9.5 DOM manipulation

Accessing element attributes

jQuery provides many methods for DOM manipulations that allow developers to dynamically add, remove, or modify content on a webpage.

The ***attr()*** method gets and sets attribute values of a DOM element.

Figure 9.5.1: Changing image attributes with attr().

```
// Change all images to <img src="star.png">
$("img").attr("src", "star.png");

// Change all images to <img src="star.png" alt="Bright
star">
$("img").attr({
   src: "star.png",
   alt: "Bright star",
});
```

Feedback?

PARTICIPATION ACTIVITY 9.5.1: jQuery attr() method.

1) `$("li").attr("style", "color:red")` is equivalent to `$("li").css("color", "red")`.

   - ○ True
   - ◉ False

Correct

`attr()` sets the `style` attribute to color:red for the `<li>`, but all other CSS properties used by the `style` attribute are removed. `css()` does not remove other CSS properties used by the `style` attribute.

2) If an image has a src attribute of "moon.png", calling `$("img").attr("src")` returns "moon.png".

   - ◉ True
   - ○ False

Correct

When given only an attribute name as an argument, `attr()` returns the current value of the attribute.

Feedback?

Adding DOM nodes

The `$()` function creates new DOM nodes when given an HTML string. Ex: `$("<span>I'm a new node!</span>");` creates a span node. However, the new node is not visible until the node is added to the DOM.

Table 9.5.1: Methods for adding DOM nodes.

Methods	Example	Before	

`prependTo()`
`prepend()`
	`$("<li>New first</li>").prependTo("ol");`
	
	`// same as`
	`$("ol").prepend("<li>New first</li>");`
		`<ol>`
		`  <li>A</li>`
		`  <li>B</li>`
		`</ol>`
			`<ol>`
			`  <`
			`firs`
			`  <`
			`  <`
			`</ol`

`appendTo()`
`append()`
	`$("<li>New last</li>").appendTo("ol");`
	
	`// same as`
	`$("ol").append("<li>New last</li>");`
		`<ol>`
		`  <li>A</li>`
		`  <li>B</li>`
		`</ol>`
			`<ol>`
			`  <`
			`  <`
			`  <`
			`last`
			`</ol`

`insertBefore()`
`before()`
	`$("<p>Before</p>").insertBefore("h2");`
	
	`// same as`
	`$("h2").before("<p>Before</p>");`
		`<h2>Test</h2>`	`<p>B`
			`<h2>`

`insertAfter()`
`after()`
	`$("<p>After</p>").insertAfter("h2");`
	
	`// same as`
	`$("h2").after("<p>After</p>");`
		`<h2>Test</h2>`	`<h2>`
			`<p>A`

`wrap()`	`$("p").wrap("<div></div>");`	`<p>A</p>`
		`<p>B</p>`
			`<div`
			`  <`
			`</di`
			`<div`
			`  <`
			`</di`

`wrapAll()`	`$("p").wrapAll("<div></div>");`	`<p>A</p>`
		`<p>B</p>`
			`<div`
			`  <`
			`  <`
			`</di`

Methods	Example	Before	

`wrapInner()`	`$("p").wrapInner("<div></div>");`	`<p>A</p>`
		`<p>B</p>`
			`<p>`
			
			`<div`
			`</p`
			`<p>`
			
			`<div`
			`</p`

Feedback?

PARTICIPATION ACTIVITY 9.5.2: Adding to the DOM.

Given the HTML below, match the jQuery code to the resulting DOM transformation.

```
<p>
   Test <i>this</i>
</p>
```

If unable to drag and drop, refresh the page.

`$("<span>x</span>").prependTo("p");`	`<p><span>x</span>Test <i>this</i></p>` Equivalent to `$("p").prepend("<span>x</span>")`.
`$("p").append("<span>x</span>");`	`<p>Test <i>this</i><span>x</span></p>` Equivalent to `$("<span>x</span>").appendTo("p");`.
`$("<span>x</span>").insertBefore("i");`	`<p>Test <span>x</span><i>this</i></p>` Equivalent to `$("i").before("<span>x</span>");`.
`$("p").after("<span>x</span>");`	`<p>Test <i>this</i></p><span>x</span>` Equivalent to `$("<span>x</span>").insertAfter("p");`.
`$("i").wrap("<span></span>");`	`<p>Test <span><i>this</i></span></p>` Because there is only one set of `<i>` elements, `$("i").wrapAll("<span></span>")` has the same effect.

Reset

Feedback?

Removing DOM nodes and manipulating HTML text

The jQuery methods ***remove()*** and ***detach()*** remove DOM nodes. Both methods are identical except `detach()` returns the removed nodes to the caller as a `jQuery` object in case the developer wants to use the nodes for other purposes.

Table 9.5.2: Methods for removing DOM nodes.

Methods	Example	Before	After

`remove()`	`$("li").remove();`	`<ol>`
		`<li>A</li>`
		`<li>B</li>`
		`</ol>`
			`<ol>`
			`</ol>`

`detach()`	`let $listElems =`
	`$("li").detach();`
		`<ol>`
		`<li>A</li>`
		`<li>B</li>`
		`</ol>`
			`<ol>`
			`</ol>`

Feedback?

jQuery has two methods for getting and setting the HTML or textual content in a webpage: ***html()*** and ***text()***. The `text()` method works like `html()` except `text()` strips out any HTML tags.

Table 9.5.3: Methods for modifying DOM text.

Methods	Example	Before	After

`html()`	`let s =`
	`$("p").html();`
	`$("div").html(s);`
		`<p>`
		`A<b>B</b>C`
		`</p>`
		`<div>`
		`</div>`
			`<p>`
			`A<b>B</b>C`
			`</p>`
			`<div>`
			`A<b>B</b>C`
			`</div>`

Methods	Example	Before	After
text()	let s = $("p").text(); $("div").text(s);	ABC	ABC ABC

Feedback?

PARTICIPATION ACTIVITY 9.5.3: Altering the DOM.

Given the HTML below, match the jQuery code to the resulting DOM transformation.

```
<p>
   Check <i>this</i> out!
</p>
```

If unable to drag and drop, refresh the page.

$("i").remove();	Check out! Equivalent to $("i").detach();.	Correct
$("p").html($("i").detach());	this $("i").detach() returned this, which was placed into the paragraph.	Correct
$("p").html($("p").text());	Check this out! $("p").text() returned "Check this out!", which was placed into the paragraph.	Correct
$("p").text("Check!");	Check! When given a string argument, the .text() method escapes < and > characters.	Cor

Reset

Feedback?

PARTICIPATION ACTIVITY

9.5.4: DOM manipulation practice.

The following webpage displays a poem. Use the jQuery DOM modification methods to alter the poem in the following ways when the Scramble button is pressed:

1. Swap the words between the `<strong>` tags from the first and third lines.
2. Detach the last line, and place the line immediately after the first line.
3. Place a single `<div>` around the entire poem that changes the font color to blue using CSS.

Finally, use jQuery to change the link's href attribute to point to https://www.quora.com/What-is-the-origin-of-the-roses-are-red-violets-are-blue-poem

Note that the Scramble button is disabled when pressed. Render the webpage again to re-enable the button.

HTML | CSS | JavaScript

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jqu

<p>Roses are <strong>red</strong>,</p>
<p>Violets are <em>blue</em>.</p>
<p>Sometimes short <strong>poems</strong></p>
<p>Just don't <em>rhyme</em>.</p>

<div>
   <button>Scramble</button>
</div>

<a href="https://en.wikipedia.org/wiki/Roses_are_Red" target="blank
```

Render webpage Reset code

Your webpage

Roses are **red**,
Violets are *blue*.
Sometimes short **poems**
Just don't *rhyme*.

Scramble

Origins of the poem

Expected webpage

Roses are **red**,
Violets are *blue*.
Sometimes short **poems**
Just don't *rhyme*.

Scramble

Origins of the poem

▼ View solution

Explain

```
--- START FILE: HTML ---

<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.m
</script>

<body><p>Roses are <strong>red</strong>,</p>
<p>Violets are <em>blue</em>.</p>
<p>Sometimes short <strong>poems</strong></p>
<p>Just don't <em>rhyme</em>.</p>
<div>
   <button>Scramble</button>
</div>
<a href="https://en.wikipedia.org/wiki/Roses_are_Red"
target="blank">Origins of the poem</a>


--- END FILE: HTML ---

--- START FILE: CSS ---

p {
   margin: 3pt;
}
button {
   margin-top: 15px;
   margin-bottom: 25px;
}


--- END FILE: CSS ---

--- START FILE: JavaScript ---


$("button").click(function() {
   let word1 = $("p:first strong").text();
        let word2 = $("p:eq(2) strong").text();
        $("p:eq(2) strong").text(word1);
        $("p:first strong").text(word2);
        let $line = $("p:last").detach();
        $("p:first").after($line);
        $("p").wrapAll("<div style='color:blue'></div>");
$("a").attr("href", "https://www.quora.com/What-is-the-origin-
of-the-roses-are-red-violets-are-blue-poem");
```

```
    // Disable the button
    $(this).attr("disabled", true);
});


--- END FILE: JavaScript ---
```

Feedback?

CHALLENGE ACTIVITY 9.5.1: jQuery DOM manipulation.

530096.4000608.qx3zqy7

Start

For the <img> tag, set src to https://resources.zybooks.com/WebProgramming/diamondsv1.png SHOW EXPECTED

HTML JavaScript

```
1 <script src="https://ajax.googleapis.com/ajax/libs/jquer
2
3 <img>
```

1 2 3 4 5

Check Next

View your last submission

Feedback?

Exploring further:

- jQuery DOM manipulation documentation
- Manipulating Elements

How was this section?

Provide section feedback