

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

WEB TECHNOLOGY LAB

BCSL504

EXPERIMENT – 09

jQuery WITH HTML AND CSS

Append Content, Animation and Colour Change

5th Semester

Append to Paragraph • Append to List

jQuery animate() • CSS Properties

Animated DIV • Colour Change

Prepared by Search Creators

Learn • Practice • Execute

1. Experiment 09

Aim

Develop jQuery programs with HTML and CSS to:

- a. Append content to an existing paragraph and list.
- b. Change the state of an element using CSS properties with the jQuery `animate()` method.
- c. Change the colour of an animated `div` element.

2. Requirements

- HTML5
- CSS
- JavaScript and jQuery
- Modern web browser
- Internet connection when loading jQuery from a CDN
- **Search Creators Compiler / Code Studio**

<https://searchcreators.org/compiler/>

- Alternatively, VS Code, Notepad or another suitable web editor

3. Search Creators Compiler

Practice with Search Creators

Practice this Web Technology Lab experiment using the **Search Creators Compiler / Code Studio**.

Open Search Creators Compiler

<https://searchcreators.org/compiler/>

Enter the HTML, CSS and jQuery program and preview the webpage in a supported web coding environment.

If jQuery is loaded from an external CDN, internet access is required.

4. Introduction to jQuery

jQuery is a JavaScript library that provides convenient methods for:

- Selecting HTML elements
- Handling events
- Modifying HTML content
- Changing CSS properties
- Creating animations

A common jQuery syntax is:

```
$(selector).action();
```

Here:

- `$` represents jQuery.
- `selector` selects an HTML element.
- `action()` performs an operation on the selected element.

5. Adding jQuery to HTML

jQuery can be included using a script element.

Example:

```
1 <script
2 src="https://code.jquery.com/jquery-3.7.1.min.js">
3 </script>
```

After loading jQuery, jQuery methods can be used inside JavaScript code.

6. Important jQuery Methods

Method	Purpose
<code>\$(document).ready()</code>	Runs code after the document is ready.
<code>click()</code>	Handles a click event.
<code>append()</code>	Adds content at the end of the selected element.
<code>animate()</code>	Animates supported CSS properties.
<code>css()</code>	Gets or changes CSS properties.

7. Part (a): Append Content

7.1 Aim

Append content to an existing paragraph and list using jQuery.

7.2 Program

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5
6 <meta charset="UTF-8">
7
8 <title>jQuery Append Example</title>
9
10 <script
11 src="https://code.jquery.com/jquery-3.7.1.min.js">
12 </script>
13
14 <style>
15
16 body {
17     font-family: Arial, sans-serif;
18     background-color: #f2f2f2;
19 }
20
21 .container {
22     width: 600px;
23     margin: 50px auto;
24     background-color: white;
25     padding: 25px;
26     border: 2px solid darkgreen;
27 }
28
29 h2 {
30     color: darkgreen;
31     text-align: center;
32 }
33
34 p {
35     font-size: 18px;
36     color: darkblue;
37 }
38
39 li {
```

```
40     font-size: 17px;
41     margin: 5px;
42 }
43
44 button {
45     padding: 10px 15px;
46     margin: 8px;
47     font-size: 15px;
48 }
49
50 </style>
51
52 </head>
53
54 <body>
55
56 <div class="container">
57
58 <h2>jQuery Append Example</h2>
59
60 <p id="myParagraph">
61     Web Technology Lab
62 </p>
63
64 <ul id="myList">
65
66     <li>HTML</li>
67     <li>CSS</li>
68
69 </ul>
70
71 <button id="appendText">
72     Append to Paragraph
73 </button>
74
75 <button id="appendItem">
76     Append to List
77 </button>
78
79 </div>
80
81 <script>
82
83 $(document).ready(function() {
84
85     $("#appendText").click(function() {
86
87         $("#myParagraph").append(
```

```
88         " - Learning jQuery"
89     );
90
91 });
92
93 $("#appendItem").click(function() {
94
95     $("#myList").append(
96         "<li>jQuery</li>"
97     );
98
99 });
100
101 });
102
103 </script>
104
105 </body>
106 </html>
```

7.3 Explanation

The paragraph is selected using:

```
1 $("#myParagraph")
```

Content is added using:

```
1 $("#myParagraph").append(
2     " - Learning jQuery"
3 );
```

Therefore:

Web Technology Lab → Web Technology Lab - Learning jQuery

Similarly, a new list item is appended using:

```
1 $("#myList").append(
2     "<li>jQuery</li>"
3 );
```

The list changes from:

HTML
CSS

to:

HTML
CSS
jQuery

8. Part (b): Animate an Element

8.1 Aim

Change the state of an HTML element using CSS properties with the jQuery `animate()` method.

8.2 Program

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5
6 <meta charset="UTF-8">
7
8 <title>jQuery Animation</title>
9
10 <script
11 src="https://code.jquery.com/jquery-3.7.1.min.js">
12 </script>
13
14 <style>
15
16 body {
17     font-family: Arial, sans-serif;
18     background-color: #eaf4ef;
19     text-align: center;
20 }
21
22 #box {
23     width: 100px;
24     height: 100px;
25     background-color: darkgreen;
26     position: relative;
27     margin: 40px;
28 }
29
30 button {
31     padding: 10px 20px;
32     font-size: 16px;
33 }
```

```
34
35 </style>
36
37 </head>
38
39 <body>
40
41 <h2>jQuery Animation</h2>
42
43 <button id="animateButton">
44     Start Animation
45 </button>
46
47 <div id="box"></div>
48
49 <script>
50
51 $(document).ready(function() {
52
53     $("#animateButton").click(function() {
54
55         $("#box").animate(
56             {
57                 left: "300px",
58                 width: "180px",
59                 height: "180px",
60                 opacity: 0.6
61             },
62             1500
63         );
64
65     });
66
67 });
68
69 </script>
70
71 </body>
72 </html>
```

8.3 Explanation

The element is selected using:

```
1 $("#box")
```

The animation is created using:

```
1 $("#box").animate(  
2     {  
3         left: "300px",  
4         width: "180px",  
5         height: "180px",  
6         opacity: 0.6  
7     },  
8     1500  
9 );
```

The animation changes:

- Horizontal position
- Width
- Height
- Opacity

The duration is:

1500 milliseconds = 1.5 seconds

9. Part (c): Change Colour of Animated DIV

9.1 Aim

Animate a div element and change its colour using jQuery.

9.2 Program

```
1 <!DOCTYPE html>  
2 <html lang="en">  
3  
4 <head>  
5  
6 <meta charset="UTF-8">  
7  
8 <title>Animated DIV Colour Change</title>  
9  
10 <script  
11 src="https://code.jquery.com/jquery-3.7.1.min.js">  
12 </script>  
13
```

```
14 <style>
15
16 body {
17     font-family: Arial, sans-serif;
18     background-color: #f5f5f5;
19     text-align: center;
20 }
21
22 #colorBox {
23     width: 120px;
24     height: 120px;
25     background-color: darkgreen;
26     position: relative;
27     margin: 40px;
28 }
29
30 button {
31     padding: 10px 20px;
32     font-size: 16px;
33 }
34
35 </style>
36
37 </head>
38
39 <body>
40
41 <h2>Animated DIV Colour Change</h2>
42
43 <button id="changeButton">
44     Animate and Change Colour
45 </button>
46
47 <div id="colorBox"></div>
48
49 <script>
50
51 $(document).ready(function() {
52
53     $("#changeButton").click(function() {
54
55         $("#colorBox").animate(
56             {
57                 left: "300px",
58                 width: "180px",
59                 height: "180px"
60             },
61             1500,
```

```
62         function() {
63
64             $("#colorBox").css(
65                 "background-color",
66                 "orange"
67             );
68
69         }
70     );
71
72 });
73
74 });
75
76 </script>
77
78 </body>
79 </html>
```

9.3 Explanation

Initially, the div has:

```
1 background-color: darkgreen;
```

The element is animated using:

```
1 $("#colorBox").animate(...)
```

After the animation is complete, the callback function is executed:

```
1 function() {
2
3     $("#colorBox").css(
4         "background-color",
5         "orange"
6     );
7
8 }
```

The colour therefore changes from:

Dark Green → Orange

10. Why `css()` is Used for Colour

The jQuery `animate()` method directly animates many numeric CSS properties such as:

- Width
- Height
- Left position
- Top position
- Opacity
- Margin
- Padding

In this simple experiment, the element is first animated and then its background colour is changed using:

```
1 .css("background-color", "orange")
```

This provides a simple and reliable implementation of the syllabus requirement to change the colour of an animated `div`.

11. Combined Program

The following single program demonstrates all three parts of Experiment 09.

Important

For practical examination or record writing, this combined program can be used to demonstrate:

Append + Animation + Colour Change

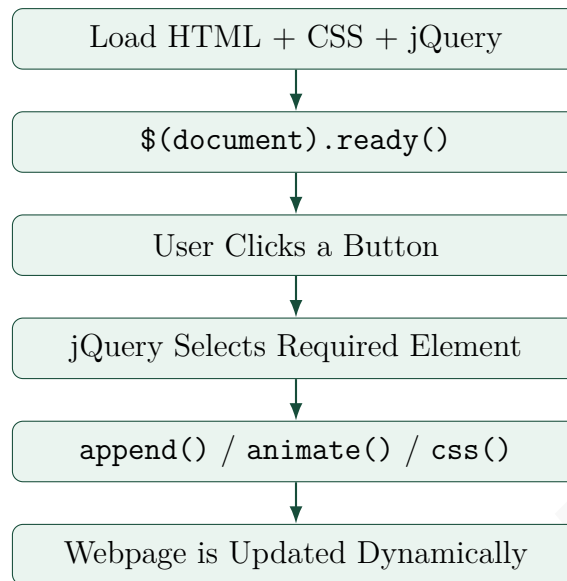
```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5
6 <meta charset="UTF-8">
7
8 <title>jQuery Operations</title>
9
10 <script
11 src="https://code.jquery.com/jquery-3.7.1.min.js">
12 </script>
13
14 <style>
15
16 body {
```

```
17     font-family: Arial, sans-serif;
18     background-color: #f2f2f2;
19 }
20
21 .container {
22     width: 750px;
23     margin: 30px auto;
24     padding: 25px;
25     background-color: white;
26     border: 2px solid darkgreen;
27 }
28
29 h2 {
30     color: darkgreen;
31     text-align: center;
32 }
33
34 p, li {
35     font-size: 17px;
36 }
37
38 button {
39     padding: 10px 15px;
40     margin: 6px;
41     font-size: 15px;
42 }
43
44 #box {
45     width: 100px;
46     height: 100px;
47     background-color: darkgreen;
48     position: relative;
49     margin-top: 25px;
50 }
51
52 </style>
53
54 </head>
55
56 <body>
57
58 <div class="container">
59
60 <h2>jQuery Operations</h2>
61
62 <h3>Append Content</h3>
63
64 <p id="paragraph">
```

```
65     Web Technology Lab
66 </p>
67
68 <ul id="list">
69
70     <li>HTML</li>
71     <li>CSS</li>
72
73 </ul>
74
75 <button id="appendParagraph">
76     Append Paragraph
77 </button>
78
79 <button id="appendList">
80     Append List Item
81 </button>
82
83 <hr>
84
85 <h3>Animation and Colour Change</h3>
86
87 <button id="animateBox">
88     Animate DIV
89 </button>
90
91 <button id="changeColor">
92     Change Colour
93 </button>
94
95 <div id="box"></div>
96
97 </div>
98
99 <script>
100
101 $(document).ready(function() {
102
103     $("#appendParagraph").click(function() {
104
105         $("#paragraph").append(
106             " - jQuery is Easy"
107         );
108
109     });
110
111     $("#appendList").click(function() {
112
```

```
113     $("#list").append(  
114         "<li>jQuery</li>"  
115     );  
116  
117 });  
118  
119 $("#animateBox").click(function() {  
120  
121     $("#box").animate(  
122         {  
123             left: "350px",  
124             width: "160px",  
125             height: "160px",  
126             opacity: 0.7  
127         },  
128         1500  
129     );  
130  
131 });  
132  
133 $("#changeColor").click(function() {  
134  
135     $("#box").css(  
136         "background-color",  
137         "orange"  
138     );  
139  
140 });  
141  
142 });  
143  
144 </script>  
145  
146 </body>  
147 </html>
```

12. Working of the Program



13. jQuery Selector Examples

Selector	Meaning
<code>\$("box")</code>	Selects the element whose ID is box.
<code>\$(".item")</code>	Selects elements having class item.
<code>\$("p")</code>	Selects paragraph elements.
<code>\$("li")</code>	Selects list-item elements.

14. append(), animate() and css()

Method	Example
<code>append()</code>	<code>\$("paragraph").append("Text");</code>
<code>animate()</code>	Changes supported CSS properties over a specified duration.
<code>css()</code>	<code>\$("box").css("background-color","orange");</code>

15. How to Execute

Practice with Search Creators

Recommended Practice Platform

Search Creators Compiler / Code Studio

<https://searchcreators.org/compiler/>

Create an HTML file, enter the program and preview the webpage.

Since the example loads jQuery from an external CDN, ensure that the execution environment has internet access.

16. Procedure

1. Open the Search Creators Compiler / Code Studio:

<https://searchcreators.org/compiler/>

2. Create a new HTML file or web project.
3. Add the jQuery library using the `script` element.
4. Create a paragraph and unordered list.
5. Create buttons to append content.
6. Use the jQuery `append()` method to add content to the paragraph.
7. Use `append()` to add a new list item.
8. Create a `div` element.
9. Apply CSS properties such as width, height, background colour and position.
10. Create an animation button.
11. Use the jQuery `animate()` method to change the position, width, height and opacity.
12. Use the `css()` method to change the background colour of the animated `div`.
13. Run or preview the webpage.
14. Click the append buttons and verify that new content is added.
15. Click the animation button and observe the movement and size change.
16. Change the colour of the animated `div` and verify the result.
17. If required, execute the same program using another suitable HTML/CSS/JavaScript editor and browser.

17. Expected Output

Expected Browser Output

jQuery Operations

Before Append:

Web Technology Lab

HTML

CSS

After Append:

Web Technology Lab - jQuery is Easy

HTML

CSS

jQuery

Before Animation:**After Animation:****After Colour Change:**

18. Important Viva Questions

Important Viva Questions

1. What is jQuery?

jQuery is a JavaScript library that provides convenient methods for DOM manipulation, events and effects.

2. What is the basic jQuery syntax?

```
$(selector).action();
```

3. What does \$ represent in jQuery?

It is commonly used as the jQuery function.

4. What is a jQuery selector?

It is used to select HTML elements on which jQuery operations are performed.

5. How do you select an element with ID box?

```
$("#box")
```

6. What is append() used for?

It inserts content at the end of the selected element.

7. Can append() add HTML elements?

Yes. For example, it can append a new `li` element to a list.

8. What is animate() used for?

It animates supported CSS properties over a period of time.

9. Which CSS properties are animated in this experiment?

Position, width, height and opacity.

10. Why is position set to relative for the div?

It allows the `left` property to visibly move the element from its normal position.

11. What does css() do?

It can read or change CSS properties of selected elements.

12. How is the background colour changed in this experiment?

Using:

```
.css("background-color","orange")
```

13. What is a callback function in animate()?

It is a function that can run after the animation completes.

14. What is document.ready used for?

It runs jQuery code after the document has been loaded and the DOM is ready.

15. Why is the jQuery library included in the page?

It provides the jQuery methods used by the program.

16. Which three main methods are important in this experiment?

`append()`, `animate()` and `css()`.

17. Which platform can students use for Search Creators coding practice?

Search Creators Compiler / Code Studio

19. Quick Revision

Concept	Remember
Library	jQuery
Basic Syntax	<code>\$(selector).action()</code>
ID Selector	<code>\$("#id")</code>
Class Selector	<code>\$(".class")</code>
Document Ready	<code>\$(document).ready()</code>
Click Event	<code>click()</code>
Append Content	<code>append()</code>
Animate Element	<code>animate()</code>
Change CSS	<code>css()</code>
Animated Properties	Position, Width, Height, Opacity
DIV Colour Change	<code>css("background-color", ...)</code>
Frontend	HTML + CSS + jQuery
Practice Platform	Search Creators Compiler
Website	searchcreators.org/compiler/

20. Result

Result

jQuery programs using HTML and CSS were developed successfully to:

- Append content to an existing paragraph.
- Append a new item to an existing list.
- Change the state of an element using CSS properties with the jQuery `animate()` method.
- Change the background colour of an animated div element.

For Search Creators coding practice:

Search Creators Compiler / Code Studio

<https://searchcreators.org/compiler/>

END OF EXPERIMENT – 09

BCSL504 – Web Technology Lab

Prepared by Search Creators

Practice Online: searchcreators.org/compiler/
