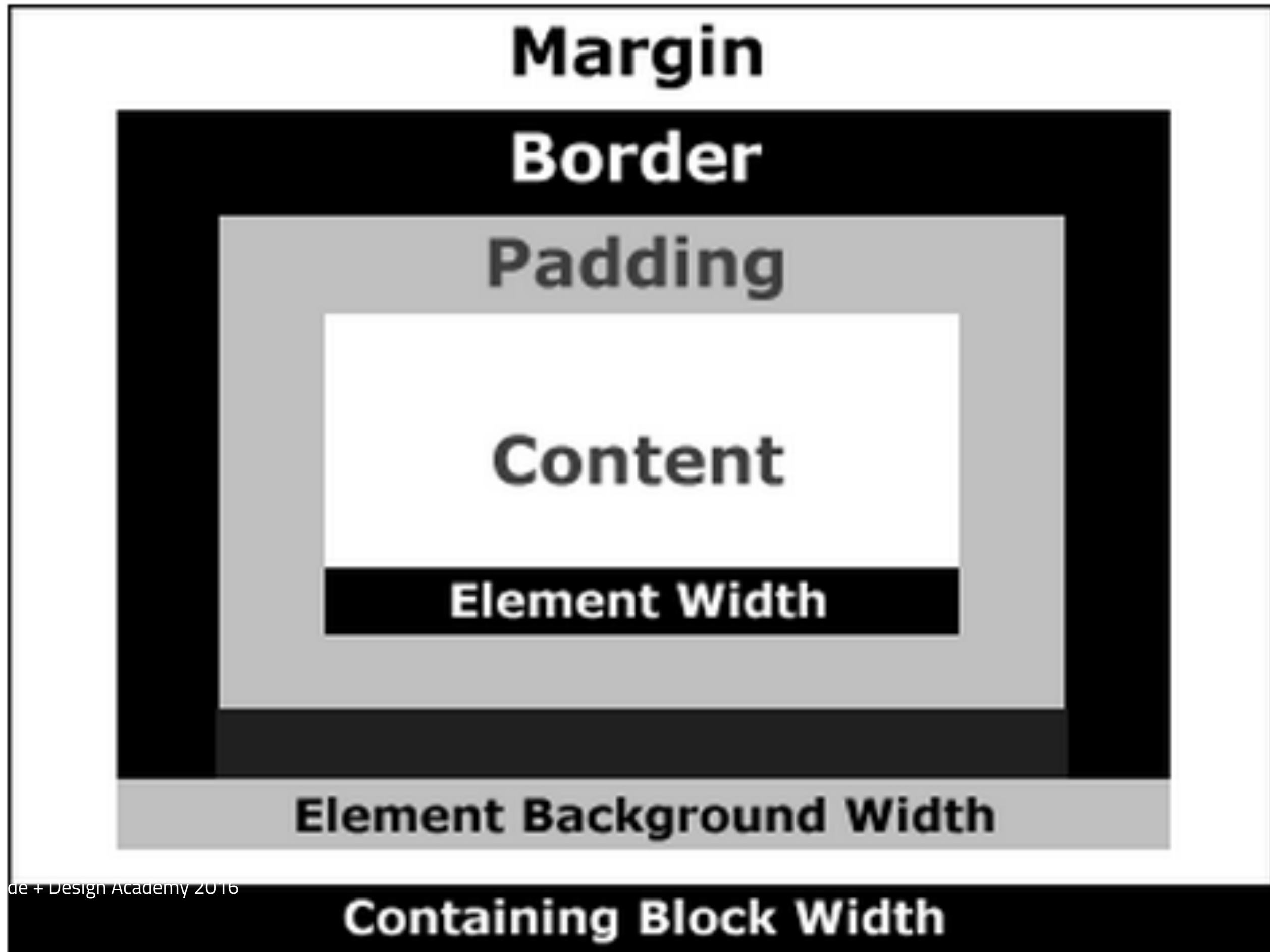
The Box Model



The "**Box Model**" describes how spacing around these boxes works!

The Box Model

- **content** - "text" inside of an HTML element
- **padding** - space between the content and a border
- **border** - a line around an element - comes after padding
- **margin** - space before next element - comes after border



Every element has these box-model properties!

Margin and Padding

```
margin: 20px;
```

Put a 20 pixel margin around the element

```
padding: 50px;
```

Put 50 pixels of padding around the element

Specific Sides

Append a specific side to padding or margin to apply the value to only that side!

```
padding-right: 10px;
```

```
margin-left: 40px;
```

```
padding-bottom: 20px;
```

```
margin-top: 10px;
```

Shorthand

You can also apply values to specific sides with just one rule!

```
/* 10px margin on all 4 sides */
```

```
margin: 10px;
```

```
/* 10px top/bottom, 20px left/right */
```

```
margin: 10px 20px;
```

```
/* 10px top, 20px left/right, 30px bottom */
```

```
margin: 10px 20px 30px;
```

```
/* 10px top, 20px right, 30px bottom, 40px left */
```

```
margin: 10px 20px 30px 40px;
```

Shorthand

For example:

```
margin-left: 20px;  
margin-right: 20px;  
margin-top: 40px;  
margin-bottom: 40px;
```

becomes

```
margin: 40px 20px;
```

All of this applies to **padding** as well!

Centering content

```
width: 900px;
```

```
margin: 0 auto;
```

- Use **auto** for **margin-left** and **margin-right** to center an element!
- This will only work for elements with a **width** property.

Demo

Border Styles

border-style: dashed;

- **border-style** - gives style to border!
- other possible values: **solid** (default), **dotted**

border-width: 10px;

- **border-width** - sets border width

Border Styles

```
border-color: #111111;
```

- **border-color** - sets a border color

```
border: 1px solid red;
```

- **border** - shorthand; set all 3 properties at once!
- **border: [width] [style] [color]**

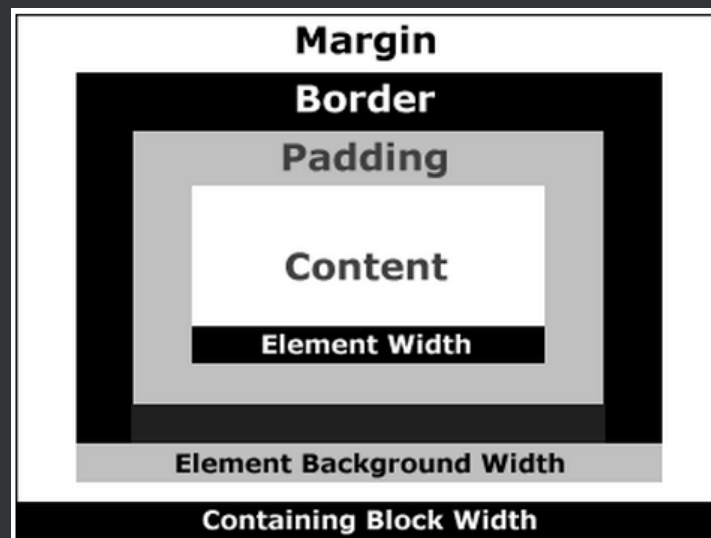
Box Sizing

Controls how the width of an element is calculated.

```
box-sizing: border-box; /* default is content-box */
```

Box Sizing

- content-box
element width = content width
- border-box
element width = content width + padding + border



Exercise #1: Using the box model

Create a `<p>` element with some text in it.

Try giving it **padding**, **border**, and **margin** to see the effects each of these properties have on the element!

Also try giving it box-sizing value of `border-box` and a pre-defined width value. See how this affects the rendering of the element.

Display Types

Display Types

There are two primary display types:

- **inline**
- **block**

display: block

- takes up as much space as is available
- can have set dimensions / padding / margins
- appears on a new line

`<!-- Elements that are normally block -->`

`<p></p>`

`<div></div>`

display: inline

- takes up only as much space as it needs
- cannot have set dimensions
- cannot only have left / right margins
- padding is applied ineffectively
- appears on the same line

`<!-- Elements that are normally inline -->`

``

``

``

display: inline-block

- takes up as much space as it needs
- can have set dimensions / padding / margins
- appears on the same line!

display: inline-block

- takes up as much space as it needs (**inline**)
- can have set dimensions / padding / margins! (**block**)
- appears on the same line! (**inline**)

*Think of **inline-block** as as **inline**, but with dimensions!*

Exercise #2: inline vs block vs inline-block

- Create 4 `<p>` elements with 4-5 sentences of `lorem ipsum` inside of them, with some of these words selected with `` tags
- Give all of the elements different classes, give them a set width (say 250px) and try seeing what happens when you change `display: block` elements to `display: inline` elements and vice-versa
- Also experiment with `display: inline-block`
- To more clearly see what's going on, try putting a border around your elements

Floats

Problem statement

- Block elements
 - Have set dimensions
 - But force a new line
- Inline elements
 - Appear on the same line
 - Can't have set dimensions

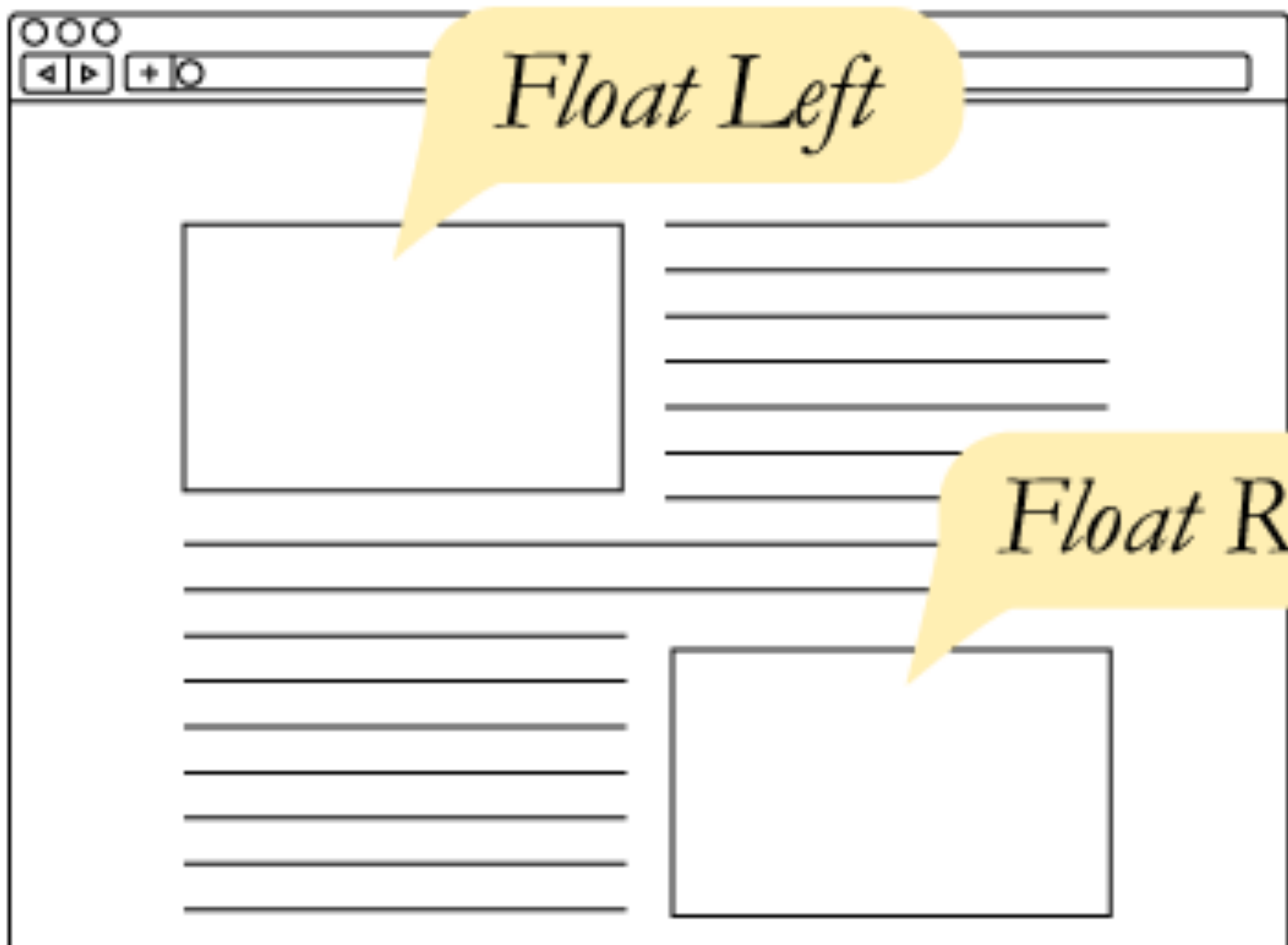
Problem Statement

- Inline-block elements
 - Appear on the same line
 - Can have set dimensions
 - Render with white-space issues

**With all of these issues, how
do I define a page layout?**

Floats

- Originally intended for wrapping text *around* other page elements



Web Layout

float

```
.my-element {  
    float: left;  
}
```

- Move the element all the way to the left side of its container.
- Have all other elements flow around it... kinda.

float

Two items to discuss:

- floated adjacent siblings
- Height Issues

Floated adjacent siblings

- If two elements are...
 - adjacent siblings
 - floated in the same direction
- ... then they will appear next to each other!
 - (if they can fit)

Floated adjacent siblings

Example:

```
/* CSS */  
.my-float {  
    float: left;  
}
```

```
<!-- HTML -->  
<div class="my-float"></div>  
<div class="my-float"></div>
```

```
float: left;
```

```
float: left;
```

Demo: Height Issues

Floats: Height Issues

When an element is floated, its following non-floated elements will NOT respect its height when establishing a new block context.

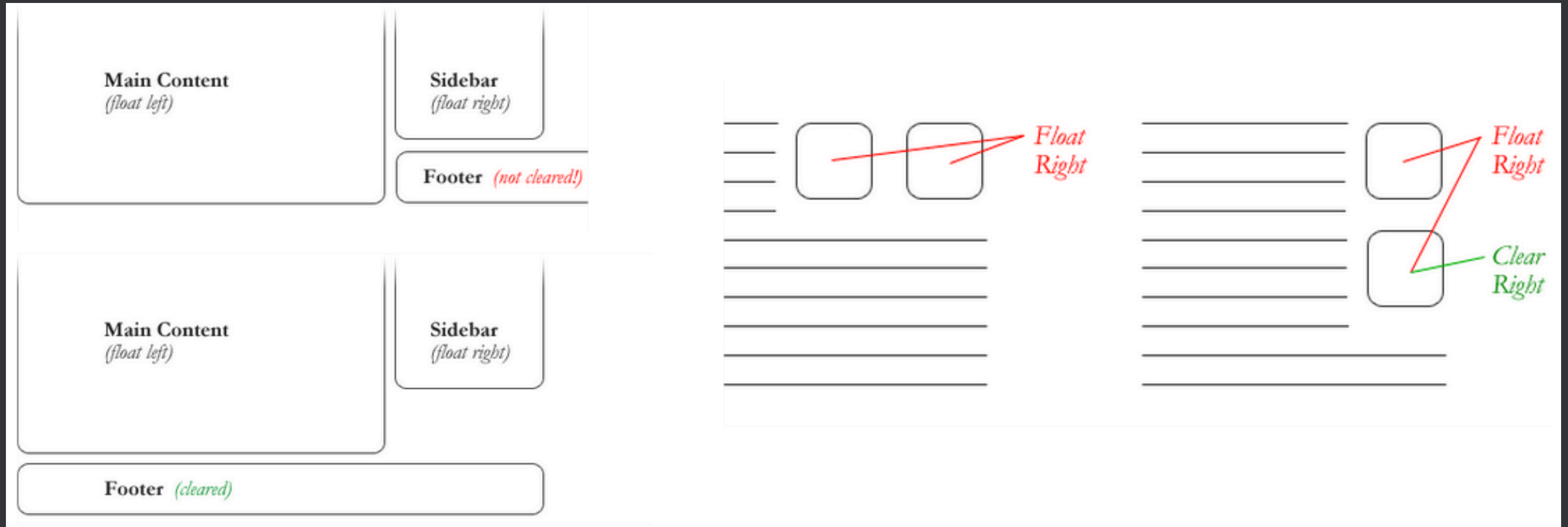
clear

clear

```
.my-non-floated-element {  
    clear: left  
}
```

- **clear** - Allows element to "clear" past elements floated in a particular direction when establishing a new block context.
 - **left** - past elements with **float: left**
 - **right** - past elements with **float: right**
 - **both** - past elements with either!

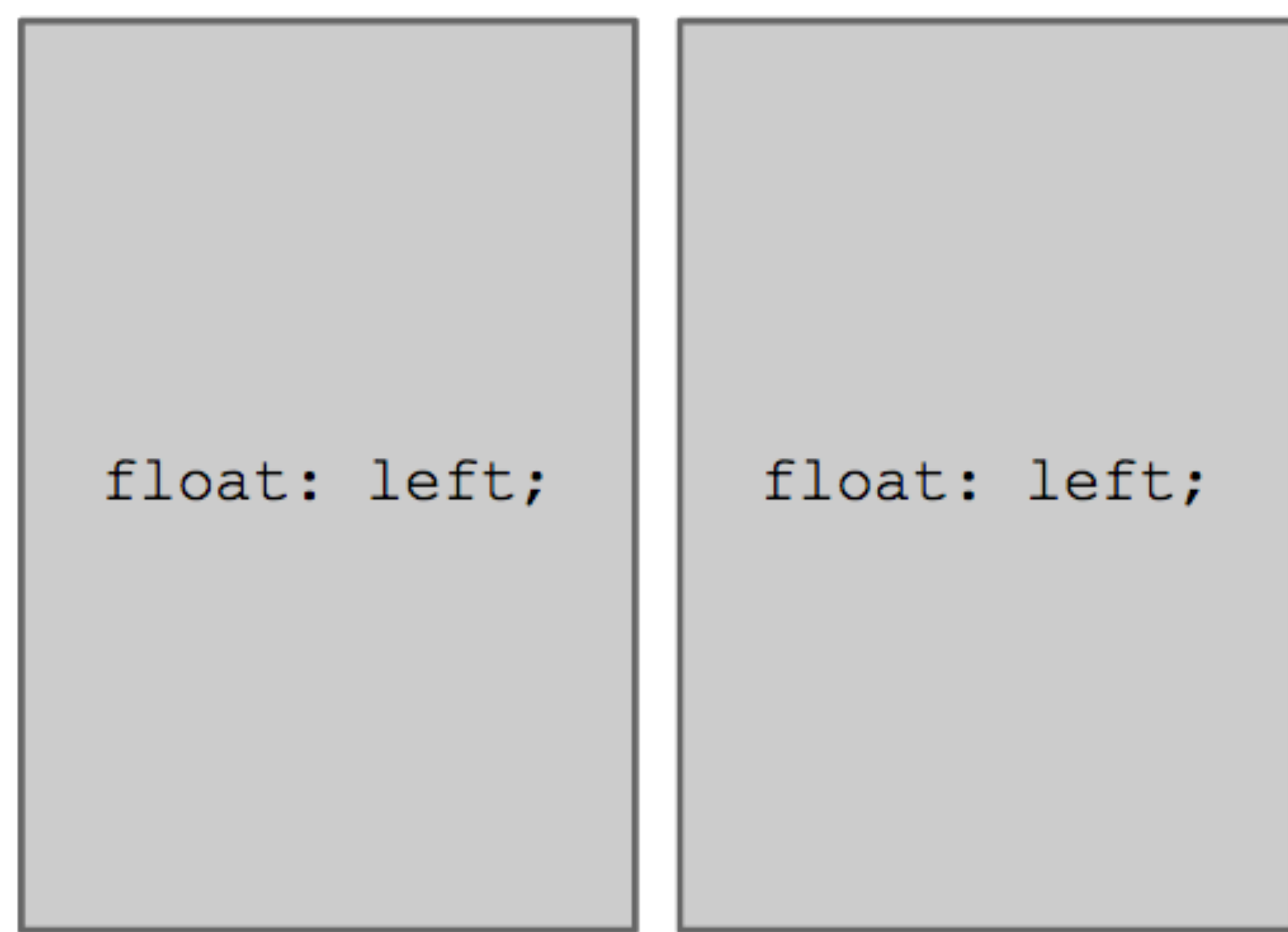
clear



"Where do I use float?"

Using float for page layout

- To create a two-column page layout, float the first and second column left
- Try resizing the page to a smaller width - the second column will collapse under the first (left) column

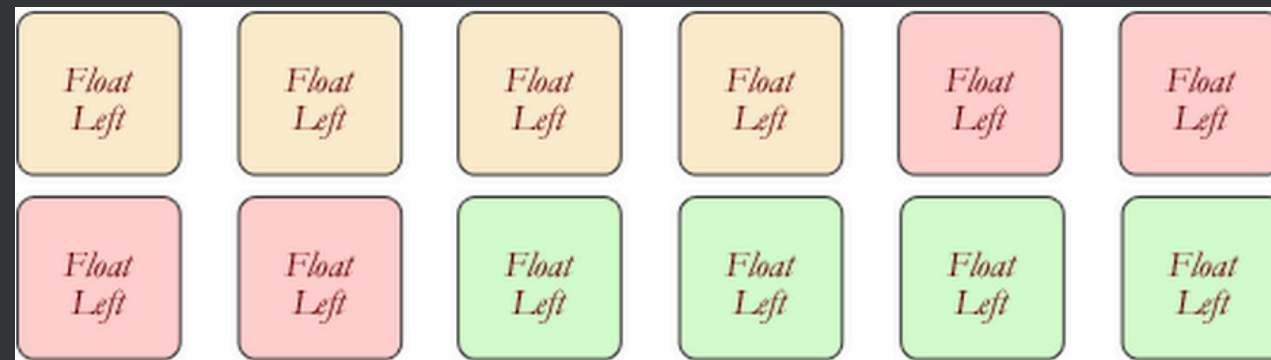


```
float: left;
```

```
float: left;
```

Using float for page layout

- You could use `float: left;` to create a dynamic image gallery
- `float` each image left and give it a `margin-right` and `margin-bottom` to enforce space



- As you resize the page, the images will stack nicely



Using float for page layout

- To add an image to the page with text flowing around it, float it left
- Try adding some **margin-right** and **margin-bottom** to the image

Exercise #3: floats

- Create 2 `<p>` elements with 4-5 sentences of `lorem ipsum` inside of them
- Also put an `` element on the page above the `<p>` elements
- Give all of the elements different classes and try floating the `` first, than the `<p>` elements to get an idea of how floats impact page layout

Positioning

Positioning

- Positioning uses the **position** property
- Used when you want to break out of a normal block-context
- For example:
 - pop-ups
 - modals
 - toasters
 - burger-menus

Facebook

https://www.facebook.com/recover.php

facebook

Email

Keep me logged in

Password

Forgot your password?

Log In

Sign Up

Facebook helps you connect and share with the people in your life.

Security Check

Enter both words below, separated by a space.
Can't read the words below? [Try different words](#) or [an audio captcha](#).

Before your account is restored, we need to verify your identity.

Text in the box:

What's this?

Security Check

This is a standard security test that we use to prevent spammers from creating fake accounts and spamming users.

Our captchas are provided by [ReCaptcha](#).

Okay

Enter your Facebook username or email address

http://facebook.com/johndoe

OR

Enter your name and a friend's name. [?]

Your name

A friend's name

I can't identify my account

Search

Cancel

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Positioning: Values

- The `position` property takes four possible values:
 - `static`
 - `relative`
 - `absolute`
 - `fixed`

Positioning: What happens?

- When an element gets positioned...
 - it either does or does not remain within the flow of the document.
 - its location will be offset with respect to *something*.
- Offset?
 - Yes! Several properties are used to move the element.
 - **top, bottom, left, right**

`position: static;`

This is the default value, so no positioning will occur!

position: relative;

- When positioned *relatively*, an element:
 - will remain within the normal flow of the document.
 - will be offset with respect to its current location.

position: relative

```
<div class='move-me'>
```

Some content

```
</div>
```

```
/* Move the element 10 px down from its current location */
```

```
.move-me{
```

```
  position: relative;
```

```
  top: 10px
```

```
}
```


position: absolute;

- When positioned *absolutely*, an element:
 - will NOT remain within the normal flow of the document.
 - will be offset with respect to the position of its closest non-statically positioned parent.

position: absolute

```
<div class='parent'>  
  <div class='child'>Some content</div>  
</div>
```

```
/* Move .child 10px down from the top of .parent */  
.parent {  
  height: 100px;  
  width: 100px;  
  position: relative;  
}  
.child {  
  position: absolute;  
  top: 10px  
}
```

position: fixed

- When positioned in a *fixed* manner, an element:
 - will NOT remain within the normal flow of the document.
 - will be offset with respect to the window.
 - will remain in place on scroll.
- Where have we seen this?
 - modals
 - 'Share' icons on blog pages

position: fixed

```
<div class='move-me'>
```

Some content

```
</div>
```

```
/* Move the element 10px from the top of the window */
```

```
.move-me {  
    position: fixed;  
    top: 10px;  
}
```

Offset directions

There are four offset directions: **left**, **right**, **top**, **bottom**

```
.my-element {  
    direction: Npx;  
}
```

This means...

*"Move the element [Npx] **away** from the [direction] of [something]"*¹

¹ Where [something] is dependent on the type of positioning used!

Offset directions

```
.my-element {  
    position: relative;  
    top: 20px;  
}
```

Offset directions

```
.my-element {  
    position: relative;  
    top: 20px;  
}
```

"Move .my-element 20px away from the top of its current position."

Offset directions

```
.my-element {  
    position: absolute;  
    left: 30px;  
}
```


Offset directions

```
.my-element {  
    position: absolute;  
    left: 30px;  
}
```

*"Move **.my-element 30px** away from the left of the position of its closest non-statically positioned parent."*

Offset directions

```
.my-element {  
    position: fixed;  
    bottom: 300px;  
}
```

Offset directions

```
.my-element {  
    position: fixed;  
    bottom: 300px;  
}
```

"Move .my-element 300px away from the bottom of the window."

Final Exercise

Create a fake website for a newspaper, "The New York Code + Design Academy Times"

- There should be two pages (see "mockups" folder for visuals)
 - Home page, where 10 fake articles are listed in a two-column layout - they should all link to:
 - An example article with a link to Facebook that stays on the page no matter how much the page is scrolled
 - The example article should have a photo with text that wraps around the photo (hint: use a **float**!)
- Use **margin: 0 auto; width: 900px;** to make the pages look nice and centered
- If you finish the above, have fun with CSS making the newspaper look as professional as possible!
- Don't worry about any of the actual text - just use lorem ipsum.

Resources

Codecademy

HTML & CSS - CSS Element Positioning, HTML & CSS Projects

TeamTreeHouse

CSS Layout Techniques

Quiz

1. Going from the inside of an element - how is the box model laid out?
2. What are the two primary display types?
3. Name the 4 types of positioning and their functions.