WEB DESIGN II

DOM & jQuery

Jorge Ribeiro, 2017

jQuery

- jQuery is a JavaScript library that implements common JavaScript tasks

- Eliminates cross-browser incompatibilities

- Select and manipulate elements, handle events, animate elements

Including jQuery

- Download jQuery from jquery.com

- jQuery must be included before the scripts file

```
      …

      <script src="js/jquery-1.10.js">
      <script src="js/scripts.js">
   </body>
</html>
```
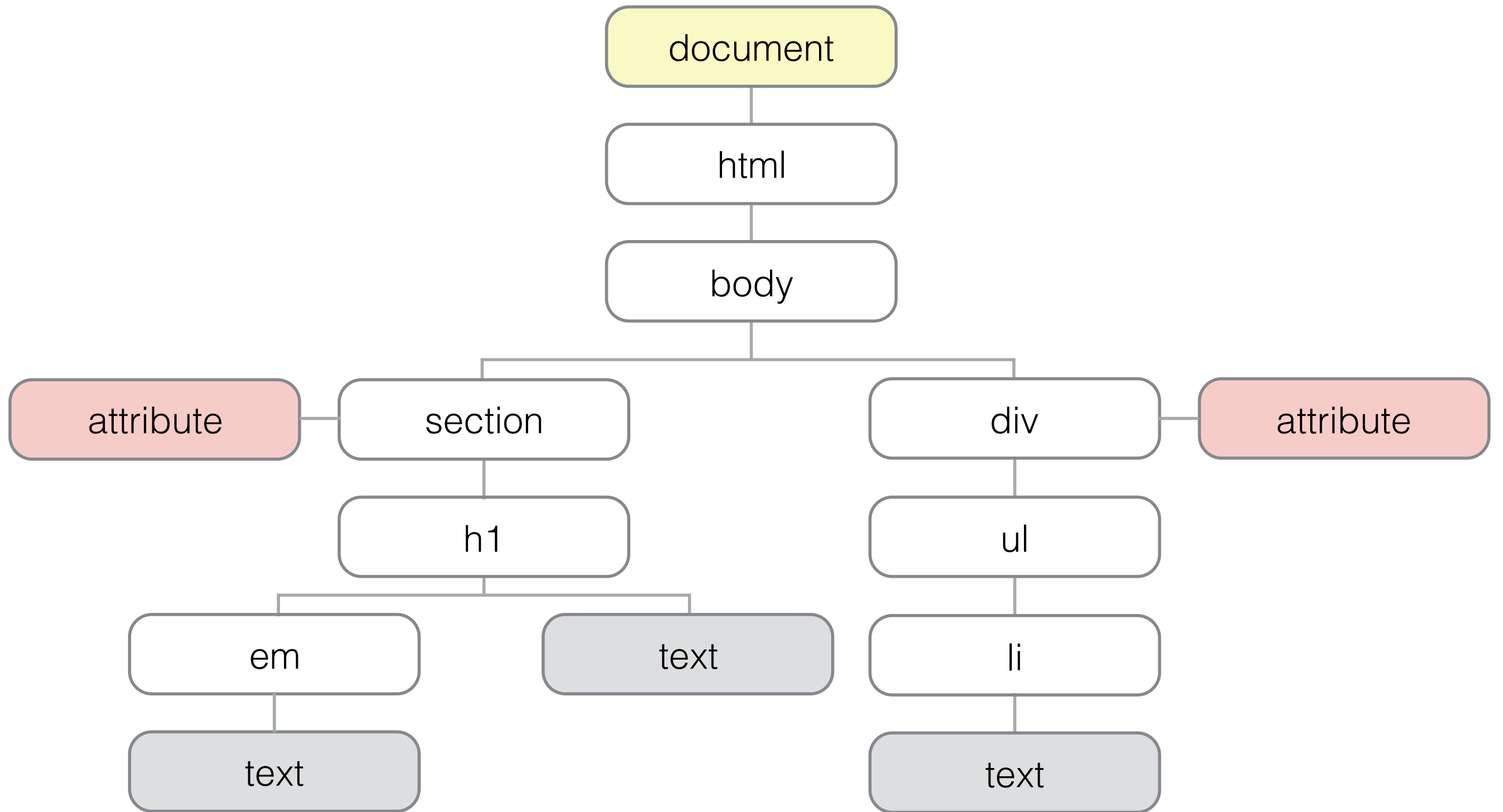
Document ready

- Put your code inside the document ready event

- It's used to check if the page is ready

```
$(document).ready(function() {
    // JavaScript code

});
```

Document Object Model (DOM)

- Is a representation of the document

- Every HTML element has a corresponding DOM node

- DOM nodes are organized in a tree structure called DOM tree

- You can use JavaScript to read and edit the DOM

- Four main types: document, element, attribute, and text

Working with the DOM

1. Find the element

2. Do something on that element

Find the element

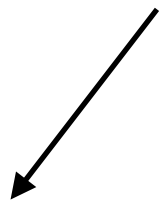- It can be a single element or a list of elements

```
$('.list li');
```

CSS-style selector

Do something with the element

jQuery object   Method

$('.list li').addClass('active');

Browser events

- Events occurs when users interact with the browser, e.g. click, key pressed, resize

- Those events can be registered, and when an event fires a JavaScript function can be called

Event handling

1. Select the element

↓

2. Specify the event

↓

3. Call the code

Event methods

Element   Event type   Code to run when the event occurs

```
$('li').on('click', function() {
    // Code to be execute when the
    // element is clicked
});
```

Event types

- click

- dbclick

- keydown

- keypress

- keyup

- mouseover

- mouseout

- mouseenter

- mouseleave

- focus

- blur

- input

- change

- resize

- scroll

"this" keyword

- Refers to the context of the current function

- In this example, it refers to the list item that was clicked

```
$('.menu li').on('click', function() {
    $(this).addClass('active');
});
```

Preventing the default action

- E.g. preventing a link to load a new page

```
$('a').on('click', function(ev) {
    ev.preventDefault();

    $(this).addClass('active');
});
```

jQuery methods

Getting elements content

- .html()

- .text()

```
var title = $('.title').text();
console.log(title)
```

HTML

```
<h2 class="title">Heading</h2>
```

Result

```
// =>
Heading
```

Traversing

- .children()

- .find()

- .next()

- .nextAll()

- .parent()

- .parents()

- .prev()

- .prevAll()

- .siblings()

- .first()

- .last()

- .has()

- .filter()

Example

```
$('.list').parent().siblings();
```

HTML

```
<h2>Heading</h2>
<section>
    <ul class="list">
        <li>Item 1</li>
        <li>Item 2</li>
    </ul>
</section>
<p>Text</p>
```

Manipulation

- .html()

- .text()

- .remove()

- .empty()

- .append()

- .appendTo()

- .prepend()

- .prependTo()

- .before()

- .after()

Example

```
$('h2').text('New heading');
```

HTML

```
<h2>Heading</h2>
```

Result

```
<h2>New heading</h2>
```

Example

```
$('ul').append('<li>New item</li>')
```

HTML

```
<ul class="list">
    <li>Item 1</li>
    <li>Item 2</li>
</ul>
```

Result

```
<ul class="list">
    <li>Item 1</li>
    <li>Item 2</li>
    <li>New item</li>
</ul>
```

Attributes / CSS

Attributes

- .attr()

- .removeAttr()

- .addClass()

- .removeClass()

- .toggleClass()

- .css()

Dimensions

- .height()

- .width()

- .position()

- .offset()

- .scrollTop()

Example

```
$('h2').addClass('title');
```

HTML

```
<h2>Heading</h2>
```

Result

```
<h2 class="title">Heading</h2>
```

Example

```
$('.title').css({
    'color': 'red',
    'margin-top': '40px'
});
```

HTML

```
<h2 class="title">Heading</h2>
```

Effects

Basic

- .show()

- .hide()

- .toggle()

Custom effects

- .delay()

- .stop()

- .animate()

Sliding

- .slideUp()

- .slideDown()

- .slideToggle()

Fading

- .fadeIn()

- .fadeOut()

- .fadeTo()

- .fadeToggle()

Example

Fade out an element on click

```
$('.button').on('click', function() {
    $('.list').fadeOut(2000);
});
```

Custom animation

```
$('.title').animate({
  'width': '400px',
  'height': '400px'
}, 200)
```

Properties

Duration (ms)

Iteration

- .each()

```
$('li').each(function(index, elem) {
  $(elem).prepend('<b>' + index + '</b>');

});
```

Result

```
// =>
<li><b>1</b1>item</li>
<li><b>2</b1>item</li>
```

Chaining

- You can use more than one method on the same selection

```
$('.header').before().addClass('active');
```

Exercises

1. Add a class to an element to change its background color

    1. Change the background color on mouseover

2. Toggle the visibility of an element when a button is pressed

    1. Toggle the label of that button

3. Validate if a form input is empty and the inputed value is greater than 18

    1. Show an error message if input is invalid

4. Append a new element to the end of a list when a button is pressed

    1. Let the user input the text of the new element

5. Change body's background color based on scroll position