

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

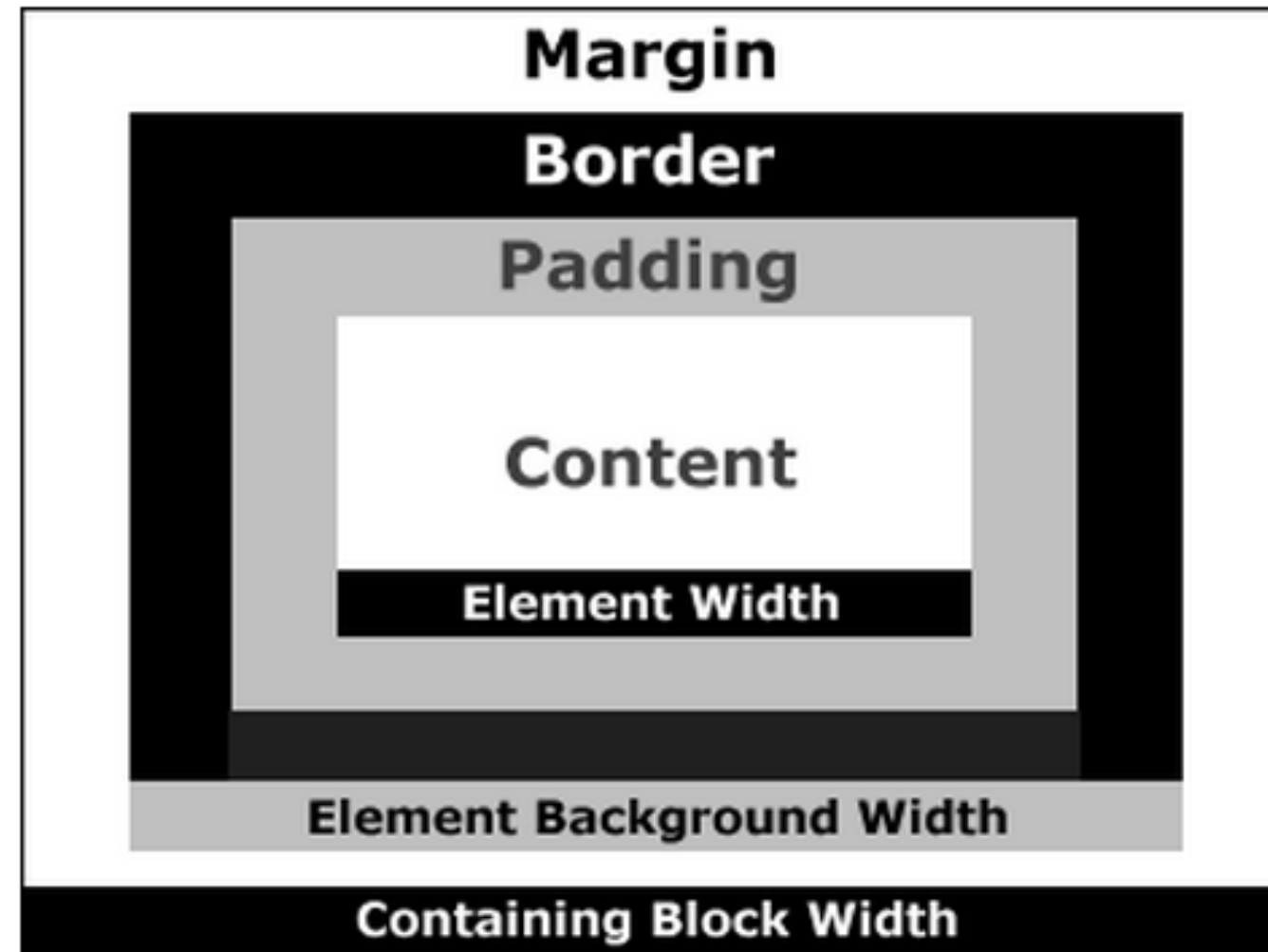
Our plan:

- The Box Model
- Display Types
- Floats
- Positioning

The Box Model

*All HTML elements can be
considered as boxes.*

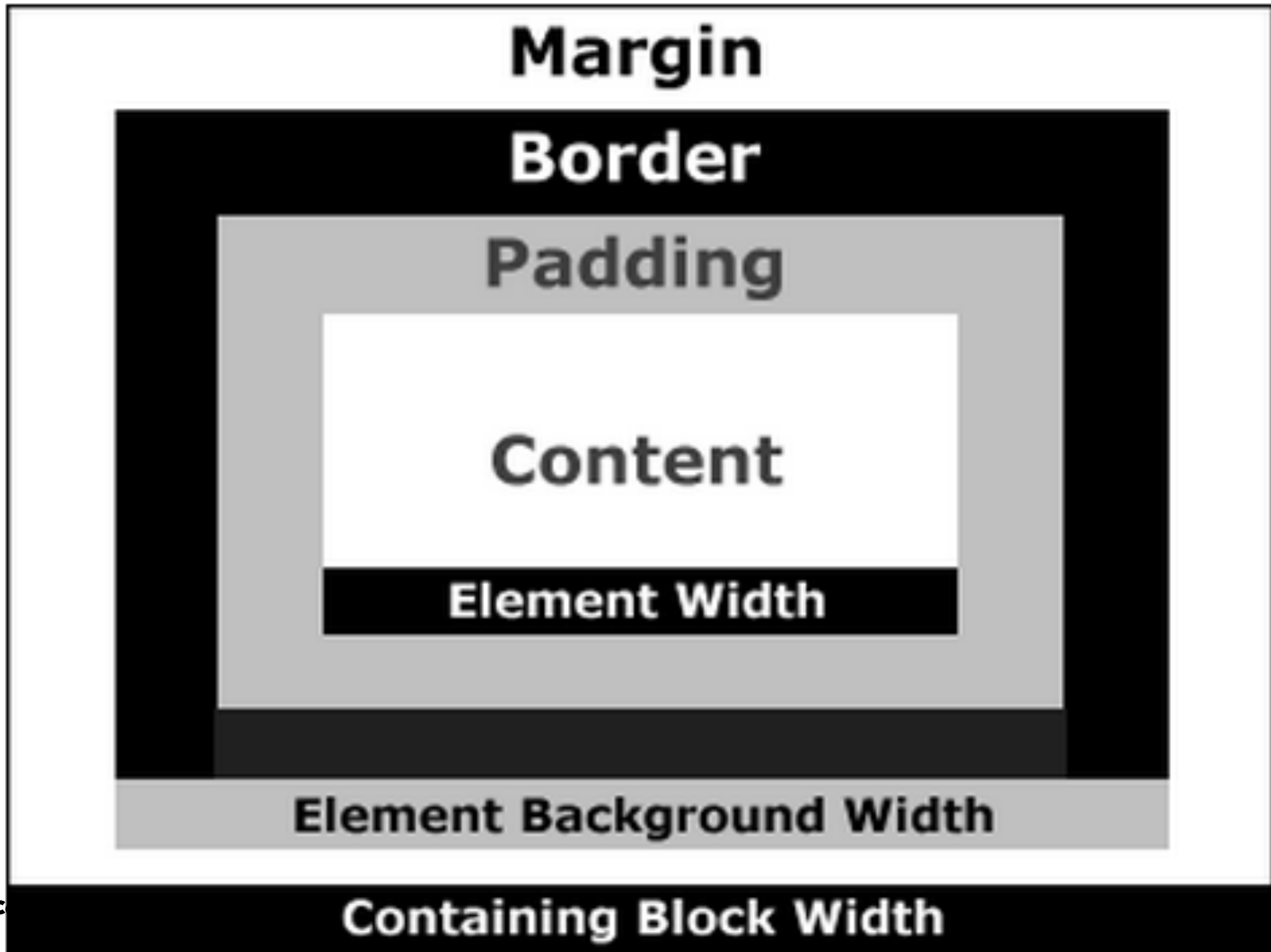
The Box Model



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]

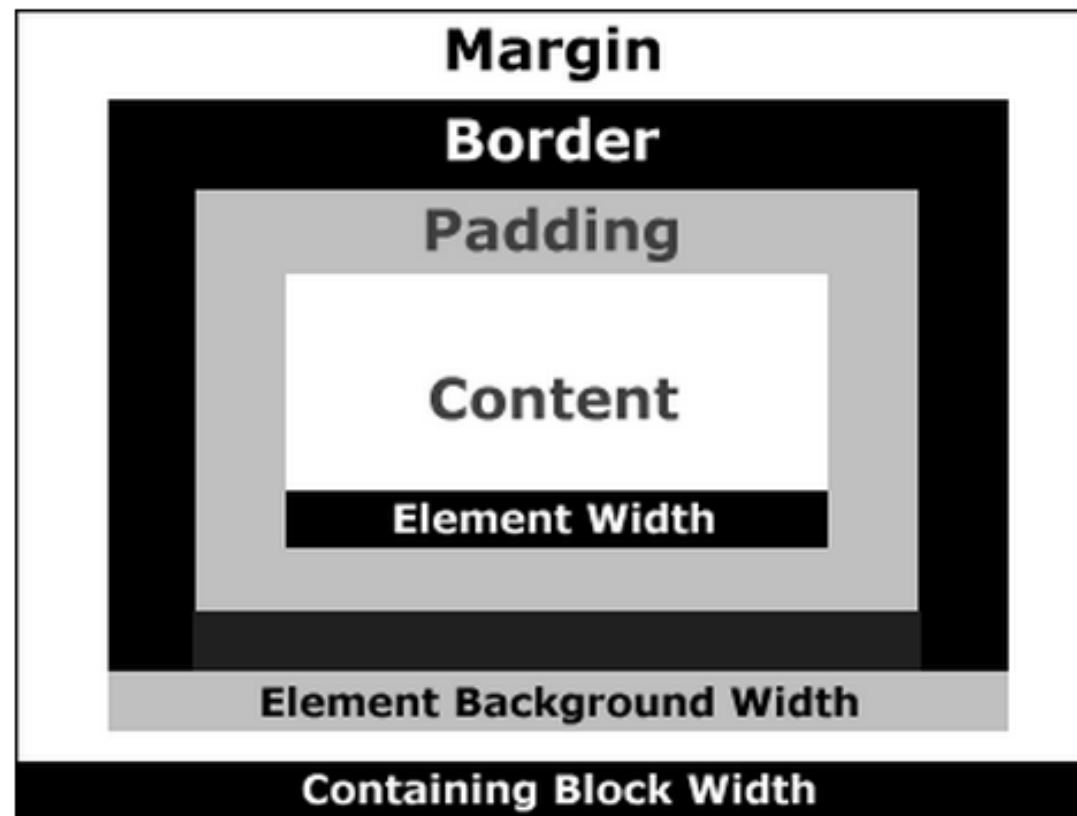
Box Sizing

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

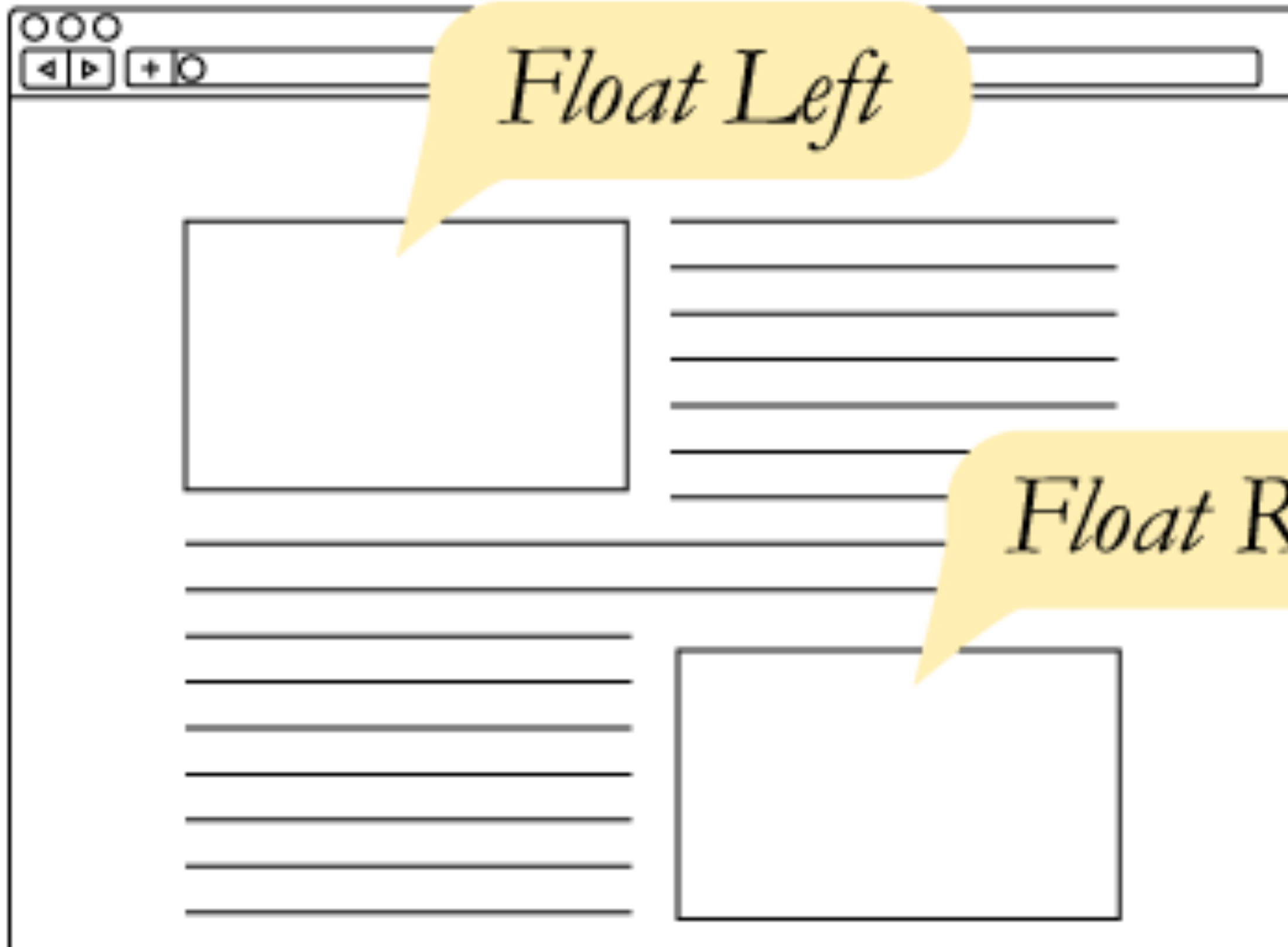
Problem Statement

- 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.

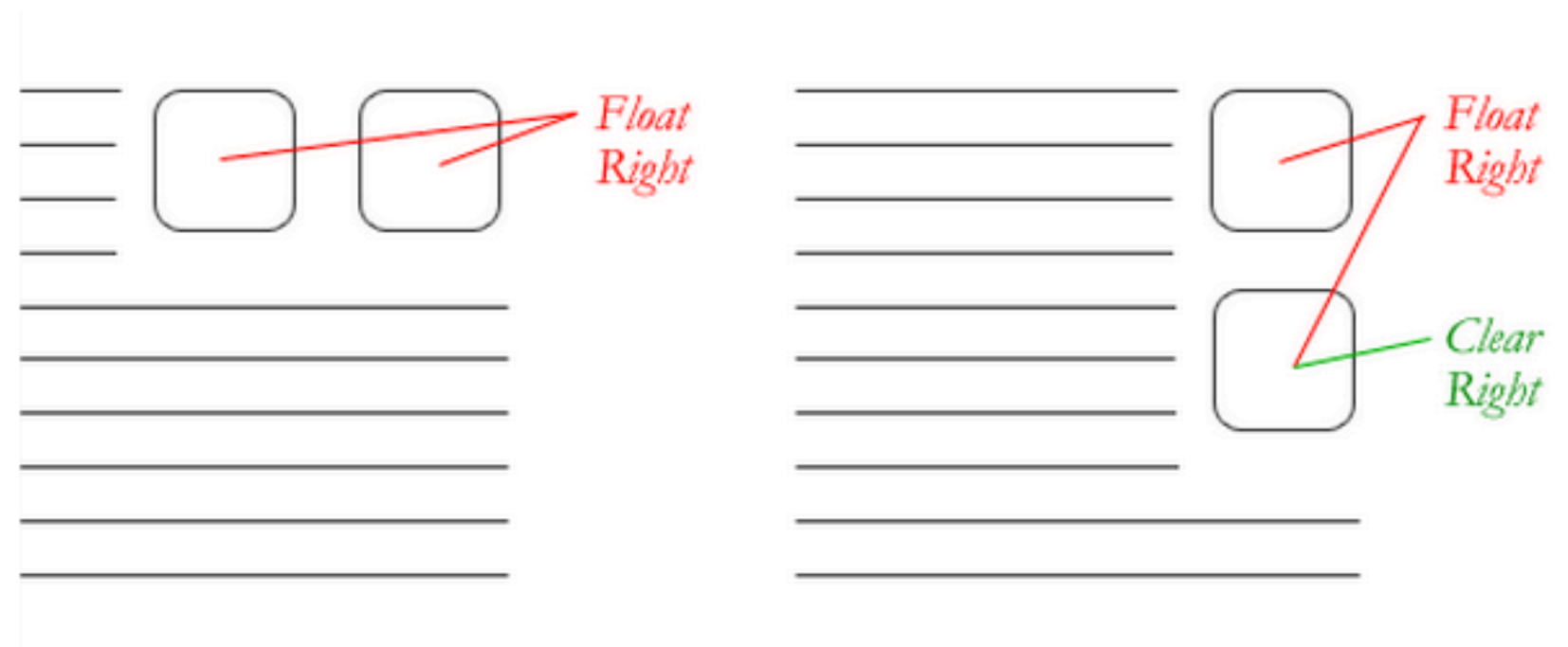
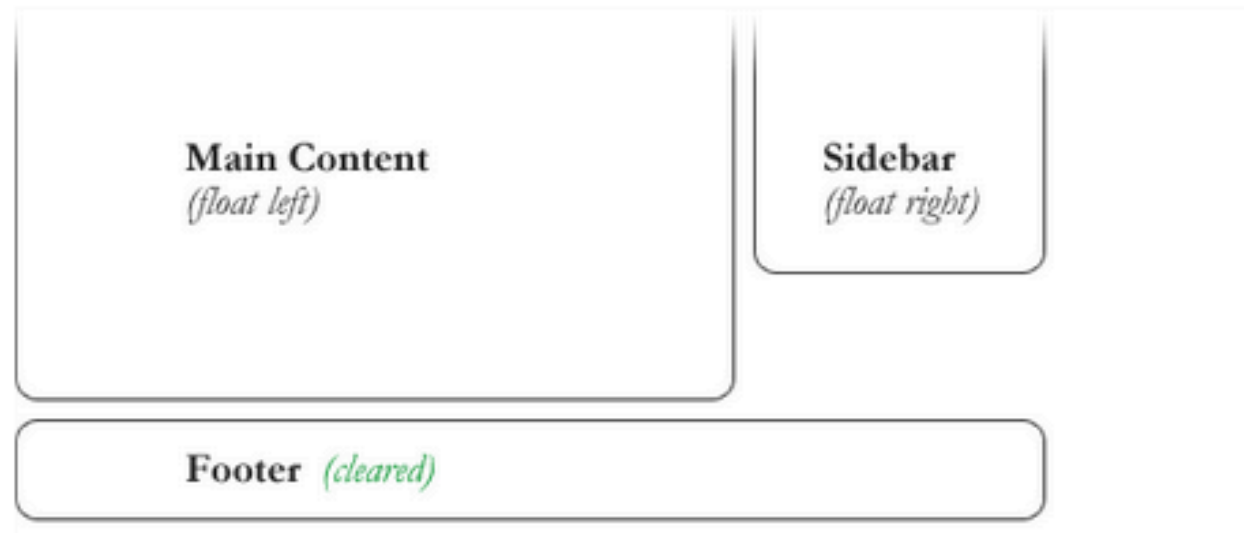
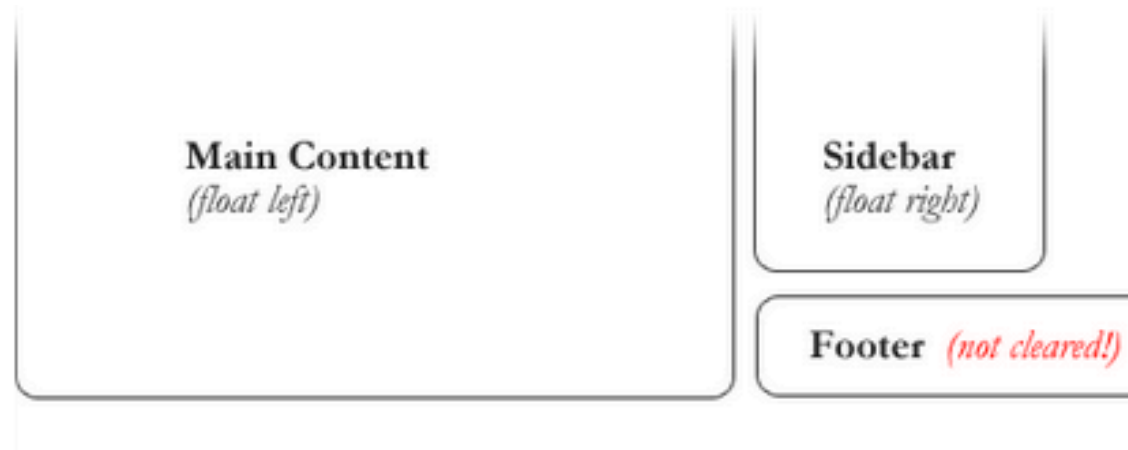
clear

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!

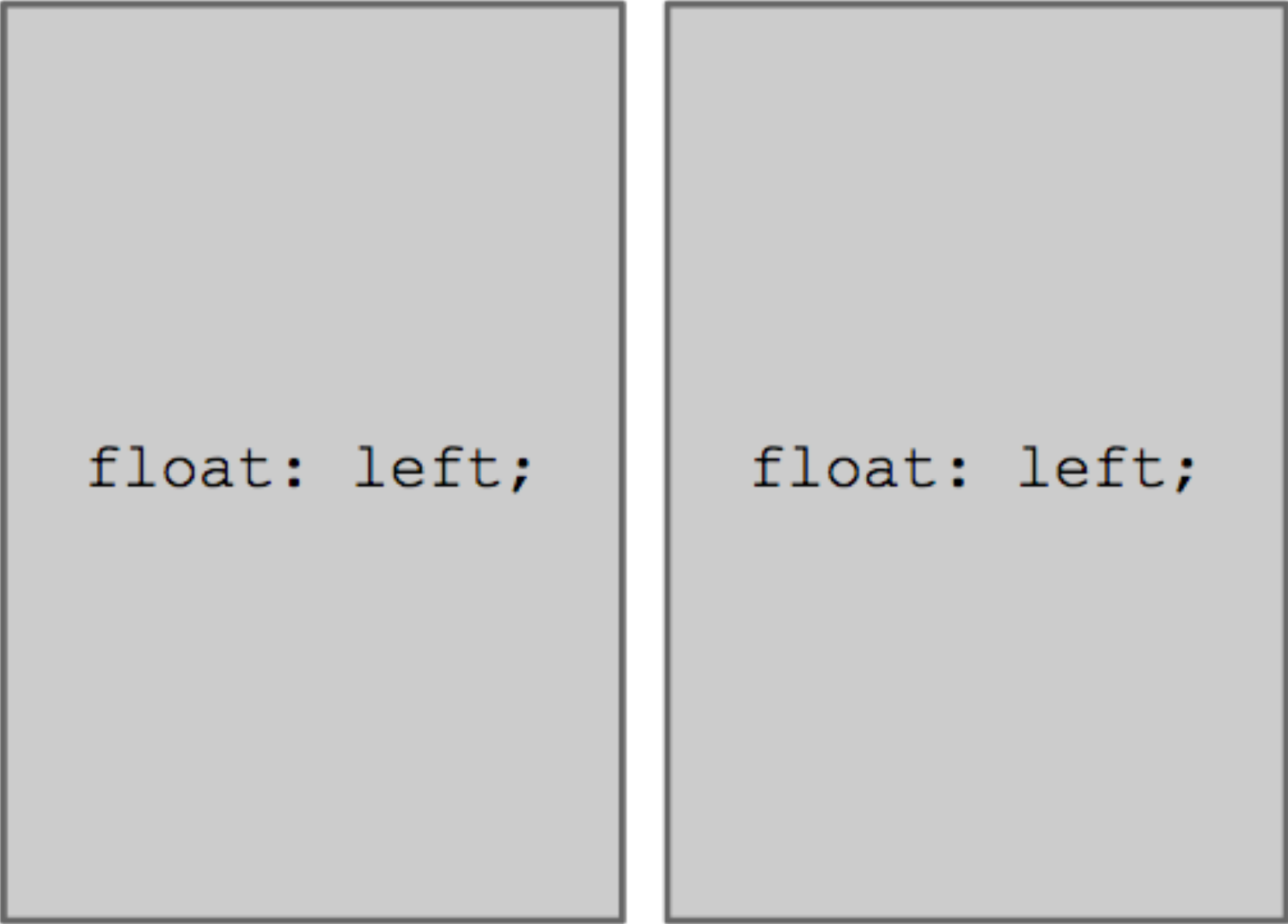
clear



"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

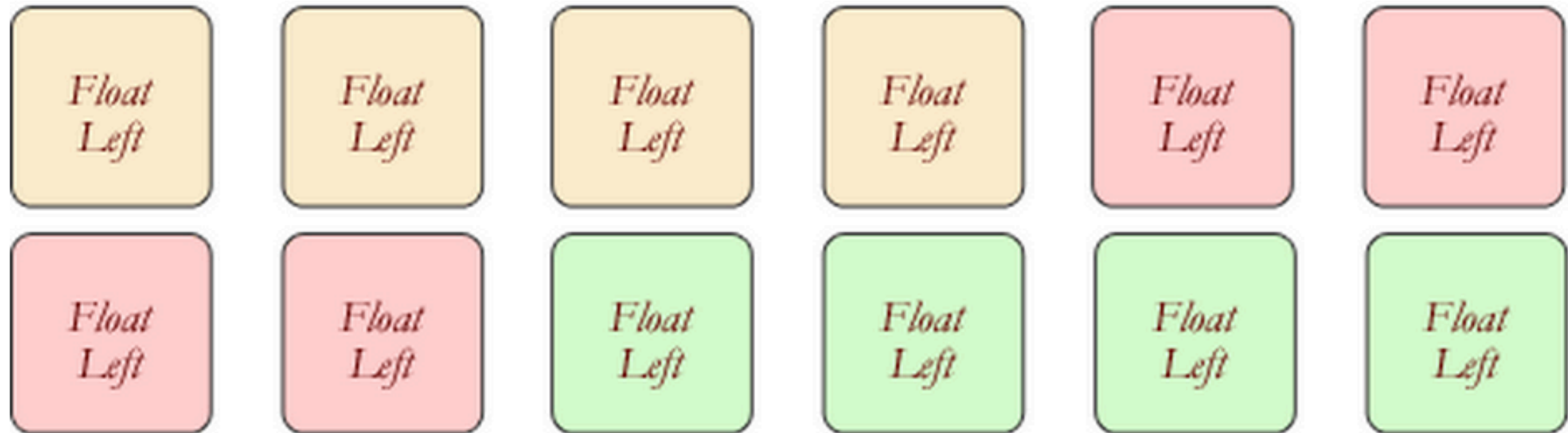


```
float: left;
```

```
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

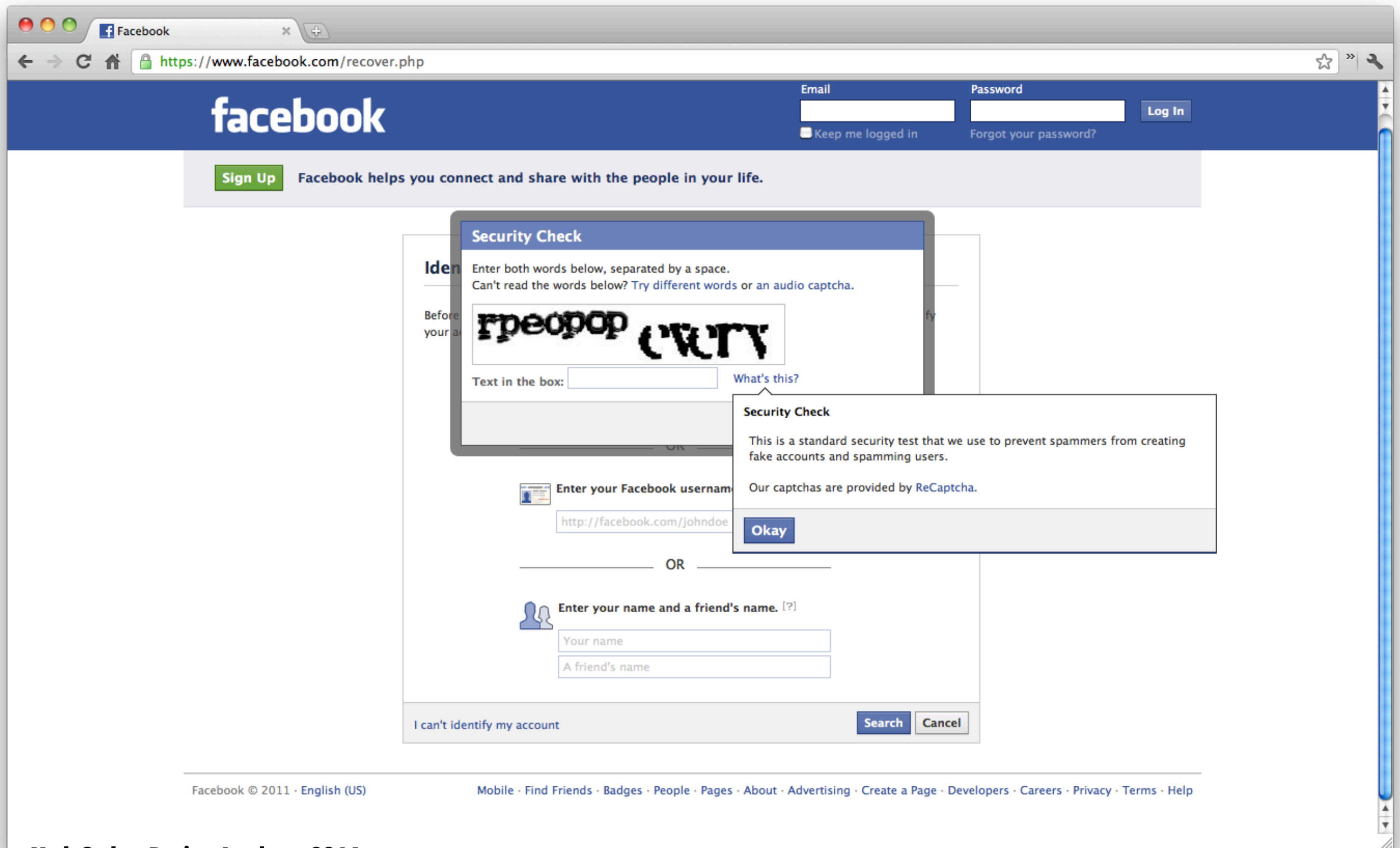
Exercise #3: floats

- 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



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.