

CSS Basics II

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Fall 2017

CSS Basics II Review

- This set of slides are quick reviews for modules from this course:
<https://www.codecademy.com/learn/learn-html-css>
- Example HTML and CSS used:
 - Travel html and css
<https://gist.github.com/harrywang/a518e2f3ec942d0df8963fc77ed602f4>
<https://gist.github.com/harrywang/c759cdeb0a821d2272813d4486dc53f9>
 - Questions html and css
<https://gist.github.com/harrywang/a384d6af50c1f272285159b65ac0baf2>
<https://gist.github.com/harrywang/1a80cc979ea9f381f60dcdfcd292545>
 - Bike html and css:
<https://gist.github.com/harrywang/4d419aa6a46b04769a8c63f3083b3964>
<https://gist.github.com/harrywang/bdbaa4149958dc6f1701995ea12e461b>

Review: CSS Selector

- Use <style> to include CSS code in HTML files.
- To style an HTML element using CSS, you must first select that element in the CSS file (selector is discussed later in this lecture)

```
<head>
    <title>Animals Around the World</title>
    <style>
        h1 {
            font-family: Arial;
        }
    </style>
</head>
<body>
    <h1>BREAKING NEWS</h1>
```



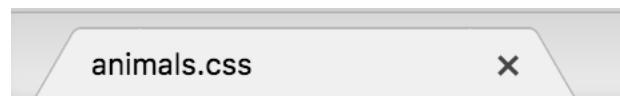
Separation of CSS and HTML

- The mixture of HTML and CSS can result in code that is difficult to read and maintain
- Link CSS files with HTML using <link> tag (URL vs. relative link paths)

Animals.html:

```
<head>
  <title>Animals Around the World</title>
<link href="https://www.codecademy.com/stylesheets/style.css" type="text/css" rel="stylesheet">
<link href="/animals.css" type="text/css" rel="stylesheet">
</head>
```

Animals.css:



```
1  h1 {
2    font-family: Arial;
3 }
```

IDs

- Use ID to style a specific element in the stylesheet.
- No two HTML elements should ever share the same ID
- Use `#id` to as the selector

```
<h1 id="slogan">Travel Like Never Before</h1>
```

```
#slogan {  
    font-family: 'Oswald', sans-serif;  
    text-transform: uppercase;  
}
```

Classes

- Classes are used to style elements that all share a specific style.
- Use *.class-name* as the selector

```
<h1 class="science">Scientist Discovers Important Cure</h1>
<h1 class="science">New Study Reveals The Importance of Sleep</h1>
```

```
.science {
    font-family: Georgia, Times, serif; color: #A3B4C5;
    text-transform: uppercase;
}
```

Class Selector

- The scope of the class selector can be specifically specified

```
.special-color {  
    color: red;  
}
```

```
p. special-color {  
    color: blue;  
}
```

```
<h1 class="special-color">Travel Like Never Before</h1>  
  
<h2>Whether you're looking for adventure or luxury, let us  
help you plan your perfect getaway.</h2>  
  
<p class="special-color"> Our quarter century of experience in  
travel planning combines local knowledge with international  
taste. You'll be amazed at what we can provide!</p>
```

What's the colors of h1, h2, and p?

TRAVEL LIKE NEVER BEFORE

WHETHER YOU'RE LOOKING FOR ADVENTURE !

Our quarter century of experience in travel planning combines local knowledge

Multiple Classes

```
<h1 class="book domestic">The Way of the Deep</h1>

<h1 class="book foreign">A Night in the Sky</h1>
```

```
.book {
    font-family: Georgia, serif;
}

.domestic {
    font-color: #0902CC;
}

.foreign {
    font-color: #B097DD;
}
```

The Div

- HTML offers an element that is the backbone of code organization: the *div*, represented by `<div>` in HTML.
- Think of the div as a box, or container, that groups elements that belong together.

```
<div class="container">
  <h1 class="title">Alice In Wonderland</h1>
  <p> ... </p>
</div>
```

```
div.container {
  background-color: rgb(252, 255, 205);
  font-family: Roboto, Helvetica, sans-serif;
}

h1.title {
  color: #0D1A2F;
}
```

The Box Model

- All HTML elements live within a box. Elements on a web page are understood by the browser as "living" inside of a container, or a box.
- **Width** and **Height**: the default dimensions of an element's box
 - Pixels - You learned about pixels when you learned about fonts. This unit lets you set the exact size of an element's box.
 - Ems - This unit sets the dimensions of the box relative to the size of the text within the box.
 - Percentages - This unit sets the dimensions of the box relative to the size of the box that it is encased in.

Width and Height: Minimum & Maximum

- Because a web page can be viewed through displays of differing screen size, the content on the web page can suffer from those changes in size.
- To avoid this problem, CSS offers properties to limit how an element's box can be sized to:
 - min-width
 - max-width
 - min-height
 - max-height

Overflow

- When the value of the max-height property is set too low, the contents will spill outside of the box.
- The overflow property controls what happens to content when it spills, or *overflows*, outside of its box.
 - `hidden` - when set to this value, any content that overflows be hidden from view.
 - `scroll` - when set to this value, a scrollbar will be added to the element's box so that the rest of the content can be viewed by scrolling.

```
p {  
    min-width: 300px;  
    max-width: 600px;  
    min-height: 150px;  
    max-height: 300px;  
    overflow: scroll;  
}
```

Our quarter century of experience in travel planning combines local knowledge with international taste. You'll be amazed at what we can provide! Our quarter century of experience in travel planning combines local knowledge with international taste. You'll be



Border

- By default, the border of the box cannot be seen.
- A border's style can be set with the border-style property:
 - dashed - border is a series of lines or dashes.
 - dotted - border is a series of square dots.
 - double - border is two solid black lines.
 - groove - border is a groove (or carving).
 - inset - border appears to cut into the screen.
 - outset - border appears to pop out of the screen.
 - ridge - border appears as a picture frame.
 - hidden or none - no border.

century of experience in travel planning combines local knowledge with international taste. You'll be amazed at what we can provide! Our quarter century of experience in travel planning combines local knowledge with international taste. You'll be amazed at what we can

Border Width

```
p {  
    border-style: solid;  
    border-width: 3px 1px 2px 1px;  
}
```

Border width in *clockwise* order (top right bottom left)

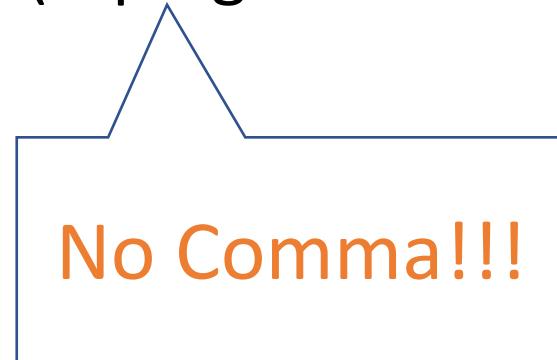
Alternatives:

border-top-width

border-right-width

border-bottom-width

border-left-width



No Comma!!!

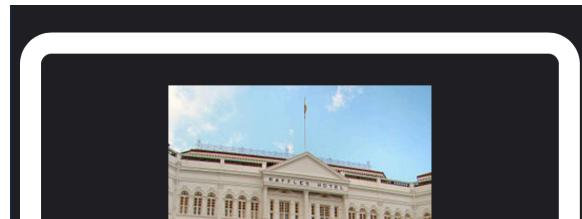
Border Shorthand and Radius

```
div.container {  
    height: 60px;  
    width: 60px;  
    border: 3px solid rgb(22, 77, 100);  
    border-radius: 100%;  
}
```

Border property shorthand : width style color

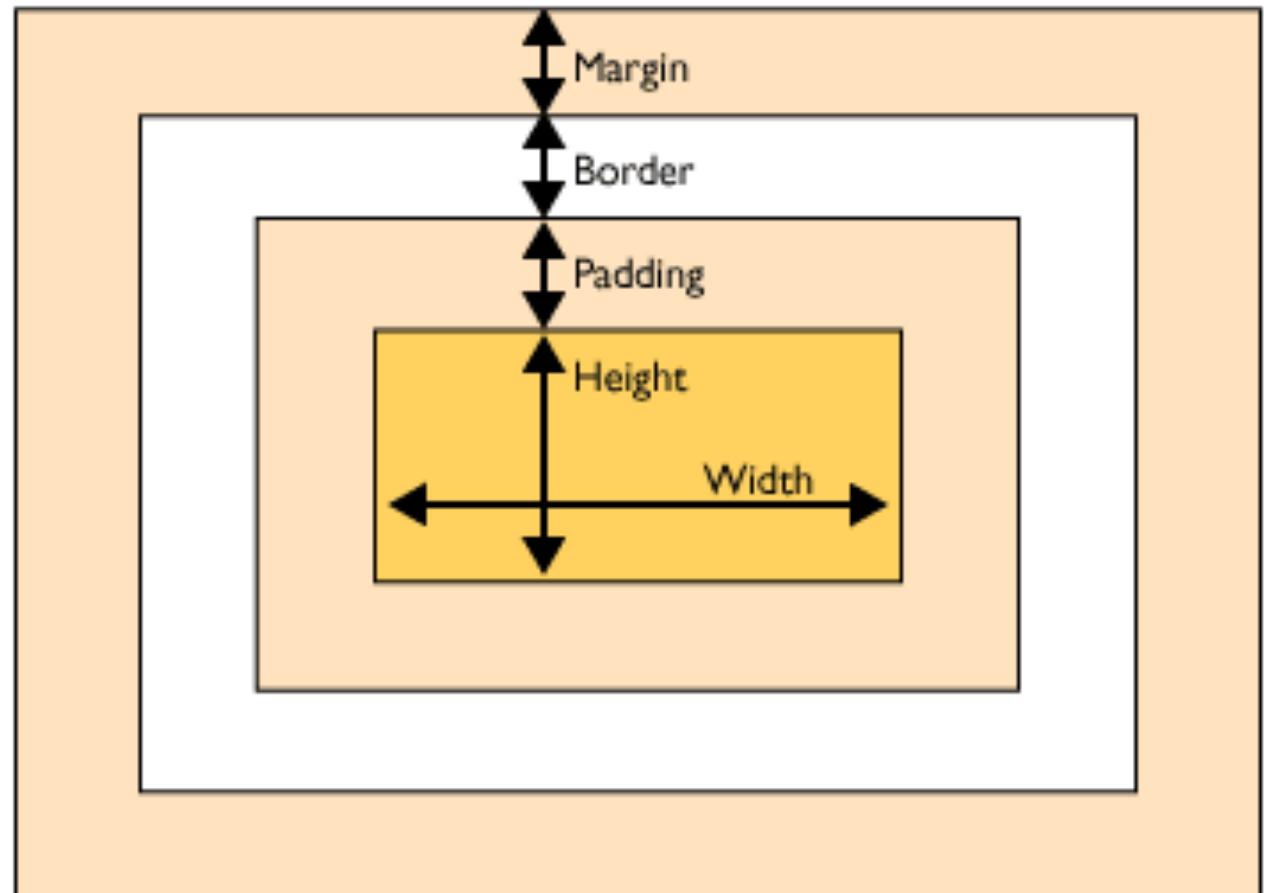
Border radius: the code above creates a div
that is a perfect circle.

border-radius:30px;



The Box Model

- Content
- Border
- Padding
- Margin



Padding

- Padding value: top right bottom left

```
p {  
  padding: 5px 10px 5px 10px;  
}
```

- If the values for top and bottom are the same and If the values for left and right are the same

- More specific:
 - padding-top
 - padding-right
 - padding-bottom
 - padding-left

```
p {  
  padding: 5px 10px;  
}
```

Margin

- Pretty much same as Padding
- When the margin property is set to **auto**, the element being styled will center **relative** to its container: NOTE the **width** (exact or relative) must be set for the element for this to work.

```
div.headline {  
    width: 400px;  
    margin: auto;  
}
```

```
#banner-content {  
    border: 1px solid #FFF;  
    position: relative;  
    top: 20%;  
    width: 60%;  
    padding: 30px 10px;  
    margin: auto; |  
}
```

Default Stylesheet

- All major web browsers have a default stylesheet they use in the absence of an external stylesheet, which is called ***user agent stylesheets***. (the term "user agent" is a technical term for the browser)
- Many developers choose to reset these default values so that they can work with a clean slate.

```
* {  
  margin: 0;  
  padding: 0;  
}
```

Inline vs. Block-level Elements

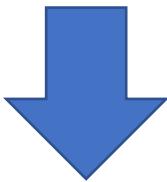
- All HTML elements can be classified as one of the following: *inline* elements or *block-level* elements.
 - Inline elements - elements that display *inline* with text, without disrupting the flow of the text (like links).
 - Block-level elements - elements that use an entire line of space in a web page and disrupt the natural flow of text. Most of the common HTML elements are block-level elements (headings, paragraphs, divs, and more).
- Modifying the **display** property of an element can help achieve a desired layout for a web page:
 - *inline* - causes block-level elements (like a div) to behave like an inline element (like a link).
 - *block* - causes inline elements (like a link) to behave like a block element (like a div).
 - *inline-block* - causes block-level elements to behave like an inline element, but retain the features of a block-level element.
 - *none* - removes an element from view. The rest of the web page will act as if the element does not exist.

Display Property Example

```
<div class="navigation">  
  <ul>  
    <li>Local</li>  
    <li>National</li>  
    <li>The Terminal</li>  
    <li>Global</li>  
    <li>OpEd</li>  
    <li>Donate</li>  
  </ul>  
</div>
```

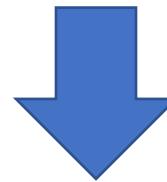
- LOCAL
- NATIONAL
- THE TERMINAL
- GLOBAL
- OPED
- DONATE

display:block;



LOCAL
NATIONAL
THE TERMINAL
GLOBAL
OPED
DONATE

display:inline;



LOCAL NATIONAL THE TERMINAL GLOBAL OPED DONATE

display:inline-block;

LOCAL NATIONAL THE TERMINAL GLOBAL OPED DONATE

Visibility

```
<ul>
  <li>Local</li>
  <li>National</li>
  <li>The Terminal</li>
  <li class="future">Donate</li>
  <li>Global</li>
  <li>OpEd</li>
```

LOCAL

NATIONAL

THE TERMINAL

DONATE

GLOBAL

OPED

```
.future {
  visibility: hidden;
}
```

LOCAL

NATIONAL

THE TERMINAL

GLOBAL

OPED

```
.future {
  display: none;
}
```

LOCAL

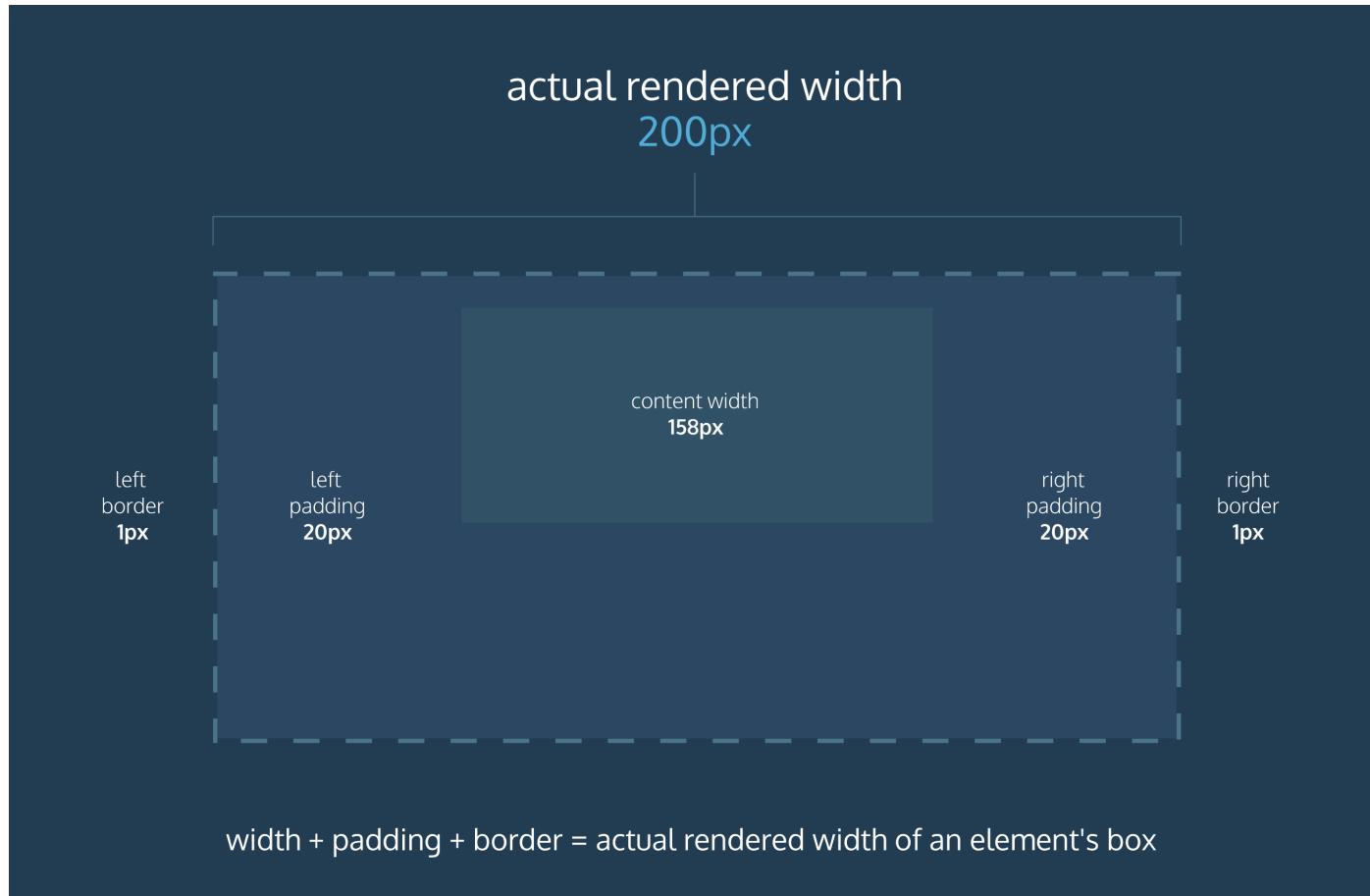
NATIONAL

THE TERMINAL

GLOBAL

OPED

Default Box Model: Content-Box



Box Model: Border-Box

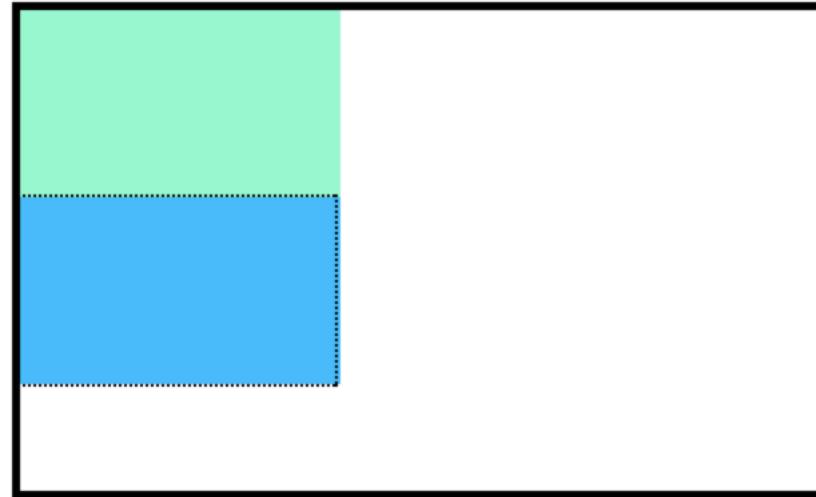
```
* {  
  box-sizing: border-box;  
}
```



Position

- Default block-level elements position: each takes up its own line of space and doesn't overlap with others (see the two boxes below)

```
.boxes {  
    width: 120px;  
    height: 70px;  
}
```

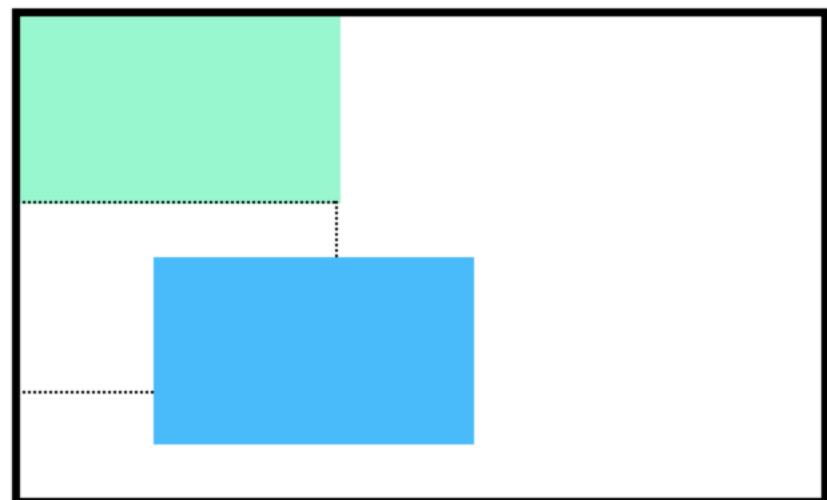


- The position property can be set to:
 - static - the default value (it does not need to be specified)
 - relative
 - absolute
 - fixed

Position: Relative

- Position can be set to ***relative*** (**relative to its static position**) and specified using ***offset properties***:
 - top - moves the element down.
 - bottom - moves the element up.
 - left - moves the element right.
 - right - moves the element left.

```
.box-bottom {  
    background-color: DeepSkyBlue;  
    position: relative;  
    top: 20px;  
    left: 50px;  
}
```



Position: Absolute

- When an element's position is set to ***absolute*** all other elements on the page will ***ignore*** the element and act like it is not present on the page:
- ***offset*** property (**relative to the top left corner of its container**) must be set for the element to show – otherwise, **THE ELEMENT WON'T SHOW!**

```
.box-bottom {  
    background-color: DeepSkyBlue;  
    position: absolute;  
    top: 20px;  
    left: 50px;  
}
```

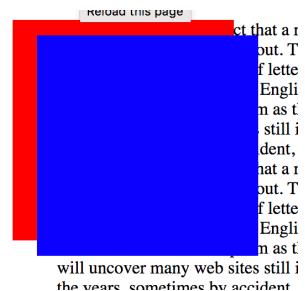
Position: Fixed

- When an element's position is set to absolute, the element will scroll out of view when a user scrolls.
- We can *fix* an element to a specific position on the page (regardless of user scrolling) by setting its position to fixed.
- ***offset*** property is also **relative to the top left corner of its container**.

```
.box-bottom {  
    background-color: DeepSkyBlue;  
    position: fixed;  
    top: 20px;  
    left: 50px;  
}
```

Z-Index: “Bring to Front”

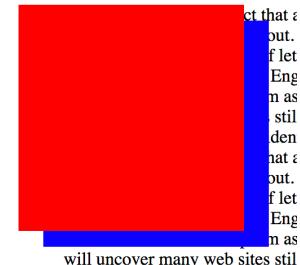
```
.box-up {  
    background-color: Red;  
    height: 200px;  
    position: absolute;  
    width: 200px;  
}  
  
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    left: 30px;  
    position: fixed;  
    top: 30px;  
    width: 200px;  
}
```



```
<div class="box-up"></div>  
<div class="box-bottom"></div>
```

```
.box-up {  
    background-color: Red;  
    height: 200px;  
    position: absolute;  
    width: 200px;  
    z-index: 2;  
}
```

```
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    left: 30px;  
    position: fixed;  
    top: 30px;  
    width: 200px;  
}
```



Float

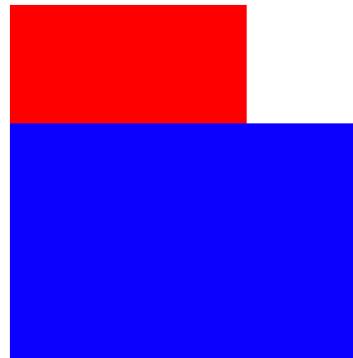
- Only works for *static* or *relative* elements
- Floated elements must have a width specified
- The float property can be set to:
 - left - this value will move, or float, elements as far left as possible.
 - right - this value will move elements as far right as possible.

No Floating

```
<div class="box-up"></div>
<div class="box-bottom"></div>
```

```
.box-up {
    background-color: Red;
    height: 100px;
    width: 200px;
}
```

```
.box-bottom {
    background-color: Blue;
    height: 200px;
    width: 300px;
}
```



1. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).
2. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now

Float One Right

```
.box-up {  
    background-color: Red;  
    height: 100px;  
    width: 200px;  
}
```

```
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    width: 300px;  
    float: right;  
}
```

```
<div class="box-up"></div>  
<div class="box-bottom"></div>
```

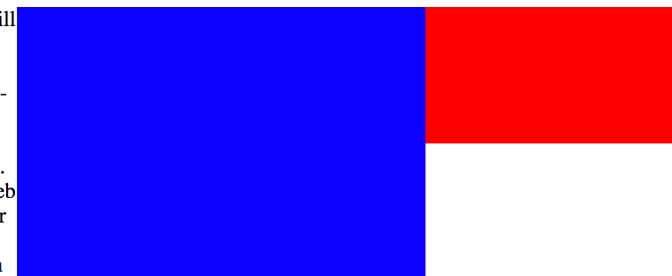


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Float Both Right

```
.box-up {  
    background-color: Red;  
    height: 100px;  
    width: 200px;  
    float: right;  
}  
  
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    width: 300px;  
    float: right;  
}
```

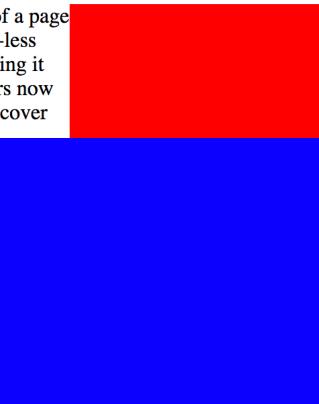
```
<div class="box-up"></div>  
<div class="box-bottom"></div>
```

- 
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 2. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout.

Clear Right

```
.box-up {  
    background-color: Red;  
    height: 100px;  
    width: 200px;  
    float: right;  
}  
  
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    width: 300px;  
    float: right;  
    clear: right;  
}
```

```
<div class="box-up"></div>  
<div class="box-bottom"></div>
```

- 
1. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).
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Clear Left

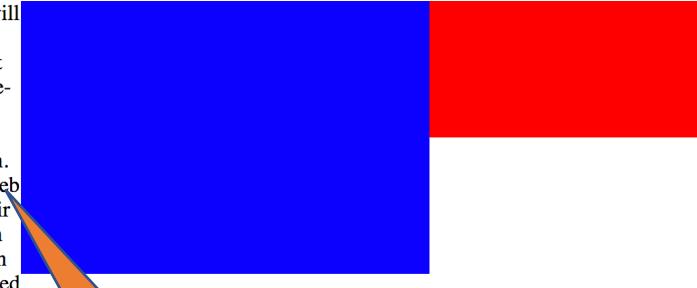
```
.box-up {  
    background-color: Red;  
    height: 100px;  
    width: 200px;  
    float: right;  
}
```

```
.box-bottom {  
    background-color: Blue;  
    height: 200px;  
    width: 300px;  
    float: right;  
    clear: left;  
}
```

```
<div class="box-up"></div>  
<div class="box-bottom"></div>
```

1. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).
2. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout.

The clear property specifies how elements should behave when they bump into each other on the page.



No effect because there is no other element bump into the blue box on the left

Image Width and Height

- Specifying the dimensions of an image helps the browser determine how much space should be reserved for the image, e.g. for LOGO
- **Note:** the img dimensions must be the same as the original image dimensions, otherwise the image will be distorted.

```

```

```
img.leaf {  
    width: 350px;  
    height: 200px;  
}
```

Position Images

- By default, images are inline elements.
- To position images properly, they must be changed to block-level elements by using “***display: block;***”

```
img.leaf {  
    width: 300px;  
    height: 200px;  
    display: block;  
    margin: 0px auto;  
}
```

Background Images

- Images can also be added to the backgrounds of HTML elements with the **background-image** property.
- `url()` must be used to specify the URL/Path of the image, enclosed in double quotes.

```
background-image: url("https://www.example.com/leaf.jpg");
```

```
background-image: url("google.png");
```

- Control how a background image *repeats* with the **background-repeat** property.
 - **repeat** - the default value — the image will repeat horizontally and vertically.
 - **repeat-x** - the background image will be repeated only along the x-axis (horizontally).
 - **repeat-y** - the background image will be repeated only along the y-axis (vertically).
 - **no-repeat** - the background image will not be repeated at all and will appear only once.

Background Image Position

- When a background image is not repeated, its position can be modified with the background-position property.
- A background image is positioned using a 3 by 3 grid (three rows, three columns), meaning there are 9 total possible positions for the image:
 - left top - top left corner of the element's box.
 - center top right top - top right corner of the element's box.
 - left center - left column, center row.
 - center center - the center of the element's box.
 - right center - right column, center row.
 - left bottom - bottom left corner of the element's box.
 - center bottom - bottom center of the element's box.
 - right bottom - bottom right corner of the element's box.
- **Note:** When setting this property, if only one value is specified, the second value will default to center.

Background Image Position Shorthand

```
p {  
  background-image: url("#");  
  background-repeat: no-repeat;  
  background-position: right center;  
}
```

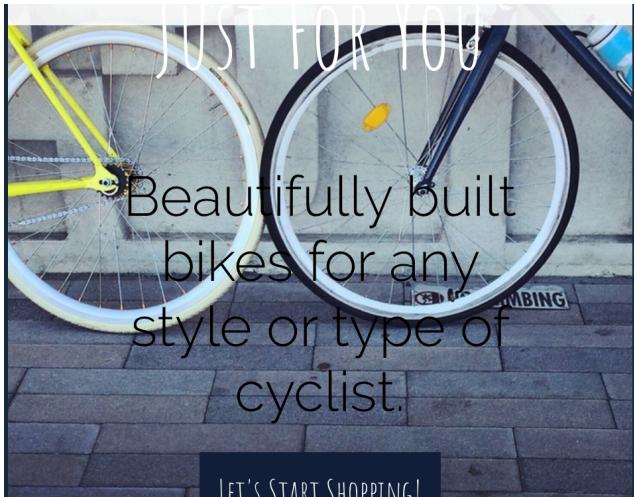
```
p {  
  background: url("#") no-repeat right center;  
}
```

Background Image Size

- **background-size** property is used to change the size of the background image:
 - **cover** - expands the image as large as possible to cover the full width or height of a container. If the dimensions of the container (say, a div) are larger than the dimensions of the image, the image will become distorted.
 - **contain** - expands the image as large as possible while preserving the original aspect ratio, aka, letterboxing.

Fix Background Image Position

- The **background-attachment** property can take one of two values:
 - **scroll** - this value allows the image to move up and down as a user scrolls on the web page (this is the default value).
 - **fixed** - this value pins the image's position on the page.



Gradient Color as Background Image

```
div.header {  
    height: 400px;  
    width: 400px;  
    background-image: -webkit-linear-  
    gradient(#666CCC, #BC1324);  
}
```



Table

- Table Row: <tr>
- Table Data: <td>
- Table Heading: <th>, row/column headings

```
<table>
  <tr>
    <th></th>
    <th scope="col">Saturday</th>
    <th scope="col">Sunday</th>
  </tr>
  <tr>
    <th scope="row">Temperature</th>
    <td>73</td>
    <td>81</td>
  </tr>
</table>
```

Spanning Columns

```
<th>Company Name</th>
<th>Number of Items to Ship</th>
<th>Next Action</th>
</tr>

<tr>
  <td>Adam's Greenworks</td>
  <td>14</td>
  <td>Package Items</td>
</tr>
<tr>
  <td>Davie's Burgers</td>
  <td colspan="2">2</td>
  <td>Send Invoice</td>
</tr>
```

Company Name	Number of Items to Ship	Next Action
Adam's Greenworks	14	Package Items
Davie's Burgers	2	Send Invoice

Spanning Rows

```
<tr>
  <td>Adam's Greenworks</td>
  <td>14</td>
  <td>Package Items</td>
</tr>
<tr>
  <td>Davie's Burgers</td>
  <td colspan="2">2</td>
  <td>Send Invoice</td>
</tr>
<tr>
  <td>Baker's Bike Shop</td>
  <td rowspan="2">3</td>
  <td>Send Invoice</td>
</tr>
```

Adam's Greenworks	14	Package Items	
Davie's Burgers	2		Send Invoice
Baker's Bike Shop		Send Invoice	
Miss Sally's Southern	3	4	Ship

Table Header, Body, Footer

- Use <thead> <tbody> <tfoot> to section off table, which can also be separately styled.

```
▼ thead th {  
    background: #88CCF1;  
    color: #FFF;  
    font-family: 'Lato', sans-serif;  
    font-size: 16px;  
    font-weight: 100;  
    letter-spacing: 2px;  
    text-transform: uppercase;  
}
```

COMPANY NAME	NUMBER OF ITEMS TO SHIP	NEXT ACTION
Adam's Greenworks	14	Package Items

Problem Solving

- Ask Google!!
- Use StackOverflow
- Ask me or TAs

Questions?