



HTML & CSS: LEVEL 1

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Week 3

SESSION OVERVIEW

- Review of week 2
- The CSS box model
- Block vs inline elements
- A couple new HTML elements
- Understanding classes and IDs



REVIEW: WEB GRAPHICS

- Minimize file sizes to help load times in browser
- Optimizes images for RGB displays with correct resolution for browsers
- **Flattens** layers and removes metadata from graphics





REVIEW: WEB IMAGE TYPES



JPG/JPEG

- Millions of colors
- Uses a compression algorithm called **lossy**
- No animation
- No transparency
- Small file size

REVIEW: WEB IMAGE TYPES



GIF

- 256 colors max
- Animation
- Pixels are either on or off (no partial transparency)

REVIEW: WEB IMAGE TYPES



PNG

- Millions of colors
- No animation
- Full alpha transparency
- No compression, so larger file sizes

{} REVIEW: LINKING TO EXTERNAL STYLESHEET

```
<link href="css/styles.css" rel="stylesheet">
```

- Tells the browser to find and load the styles.css file from the css directory
- The rel attribute stands for "relation" in this case, this link's relationship to the document is "stylesheet"
- This tag goes inside the <head> element
- Should be on every page that needs the styles

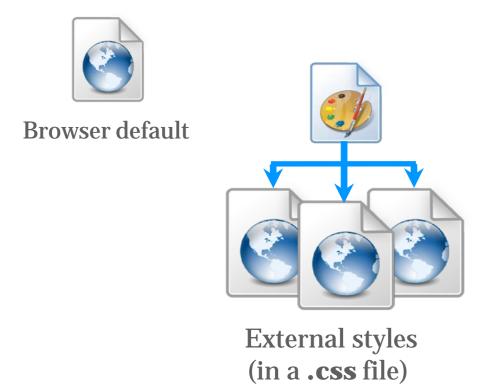
{} REVIEW: THE "CASCADING" PART

The 3 rules for determining how styles get applied:

- Styles are applied from far to near
- Styles are applied from top to bottom
- Children elements are more specific than parents

{} REVIEW: NEAR TO FAR

Styles that are "closer" to the elements they style take precedence





Internal styles (in the <head>)



Inline styles (directly on an element)

Closer to element

{} REVIEW: TOP TO BOTTOM

If the same property is styled multiple times for the same selector, the last one sticks.

```
p { color: #2f4251; }
P { color: #daa645; } /*this wins*/
```

{} REVIEW: CHILDREN ARE SPECIFIC

Children elements **inherit** styles from their parents but can **override** parents with their own styles

```
body { color: #2f4251; } /* parent */
p { color: #daa645; } /* child */
```

{} REVIEW: SELECTORS CAN BE MORE SPECIFIC

If one style is **more specific** than another, it takes precedence

```
p { color: #daa645; } /* all paragraphs */
a { color: #e7c0c8; } /* links in general */
p a { color: #c4fe46; } /* links in paragraphs */
```

BACKGROUND-IMAGE: REVIEW

Can set background of an element as an **image** using background-image

```
p {
    background-image: url("images/kitten.jpg");
    color: white;
}
```

BACKGROUND: REVIEW

background-position: allows you to move a background image around within its container

background-repeat: defines if (and how) the background image will repeat

background-attachment: changes if the image stays in place when the user scrolls the page or scrolls with the page

background-size: specifies how much of the container that the image covers

PSEUDO REVIEW

A **CSS pseudo-class selector** specifies a special state of the element we want to style

:first-letter styles the first letter of a block of text

:first-child and :last-child style the first and last children of a parent

:focus styles an element that has the current keyboard focus, from either click or tab

HEIGHT AND WIDTH: REVIEW

height and width can be set on (most) elements to change how much room they take up on the page.

```
header { height: 6em; }
```

To ensure an element is **never larger** than a certain value, use max-height or max-width.

Specify min-height or min-width if you want to ensure an element is **never smaller** than a certain value.

QUESTIONS?

THE CSS BOX MODEL

CSS BOX MODEL

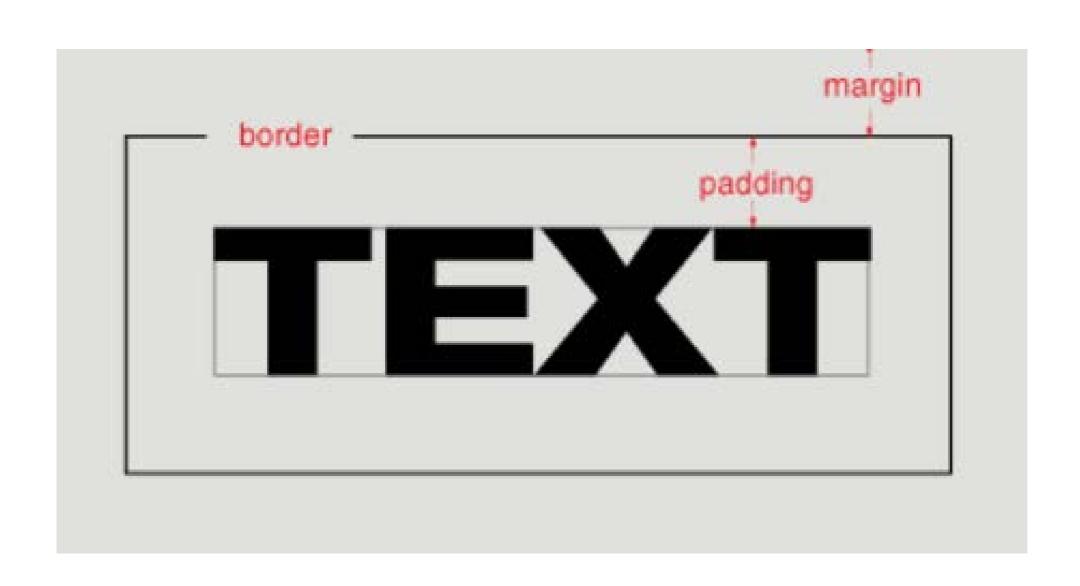
CONTENT: stuff in the box

PADDING: bubble wrap and packing peanuts

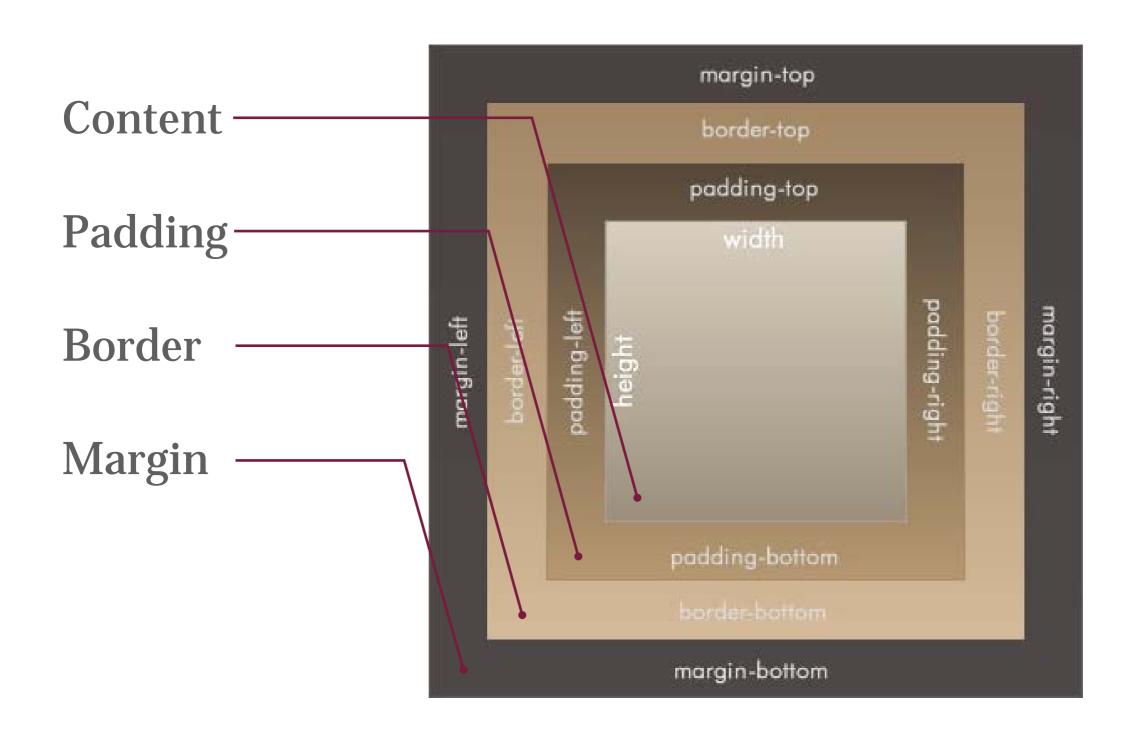
BORDER: sides of the box

MARGIN: space between multiple boxes

CSS BOX MODEL



CSS BOX MODEL



Padding creates space inside an element.

Padding affects how far content is from the border.

```
p {
    padding-top: 20px;
                                   This is a paragraph with some padding.
    padding-right: 5px;
    padding-bottom: 40px;
    padding-left: 10px;
Shorter way:
p {
    padding: 20px 5px 40px 10px;
```

If top/bottom and left/right padding match...

```
p {
   padding-top: 20px;
   padding-right: 10px;
   padding-bottom: 20px;
   padding-left: 10px;
Combine them!
p { padding: 20px 10px; }
```

```
If all padding matches...
p {
    padding-top: 20px;
    padding-right: 20px;
    padding-bottom: 20px;
    padding-left: 20px;
Combine EVEN MORE!
p { padding: 20px; }
```

Padding can be applied only to the top, only to the bottom, and so on — or any combination of those:

```
p {
    padding-left: 40px;
}

p {
    padding-top: 20px;
    padding-right: 10px;
}
```

MARGIN

Margin creates space **outside** an element.

Same abbreviation style and rules as padding

```
p {
    margin-top: 20px;
    margin-right: 5px;
    margin-bottom: 40px;
    margin-left: 10px;
}

Is the same as

p { margin: 20px 5px 40px 10px; }
```

MARGIN

You can give margin a **negative** value to shift elements in the opposite direction.

```
p {
    margin-top: -20px;
}
```

This may result in overlapping text!

Hero image heading

MARGIN VS PADDING

Use margin to separate the element from the things that are around it.

Use padding to move the element away from the edges of the block.

Margin is the space between one object and its surrounding elements.

Padding is the space inside the border, between the border and the actual image or text.

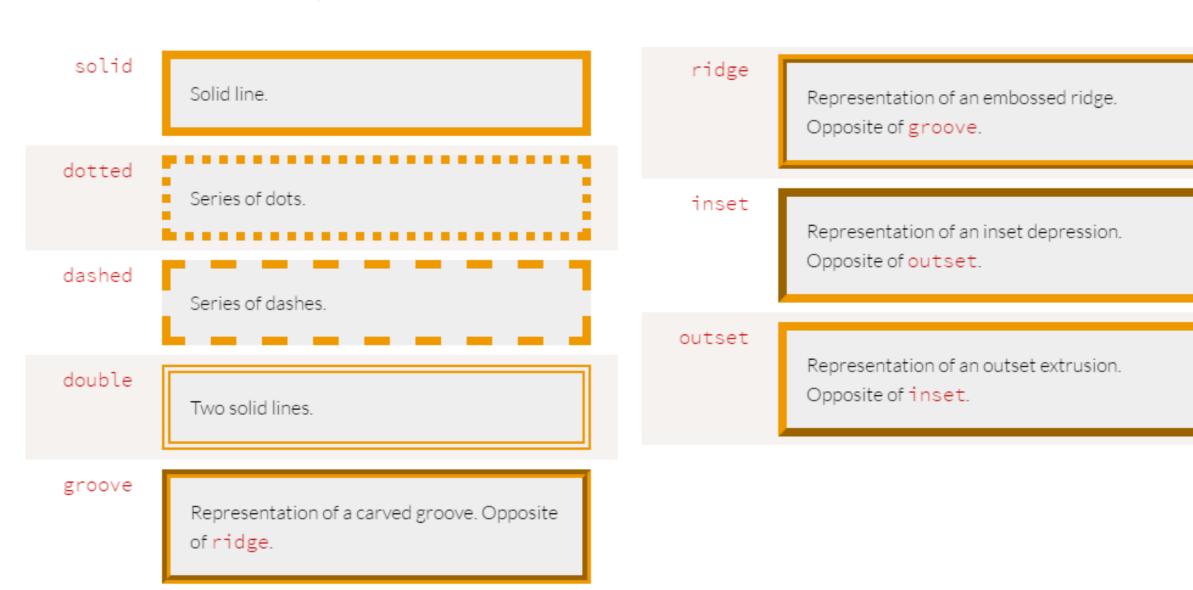
Between margin and padding, you can set a border

Values are separated with spaces, in this order:

- Width (usually in pixels, but can be em)
- Border style (solid, dotted, dashed, etc)
- Color

```
p {
    border: 2px dotted #ff0000;
}
```

Border styles:



You can set a border on only one side of an element:

```
h1 { border-bottom: 3px solid black; }
```

HEADER WITH BORDER BOTTOM

A common use of border is to visually separate list items in a navigation menu.

```
ul {
    list-style : none;
}

li {
    padding: 1em;
    background-color: #283c51;
    border-top: 1px solid #395673;
    color: #adadad;
}
```

```
About us

Products

Services

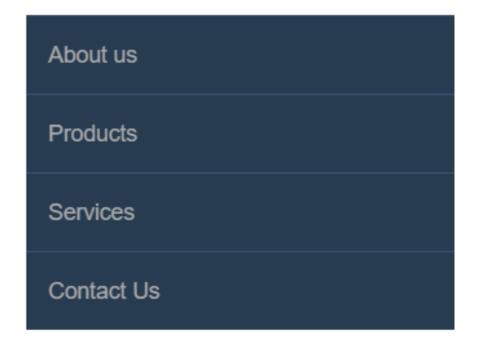
Contact Us
```

LIST STYLE

Note that we set

```
ul {
    list-style: none;
}
```

to remove the bullets that appear by default on an unordered list



BORDER RADIUS

To make an element appear curved, use the property border-radius

- The value is a number (in px or em) or percentage
- You can use border-radius even if you don't explicitly set a border

```
li {
    /* same styles... */
    border-radius: 2em;
}
```

```
About us

Products

Services

Contact Us
```

BORDER RADIUS

border-radius can be used to create a circle.

- Set border-radius to 50%
- Set height and width to the same value

```
border-radius: 50%;
background-color: black;
color: white;
text-align: center;
height: 3em;
width: 3em;
line-height: 3em;
margin: 5px;
}
```

BORDER RADIUS

This technique can be used on images to crop them into a circle

• If the image itself doesn't have a square ratio, it will look distorted

```
img {
    border-radius: 50%;
    height: 200px;
    width: 200px;
}
```





PRACTICE TIME!

ASSIGNMENT

If you haven't already, create a navigation section for your website.

- Add a list of links in your navigation menu
- Make the navigation menu pretty by using padding, margin, border, background color, and other tricks we've learned.
 - ONLY style lists that are in the nav menu not lists on the rest of the page
 - Bonus points: style the last or first item in the nav menu differently using **pseudo-classes**
- Give your page "breathing room" with padding and/or margin.

<>

BLOCK VS. INLINE ELEMENTS

<> BLOCK ELEMENTS

BLOCK ELEMENTS

- Expand naturally to fill their parent container
 - Takes up a "full line"
- Can have margin and/or padding
- Can have height and/or width
- By default, will be placed **below** previous elements in the markup

<> BLOCK ELEMENTS

LOCK ELEMENTS EXPAND NATURALLY ———————————————————————————————————	
ND NATURALLY DROP BELOW OTHER ELEMENTS	

<> BLOCK ELEMENTS

Examples of block elements:

- Headings <h1>...<h6>
- Paragraphs
- Lists ,

<> INLINE ELEMENTS

INLINE ELEMENTS

- Flow along with text content
- Only take up as much space as necessary
- Ignore width and height properties
- Margin and padding only pushes other elements away horizontally, not vertically
 - Top and bottom margin/padding is ignored

<> INLINE ELEMENTS

INLINE ELEMENTS FLOW WITH TEXT

PELLENTES QUE HABITANT MORBITRISTIQUE SENECTUS
ET NETUS ET MALESUADA FAMES AC TURPIS EGESTAS.
VESTIBULUM INLINE ELEMENT VITAE, ULTRICIES
EGET, TEMPOR SIT AMET, ANTE. DONEC EU LIBERO SIT
AMET QUAM EGESTAS SEMPER. AENEAN ULTRICIES MI
VITAE EST. MAURIS PLACERAT ELEIFEND LEO.

<> BLOCK & INLINE ELEMENTS

Examples of inline elements:

- Links <a>
- Font emphasis
- Font bold

Pellentesque inline element malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. Aenean ultricies mi vitae est. Mauris placerat eleifend leo.

<> INLINE BLOCK

INLINE-BLOCK ELEMENT

- Is a hybrid of inline and block
- Takes up width and height like block-level elements
- Flows with content
- Can have margin and padding
- Examples of inline-block elements:
 - Image

<> INLINE BLOCK



senectus et netus et malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. Aenean ultricies mi vitae est. Mauris placerat eleifend leo.

<> DISPLAY

You can change whether or not any element is block, inline, or inline-block by using the CSS display property.

This means we can do some neat things!

```
li {
    display: inline-block;
}
```



PRACTICE TIME!

ASSIGNMENT

Update your navigation to a horizontal menu using CSS.

- Give the li elements a display property of either inline or inline-block. Which looks better? Why do you think that is?
- Update your styles so that they look nice in the new orientation

Create a link that looks like a button.

- What happens if you want to put two "button-style" links next to one another?
- What if you want the two buttons to be the same width even when they have different text?

<htnl> (MORE) HTML ELEMENTS

 ELEMENTS

A is a generic inline element

No default style

Used to style inline content

<DIV> ELEMENTS

A <div> is a generic block element

No default style

 Heavily used as a wrapper for other elements, to create complex layouts

<DIV> LAYOUT EXAMPLE

Header div

Sidebar div

Main container div

This is the div that holds the content for the main container

This div is for callouts

And holds some special data.

<DIV> LAYOUT EXAMPLE

```
<div class="header">
    <h1>Header div</h1>
</div>
<div class="row">
    <div class="sidebar">
       Sidebar div
    </div>
    <div class="main">
        <h2>Main container div</h2>
        This is the div that holds the content for the main container
        <div class="callout">
           <h4>This div is for callouts</h4>
           And holds some special data.
       </div>
    </div>
</div>
```

WHY USE DIV OR SPAN?

Both div and span really need something extra to be useful, since they have no presentation style by default.

- Bonus: you don't need to "reset" them before making them fit your design (like ul or p)
- But... how do you style them anyway?



ID & CLASS SELECTORS

CSS lets us target all paragraphs like this:

```
p {
    font-size: 20px;
}
```

But what if we want to style only **some** paragraphs?

You can add class and id to any HTML element to identify it for styling.

• You decide the class and id values — be descriptive!

```
Big text
Still
totally valid
```

Adding a class or id does nothing to an element by default.

- Classes and ids don't have any styling information by themselves
- They require you to add CSS selectors if you want styling to be applied

Multiple elements can have the same class

 A class is like a barcode – all products of the same type have the same barcode



Only **one** element per page can use the same id

 An id is like a serial number – it uniquely identifies one specific instance of a product



CLASS SELECTORS IN CSS

- In CSS, target a class with a period
- Will style **all** types of elements that have that class:

```
.kittens { color: gray; }

This will be gray.
<div class="kittens">This will be gray too.</div>
```

CLASS ATTRIBUTES

Elements can have **multiple** classes, separated by a space:

```
Big text with a
margin
.important { font-size: 20px; }
.margin-sm { margin: 5px; }
```

CLASS SELECTORS IN CSS

Child selectors work with classes:

```
.card p { padding: 16px; }
```

"Any paragraph that is **inside** an element with a class of card gets 16px of padding."

```
<div class="card">
    <h2>This will not get padding</h2>
    But this will
</div>
```

ID ATTRIBUTES

- An id can only be used once per page
- Elements cannot have multiple id attributes

```
<div id="mainContent">
     <!-- This better be the only main -->
</div>
```

ID SELECTORS IN CSS

```
In CSS, target an id with a hash:
#kittenContainer {
   color: gray;
<div id="kittenContainer"></div>
```

IDS FOR ANCHORING

If you put a hash followed by the element's id in the URL, the browser will jump to that location on the same page:

Proceed
directly to kittens

ID ATTRIBUTES

Q: What horrible thing will happen if you use an **id** twice on the same page?

A: Well...actually nothing.

- But your page won't validate
- Jump links will go to whatever id appears first
- And any Javascript that needs to locate that specific element will fail

MIXING CLASS AND ID ATTRIBUTES

An element can have both id and class attributes.

```
<div id="puppyContainer" class="small fluffy"></div>
<div id="birdContainer" class="small feathery"></div>
```

HOW TO CHOOSE - CLASS OR ID?

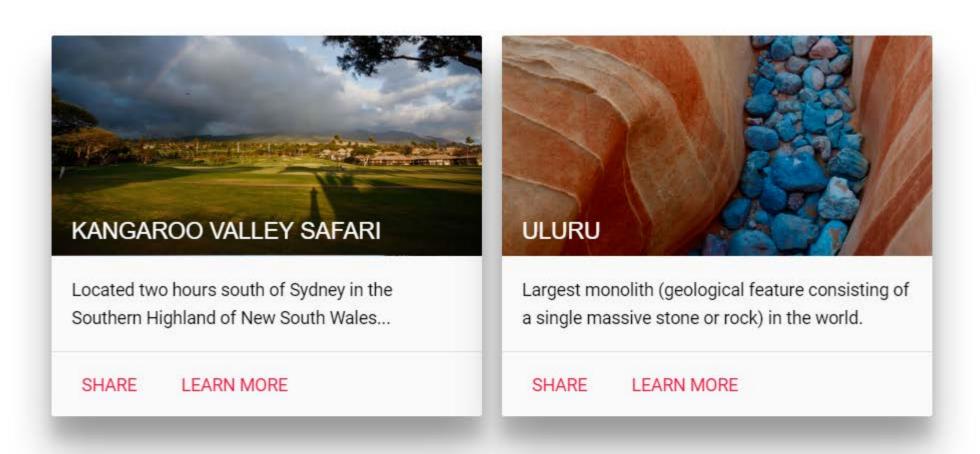
If you think it's likely or possible that you'll want to apply the same style to multiple things, definitely use class

If your element is guaranteed to be the only one on the page, you can use id — or you can still use class

If your element needs to be linked to directly, use id

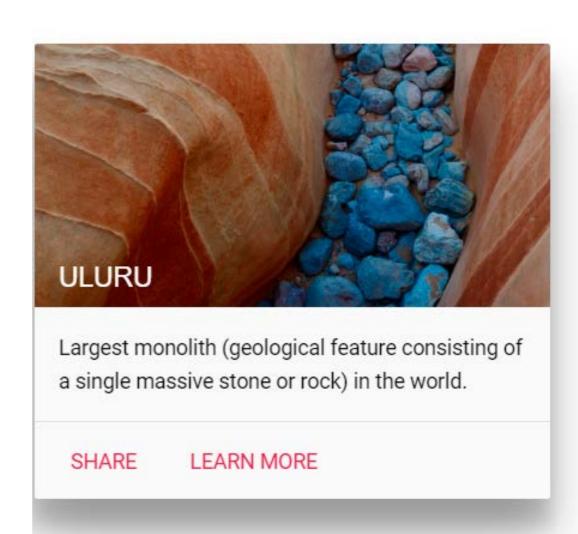
CLASS COMPONENTS

The most common use of classes is to define reusable components.



CLASS COMPONENTS

A component is an outline defined in HTML that will have the same markup every time it's used, but with different content inside it.



CHILDREN IN CLASS

```
.card {
      display: inline-block;
      width: 344px;
      height: 304px;
.card p {
      padding: 16px;
      margin: 0;
      line-height: 1.6;
.card .action-bar {
      padding: 0 8px;
      border-top: 1px solid #E0E0E0;
      height: 52px;
```



a single massive stone or rock) in the world.

SHARE **LEARN MORE**

See a <u>live demo</u>



PRACTICE TIME!

ASSIGNMENT

Give an element on your page a descriptive class

- Apply a special style using a CSS class selector
- Style a child element of this element

Create another class and apply it to **two different** types of elements

• Bonus points: apply to an element that already has a class. What happens if the styles conflict? How would you make sure the result is what you want?

Assign an id to an element on your page

- Apply a unique style using an id selector
- Create a link in your nav that jumps to that element

"HOMEWORK"

Practice!

• Optional: read chapter 8 of HTML and CSS: Design and Build Websites



 Try playing with this <u>interactive</u> demo of the CSS box model