BOX MODEL

EVERYTHING IS RECTANGLES

EXPLORING THE BOX MODEL

- Inline/Block Elements Review
- How Elements are Displayed
- What the box model is
- Working with the box model
- Width, Height, Margin, Padding, Borders
- Box Sizing
  - border-box

BEFORE WE BEGIN

- CSS Properties short-hand.
- CSS Selectors grouping.
- http://codepen.io/ianshea/pen/RrxLLM?editors=110

BLOCK ELEMENTS VS. INLINE ELEMENTS

- Block Elements
  - Begin on a “new line”
  - Take up the whole width
  - Stack on top of each other
- Inline Elements
  - Do not begin on a “new line”
  - Maintain the width of their content
  - They fall *inline* with other elements
- http://codepen.io/ianshea/pen/vLJrQo?editors=110

THE DISPLAY PROPERTY

- Every element has a default **display** property.
- We can alter this display property in our CSS rules
  - This means…
    - We can change inline elements to block!
    - We can change block elements to inline.
    - We can hide elements

THE DISPLAY PROPERTY

- The most common display property values used are:
  - display: **block**;
  - display: **inline**;
  - display: **none**;
  - display: **inline-block**;
- http://codepen.io/ianshea/pen/wMpqPP?editors=110

REGARDING INLINE-BLOCK

- Will show an element *inline*
- Allows usage of the box-model properties
  - In the code-pen example, we added a `height` property http://codepen.io/ianshea/pen/wMpqPP?editors=110
- Inline block elements have a space between them, they don’t butt right up against each other by default

BOX MODEL = BOXES

- Every element on a page is a **rectangular box.** http://codepen.io/ianshea/pen/EPovOx?editors=110

THE BOX MODEL

- Every element is a rectangular box
- There are a few properties that define the **true dimensions** of the box.
- **width**, **height**, **padding**, **border** and **margin**.
- padding/margin/border all have sides.
  - *padding/margin/border*-**top**
  - *padding/margin/border*-**right**
  - *padding/margin/border*-**bottom**
  - *padding/margin/border*-**left**

CALCULATING DIMENSIONS

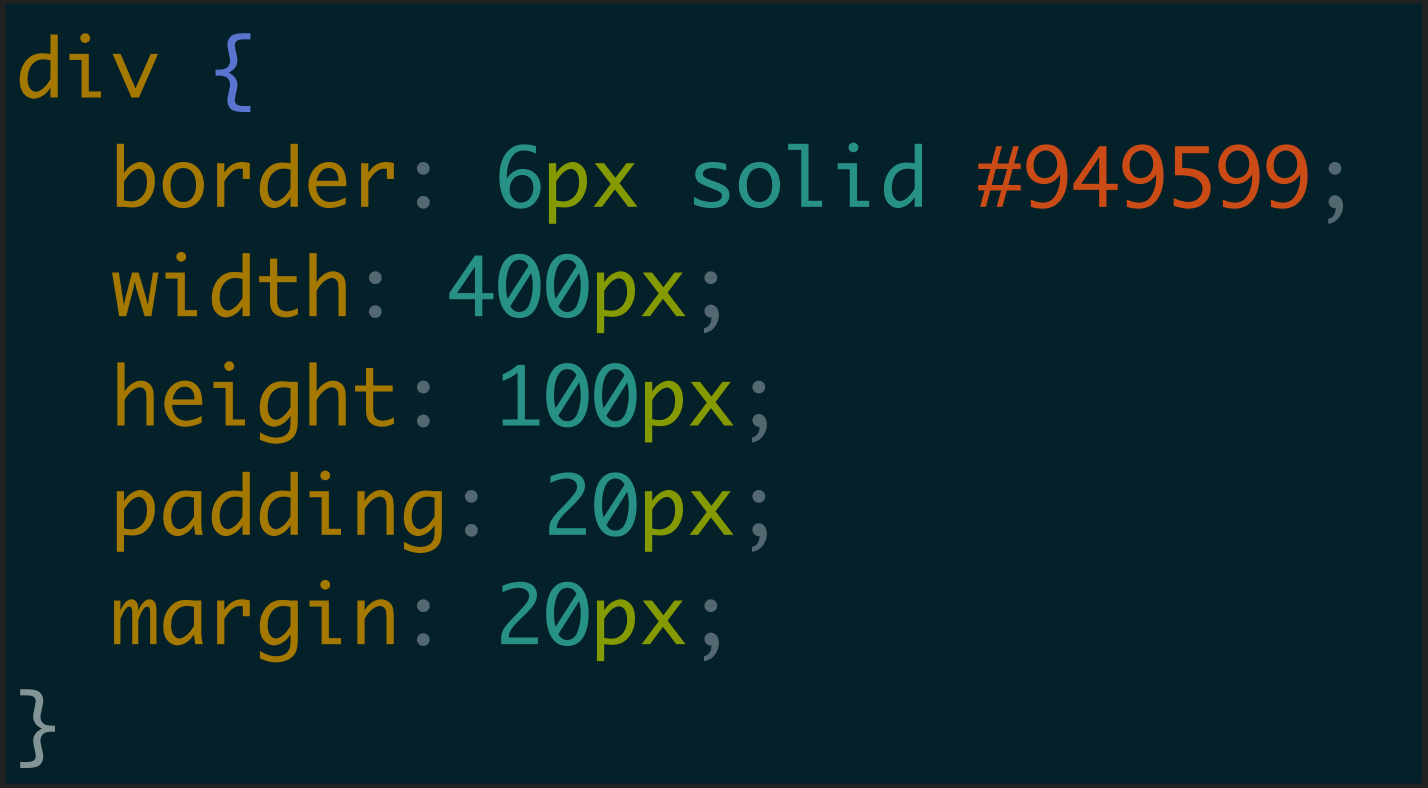
- Calculating the ***true width*** of an element:

margin-right + border-right + padding-right + width + padding-left + border-left + margin-left

- Calculating the ***true height*** of an element:

margin-top + border-top + padding-top + height + padding-bottom + border-bottom + margin-bottom

CALCULATING DIMENSIONS

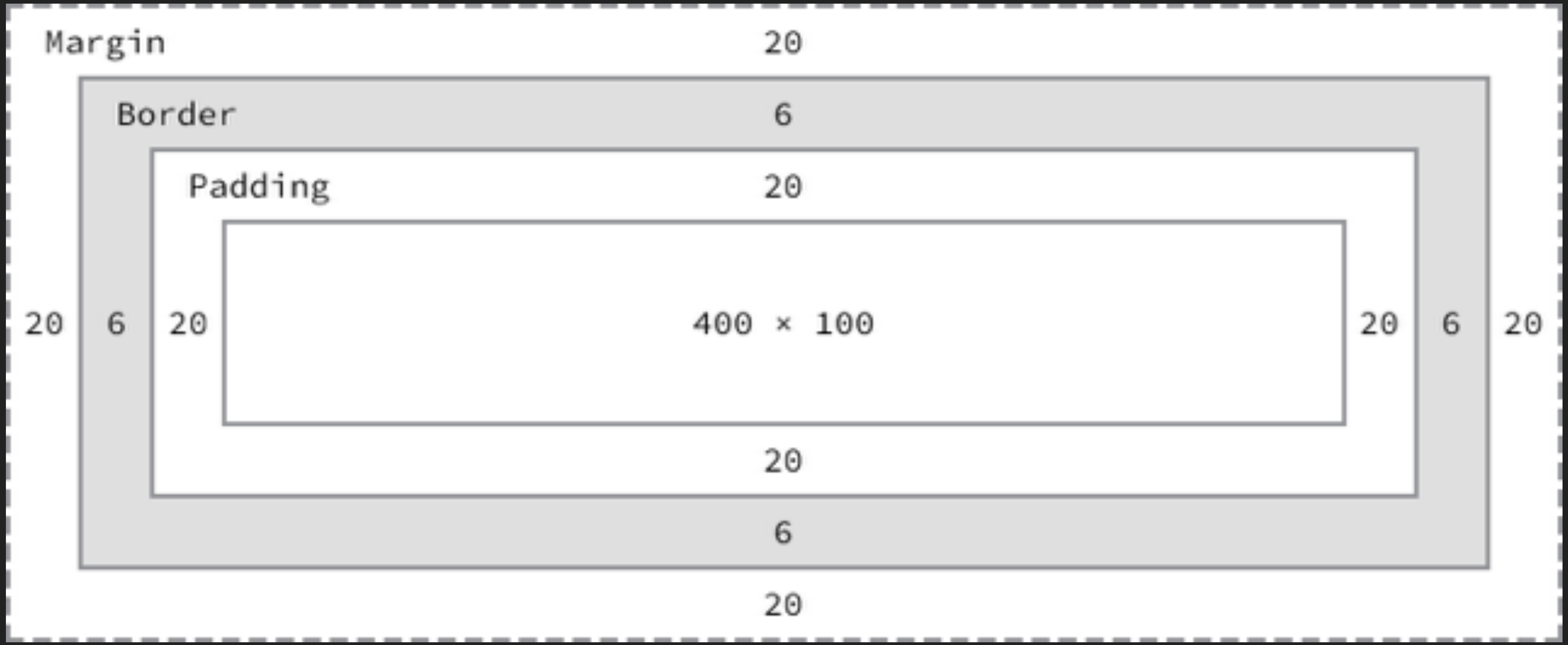


```
div {
  border: 6px solid #949599;
  width: 400px;
  height: 100px;
  padding: 20px;
  margin: 20px;
}
```

http://learn.shayhowe.com/html-css/opening-the-box-model/#box-model

BOX MODEL

```
div {
  border: 6px ...
  width: 400px;
  height: 100px;
  padding: 20px;
  margin: 20px;
}
```



- Width:
  492px = 20px + 6px + 20px + 400px + 20px + 6px + 20px

- Height:
  192px = 20px + 6px + 20px + 100px + 20px + 6px + 20px

BOX MODEL PROPERTIES: WIDTH/HEIGHT

- Width
  - You can set width on `block` elements
    This means `inline-block` elements too!
  - Inline elements default to the width of the content.
    Example: a <strong> tag or <span> with content inside the tag.
- Height
  - Height is determined by content.
  - You can set height on `block` elements.
    This means `inline-block` elements too!
- Inline Elements **cannot** have a fixed size.

BOX MODEL PROPERTIES: MARGINS

- Provides:
  - Positioning elements
  - Space **around** elements
- Some elements have default margins.
  - Usually text elements, <h1>, <p>, etc.
- Is **outside** of the border of an element
- We set the amount of space that surrounds the element
- Unlike width/height - we can add to inline elements
- You cannot give the margin of an element a color
- http://codepen.io/ianshea/pen/dGJVWz?editors=110

BOX MODEL PROPERTIES: PADDING

- Provides:
  - Spacing **within** an element
- Is **inside** of the border of an element
- Unlike width/height - we can add to inline elements
- We set the amount of space between the content and the border and margin
- http://codepen.io/ianshea/pen/VeyMbM?editors=110

BOX MODEL PROPERTIES: PADDING/MARGIN SHORTHAND

- We can set padding/margin with shorthand to save our selves some typing.
- http://codepen.io/ianshea/pen/WrdZzq?editors=110
- The above example uses the **padding** property. The shorthand for the **margin** property works the exact same way.

BOX MODEL PROPERTIES: BORDERS

- Provide:
  - Borders for our HTML elements
- They come between the padding and the margin.
- There are different border appearances.
- We can control all sides of our elements border individually.
- http://codepen.io/ianshea/pen/BjJwGE?editors=110#0

BOX MODEL PROPERTIES: BORDERS

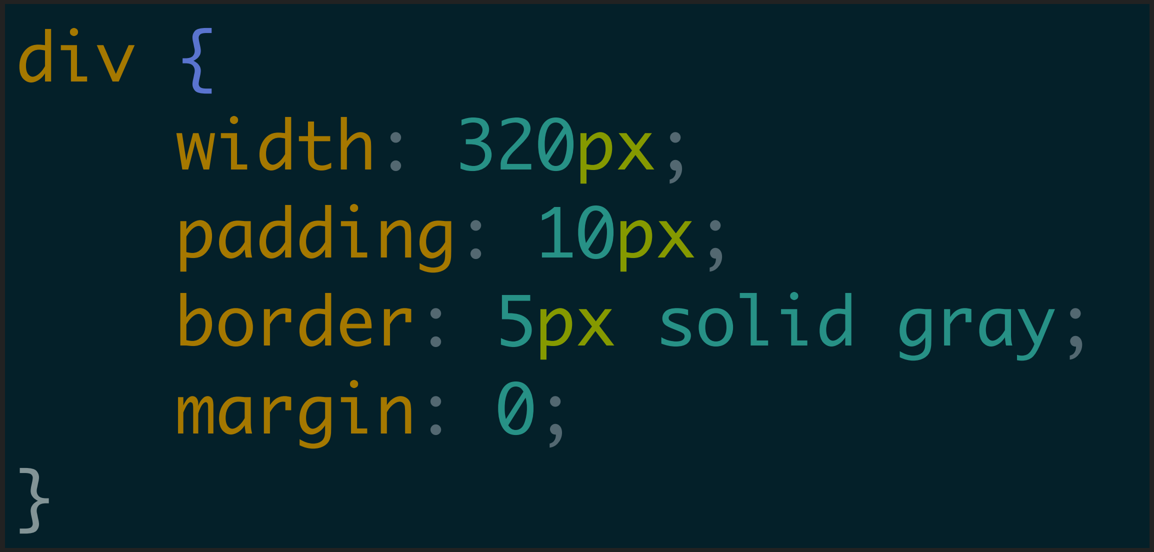
- Border Radius
  - Rounds the corners of elements.
  - But… does it make it truly rounded?
    Hint: No. *All elements are rectangles.*
- http://codepen.io/ianshea/pen/OMzxqG?editors=110#0

BOX-SIZING

- There are 2 box-sizing properties.
  - content-box
  - border-box
- What do they do?
  - Change the way our width/padding/border is calculated.
- **Note: The reading is incorrect. `padding-box` is not a valid value for box-sizing and should not be used.**

BOX-SIZING: CONTENT-BOX;

- box-sizing: content-box;
  - This is the default value for elements.
  - Starts with width/height and then adds in the padding, border and margin to calculate size.

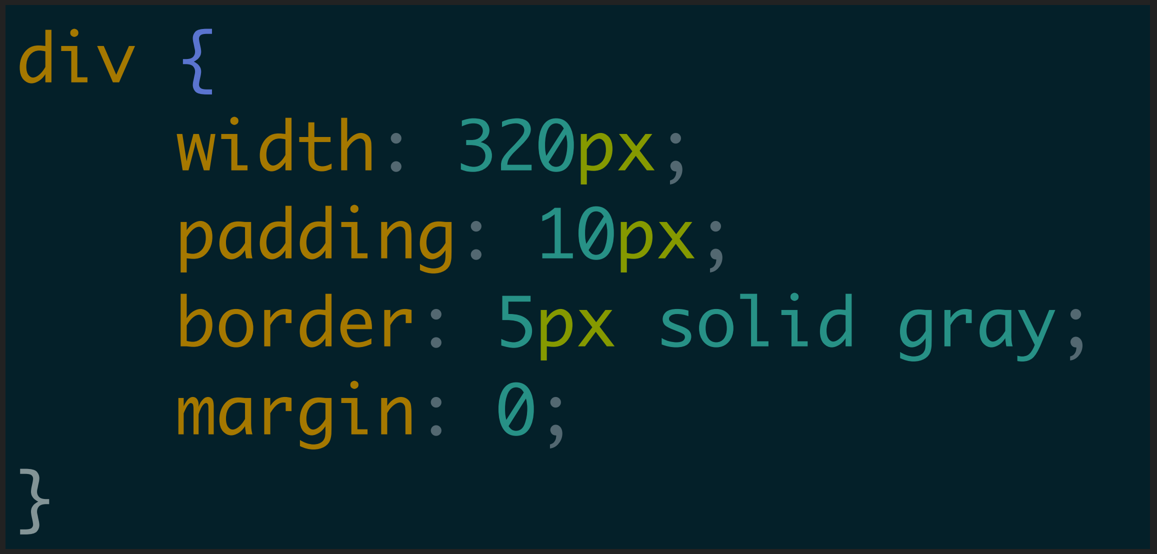


```css
div {
    width: 320px;
    padding: 10px;
    border: 5px solid gray;
    margin: 0;
}
```

320px (width)
+ 20px (left + right padding)
+ 10px (left + right border)
+ 0px (left + right margin)
= 350px

BOX-SIZING: BORDER-BOX;

- box-sizing: border-box;
  - Alters the calculation to **include** the padding AND border.



```
div {
    width: 320px;
    padding: 10px;
    border: 5px solid gray;
    margin: 0;
}
```

320px (width)

+ 0 (left + right padding)

+ 0 (left + right border)

+ 0px (left + right margin)

= 320px

BOX-SIZING — CODEPEN EXAMPLE

- http://codepen.io/ianshea/pen/PZEOov?editors=110
- Note the difference in the way the sizes are calculated.
- We'll usually want to set our box-sizing property for all elements.
- The best box-sizing value to use is **border-box.**
- To set all of your elements to use border-box…

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

AND ONE LAST THING…

DEVELOPER TOOLS

- Chrome/Safari/Firefox/IE have inspectors
- For class we'll focus on Chrome's
- Allows us to **Inspect** our HTML/CSS in browser
- While in Chrome:
  - Right click on a page (or an element!) and click "**Inspect**"
  - or, Click View > Developer > Developer Tools

</LECTURE>