

9.1 Getting started with jQuery

JavaScript libraries

Writing JavaScript that creates dynamic, interactive webpages that work across all browsers can be very tedious, often requiring many lines of brittle code. Developers typically rely on libraries to ease the burden of writing such code. A **library** is a collection of functions that focus on a related set of tasks. **jQuery** is a popular JavaScript library that focuses on a broad range of tasks, many of them associated with the visual elements of a webpage.

Library vs. framework

*New JavaScript developers are sometimes confused about the difference between a "library" and a "framework". A **framework** is a suite of libraries designed to offer a more comprehensive platform in which to program. When using a framework, the program's flow is dictated by the framework, not the programmer. Examples of popular JavaScript frameworks include [AngularJS](#), [Ember](#), and [Backbone.js](#).*

Table 9.1.1: Common tasks performed by jQuery.

DOM manipulation	Find, alter, add, or remove DOM elements
User interaction	Respond to mouse clicks, mouse movement, or typing
Animation	Smoothly show, hide, or move webpage elements
Widgets	Display and manage the interaction of complex GUI elements
Ajax	Issue asynchronous HTTP requests and handle responses
Browser quirks	Handle inconsistencies across different browsers

[Feedback?](#)**PARTICIPATION
ACTIVITY**

9.1.1: jQuery tasks.



Match the tasks performed by jQuery to the corresponding example.

If unable to drag and drop, refresh the page.

User interaction	Respond to the user clicking a button. jQuery provides functions to add event handlers.	Correct
Browser quirks	Write code that works in older versions of Internet Explorer. jQuery works consistently in all browsers.	Correct
Widgets	Display a date picker. jQuery plugins display customizable widgets like date pickers, dialog boxes, and sliders.	Correct
Animation	Fade an image into view. jQuery provides functions to animate the display and hiding of DOM elements.	Correct
Ajax	Interact with a web API. jQuery simplifies writing Ajax code that makes HTTP requests.	Correct
DOM manipulation	Add a new item to a list. jQuery provides functions to add new DOM elements or alter or remove existing elements.	Correct

Reset[Feedback?](#)

Accessing the jQuery library

The jQuery library can be obtained from jquery.com. Version 3 is the latest version. After downloading the library, developers often place the library in a standard location on their web server. Webpages that use jQuery import the library as shown in the figure below. The filename contains a version number (3.5.1), and the ".min" means the code has been minified to download quicker.

Figure 9.1.1: Downloading jQuery library from the local web server.

```
<script src="jquery-3.5.1.min.js">
</script>
```

[Feedback?](#)

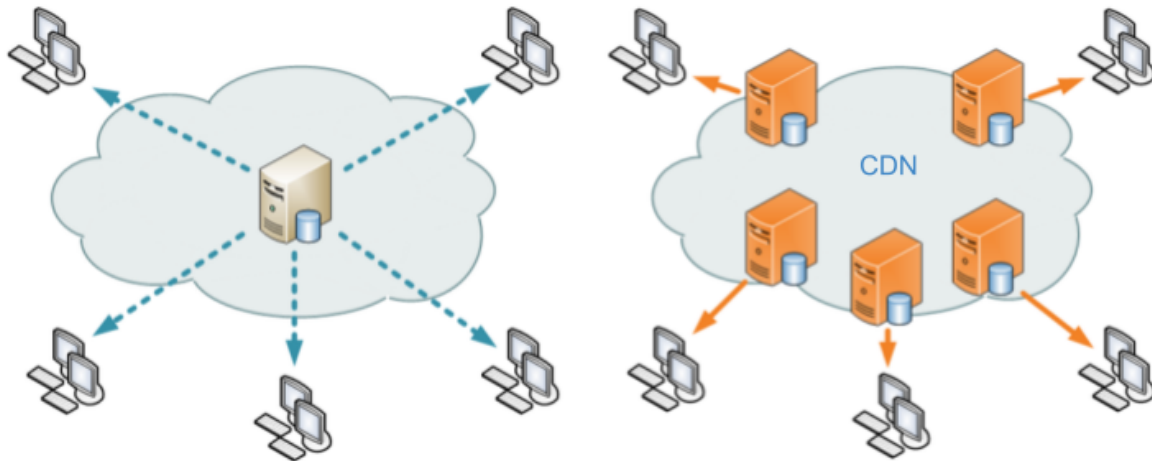
Another option is to write webpages that download the jQuery library from a CDN. A **Content Delivery Network (CDN)** hosts popular web files around the globe and automatically routes requests to the closest server, thus speeding up the delivery of the files. The figure below shows how to import the jQuery library from a CDN. The **integrity** and **crossorigin** attributes are used for **Subresource Integrity (SRI)** checking, which allows web browsers to verify resources hosted on third-party servers have not been altered.

Figure 9.1.2: Downloading jQuery library from the code.jquery.com CDN.

```
<script
  src="https://code.jquery.com/jquery-3.5.1.min.js"
  integrity="sha256-
9/aliU8dGd2tb6OSsuzixeV4y/faTqgFtohetphbbj0="
  crossorigin="anonymous"></script>
```

[Feedback?](#)

Figure 9.1.3: Single server distribution vs. CDN distribution.



Source: [Kanoa](#) / [CC BY-SA 3.0](#)

[Feedback?](#)

**PARTICIPATION
ACTIVITY**

9.1.2: Loading the jQuery library.



- 1) Older versions of Query can be downloaded from the jQuery website.

☒ True
☐ False

Correct

Older versions like 1 and 2 are available, but version 3 does everything the previous versions do and more. A version called jQuery-Compat 3 can even run on old web browsers like Internet Explorer 8.



- 2) The jQuery library will almost always download faster to the browser using a CDN than from a webpage's server.

☒ True
☐ False

Correct

CDNs are almost always located geographically closer to the browser downloading the library, and the CDN servers are quick to respond to requests. Also, the jQuery library could be cached by the browser since many sites use CDNs to download jQuery.



- 3) Other CDNs besides code.jquery.com exist.

☒ True
☐ False

Correct

The jQuery website lists other CDNs from Google, Microsoft, and others.



[Feedback?](#)

The jQuery() function

The jQuery library defines a primary function called **jQuery()**. The function behaves differently depending on what arguments are passed to **jQuery()**, but the function always returns a **jQuery** object. *Good practice is to use variables that start with "\$" to hold jQuery objects.*

PARTICIPATION
ACTIVITY

9.1.3: Creating jQuery objects from DOM nodes.



Start



2x speed

```
<!DOCTYPE HTML>
<html lang="en">
  <title>jQuery Example</title>
  <script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
  <body>
    <p id="hello">Hello, jQuery!</p>
    <p>This stuff is great!</p>
    <script>
      let helloPar = document.getElementById("hello");
      let $helloPar = jQuery(helloPar);
      let allParas = document.getElementsByTagName("p");
      let $allParas = jQuery(allParas);
    </script>
  </body>
</html>
```

helloPar	<p>	DOM node
\$helloPar	[<p>]	jQuery obj
allParas	[<p>,<p>]	DOM node array
\$allParas	[<p>,<p>]	jQuery obj

Captions ^

1. The <script> tag downloads the jQuery library.
2. getElementById() finds the element with ID "hello" and returns the first <p> DOM node.
3. The jQuery() function creates a jQuery object with the <p> DOM node.
4. getElementsByTagName() finds all paragraphs and returns an array of DOM nodes.
5. The jQuery() function creates a jQuery object from the array of DOM nodes.

Feedback?

The **\$()** function is the same as the **jQuery()** function, which developers often use to type less code.

Figure 9.1.4: Using the \$() function.

```
let $p = $(document.getElementById("hello"));

// same as
let $p =
jQuery(document.getElementById("hello"));
```

[Feedback?](#)**PARTICIPATION
ACTIVITY**9.1.4: The `jQuery()` and `$()` functions.

- 1) If the jQuery library is not downloaded to the user's browser, using `$()` will result in a syntax error.

☒ True
☐ False

Correct

`$()` and `jQuery()` are only defined if the jQuery library is downloaded.



- 2) `$(x)` is equivalent to `jQuery(x)`, where `x` contains a DOM node.

☒ True
☐ False

Correct

Developers typically use `$()` to type less code.



- 3) The `jQuery` object contains a collection of DOM nodes.

☒ True
☐ False

Correct

Passing a single DOM node to the `$()` function creates a collection containing that single DOM node.



- 4) The `jQuery` object returned by `$()` must be stored in a variable that begins with `$`.

☐ True
☒ False

Correct

Good practice is to store `jQuery` objects in variables that start with `$`, but the `$` is not required.

[Feedback?](#)

Exploring further:

- [jQuery API](#)
- [Subresource Integrity](#) from W3C
- [jQuery\(\) function](#)

How was
this
section?



Provide section feedback