

What is jQuery

jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML. jQuery is the most popular JavaScript library in use today, with installation on 65% of the top 10 million highest-trafficked sites on the Web. jQuery is free, open-source software licensed under the MIT License.

jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications. jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects and high-level, theme-able widgets. The modular approach to the jQuery library allows the creation of powerful dynamic web pages and web applications.

jQuery, at its core, is a DOM (Document Object Model) manipulation library. The DOM is a tree-structure representation of all the elements of a web-page and jQuery simplifies the syntax for finding, selecting, and manipulating these DOM elements. For example, jQuery can be used for finding an element in the document with a certain property (e.g. all elements with an h1 tag), changing one or more of its attributes (e.g. color, visibility), or making it respond to an event (e.g. a mouse click).

jQuery also provides a paradigm for event handling that goes beyond basic DOM element selection and manipulation. The event assignment and the event callback function definition are done in a single step in a single location in the code. jQuery also aims to incorporate other highly used JavaScript functionality (e.g. fade ins and fade outs when hiding elements, animations by manipulating CSS properties).

The advantages of using jQuery are:

- Encourages separation of JavaScript and HTML: The jQuery library provides simple syntax for adding event handlers to the DOM using JavaScript, rather than adding HTML event attributes to call JavaScript functions. Thus, it encourages developers to completely separate JavaScript code from HTML markup.
- Brevity and clarity: jQuery promotes brevity and clarity with features like chainable functions and shorthand function names.
- Eliminates cross-browser incompatibilities: The JavaScript engines of different browsers differ slightly so JavaScript code that works for one browser may not work for another. Like other JavaScript toolkits, jQuery handles all these cross-browser inconsistencies and provides a consistent interface that works across different browsers.
- Extensible: New events, elements, and methods can be easily added and then reused as a plugin.