



WEB ENGINEERING

.Net

Week 2 - Day 7



: Basics

Recap Questions

The following questions will be asked to the participants for review:

What is

- jQuery Syntax
- jQuery Selectors
- Manipulating HTML DOM with jQuery

What is jQuery?

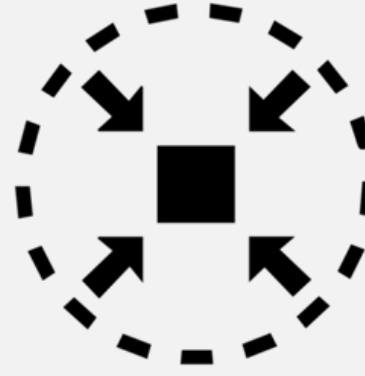
edureka!



Simplifies JavaScript



Event Handling



Lightweight



Animations

Learning Objectives

By the end of this session, the students will have developed an understanding of:

- ▶ jQuery Animation
- ▶ Hide/Show
- ▶ Fade
- ▶ Slide
- ▶ Manipulating CSS with jQuery





jQuery Animation

jQuery Animation

- jQuery includes methods which give special effects to the elements on hiding, showing, changing style properties, and fade-in or fade-out operation.
- These special effect methods can be useful in building an interactive user interface.
- The following table lists jQuery methods for adding special effects to the DOM elements.

jQuery Methods for Special Effects	Description
animate()	Perform custom animation using element's style properties.
queue()	Show or manipulate the queue of functions to be executed on the specified element.
stop()	Stop currently running animations on the specified element(s).
fadeIn()	Display specified element(s) by fading them to opaque.
fadeOut()	Hides specified element(s) by fading them to transparent.
fadeTo()	Adjust the opacity of the specified element(s)
fadeToggle()	Display or hide the specified element(s) by animating their opacity.

jQuery Methods for Special Effects	Description
hide()	Hide specified element(s).
show()	Display specified element(s).
toggle()	Display hidden element(s) or hide visible element(s).
slideUp()	Hide specified element(s) with sliding up motion.
slideDown()	Display specified element(s) with sliding down motion.
slideToggle()	Display or hide specified element(s) with sliding motion.

jQuery animate() Method

- The jQuery animate() method is used to create custom animations by changing the CSS numerical properties of a DOM element, for example, width, height, margin, padding, opacity, top, left, etc.
- Following is a simple syntax of animate() method:

```
$(selector).animate({ properties }, [speed, callback] );
```

Some Important points

- You can apply any jQuery selector to select any DOM element and then apply jQuery animate() method to animate it. Here is the description of all the **parameters** which give you a complete control over the animation:
 - **properties** – A required parameter which defines the CSS properties to be animated and this is the only mandatory parameter of the call.
 - **speed** – An optional string representing one of the three predefined speeds ("slow", "normal", or "fast") or the number of milliseconds to run the animation (e.g. 1000).
 - **callback** – An optional parameter which represents a function to be executed whenever the animation completes.

Animate: Pre-Requisites

- (a) - The `animate()` method does not make hidden elements visible as part of the effect. For example, given `$(selector).hide().animate({height: "20px"}, 500)`, the animation will run, but the element will remain hidden.
- (b) - To manipulate the position of a DOM element as a part of the animation, first we need to set its position to relative, fixed, or absolute because by default, all HTML elements have a static position, and they cannot be moved using `animate()` method.

-
- The animate() method changes existing style properties to the specified properties with motion.
 - Specify a selector to get the reference of an element to which you want to add animation effect and then call animate() method with JSON object for style properties, speed of animation and other options.

Syntax

```
$('#selector expression').animate({ stylePropertyName : 'value'},  
                                   duration,  
                                   easing,  
                                   callback);  
  
$('#selector expression').animate({ propertyName : 'value'},{ options });
```

Apply Animation: Example

In the following example, we are changing height and width of the element with animation.

Try out this example on your computers and then [check the output here](#):

```
$( '#myDiv' ).animate({  
    height: '200px',  
    width: '200px'  
});
```

```
<div id="myDiv" class="redDiv">  
</div>
```


Set Animation Duration

You can apply animation duration in milliseconds as a second parameter of animate() method

Try out this example on your computers and then [check its output here](#):

```
$('#myDiv').animate({  
    height: '200px',  
    width: '200px'  
},  
5000);
```

```
<div id="myDiv" class="redDiv">  
</div>
```

Apply Easing Method

Specify a string parameter indicating which easing function to use for the transition. The jQuery library provides two easing function: linear and swing.

Try out this example on your computers and then [check its output here](#):

```
$('#myDiv').animate({  
    height: '200px',  
    width: '200px'  
},  
5000, 'swing');  
  
<div id="myDiv" class="redDiv">  
</div>
```

Callback Function on Animation Complete

Specify a callback function to execute when animation is complete.

Try out this example on your computers and then [check its output here](#):

```
$('#myDiv').animate({
    height: '200px',
    width: '200px'
},
5000,
function () {
    $('#msgDiv').append('Animation completed');
});

<div id="myDiv" class="redDiv">
</div>

<div id="msgDiv"></div>
```

Specify Animation Options

You can specify various options as JSON object. The options include duration, easing, queue, step, progress, complete, start, done and always. Visit api.jquery.com for more information.

Try out this example on your computers and then [check its output here:](#)

```
$('#myDiv').animate({  
    height: '200px',  
    width: '200px'  
},  
{  
    // options parameter  
    duration: 5000,  
    complete: function () {  
        $(this).animate({  
            height: '100px',  
            width: '100px'  
        }, 5000,  
        function () {  
            $('#msgDiv').text('Animation completed..');  
        });  
    },  
    start: function () {  
        $('#msgDiv').append('starting animation..');  
    }  
});
```

```
<div id="msgDiv"></div>
```

```
<div id="myDiv" class="redDiv">  
</div>
```



fadeIn() / fadeOut()

jQuery fadeIn() Method

The jQuery fadeIn() method displays specified element(s) by fading them to opaque.

Syntax:

```
$('#selector expression').fadeIn(speed, easing, callback);
```

jQuery fadeIn() Method

```
$('#myDiv').fadeIn(5000, function () {  
    $('#msgDiv').append('fadeIn() completed.')});
```

```
<div id="myDiv" class="redDiv">  
</div>
```

```
<div id="msgDiv"></div>
```

Try out this example on your computers and then [check its output here:](#)

jQuery fadeOut() Method

The jQuery fadeOut() method hides specified element(s) by fading them to transparent.

Syntax:

```
$('#selector expression').fadeOut(speed, easing, callback);
```


jQuery fadeOut() Method

```
$('#div1').fadeOut(5000, function () {  
    $('#msgDiv').append('fadeOut() completed.')});
```

```
<div id="msgDiv"></div>
```

```
<div id="myDiv" class="redDiv">  
</div>
```

Try out this example on your computers and then [check its output here:](#)



Hide() / Show()

jQuery show() and hide() Methods

- You can show and hide HTML elements using the jQuery show() and hide() methods.
- The hide() method simply sets the inline style display: none for the selected elements.
- Conversely, the show() method restores the display properties of the matched set of elements to whatever they initially were—typically block, inline, or inline-block—before the inline style display: none was applied to them. Here's is an example.

jQuery show() and hide() Methods

- Durations can be specified either using one of the predefined string 'slow' or 'fast', or in a number of milliseconds, for greater precision; higher values indicate slower animations.

Example 1

Practice writing the code on your computer.

Then, [check the output here](#)

```
1  <script>
2  $(document).ready(function(){
3      // Hide displayed paragraphs
4      $(".hide-btn").click(function(){
5          $("p").hide();
6      });
7
8      // Show hidden paragraphs
9      $(".show-btn").click(function(){
10         $("p").show();
11     });
12 });
13 </script>
```

Example 2

Note: The speed or duration string 'fast' indicates the durations of 200 milliseconds, while the string 'slow' indicates the durations of 600 milliseconds.

Try out this example on your computers and [Check the output here](#)

```
1 <script>
2 $(document).ready(function(){
3     // Hide displayed paragraphs with different speeds
4     $(".hide-btn").click(function(){
5         $(".p.normal").hide();
6         $(".p.fast").hide("fast");
7         $(".p.slow").hide("slow");
8         $(".p.very-fast").hide(50);
9         $(".p.very-slow").hide(2000);
10    });
11
12    // Show hidden paragraphs with different speeds
13    $(".show-btn").click(function(){
14        $(".p.normal").show();
15        $(".p.fast").show("fast");
16        $(".p.slow").show("slow");
17        $(".p.very-fast").show(50);
18        $(".p.very-slow").show(2000);
19    });
20 });
21 </script>
```



Slide up/down/toggle

slideDown()

Syntax

```
$(selector).slideDown(speed);  
$(selector).slideDown(speed, callback);  
$(selector).slideDown(speed, easing, callback);
```


slideDown()

- **speed:** It specifies the speed of the delay. Its possible values are slow, fast and milliseconds.
- **easing:** It specifies the easing function to be used for transition.
- **callback:** It is also an optional parameter. It specifies the function to be called after completion of slideDown() effect.
- Let's take an example to demonstrate jQuery slideDown() effect.

slideDown()

Example

<https://www.javatpoint.com/jquery-slidedown>

Try out this
example on your
computers and
then [check its
output here:](#)

```
<!DOCTYPE html>
<html>
<head>
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.2/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: #00FFFF;
    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 javatpoint.com!
It is the best tutorial website to learn jQuery and other languages.</div>
</body>
```

slideUp()

Syntax

```
$(selector).slideUp(speed);  
$(selector).slideUp(speed, callback);  
$(selector).slideUp(speed, easing, callback);
```

slideUp()

- **speed:** It specifies the speed of the delay. It's possible values are slow, fast and milliseconds.
- **easing:** It specifies the easing function to be used for transition.
- **callback:** It is also an optional parameter. It specifies the function to be called after completion of slideUp() effect.
- Let's take an example to demonstrate jQuery slideUp() effect.

slideUp()

Example

<https://www.javatpoint.com/jquery-slideup>

Try out this
example on your
computers and
then [check its
output here:](#)

```
<!DOCTYPE html>
<html>
<head>
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.2/jquery.min.js"> </script>
<script>
$(document).ready(function(){
    $("#flip").click(function(){
        $("#panel").slideUp("slow");
    });
});
</script>
<style>
#panel, #flip {
    padding: 5px;
    text-align: center;
    background-color: #00FFFF;
    border: solid 1px #c3c3c3;
}
#panel {
    padding: 50px;
}
</style>
</head>
<body>
<div id="flip">Click to slide up panel</div>
<div id="panel">Hello javatpoint.com!
It is the best tutorial website to learn jQuery and other languages.</div>
</body>
</html>
```

slideToggle()

Syntax

```
$(selector).slideToggle(speed);
```

```
$(selector).slideToggle(speed, callback);
```

```
$(selector).slideToggle(speed, easing, callback);
```

slideToggle()

- **speed:** It specifies the speed of the delay. Its possible values are slow, fast and milliseconds.
- **easing:** It specifies the easing function to be used for transition.
- **callback:** It is also an optional parameter. It specifies the function to be called after completion of slideToggle() effect.
- Let's take an example to demonstrate jQuery slideToggle() effect.

slideToggle()

Example

<https://www.javatpoint.com/jquery-slidetoggle>

Try out this
example on your
computers and
then [check its
output here:](#)

```
<!DOCTYPE html>
<html>
<head>
<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.2/jquery.min.js"> </script>
<script>
$(document).ready(function(){
    $("#flip").click(function(){
        $("#panel").slideToggle("slow");
    });
});
</script>
<style>
#panel, #flip {
    padding: 5px;
    text-align: center;
    background-color: #00FFFF;
    border: solid 1px #c3c3c3;
}
#panel {
    padding: 50px;
    display:none;
}
</style>
</head>
<body>
<div id="flip">Click to slide toggle panel</div>
<div id="panel">Hello javatpoint.com!
It is the best tutorial website to learn jQuery and other languages.</div>
</body>
</html>
```




CSS Manipulation using jQuery

CSS Manipulation

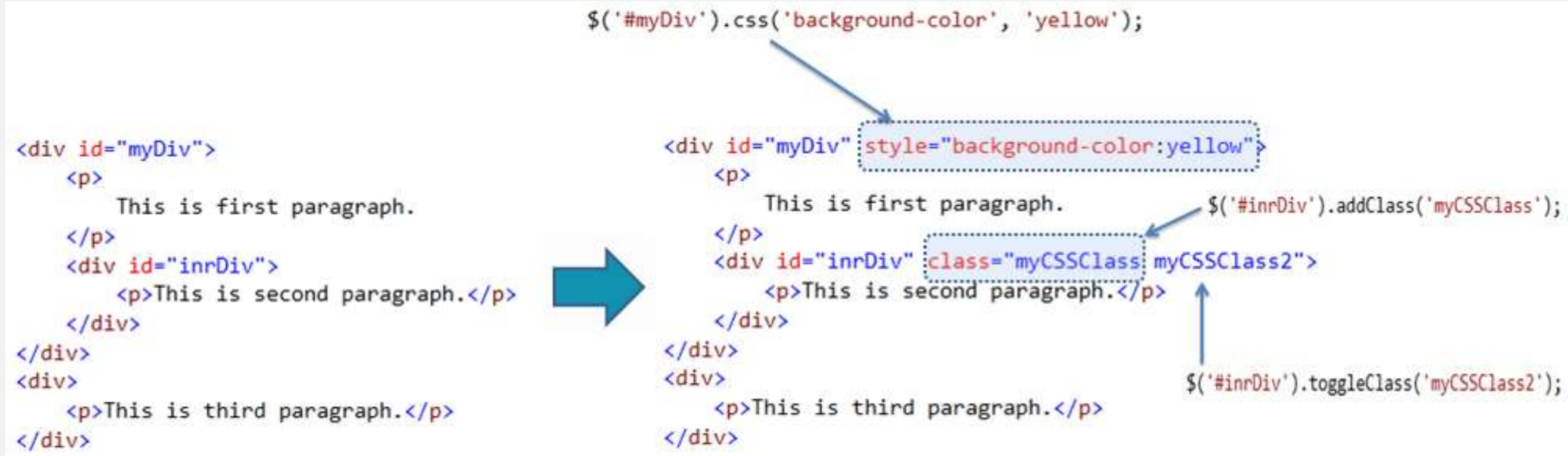
The jQuery library includes various methods to manipulate style properties and CSS class of DOM element(s).

The following table lists jQuery methods for styling and css manipulation.

jQuery Methods	Description
css()	Get or set style properties to the specified element(s).
addClass()	Add one or more class to the specified element(s).
hasClass()	Determine whether any of the specified elements are assigned the given CSS class.
removeClass()	Remove a single class, multiple classes, or all classes from the specified element(s).
toggleClass()	Toggles between adding/removing classes to the specified elements

CSS Manipulation

The following figure shows how jQuery methods changes style and css class of the DOM elements.



jQuery css() Method

The jQuery css() method gets or sets style properties to the specified element(s).

Syntax:

```
$('#selector expression').css('style property name','value');  
  
$('#selector expression').css({  
    'style property name':'value',  
});
```

Specify a selector to get the reference of an elements to which you want to set the style property and then call css() method with style property name and value parameter. You can also set multiple style properties by passing JSON object with 'style property name':'value'.

css() Method: Example

Try out this example on your computers and then [check its output here:](#)

```
$('#myDiv').css('background-color','yellow');
$('p').css({'background-color': 'red','width':'400px'});

$('#myDiv').css('background-color'); // returns rgb(255,255,0) for yellow color

<div id="myDiv">
    <p>This is first paragraph.</p>
</div>
<div>
    <p>This is second paragraph.</p>
</div>
<div >
    <p>This is third paragraph.</p>
</div>
```

jQuery addClass() method

The jQuery addClass() method adds single or multiple css class to the specified element(s).

Syntax:

```
$('selector expression').addClass('css class name');
```

First specify a selector to get the reference of an elements to which you want to set the css property and then call addClass() method with one or multiple class names as a string parameter. Multiple class names must be separated by space.

addClass() method: Example

Try out this
example on your
computers and
then [check its
output here:](#)

```
$('#myDiv').addClass('yellowDiv');  
$('p').addClass('impPrg');  
  
<div id="myDiv">  
  <p>  
    This is first paragraph.  
  </p>  
</div>  
<div>  
  <p>This is second paragraph.</p>  
</div>  
<div >  
  <p>This is third paragraph.</p>  
</div>
```

jQuery toggleClass() Method

The jQuery toggleClass() method toggles between adding/removing classes to the specified elements

Syntax:

```
$('.selector expression').toggleClass('css class name');
```

Specify a selector to get the reference of an elements to which you want to toggle css classes and then call toggleClass() method with css class name as a string parameter.

toggleClass() Method: Example

Try out this
example on your
computers and
then check its
output here:

```
$('#myDiv').toggleClass('redDiv');
```

```
<div id="myDiv" class="yellowDiv">  
</div>
```

Important Points



1. The jQuery CSS methods allow you to manipulate CSS class or style properties of DOM elements.
2. Use the selector to get the reference of an element(s) and then call jQuery css methods to edit it.
3. Important DOM manipulation methods: `css()`, `addClass()`, `hasClass()`, `removeClass()`, `toggleClass()` etc.

Homework

Students will practice exercises of the topics covered today from this link:

[jQuery DOM Practice Exercises](#)

&

<https://api.jquery.com/animate/>



Learning Objectives

By the end of this session, the students have practised

- ✓ Hide/Show
- ✓ Fade
- ✓ Slide
- ✓ jQuery Animation
- ✓ Manipulating CSS with jQuery



Conclusion & Q/A

See you tomorrow!