

## JQuery

## PART-2

*JQuery - Syntax, Selectors, Events.*

**jQuery** is a **fast, lightweight, and feature-rich** JavaScript library designed to simplify client-side scripting of HTML.

- ❖ It was created by **John Resig in 2006** and quickly became one of the most widely used libraries on the web.
- ❖ Its main goal is: *“Write less, do more.”*
- ❖ That means instead of writing long JavaScript code, you can achieve the same functionality with fewer lines using jQuery.

### Why Do We Need jQuery?

Writing pure JavaScript can sometimes be:

- Long and complicated
- Different in different browsers (cross-browser issues)
- ❖ jQuery provides **shorter code, cross-browser compatibility, and many built-in features.**

### Example:

```
// Without jQuery (JavaScript)
document.getElementById("demo").style.color = "red";

// With jQuery
$("#demo").css("color", "red");
```

### Features of jQuery

1. **DOM Manipulation** – Easily add, remove, and change HTML elements.
2. **CSS Manipulation** – Change style properties dynamically.
3. **Event Handling** – Simplified handling of events (click, hover, etc.).

4. **Animations/Effects** – Hide/Show, Fade, Slide, Toggle, Animate.
5. **AJAX Support** – Load data asynchronously without reloading the page.
6. **Cross-Browser Compatibility** – Works smoothly on all major browsers.
7. **Plugins** – Thousands of free plugins to extend functionality.

## How to Use jQuery

### 1. Include jQuery

Two ways:

- **CDN (Recommended)**

```
<script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
```

- **Download and Link Locally**

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

### 2. Document Ready Function

Always make sure the DOM is fully loaded before running jQuery:

```
$(document).ready(function(){  
    //jQuery code goes here  
});
```

## Basic Syntax of jQuery

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

- `$` → jQuery symbol
- `selector` → HTML element(s)
- `action()` → jQuery method

### Example:

```
$("#demo").hide();    // Hides element with id=demo  
$(".box").show();     // Shows all elements with class=box  
$("p").css("color","blue"); // Changes color of all <p> tags
```

### Common Selectors in jQuery

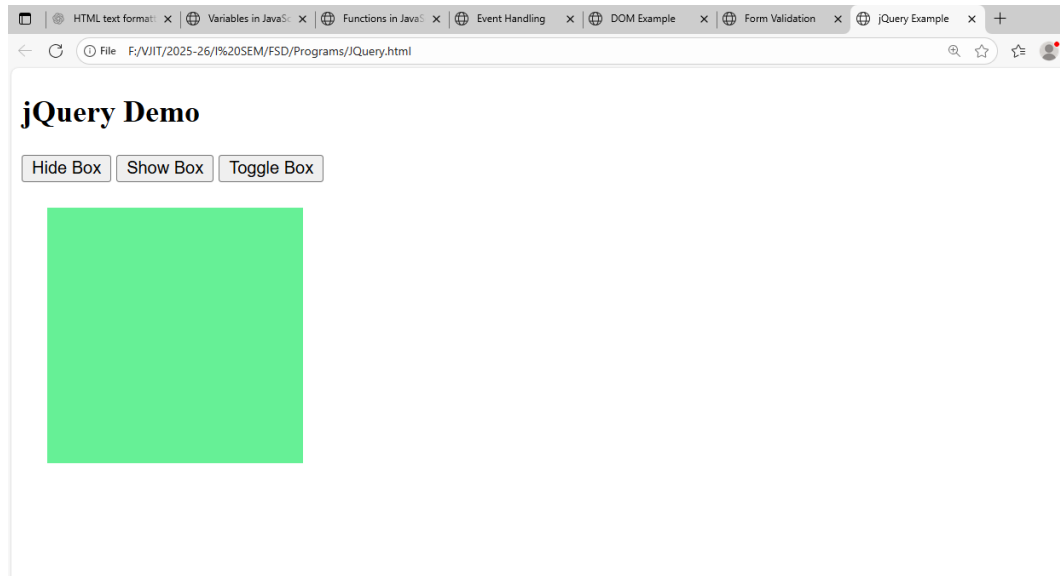
Selector	Example	Meaning
#id	\$("#myId")	Selects element with id myId
.class	\$(".myClass")	Selects all elements with class myClass
tag	\$("p")	Selects all <p> elements
*	\$("*")	Selects all elements
this	\$(this)	Refers to the current element

#### Example:

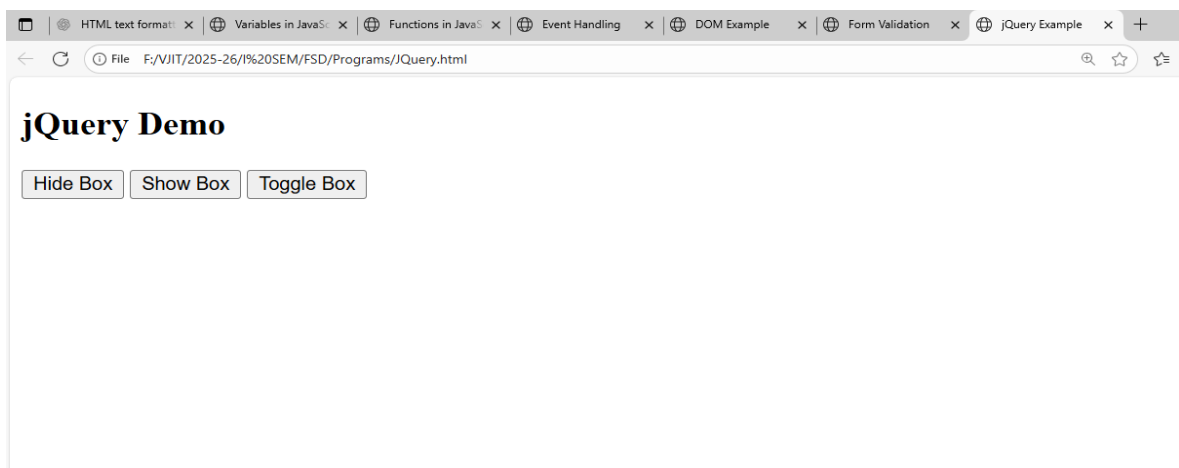
```
<!DOCTYPE html>
<html>
<head>
  <title>jQuery Example</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
  <style>
    #box { width:200px; height:200px; background:lightgreen; margin:20px; }
  </style>
</head>
<body>
  <h2>jQuery Demo</h2>
  <button id="btn1">Hide Box</button>
  <button id="btn2">Show Box</button>
  <button id="btn3">Toggle Box</button>
  <div id="box"></div>

  <script>
    $(document).ready(function(){
      $("#btn1").click(function(){ $("#box").hide(); });
      $("#btn2").click(function(){ $("#box").show(); });
      $("#btn3").click(function(){ $("#box").toggle(); });
    });
  </script>
</body>
</html>
```

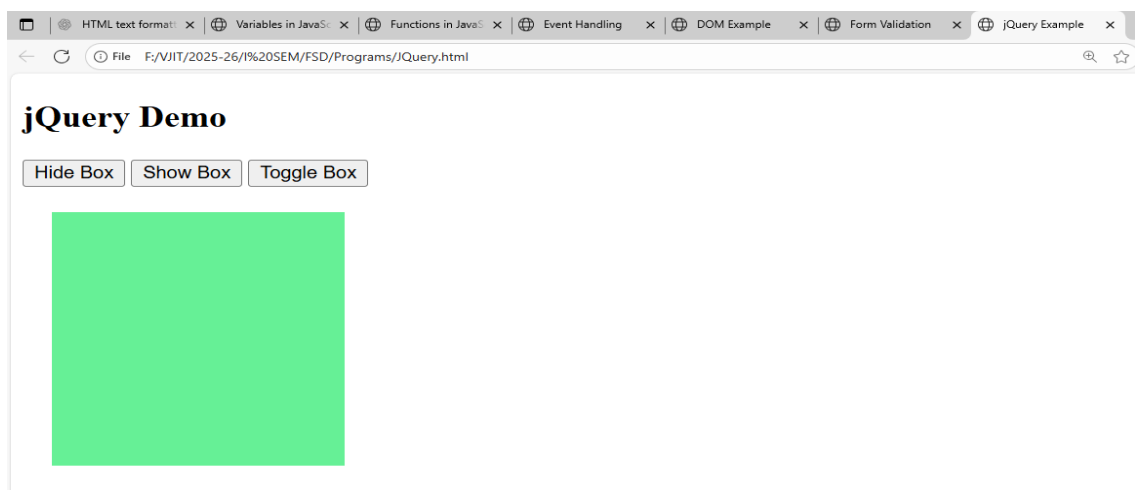
## Explanation:



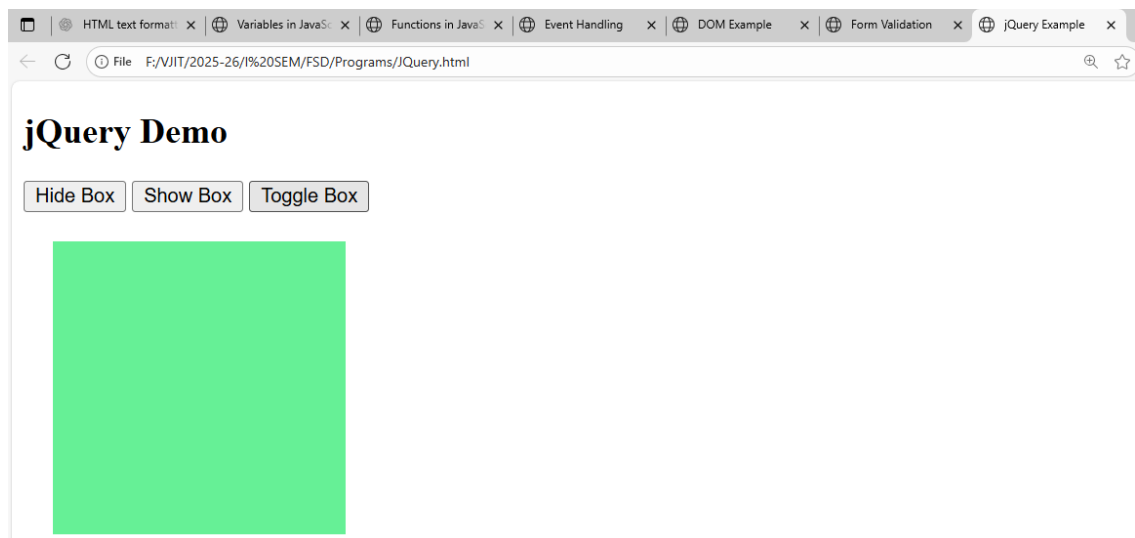
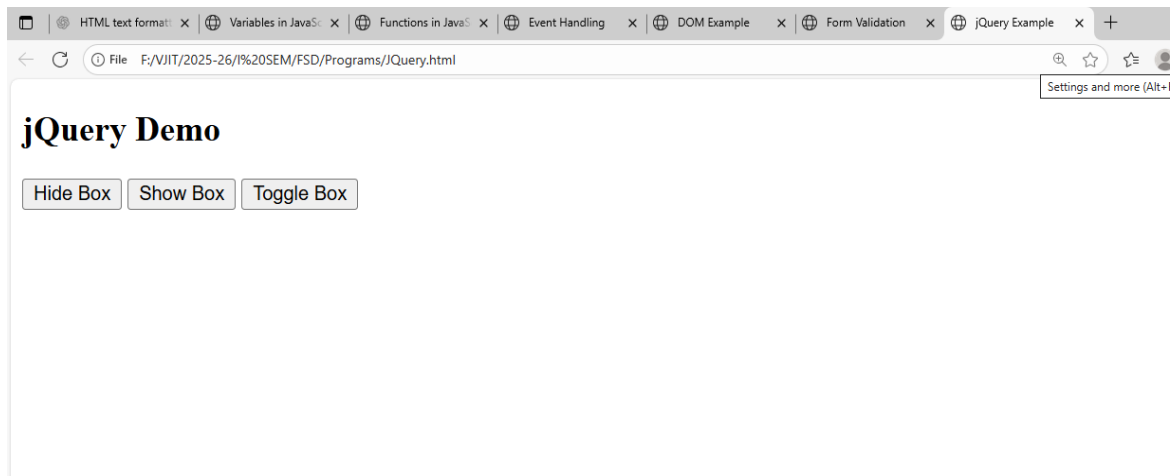
- #btn1 **hides** the box.



- #btn2 **shows** the box.



- #btn3 **toggles** the box (**show/hide**).



### Advantages of jQuery

- ✓ Simple and concise syntax
- ✓ Reduces cross-browser issues
- ✓ Large community and plugin support
- ✓ Speeds up development time
- ✓ Lightweight (only ~90 KB)

### Disadvantages of jQuery

- ✗ Not always needed (modern JavaScript has many similar features like querySelector, fetch, etc.)
- ✗ Adds dependency on an external library
- ✗ Slower than pure JavaScript in performance-heavy applications

**Summary:**

- jQuery is a **JavaScript library** that simplifies coding.
- It is widely used for **DOM manipulation, event handling, animations, and AJAX**.
- Syntax is easy: `$(selector).action()`.

**Commonly Used jQuery Methods**

Method	Syntax	Description	Example
<b>hide()</b>	<code>\$(selector).hide();</code>	Hides selected elements	<code>\$("#box").hide();</code>
<b>show()</b>	<code>\$(selector).show();</code>	Shows hidden elements	<code>\$(".menu").show();</code>
<b>toggle()</b>	<code>\$(selector).toggle();</code>	Toggles between hide/show	<code>\$("#info").toggle();</code>
<b>fadeIn()</b>	<code>\$(selector).fadeIn(speed);</code>	Fades in elements	<code>\$(".img").fadeIn(1000);</code>
<b>fadeOut()</b>	<code>\$(selector).fadeOut(speed);</code>	Fades out elements	<code>\$(".img").fadeOut(1000);</code>
<b>fadeToggle()</b>	<code>\$(selector).fadeToggle(speed);</code>	Toggles fade in/out	<code>\$("#div1").fadeToggle();</code>
<b>slideDown()</b>	<code>\$(selector).slideDown(speed);</code>	Slides element down	<code>\$("#menu").slideDown();</code>
<b>slideUp()</b>	<code>\$(selector).slideUp(speed);</code>	Slides element up	<code>\$("#menu").slideUp();</code>
<b>slideToggle()</b>	<code>\$(selector).slideToggle(speed);</code>	Toggles slide up/down	<code>\$("#menu").slideToggle();</code>
<b>css()</b>	<code>\$(selector).css(property, value);</code>	Changes CSS style	<code> \$("p").css("color", "red");</code>
<b>attr()</b>	<code>\$(selector).attr("attribute", "value");</code>	Gets/Sets attribute value	<code> \$("img").attr("src", "pic.jpg");</code>
<b>html()</b>	<code>\$(selector).html(content);</code>	Sets/gets HTML content	<code> \$("#demo").html("&lt;b&gt;Hi&lt;/b&gt;");</code>

<b>text()</b>	<code>\$(selector).text(content);</code>	Sets/gets text content	<code>\$(".msg").text("Hello!");</code>
<b>val()</b>	<code>\$(selector).val();</code>	Gets/sets form values	<code>\$("#name").val("Kishore");</code>
<b>append()</b>	<code>\$(selector).append(content);</code>	Adds content inside element (end)	<code>\$("#list").append("&lt;li&gt;Item&lt;/li&gt;");</code>
<b>prepend()</b>	<code>\$(selector).prepend(content);</code>	Adds content inside element (beginning)	<code>\$("#list").prepend("&lt;li&gt;First&lt;/li&gt;");</code>
<b>after()</b>	<code>\$(selector).after(content);</code>	Adds content <b>after</b> element	<code>\$("p").after("&lt;hr&gt;");</code>
<b>before()</b>	<code>\$(selector).before(content);</code>	Adds content <b>before</b> element	<code>\$("p").before("&lt;h2&gt;Title&lt;/h2&gt;");</code>
<b>remove()</b>	<code>\$(selector).remove();</code>	Removes selected element	<code>\$("#demo").remove();</code>
<b>empty()</b>	<code>\$(selector).empty();</code>	Clears content inside element	<code>\$("#box").empty();</code>
<b>addClass()</b>	<code>\$(selector).addClass("class");</code>	Adds CSS class	<code>\$("p").addClass("highlight");</code>
<b>removeClass()</b>	<code>\$(selector).removeClass("class");</code>	Removes CSS class	<code>\$("p").removeClass("highlight");</code>
<b>toggleClass()</b>	<code>\$(selector).toggleClass("class");</code>	Toggles CSS class	<code>\$("p").toggleClass("highlight");</code>
<b>on()</b>	<code>\$(selector).on("event", function);</code>	Attaches event handler	<code>\$("#btn").on("click", function(){ alert("Clicked"); });</code>
<b>off()</b>	<code>\$(selector).off("event");</code>	Removes event handler	<code>\$("#btn").off("click");</code>

## jQuery Selectors

In **jQuery**, **selectors** are used to find and select HTML elements so that you can manipulate them (change content, style, events, etc.).

- ❖ They are based on **CSS selectors** but enhanced with extra features.
- ❖ With these, you can do **animations, DOM manipulation, CSS styling, and event handling** easily with jQuery.

**Syntax:**

***\$(selector).action();***

- **\$** → Access jQuery.
- **selector** → Used to find (select) HTML elements.
- **action()** → Method to be performed (hide, show, css, etc.).

### 1. Basic Selectors

Selector	Example	Description
*	\$("#*")	Selects all elements
#id	\$("#demo")	Selects element with specific id
.class	\$(".box")	Selects all elements with a class
element	\$("#p")	Selects all <p> elements
group	\$("#p, h1, .box")	Selects multiple element types

### 2. Hierarchy Selectors

Selector	Example	Description
ancestor descendant	\$("#div p")	Selects all <p> inside <div>
parent > child	\$("#div > p")	Selects <b>direct children</b> <p> of <div>
prev + next	\$("#h1 + p")	Selects first <p> immediately after <h1>
prev ~ siblings	\$("#h1 ~ p")	Selects all <p> siblings after <h1>



### 3. Attribute Selectors

Selector	Example	Description
[attr]	\$("[href]")	Selects elements with attribute
[attr='value']	\$("[type='text']")	Selects elements with given attribute value
[attr!='value']	\$("[type!='text']")	Not equal
[attr^='val']	\$("[name^='user']")	Starts with
[attr\$='val']	\$("[name\$='name']")	Ends with
[attr*='val']	\$("[title*='hello']")	Contains

### 4. Form Selectors

Selector	Example	Description
:input	\$(":input")	Selects all input elements
:text	\$(":text")	Text fields
:password	\$(":password")	Password fields
:checkbox	\$(":checkbox")	Checkboxes
:radio	\$(":radio")	Radio buttons
:submit	\$(":submit")	Submit button
:selected	\$(":selected")	Selected option
:checked	\$(":checked")	Checked inputs

### 5. Content Selectors

Selector	Example	Description
:contains("text")	\$(":contains('Hello')")	Selects elements with text
:empty	\$(":empty")	Elements with no children
:has(selector)	\$("div:has(p)")	Divs containing <p>
:parent	\$(":parent")	Elements with children

### 6. Visibility Selectors

Selector	Example	Description
:hidden	\$(":hidden")	Hidden elements
:visible	\$(":visible")	Visible elements

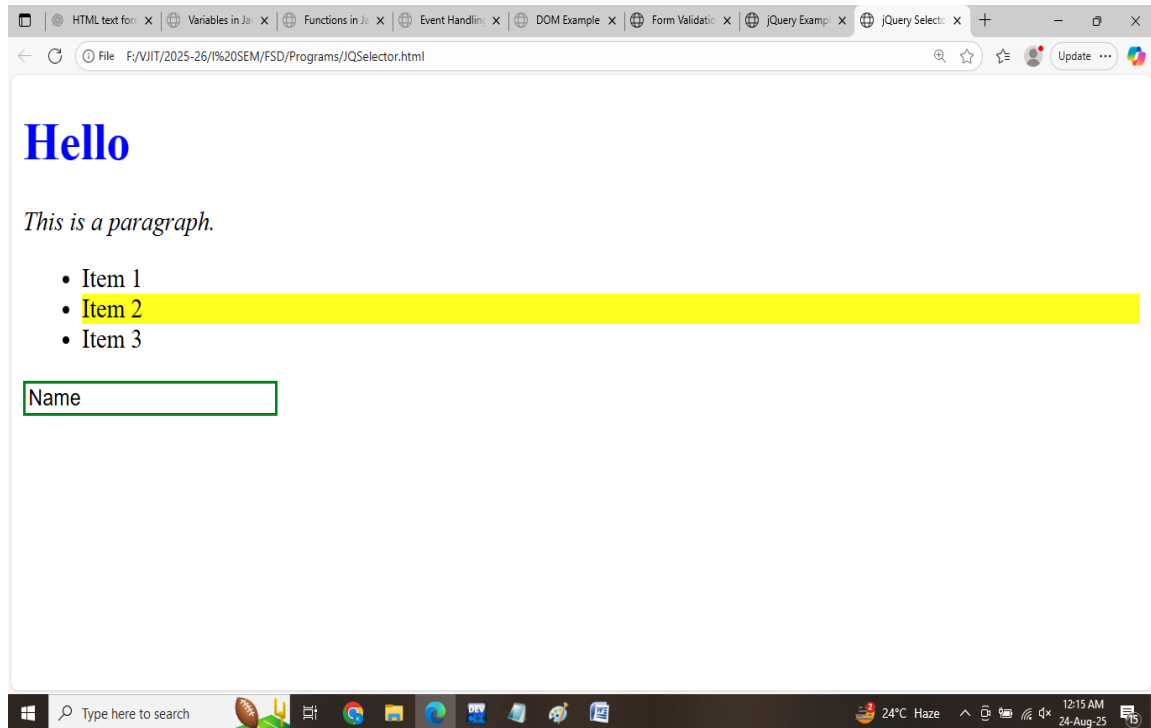
## 7. Child Filters

Selector	Example	Description
:first-child	\$("p:first-child")	First child
:last-child	\$("p:last-child")	Last child
:nth-child(n)	\$("p:nth-child(2)")	Second child
:only-child	\$("p:only-child")	Elements that are only child

### Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>jQuery Selectors</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
</head>
<body>

  <h1 id="main">Hello</h1>
  <p class="intro">This is a paragraph.</p>
  <ul id="list">
    <li>Item 1</li>
    <li class="highlight">Item 2</li>
    <li>Item 3</li>
  </ul>
  <input type="text" value="Name">
  <script>
    $(document).ready(function(){
      $("#main").css("color", "blue");    // ID selector
      $(".intro").css("font-style", "italic"); // Class selector
      ("li.highlight").css("background", "yellow"); // Class + element
      $("input[type='text']").css("border", "2px solid green"); // Attribute
    });
  </script>
</body>
</html>
```

**Output:**

## jQuery Events

**Events** are actions or occurrences (like a button click, mouse movement, or form submission) that a web page can respond to.

### Syntax:

```
$(selector).event(function(){
    // code to be executed when event occurs
});
```

### 1. Mouse Events

Event	Example	Description
click()	<code>\$("#btn").click(function(){ ... });</code>	Fires when element is clicked
dblclick()	<code>\$("#btn").dblclick(function(){ ... });</code>	Double click
mouseenter()	<code>\$("#box").mouseenter(function(){ ... });</code>	Mouse enters element
mouseleave()	<code>\$("#box").mouseleave(function(){ ... });</code>	Mouse leaves element
hover()	<code>\$("#box").hover(fnIn, fnOut);</code>	Combines mouseenter and mouseleave
mousedown()	Fires when mouse button is pressed	
mouseup()	Fires when mouse button is released	
mousemove()	Fires when mouse moves inside element	

### 2. Keyboard Events

Event	Example	Description
keypress()	<code>\$("#name").keypress(function(){ ... });</code>	Key is pressed
keydown()	Fires when key is pressed down	
keyup()	Fires when key is released	

### 3. Form Events

Event	Example	Description
submit()	<code>\$("form").submit(function(){ ... });</code>	Form submission
change()	<code>\$("#city").change(function(){ ... });</code>	When value changes (input, select)
focus()	<code>\$("#name").focus(function(){ ... });</code>	Input gains focus
blur()	<code>\$("#name").blur(function(){ ... });</code>	Input loses focus

### 4. Document/Window Events

Event	Example	Description
ready()	<code>\$(document).ready(function(){ ... });</code>	Runs after DOM is ready
load()	<code>\$(window).load(function(){ ... });</code>	Runs after full page loads (including images)
resize()	<code>\$(window).resize(function(){ ... });</code>	When window is resized
scroll()	<code>\$(window).scroll(function(){ ... });</code>	When page is scrolled

### 5. Event Binding Methods

- **on()** → Recommended way to attach event handlers.

```
$("#btn").on("click", function(){
    alert("Button Clicked!");
});
```

- **off()** → Removes event handler.

```
$("#btn").off("click");
```

- **one()** → Runs only once.

```
$("#btn").one("click", function(){
    alert("This will run only once!");
});
```

**Example:**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>jQuery Events</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
</head>
<body>
  <button id="btn">Click Me</button>
  <input type="text" id="name" placeholder="Type here">
  <p id="msg"></p>
  <script>
    $(document).ready(function(){
      // Button click
      $("#btn").click(function(){
        alert("Button was clicked!");
      });
      // Keyboard input
      $("#name").keyup(function(){
        $("#msg").text("You typed: " + $(this).val());
      });
    });
  </script>
</body>
</html>
```

**Output:**