DOM and CSS

In a nutshell :)

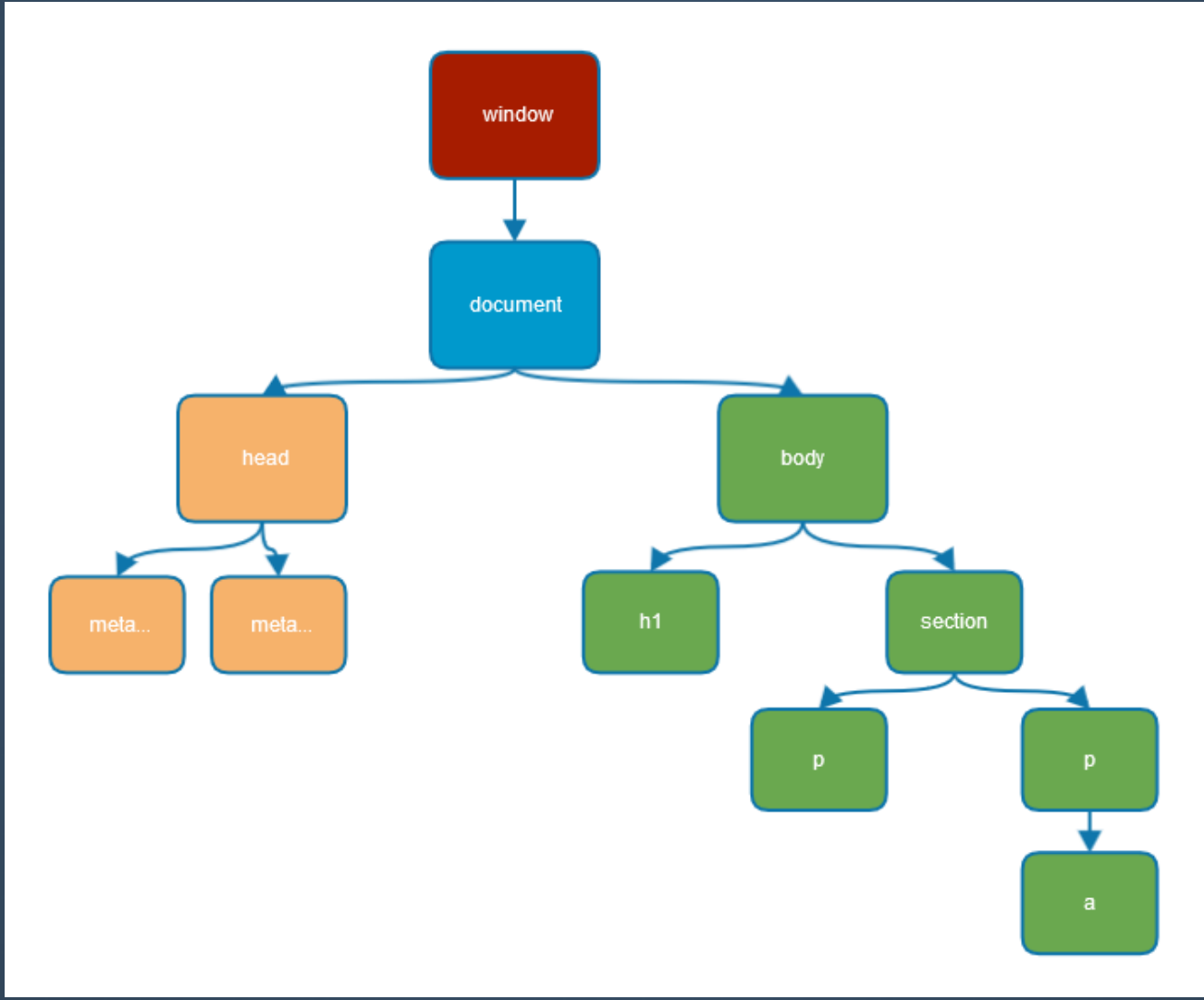
DOM

The structure of the page

Content and structure

```
<body>
        <h1>Some header</h1>
        <section id="smth">
                <p>Hello world</p>
                <p>Lets put some <a href="http://www.google.com">link</a></p>
        </section>
</body>
```

The DOM tree



Finding a DOM element

```
document.firstChild.firstChild.nextElementSibling.lastChild
```

```
element.getElementById(); //find one element by ID
element.getElementsByTagName() // find collection of elements by tag name
element.getElementsByClassName() // same but by class name
```

```
element.querySelector();
element.querySelectorAll();

element.querySelector('header .subtitle');
```

Manipulating DOM element

```
var text = document.createElement('p');
text.textContent = 'JS is awsome'; //content (only text) of the element
test.innerHTML = '<span>Some html</span>';
document.body.appendChild(text);
```

```
document.createElement(tagName)

parentNode.appendChild(node)
parentNode.insertBefore(newNode, beforeNode)
parentNode.removeChild(node)
parentNode.replaceChild(newNode, oldNode)


node.cloneNode(deep)
```

Object attributes (properties)

```
//object attributes
el.textContent = 'Pure text';
el.innerHTML = '<b>Some code</b>';

el.id = 'myId';
```

HTML Attributes

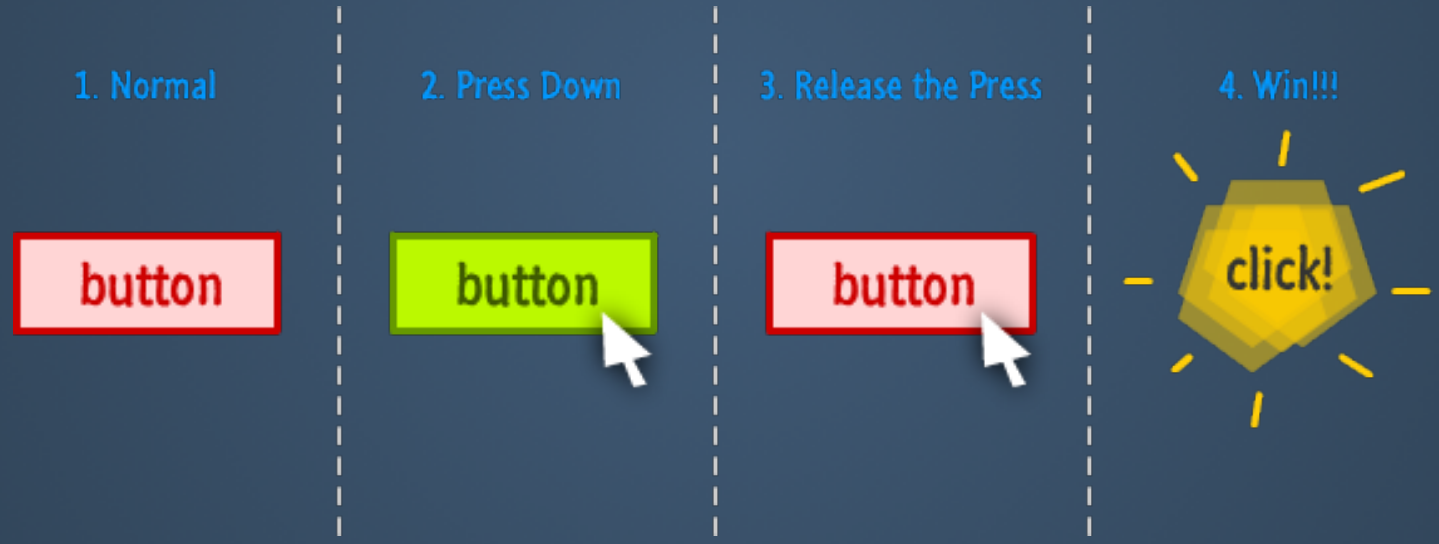
```
//"html" attributes
el.setAttribute('class', 'some-css-class');
el.getAttribute('id');
```

Working with css classes

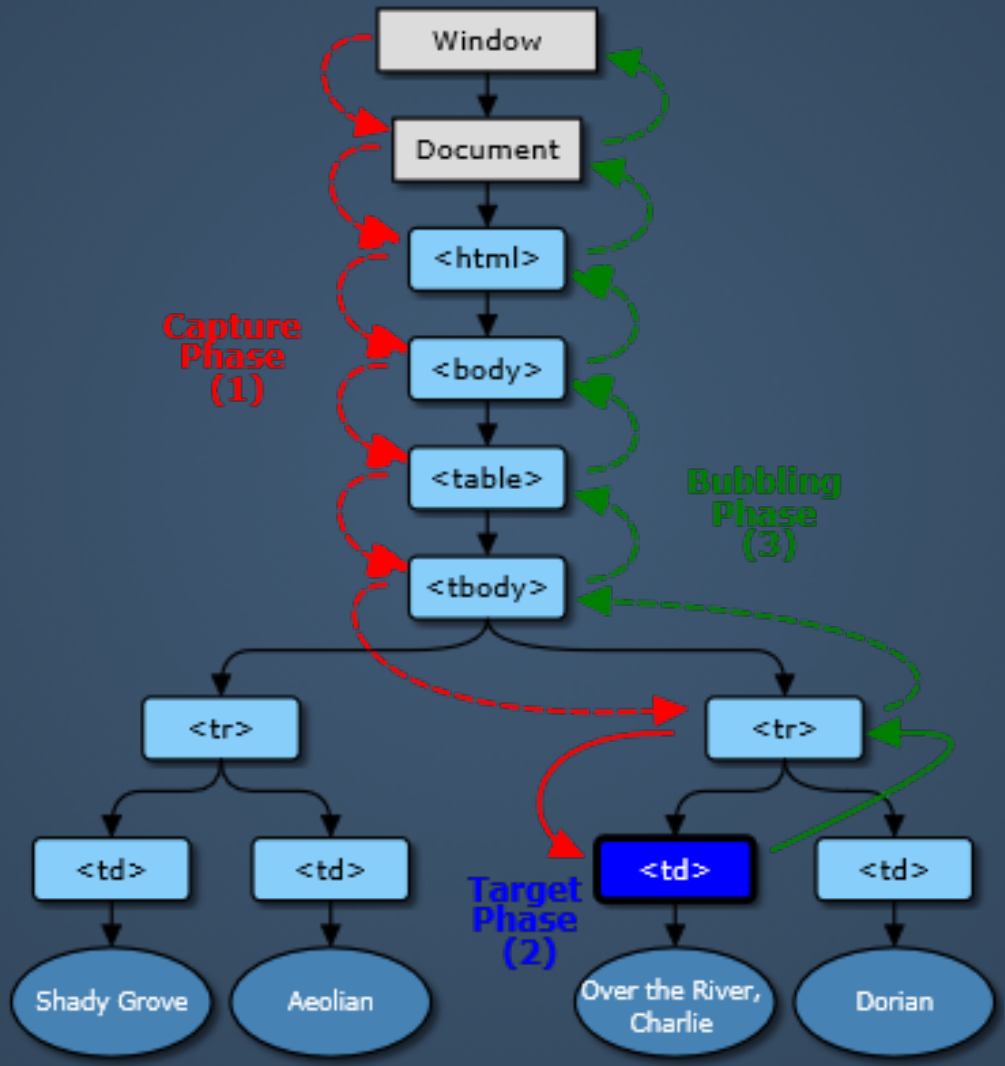
```
pEl.classList.contains('strong');
pEl.classList.add('newcls'); // strong inactive newcls
pEl.classList.remove('strong'); //inactive newcls
```

Events

Various user actions cause an event to be emitted



Event phases



Reacting on an event

```
buttonEl.addEventListener('click', function () {
        alert('I can feel you clicking me!');
});

buttonEl.onclick = function () { alert('DONT!') };
```

Controling event cycle

```
el.addEventListener('click', function (event) {
        event.stopPropagation(); // will not bubble!
}, false);

el.addEventListener('click', function (event) {
        event.preventDefault(); // will not perform default action
}, false);
```

Events delegation

```
<ul id="list">
        <li>Click me</li>
        <li>Click me</li>
        <li>Click me</li>
</ul>
```

```
var listEl = document.querySelector('#list');
listEl.addEventListener('click', function (event) {
        if (event.target.tagName === 'LI') {
            alert('list element clicked');
        }
});
```

Time to code!

tasks/basics/dom_bmi

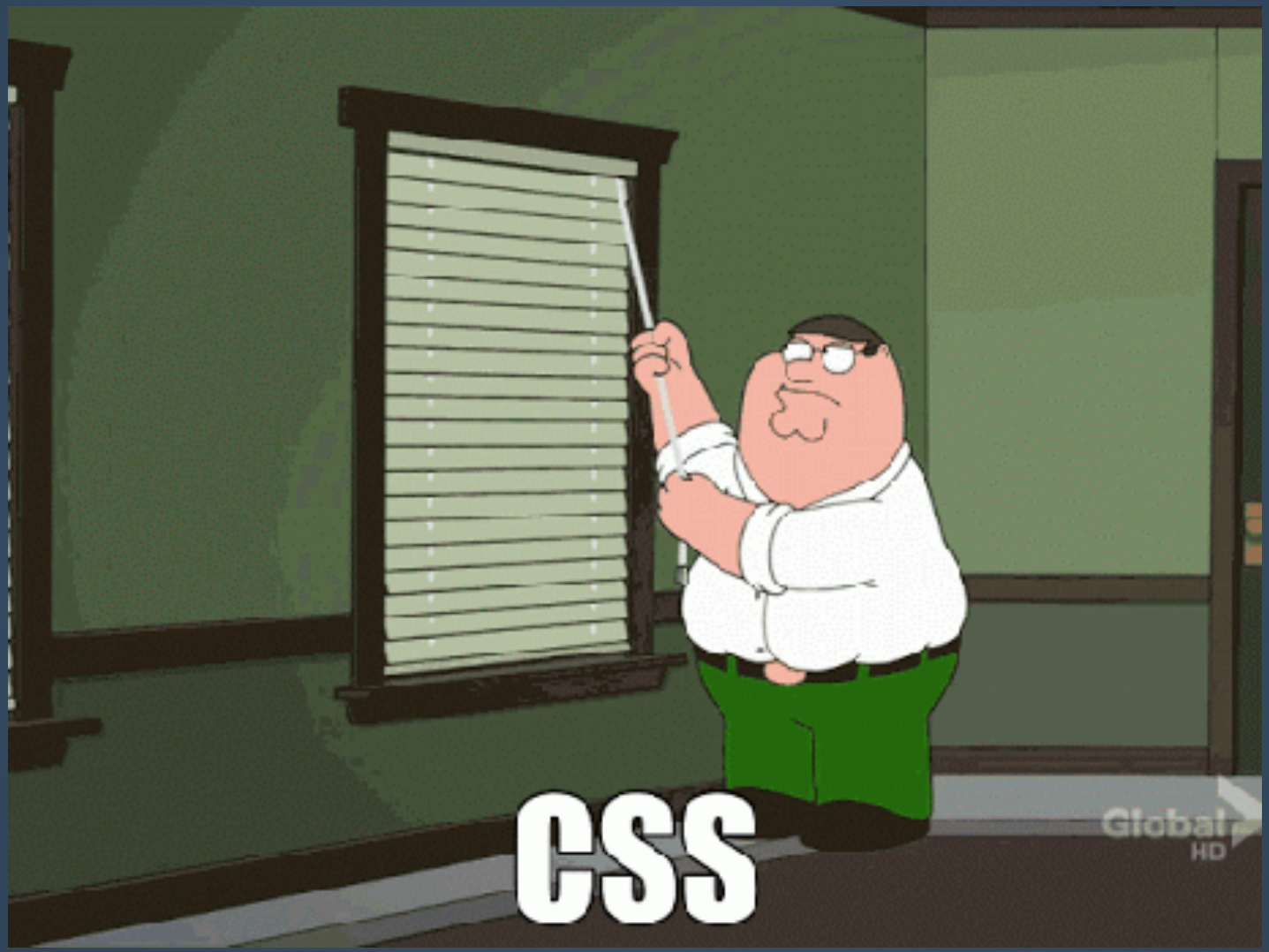
CSS

How to make your app fabulous

Cascading Style Sheets

- Describing the look and feel of an HTML document
- Designed to enable the separation of document content from document presentation
- Allow the same markup page to be presented in different styles for different render methods


HTML
HTML+CSS
VIA 9GAG.COM


CSS
Global
HD

Adding a style

Inline

```
<p style="text-align: center;">Some text</p></code>
```

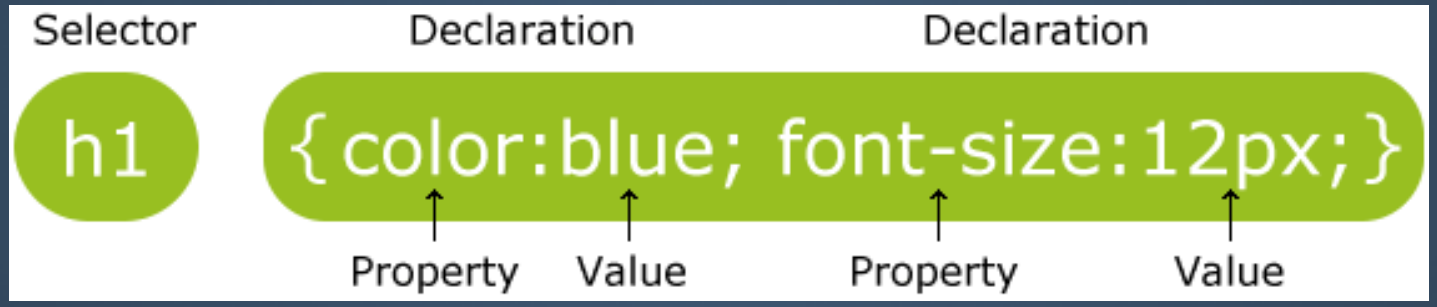
In page header

```
<style>
        p {
                text-align: center;
        }
</style>
```

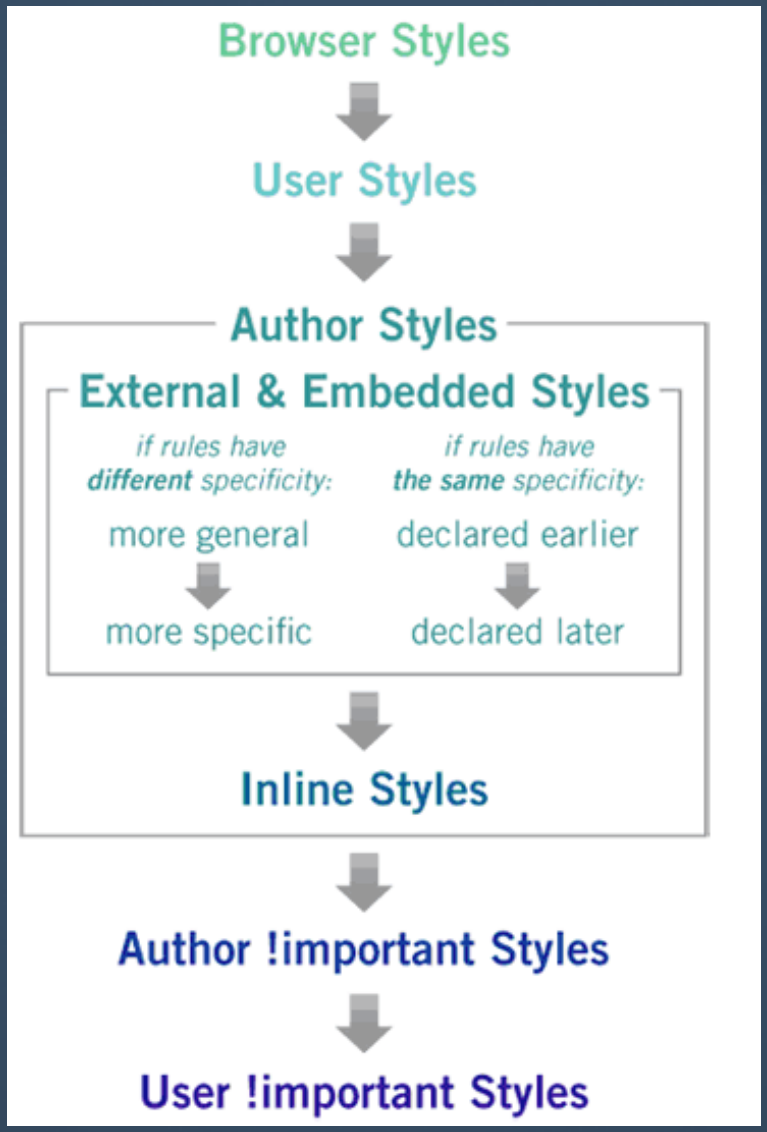
Separated file

```
//styles.css
p {
        text-align: center;
}
```

CSS syntax


Selector
Declaration
Declaration
h1
{color:blue; font-size:12px;}
Property
Value
Property
Value

CSS cascade priority



Basic css selectors

Id

```
<p id="test">Some tekst</p>
```

```
#test {
    color: red;
}
```

class

```
<p class="test">Some tekst</p>

<p class="test">Some other tekst</p>
```

```
.test {
    color: red;
}
```

Basic css selectors

Id

```
<p id="test">Some tekst</p>
```

```
#test {
    color: red;
}
```

class

```
<p class="test">Some tekst</p>

<p class="test">Some other tekst</p>
```

```
.test {
    color: red;
}
```

Nested elements

All descendants

```
#header {
    font-size: 20px;
}

#header p {
    color: #FF0000;
}
```

Children

```
#header {
    font-size: 20px;
}

#header > p {
    color: #FF0000;
}
```

Nested elements

All descendants

```
#header {
    font-size: 20px;
}

#header p {
    color: #FF0000;
}
```

Children

```
#header {
    font-size: 20px;
}

#header > p {
    color: #FF0000;
}
```

Pseudo classes

```
a:active {
    color: red;
}

a:hover {
    color: blue;
}

a:first-child {
    color: yellow;
}
```

```
a:first-letter {
    color: red;
}

a:first-line{
    color: blue;
}
```

Let's play

/tasks/basics/css_selectors

Specificity

If you have two (or more) conflicting CSS APPs that point to the same element, there are some basic APPs that a browser follows to determine which one is most specific and therefore wins out

Specificity

More Specific = Greater Precedence

If the selectors are the same then the last one will always take precedence

```
p { color: red; }
p { color: magenta; }
```

Specificity

More Specific = Greater Precedence

If the selectors are the same then the last one will always take precedence

```
p { color: red; }
p { color: magenta; }
```

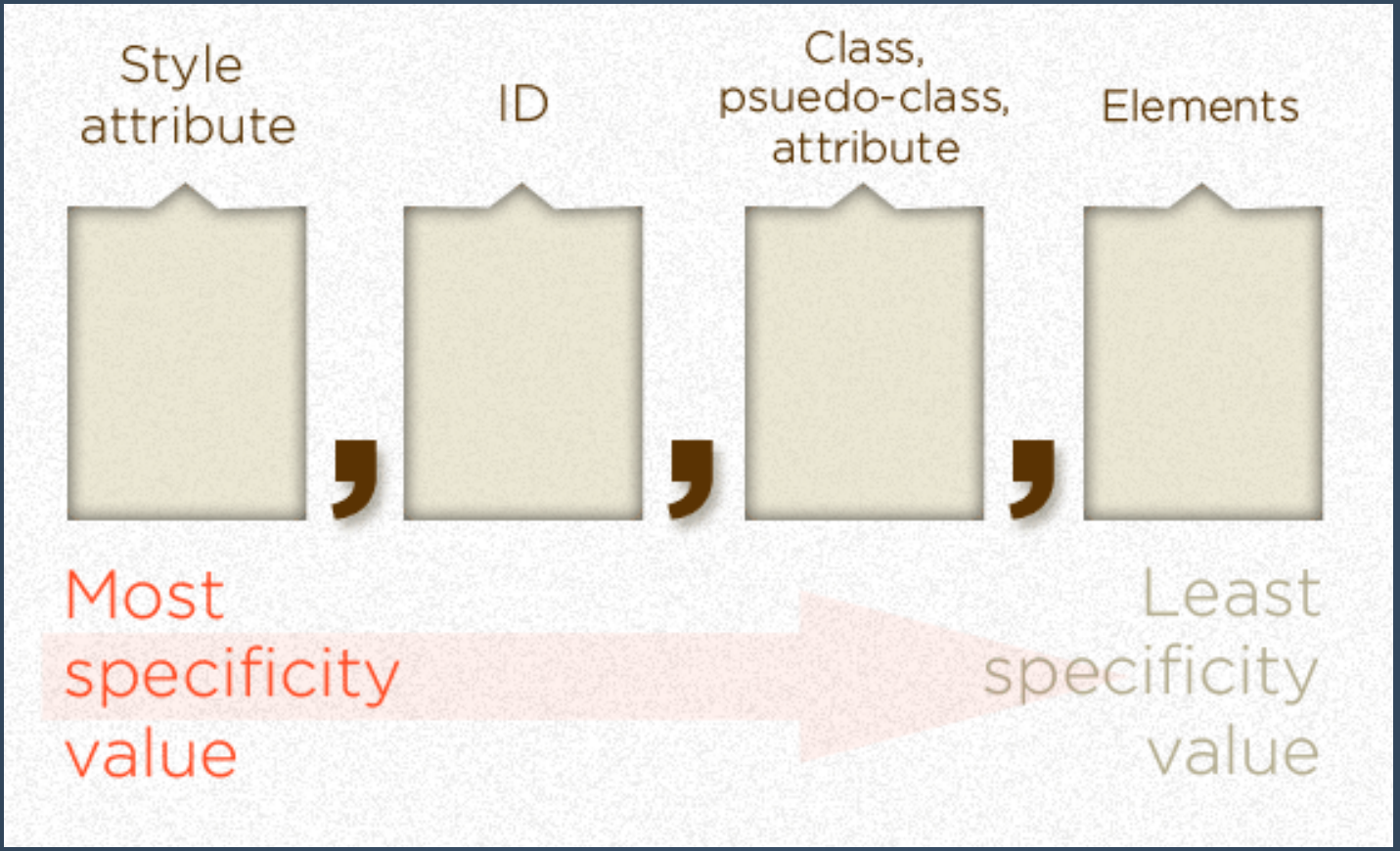
Specificity

```
<div class="box">
    <p>My paragraph</p>
</div>

.box p { color: red; }
p { color: magenta; }
```

?

Specificity



Specificity

- For each element reference, apply 0,0,0,1 point
- For each class value (or pseudo-class or attribute selector), apply 0,0,1,0 points
- For each ID value, apply 0,1,0,0 points
- If the element has inline styling, that automatically1 wins (1,0,0,0 points)

Quiz

What will the color of paragraph?

```
div#main p.bar { color: red; }

.container p#foo.boo { color: green; }

#main.container p { color: blue; }
```

```
<div class="container" id="main">
   <p class="bar boo" id="foo">Something clever goes here...</p>
</div>
```

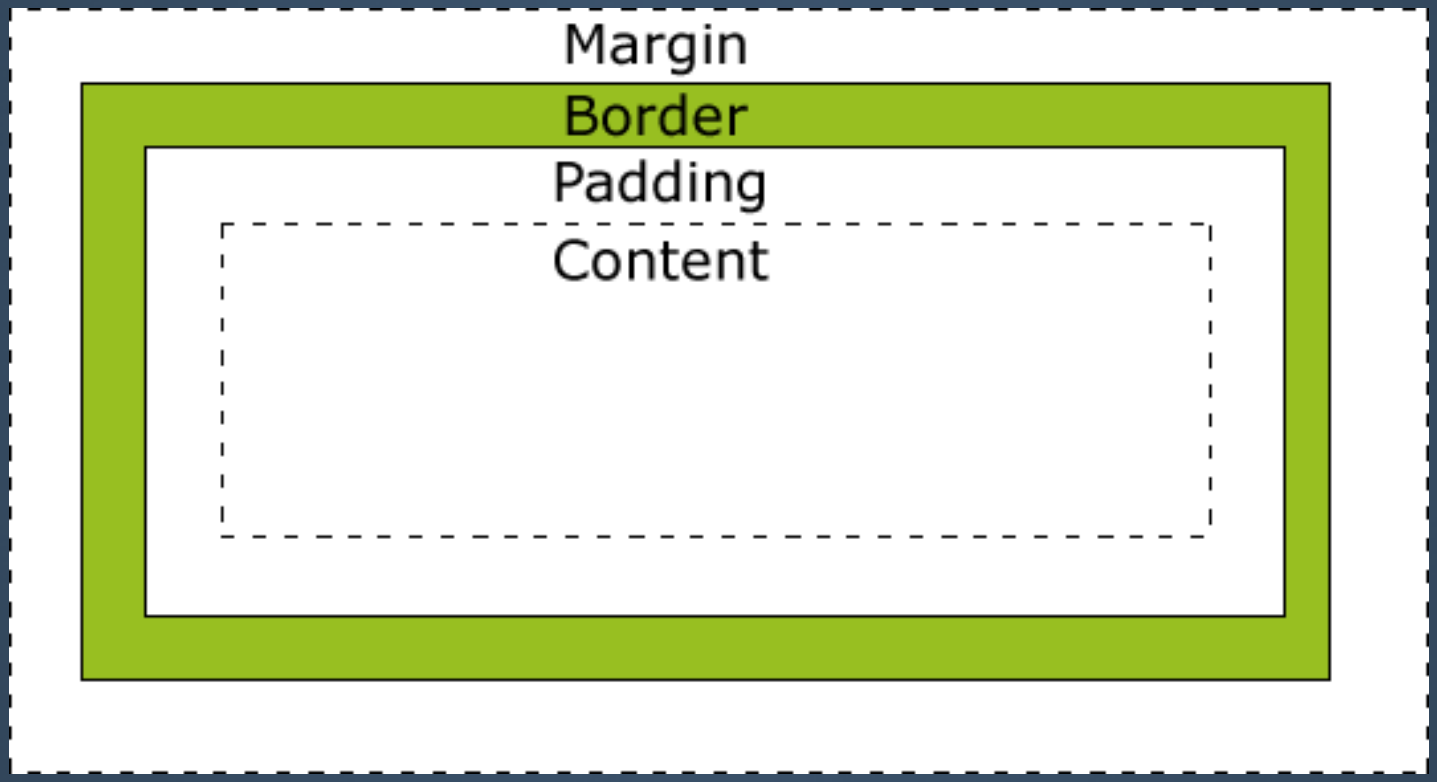
Quiz

GREEN

```
2. (0,1,1,2) div#main p.bar { color: red; }
1. (0,1,2,1) .container p#foo.boo { color: green; }
3. (0,1,1,1) #main.container p { color: blue; }
```

Some CSS definitions

Box model



Box model

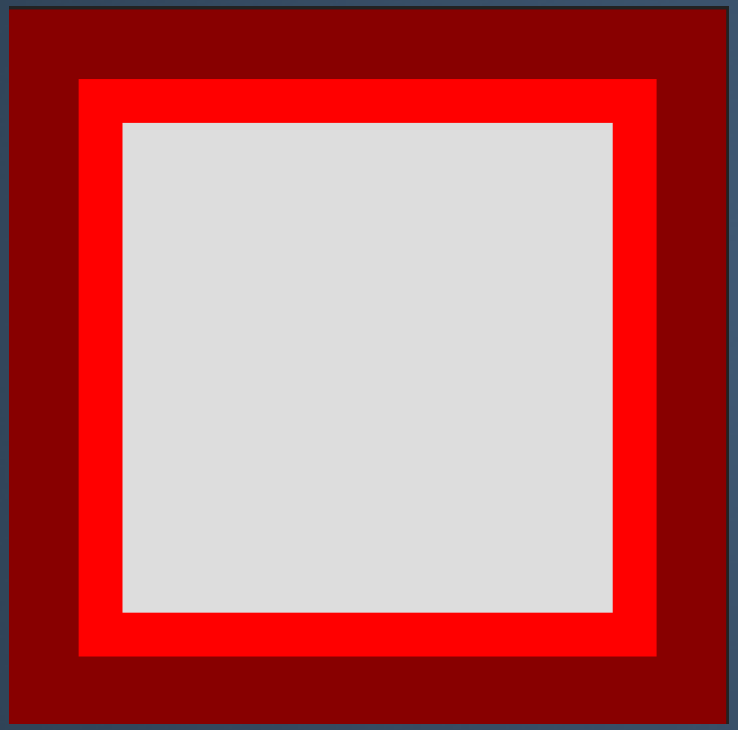
```
/* default style as specified by the CSS standard */
box-sizing: content-box;

/* the width and height include the padding size, not the border or margin */
box-sizing: padding-box;

/* the width and height include the padding and border, but not the margin */
box-sizing: border-box;
```

Box model - Quiz

What will the size of the content?



width: 200px;

height: 200px;

border-width: 20px;

padding: 25px;

margin: 5px;

border-box: ?

padding-box: ?

content-box: ?

Display

The display CSS property specifies the type of rendering box used for an element

display: inline

Boxes that are displayed inline follow the flow of a line. Only padding and margin can be applied.

display: block

Makes a box standalone, fitting the entire width of its containing box, with an effective line break before and after it

display: inline-block

Generates a block element box that will be flowed with surrounding content as if it were a single inline box

Positioning

The position property is used to define whether a box is absolute, relative, static or fixed

position: static

is the default value and renders a box in the normal order of things, as they appear in the HTMLstatic

position: relative

is much like static but the box can be offset from its original position with the properties top, right, bottom and leftrelative

position: absolute

pulls a box out of the normal flow of the HTML and delivers it to a world all of its own. The absolute box can be placed anywhere on the page using top, right, bottom and leftabsolute

position: relative

behaves like absolute, but it will absolutely position a box in reference to the browser window as opposed to the web page, so fixed boxes should stay exactly where they are on the screen even when the page is scrolledfixed

Let's play

/tasks/basics/css_tryout