



Jquery- An Interactive Web Designing Tool in Web Domain

Mrs. Varsha P.Desai

Assistant Professor at V.P. Institute of Management Studies & Research, Sangli

Abstract: Today website designing is challenging task for interactive web development. Scripting is an important buzzword in website development scenario. Jquery is the one of the important technique for web designing. Web applications are dynamic environment for client and server interaction. Jquery provides various methods, events and plug-Ins that help to develop interactive web applications. It can be implemented with any web based language like asp, php, python, perl etc. The major issue related to website is cross browser compatibility, jquery is efficient tool for solving this problem interactively. This paper represents significance of jquery in web domain, features and components for interactive web development.

Keywords: CDN, CSS, DOM, HTML, Script.

Introduction: Today web application having highest demand in market. Development of interactive web application is challenging task for web developer. Web designing tools are significantly growing which helps for rapid and interactive web development. User friendly GUI create by implementing animation, effects, and colors shades attributes to attract and promote users for using web application. Web applications are dynamic environment which combines client side and server side programming that provide functionalities such as interacting with users, database manipulation and generating request through browser^[4]. Script is a program which can be run at background of web application to perform operation as per response of users. Each script represent text document that contains list of instructions that can be handle by script manager or web environment to perform automated activities in web application. It inhibits users from using complicated steps in order to reach desired result^[1]

Jquery is cross platform open source javascript library that simplifies

client side scripting by writing less code.^[13] It is implemented by 86.5% of all websites. It is most effective tool for high traffic websites to provide various effects with minimum efforts. E-commerce websites mostly used jquery to attract users and motivate them for using web applications. Jquery implementation is very easy that provide various function for interactive web development.^[2] Jquery syntax are used to navigate to the document, create animation, handles event and develop ajax application. It encourage developer to separate javascript code from HTML markup.^[3] Latest version of jquery is 3.1.1 released in Sep. 2016. This version solves issues of selector, whitespace and map file etc.^[12]

Objectives:

1. To study importance and features of jquery in web domain
2. To study architecture of jquery.

II. Features of Jquery:

1. **Lightweight Library:** Jquery library helps to enhance HTML and CSS functionality by handling various

- events, effects and animations. Jquery can be applied to tags, ids, selector, class etc.
- Separating design from action:** Jquery provide various functions and shorthand methods to perform different actions which separate your web page design HTML code and events. These actions are embedded within document.ready() function.
 - Browser compatibility:** javascript code that works for one browser may not be work for other browser. But jquery library handles these cross browser inconsistencies and provide consistent interface to work on different browsers.
 - Reduce code:** Jquery library consist of various methods to handle events and perform animation. Implementation of jquery methods leads to reduce size of code.
 - Extensibility:** We can add new methods, events, elements into jquery

- library. It provides extensibility and reusability of code.
- Ajax Support:** It is possible to handle cross browser ajax request using jquery. Jquery methods are used to load and manipulate remote data.
 - Jquery plugins:** We can create plugins by implementing jquery methods to handle different functionalities like web service, data grids, drag drop, events, cookies, XML and XSTL.^[3]

III] Component Architecture of JQuery:

Jquery is javascript library with API. It handles DOM (Document Object Modeling) and HTML using CSS, events, methods, animation and ajax interaction. When we select or create new object jquery create instance and return that object to array collection. DOM elements provide functionality to create interactive result. When we create or select jquery the result of jquery method will always wrapped into jquery object.^[5]

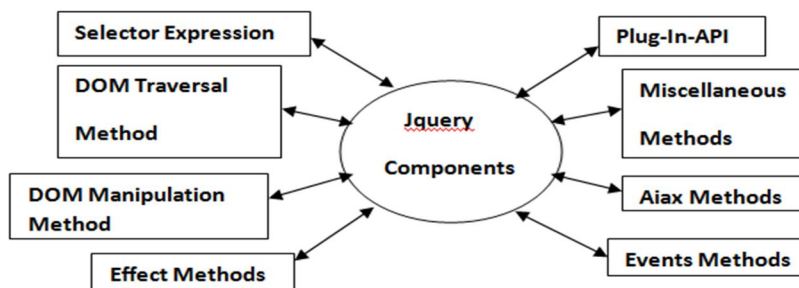


Fig1. Component Architecture of jquery.

- Plug-In-API:** JQuery plug-Ins is called extension of jquery. JQuery plug-ins are available in <https://jquery.com/plugins> repository. We can create new jquery plug-ins by adding new methods that returns jquery object. JQuery file must save with .js extension. JQuery plug-in for Ecommerce applications

- are available to fulfill common need of ecommerce websites. It includes credit card validation, zoom feature, product rating, slider, jcart, form, smart validate etc.^[6]
- Miscellaneous methods:** It include following methods:
 - add(): To attach data or get data from selected element.



- b. each(): Execute function for each matched element.
- c. get(): Get DOM element matched by selector.
- d. index(): Search element among match element
- e. RemoveData(): Removes previously stored data.
- f. ToArray(): Remove all the DOM element contain jquery setas array.
- g. \$param(): Serialized representation of array object.
- h. \$noConflict: Relasejquery control of \$ variable.^[7]
- 3. **Ajax methods:**Jqueryajax methods are used to develop interactive web application. It helps to update only part of webpage without reloading whole page. It include:
 - a. load(): Load data from server and return into selected element.
 - b. \$.get(): Load data from server using ajax HTTP get method.
 - c. \$.ajaxTransport(): Handle actual transmission of ajax data.
 - d. ajaxSuccess(): Specifies function to run when ajaxrequest complete successfully.^[8]
- 4. **Event Methods:** These methods are attaching a function to event handler for selected event to perform specific action. Itconsists of keyboard, mouse as well as load and unload events of element.
- 5. **Effect Methods:** These methods are used to provide animation effect to selected element. It include effects to move element, slide element, change opacity of element etc.
- 6. **DOM manipulation method:** It provides Javascript code interaction to get desired result. HTML and CSS are needed for DOM manipulation.^{2,3} attr(), HTML() and Val() methods are used for retrieving data from

DOM element. E.g. Inserting or removing element at specific event.^[9]

- 7. **DOM Traversal Method:** These methods are used to select document element randomly or sequentially. We can move from up, down or sideways in DOM tree so it called as DOM tree traversal. Generally used with list tags and <div> tags where hierarchy of tags is used. E.g. Display elements at particular index.^[10]
- 8. **Selector Expression:** It is important when we need to apply jquery for CSS elements. It is used to filter element that satisfy condition which is provided to selector. E.g Display even numbers from table row.^[11]

Example of JQuery:

```
<imgalt=""src="Tulips.jpg" id="img2"Width="153px"Height="124px"/>
<script type="text/jscript"src="jquery-3.1.0.js"></script>
<script type="text/jscript">
$(document).ready(function () {
$("#img2").click(function () {
$("#img2").animate({
left: '250px',
opacity: '0.5',
height: '300px',
width: '300px', });});});
</script>
```



Limitation of JQuery:

To implement jquery you need to add jquery library in your application or provide reference of online jquery CDN file.

It is difficult to analyses performance of selectors used in jquery.

Even though the large library is available, sometime need to customize code to fulfill our requirements.

4. JQuery is not sufficient for all client side requirements so we need to write JavaScript code too.
5. Many JQuery plugins are available but it is difficult to identify which is suitable for our application.

Before JQuery	After JQuery
 <p>Image is display using image tag and image name is img2. JQuery is applied on image.</p>	 <p>Jquery animate method is used to change size and opacity of image on click event.</p>

Conclusion: JQuery is a significant java script technique to improve performance of application by writing less code and do more functionality. JQuery open source library provide different features like animation effects, css manipulation, event handling, ajax, DOM traversal and manipulation etc. JQuery plug-ins is

available on internet to develop interactive web application. Code develops using jquery provides cross browser compatibility that is emerging issue of many web applications. We can download latest version jquery library file or work with online library for interactive web development.

References:

1. <https://www.ntchosting.com/encyclopedia/scripting-and-programming/script>
2. http://www-scf.usc.edu/~changwoo/itp104/Web_Article.html
3. <https://en.wikipedia.org/wiki/JQuery> on 9.11.2016 at 1.20pm
4. <http://www.comentum.com/guide-to-web-application-development.html>
5. <https://learn.jquery.com/using-jquery-core/jquery-object/> on 8.8.206 at 4.14pm
6. <https://webresourcesdepot.com/best-jquery-plugins-for-ecommerce/>
7. http://www.w3schools.com/jquery/jquery_ref_misc.asp
8. http://www.w3schools.com/jquery/jquery_ref_ajax.asp on 6.7.2016 at 2.30pm
9. <https://www.tutorialspoint.com/jquery/jquery-dom.htm>
10. http://www.w3schools.com/jquery/jquery_traversing.asp
11. <http://www.j2eebrain.com/java-J2ee-jquery-architecture.html> on 10.11.2016 at 10.20a.m
12. <https://blog.jquery.com/2016/05/19/jquery-migrate-1-4-1-released-and-the-path-to-jquery-3-0/>
13. Dr. Samrat Vivekanand O Khanna, Mijjal Mistry "Impact of jquery in web domain", IJERSE, ISSN-22-77-128-XX