

Introduction

jQuery is a JavaScript based library that makes using java script much easier for your web based applications. JQuery is fast, much easy to use, small in size around 32Kb, and contains lot of features.

You have to write lot of JavaScript code to accomplish tasks that jQuery enables you to write with much less code. Its aim is to write less do more.

jQuery is cross platform compatible, i.e. supported by many popular browsers like Chrome, Firefox, IE, Safari and others.

jQuery makes it quite simple like HTML document transversal and manipulation, handling events (like clicking on links, mouse up, mouse down etc.), animations for your applications (like slider, loader et.) and Asynchronous JavaScript and XML (AJAX) operations with an easy to use API.

You can do many things or seen, as you might noticed in different web sites like cool jQuery sliders, slidshows, menus, fadein/fadeout effects, beautiful dropdowns .. just a few what can be done with jQuery.

Setting up jQuery

Installing or setting up jQuery to enable you working in your web applications is quite simple. This does not require any compilation etc.

You just have to place or refer library file of jQuery in your HTML files to work with it. Below is how you can do it:

You can download jQuery library from <http://jquery.com/download/>.

After downloading and placing uncompressed file to your development machine, **place it to same directory where you code files are.**

```
1 <head>
2     <title>jQuery Library</title>
3     <script type="text/javascript" src="jquery-1.11.1.js"></script>
4 </head>
```

Note: jquery-1.11.1.min.js in compressed version of jquery.js, It is used when website is to be hosted on client machine.

It will decrease page load-time for webpage using jQuery.

Syntax of jQuery

All jQuery programs begin with instantiating document.ready event which prevents any jQuery code from running before the document is finished loading (is ready). Syntax for jQuery:

```
1 <head>
2   <title>jQuery Library</title>
3   <script type="text/javascript" src="jquery-1.11.1.js"></script>
4   <script>
5       $(document).ready(function(){
6           // JQuery statements;
7       });
8   </script>
9 </head>
```

jQuery Selectors

jQuery selectors are one of the most important parts of the jQuery library.

jQuery selectors allow you to select and manipulate HTML element(s).

All selectors in jQuery start with the dollar sign and parentheses i.e. `$()`. There are three types of selectors

- ID based selector.
- Direct tag based Selector.
- Class based Selector.

#ID based selector

The jQuery `#id` selector uses the id attribute of an HTML tag to find the specific element.

An id should be unique within a page, so you should use the `#id` selector when you want to find a single, unique element.

To find an element with a specific id, write a hash character, followed by the id of the HTML element:

The following example illustrates the flow of jQuery program.

```
1 <!DOCTYPE html>
```

```
2 <html>
3   <head>
4       <script src='jquery -1.11.1.js '>
5   </script>
6   <script>
7       $(document).ready(function(){
8           $('#button1 ').click(function(){
9               window.close();
10          });
11      });
12  </script>
13 </head>
14 <body>
15     <button id='button1 '>Close Window</button>
16 </body>
17 </html>
```

Explanation

In the above program at Line 4 jquery library is instantiated. Line 7 is calling document.ready event to ensure page is properly loaded or not.

At Line 8 click event is called, which will be invoked when button is clicked. The click event will call window.close() method.

Element based selector

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4       <script src='jquery -1.11.1.js '>
5   </script>
6   <script>
7       $(document).ready(function(){
8           $('p ').click(function(){
9               window.open('www.yahoo.com', '_blank ');
10          });
11      });
12 </script>
13 </head>
14 <body>
15     <p>Click here to open new window</p>
16 </body>
17 </html>
```

```
11         $('#div').click(function(){
12             window.open('www.amazon.com','_blank')
13         });
14     });
15     </script>
16 </head>
17 <body>
18     <p>Click here to open yahoo.com</p>
19     <div>Click here to open amazon.com</div>
20 </body>
21 </html>
```

Explanation

In the above example p and div are the two HTML elements, when p or div are clicked yahoo.com or amazon.com in a blank window will get opened.

Both are defined under single document.ready event.

Class based selector

The jQuery class selector finds elements with a specific class.

To find elements with a specific class, write a period character, followed by the name of the class.

```
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <script src='jquery-1.11.1.js'>
5         </script>
6         <script>
7             $(document).ready(function(){
8                 $('#.p1').click(function(){
9                     window.open('www.yahoo.com','_blank');
10                 });
11                 $('#.div1').click(function(){
12                     window.open('www.amazon.com','_blank')
13                 });
14             });
```

```
15     </script>
16 </head>
17 <body>
18     <p class = '.p1 ' >Click here to open yahoo.com</p>
19     <div class = '.div ' >Click here to open amazon.com</div>
20 </body>
21 </html>
```

Explanation

In the above example .p1 and .div1 are the two classes defined for p and div elements, when .p1 or .div1 are clicked, either yahoo.com or amazon.com in a blank window will get opened.

Both are defined under single document.ready event.

Child Selector

Selects all child elements specified by Parent element. The syntax is parent > child, The > sign specifies to select all child elements of parent.

```
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <script src = 'jquery - 1.11.1. js ' >
5         </script>
6         <script>
7             $(document). ready (function () {
8                 $('#div1 ' ). click (function () {
9                     $( 'div > p ' ). css ( 'color ' , 'blue ' );
10                });
11            });
12        </script>
13    </head>
14    <body>
15        <div id = 'div1 ' >Click here
16            <p>This will be now in blue color</p>
17            <p>This also will be in blue color</p>
18        </div>
```

```
19     </body>
20 </html>
```

Explanation

In the above example under div1 id there are two <p> tags. We can select all p tags of div1 using > operator.

Specific Element and its childs Selector

When a page contains similar elements, say many elements and only one of it has to be manipulated, jQuery provides flexible way of doing it.

```
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <script src='jquery -1.11.1.js '>
5         </script>
6         <script>
7             $(document).ready(function(){
8                 $('#b1').click(function(){
9                     $('ul#ul2 > li').css('color','blue');
10                });
11            });
12        </script>
13    </head>
14    <body>
15        <ul id='ul1'>
16            <li>One</li>
17            <li>Two</li>
18        </ul>
19        <ul id='ul2'>
20            <li>One</li>
21            <li>Two</li>
22        </ul>
23        <button id='b1'>Color Change of ul2</button>
24    </body>
```

25 </html>

Explanation

In the above example there are two ul tags with different id. using jQuery only ul2 and all its childs are manipulated. Hence we can change the behaviour of any particular element easily.

Event Handling

Events are users actions on a web page that web page can respond to.

For example pressing a keyboard key, bringing mouse pointer to a link, click that link, while page is loading, page is closed or unloading and many more actions.

jQuery is tailor-made to respond to many useful events that webpage can get. As a user triggers those events, custom function or actions can be performed by catching those events in event handlers.

Types of Events

Events in jQuery are broadly classified as:

- Mouse Events
- Document Events

Mouse Events

click event

Invokes when mouse is clicked.

```
1 ( 'p' ). click ( );
```

dblclick event

Invokes when mouse is double clicked.

```
1 $( document ). ready ( function () {  
2     $( 'p' ). dblclick ( function () {  
3         alert ( 'Welcome' );  
    }  
    }  
    );
```

```
4     });  
5  });
```

mouseenter event

Invokes when mouse enters on specified element.

```
1 $(document).ready(function(){  
2     $('p').mouseenter(function(){  
3         alert('Welcome');  
4     });  
5 });
```

mouseleave event

Invokes when mouse leaves the focus from the specified element.

```
1 $(document).ready(function(){  
2     $('p').mouseleave(function(){  
3         alert('Welcome');  
4     });  
5 });
```

hover event

Invokes when mouse is hovered.

```
1 $(document).ready(function(){  
2     $('#submit1').hover(function(){  
3         alert('Welcome');  
4     });  
5 });
```

Form Events

submit event

jQuery provided submit() method to handle submit event where a function can be attached to perform certain actions e.g. checking form fields before submitting to database.


```

1 $(document).ready(function(){
2     $('#submit1').submit(function(){
3         alert('Form will be submitted to server.');
```

change event

jQuery provides change() method to perform action or attach an event handler to change event.

When value of an element like textbox, dropdown, text area etc. is changed the change event occurs.

```

1 <!DOCTYPE html>
2 <html>
3     <head>
4         <script src='jquery -1.11.1.js'></script>
5         <script>
6             $(document).ready(function(){
7                 $('#s1').change(function(){
8                     $('#t1').css('color', $('#s1').val());
9                 });
10            });
11        </script>
12    </head>
13    <body>
14        <form>
15            <input type='text' id='t1'>
16            <select id='s1'>
17                <option value='red'>Red</option>
18                <option value='blue'>Blue</option>
19                <option value='green'>Green</option>
20            </select>
21        </form>
22    </body>
23 </html>
```

focus event

When user click on element or when user press tab key to move the focus from one element to another.

```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Insert title here</title>
5          <script src='jquery-1.11.1.js'></script>
6          <script>
7              $(document).ready(function(){
8                  $('#t2').focus(function(){
9                      $('#t1').css('color','magenta');
10                 });
11             });
12         </script>
13     </head>
14     <body>
15         <form>
16             <input type='text' id='t1' value='Changed Color'>
17             <input type='text' id='t2' value='Change the color of text 1'>
18         </form>
19     </body>
20 </html>
```