

What is jQuery?

jQuery is a fast, small, and feature-rich **JavaScript library** designed to simplify the client-side scripting of HTML. It provides an easy-to-use API that works across a wide range of browsers, making it a popular tool for web developers.

Key Features of jQuery

- 1. DOM Manipulation**
 - Enables dynamic changes to HTML elements, attributes, styles, and content.
 - Example: Add, remove, or modify elements in the DOM tree.
- 2. Event Handling**
 - Simplifies attaching event listeners to elements, such as `click`, `hover`, or `submit`.
- 3. Animation Effects**
 - Built-in methods for creating animations, such as fading, sliding, or toggling elements.
- 4. AJAX Support**
 - Allows easy handling of asynchronous HTTP requests for dynamically updating content without reloading the page.
- 5. Cross-Browser Compatibility**
 - Abstracts browser-specific quirks, providing a uniform API for different browsers.
- 6. CSS Manipulation**
 - Allows reading and changing CSS properties of elements.

1. Basic jQuery Syntax

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

- **\$:** Denotes jQuery.
- **selector:** Specifies the HTML element(s) to select.
- **action:** Specifies what jQuery should do (e.g., manipulate content, style, events).

2. jQuery Selectors

Selector	Example	Description
<code>*</code>	<code>\$("*")</code>	Selects all elements.
<code>#id</code>	<code>\$("#id")</code>	Selects an element with the specified ID.
<code>.class</code>	<code>\$(".class")</code>	Selects all elements with the specified class.

Selector	Example	Description
Element	<code>\$("p")</code>	Selects all <code><p></code> elements.
element1, element2	<code>\$("h1, h2")</code>	Selects all <code><h1></code> and <code><h2></code> elements.
<code>:first</code>	<code>\$("p:first")</code>	Selects the first <code><p></code> element.
<code>:last</code>	<code>\$("p:last")</code>	Selects the last <code><p></code> element.
<code>:eq(index)</code>	<code>\$("li:eq(1)")</code>	Selects the <code></code> element at index 1.
<code>:even</code>	<code>\$("tr:even")</code>	Selects even <code><tr></code> rows in a table.
<code>:odd</code>	<code>\$("tr:odd")</code>	Selects odd <code><tr></code> rows in a table.
<code>[attribute]</code>	<code>\$("[href]")</code>	Selects elements with the specified attribute.
<code>[attribute=value]</code>	<code>\$("[type='text']")</code>	Selects elements with a specific attribute value.
<code>:contains(text)</code>	<code>\$(":contains('Hello')")</code>	Selects elements containing the specified text.
<code>:hidden</code>	<code>\$(":hidden")</code>	Selects all hidden elements.
<code>:visible</code>	<code>\$(":visible")</code>	Selects all visible elements.

3. Examples

1. Change text content

```
$("#btn").click(function() {
    $("p").text("Hello, jQuery!");
});
```

2. Hide all paragraphs

```
$("p").hide();
```

3. Change CSS of an element

```
$("h1").css("color", "blue");
```

4. Commonly Used jQuery Functions

Function	Description
<code>.hide()</code>	Hides the selected elements.
<code>.show()</code>	Shows the selected elements.
<code>.toggle()</code>	Toggles between hiding and showing elements.
<code>.fadeIn()</code>	Fades in the selected elements.

Function	Description
<code>.fadeOut()</code>	Fades out the selected elements.
<code>.slideUp()</code>	Slides up (hides) the selected elements.
<code>.slideDown()</code>	Slides down (shows) the selected elements.
<code>.animate()</code>	Performs custom animations on selected elements.
<code>.val()</code>	Gets or sets the value of form elements.
<code>.html()</code>	Gets or sets the HTML content of elements.
<code>.text()</code>	Gets or sets the text content of elements.
<code>.append()</code>	Inserts content at the end of selected elements.
<code>.prepend()</code>	Inserts content at the beginning of selected elements.
<code>.on()</code>	Attaches event handlers to elements.
<code>.off()</code>	Removes event handlers from elements.
<code>.addClass()</code>	Adds a specified class to elements.
<code>.removeClass()</code>	Removes a specified class from elements.
<code>.attr()</code>	Gets or sets the attribute of elements.
<code>.remove()</code>	Removes selected elements.

Sample:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>jQuery Basics Example</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
  <style>
    .highlight {
      background-color: yellow;
    }
    .hidden {
      display: none;
    }
  </style>
</head>
<body>
  <h1 id="main-heading">Welcome to jQuery Basics</h1>
  <button id="change-text">Change Text</button>
  <button id="toggle-class">Toggle Highlight</button>
  <button id="hide-paragraphs">Hide Paragraphs</button>
  <button id="show-paragraphs">Show Paragraphs</button>
  <button id="fade-in">Fade In Box</button>
  <button id="fade-out">Fade Out Box</button>
```

```
<button id="slide-toggle">Slide Toggle Box</button>
```

```
<p class="paragraph">This is the first paragraph.</p>
```

```
<p class="paragraph">This is the second paragraph.</p>
```

```
<div id="box" class="hidden" style="width: 100px; height: 100px; background-color: red; margin-top: 20px;"></div>
```

```
<form id="my-form">
```

```
  <label for="input-text">Enter text: </label>
```

```
  <input type="text" id="input-text">
```

```
  <button type="submit">Submit</button>
```

```
</form>
```

```
<script>
```

```
  $(document).ready(function () {
```

```
    // 1. Change text of the main heading
```

```
    $("#change-text").click(function () {
```

```
      $("#main-heading").text("jQuery Makes JavaScript Easier!");
```

```
    });
```

```
    // 2. Toggle highlight class on paragraphs
```

```
    $("#toggle-class").click(function () {
```

```
      $(".paragraph").toggleClass("highlight");
```

```
    });
```

```
    // 3. Hide all paragraphs
```

```
    $("#hide-paragraphs").click(function () {
```

```
      $(".paragraph").hide();
```

```
    });
```

```
    // 4. Show all paragraphs
```

```
    $("#show-paragraphs").click(function () {
```

```
      $(".paragraph").show();
```

```
    });
```

```
    // 5. Fade out and fade in box
```

```
    $("#fade-out").click(function () {
```

```
      $("#box").fadeOut();
```

```
    });
```

```
    $("#fade-in").click(function () {
```

```
      $("#box").fadeIn();
```

```
    });
```

```
    // 6. Slide toggle box
```

```
    $("#slide-toggle").click(function () {
```

```
      $("#box").slideToggle();
```

```
    });
```

```
// 7. Capture input and display it
$("#my-form").submit(function (e) {
  e.preventDefault(); // Prevent form submission
  const inputValue = $("#input-text").val();
  alert("You entered: " + inputValue);
});
});
</script>
</body>
</html>
```