

Lecture 13 - jQuery

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Objectives

Understand the basics of jQuery

- How to use jQuery
- The functionalities of jQuery

Introduction

- jQuery is a lightweight, "write less, do more", JavaScript library.
- The purpose of jQuery is to make it much easier to use JavaScript on your website.
- jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish and wraps them into methods that you can call with a single line of code.

Features Included in jQuery Library

- HTML/DOM manipulation
- CSS manipulation
- HTML event methods
- Effects and animations

Adding jQuery to Your Web Pages – Option 1

- Download the jQuery library from www.jquery.com
- And Place the downloaded file in the same directory as the pages where you wish to use it

```
<head>
```

```
    <script src="jquery-3.6.0.min.js"></script>
```

```
</head>
```

Adding jQuery to Your Web Pages – Option 2

- If you don't want to download and host jQuery yourself, you can include it from a CDN (Content Delivery Network).
- Both **Google** and **Microsoft** host jQuery

Google CDN:

```
<head>  
    <script  
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery  
.min.js">  
    </script>  
</head>
```

Adding jQuery to Your Web Pages – Option 2

Microsoft CDN:

```
<head>
```

```
  <script
```

```
src="http://ajax.aspnetcdn.com/ajax/jquery/jquery-3.6.0.min.js"> </script>
```

```
</head>
```

Syntax

- With jQuery , first you **select** HTML elements and then perform "**actions**" on them

$\$(selector).action()$

- ‘\$’ sign - To define/access jQuery
- *(selector)* - To find HTML elements
- jQuery *action()* - To be performed on the element(s)

Examples

- `$(this).hide()` - hides the current element
- `$("p").hide()` - hides all `<p>` elements
- `$(".test").hide()` - hides all elements with `class="test"`
- `$("#test").hide()` - hides the element with `id="test"`

The Document Ready Event

- To prevent any jQuery code from running before the document is finished loading, all jQuery methods are included inside a document ready event:

```
$(document).ready(function() {  
  // jQuery methods go here...  
});
```

- Include JavaScript code before the body of the document, in the head section

The Document Ready Event

- Here are some examples of actions that can fail if methods are run before the document is fully loaded:
 - Trying to hide an element that is not created yet
 - Trying to get the size of an image that is not loaded yet

jQuery Selectors

- Allow to select and manipulate HTML element(s)
- Used to "find" (or select) HTML elements based on their id, classes, types, attributes, etc
- Start with the dollar sign and parentheses: `$()`

Types of Selectors

- Element Selector
 - \$("p")
- ID Selector
 - \$("#test")
- Class Selector
 - \$(".class1")

Example Code - ID selector

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function() {
    $("button").click(function() {
        $("#test").hide();
    });
});
</script>
</head>
<body>
<h2>This is a heading</h2>
<p>This is a paragraph.</p>
<p id="test">This is another paragraph.</p>
<button>Click me</button>
</body>
</html>
```

Example Code - Class selector

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function() {
    $("button").click(function() {
        $(".test").hide();
    });
});
</script>
</head>
<body>
<h2 class="test">This is a heading</h2>
<p class="test">This is a paragraph.</p>
<p>This is another paragraph.</p>
<button>Click me</button>
</body>
</html>
```

More jQuery Selector Examples

- `$("*")` - Selects all elements
- `$(this)` - Selects the current HTML element
- `$("p.intro")` - Selects all `<p>` elements with `class="intro"`
- `$("p:first")` - Selects the first `<p>` element
- `$("ul li:first")` - Selects the first `` element of the first ``
- `$("ul li:first-child")` - Selects the first `` element of every ``
- `$("[href]")` - Selects all elements with an href attribute
- `$("a[target]='_blank']")` - Selects all `<a>` elements with a target attribute value equal to `"_blank"`
- `$("a[target]!='_blank']")` - Selects all `<a>` elements with a target attribute value NOT equal to `"_blank"`
- `$(":button")` - Selects all `<button>` elements and `<input>` elements of `type="button"`

jQuery Functions in a Separate File

- If your website contains a lot of pages, and you want your jQuery functions to be easy to maintain, you can put your jQuery functions in a separate **.js** file.
- **Syntax**

```
<head>  
    <script src=" jquery-3.6.0.min.js"></script>  
    <script src="jquery_functions.js"></script>  
</head>
```

jQuery Event Methods

- **Events** : The visitors' actions that a web page can respond to
- An event represents the precise moment when something happens
- **Examples**
 - Moving a mouse over an element
 - Selecting a radio button
 - Clicking on an element
- The term "**fires/fired**" is often used with events,
 - Example: "The keypress event **fires** the moment you press a key"

Common DOM Events

Mouse Events	Keyboard Events	Form Events	Document/Window Events
click	keypress	submit	load
dblclick	keydown	change	resize
mouseenter	keyup	focus	scroll
mouseleave		blur	unload

jQuery Syntax For Event Methods

Step 1

- Assign an event to a particular element
 - `$("selector").event();`
 - Ex: `$("p").click();`

Step2

- Define what should happen when the event fires
- You must pass a **function** to the event:

```
$("p").click(function(){  
    // action goes here!!  
});
```

Common jQuery Event Methods

\$(document).ready()

- This method allows to execute a function when the document is fully loaded

click()

- Attaches an event handler function to an HTML element
- The function is executed when the user clicks on the HTML element
 - Ex:

```
$("#p").click(function() {  
    $(this).hide();  
});
```

dblclick()

- Attaches an event handler function to an HTML element
- The function is executed when the user double-clicks on the HTML element

- Example

```
$("#p").dblclick(function() {  
    $(this).hide();  
});
```

blur()

- Attaches an event handler function to an HTML **form** field
- The function is executed when the form field loses focus

- Example

```
$("#input").blur(function() {  
    $(this).css("background-color", "#ffffff");  
});
```

mouseenter()

- The mouseenter() method attaches an event handler function to an HTML element
- The function is executed when the mouse pointer enters the HTML element
 - Example

```
$("#p1").mouseenter(function() {  
    alert("You entered p1!");  
});
```

mouseleave()

- The mouseleave() method attaches an event handler function to an HTML element
- The function is executed when the mouse pointer leaves the HTML element
- Example

```
$("#p1").mouseleave(function() {  
    alert("Bye! You now leave p1!");  
});
```

mousedown()

- The function is executed, when the left, middle or right mouse button is pressed down, while the mouse is over the HTML element

mouseup()

- The function is executed, when the left, middle or right mouse button is released, while the mouse is over the HTML element

focus()

- The focus() method attaches an event handler function to an HTML form field
- The function is executed when the form field gets focus

Example – jQuery Events

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function() {
    $("p").dblclick(function() {
        $(this).hide();
    });
});
</script>
</head>
<body>
<p>If you double-click on me, I will disappear.</p>
<p>Click me away!</p>
<p>Click me too!</p>
</body>
</html>
```

jQuery Effects

jQuery hide() and show()

- With jQuery, you can hide and show HTML elements with the hide() and show() methods.

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function(){
  $("#hide").click(function(){
    $("p").hide();
  });
  $("#show").click(function(){
    $("p").show();
  });
});
</script>
</head>
<body>
<p>If you click on the "Hide" button, I will disappear.</p>
<button id="hide">Hide</button>
<button id="show">Show</button>
</body>
</html>
```

jQuery Effects

jQuery toggle()

- You can also toggle between hiding and showing an element with the **toggle()** method

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("p").toggle();
    });
});
</script>
</head>
<body>
<button>Toggle between hiding and showing the paragraphs</button>
<p>This is a paragraph with little content.</p>
<p>This is another small paragraph.</p>
</body>
</html>
```

jQuery Effects

jQuery fadeIn()

- The jQuery fadeIn() method is used to fade in a hidden element
- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds.

```
$("#button").click(function(){  
    $("#div1").fadeIn();  
    $("#div2").fadeIn("slow");  
    $("#div3").fadeIn(3000);  
});
```

jQuery Effects

jQuery fadeIn()

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script>
$(document).ready(function(){
  $("button").click(function(){
    $("#div1").fadeIn();
    $("#div2").fadeIn("slow");
    $("#div3").fadeIn(3000);
  });
});
</script>
</head>
<body>
<p>Demonstrate fadeIn() with different parameters.</p>
<button>Click to fade in boxes</button><br><br>

<div id="div1" style="width:80px;height:80px;display:none;background-color:red;"></div>
<br>
<div id="div2" style="width:80px;height:80px;display:none;background-color:green;"></div>
<br>
<div id="div3" style="width:80px;height:80px;display:none;background-color:blue;"></div>

</body>
</html>
```

jQuery Effects

jQuery fadeOut()

- The jQuery fadeOut() method is used to fade out a visible element

```
$("#button").click(function(){  
    $("#div1").fadeOut();  
    $("#div2").fadeOut("slow");  
    $("#div3").fadeOut(3000);  
});
```

jQuery Effects

jQuery fadeToggle()

- The jQuery fadeToggle() method toggles between the fadeIn() and fadeOut() methods.
- If the elements are faded out, fadeToggle() will fade them in.
- If the elements are faded in, fadeToggle() will fade them out.

```
$("#button").click(function(){  
    $("#div1").fadeToggle();  
    $("#div2").fadeToggle("slow");  
    $("#div3").fadeToggle(3000);  
});
```

jQuery Effects

jQuery fadeTo()

- The jQuery fadeTo() method allows fading to a given opacity (value between 0 and 1).

```
$("#button").click(function(){  
    $("#div1").fadeTo("slow", 0.15);  
    $("#div2").fadeTo("slow", 0.4);  
    $("#div3").fadeTo("slow", 0.7);  
});
```


jQuery Effects

jQuery slideDown()

- The jQuery slideDown() method is used to slide down an element
- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds

jQuery slideDown()

```
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
    $("#flip").click(function(){
        $("#panel").slideDown("slow");
    });
});
</script>
<style>
#panel, #flip {
    padding: 5px;
    text-align: center;
    background-color: #e5eccc;
    border: solid 1px #c3c3c3;
}
#panel {
    padding: 50px;
    display: none;
}
</style>
</head>
<body>
<div id="flip">Click to slide down panel</div>
<div id="panel">Hello world!</div>
</body>
</html>
```

jQuery Effects

jQuery slideUp()

- The jQuery slideUp() method is used to slide up an element
- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds

jQuery slideToggle()

- The jQuery slideToggle() method toggles between the slideDown() and slideUp() methods.
- If the elements have been slid down, slideToggle() will slide them up.
- If the elements have been slid up, slideToggle() will slide them down.

Questions...

