

What Are Events in JavaScript?

An **event** in JavaScript is an action that happens in the browser. JavaScript can *listen* for these actions and respond to them.

Examples of events:

- Clicking a button
- Moving the mouse
- Typing on the keyboard
- Scrolling the page
- Loading the webpage
- Submitting a form

Events allow you to make web pages **interactive**.

How to Use Events in JavaScript

JavaScript provides **three main ways** to handle events.

1. Inline Event Handling (HTML attribute)

Writing the event directly inside the HTML element.

```
<button onclick="alert('Button clicked')">Click Me</button>
```

Simple, but not recommended for big projects.

2. Using JavaScript Property

Assigning a function to an event property.

```
<button id="btn">Click Here</button>
```

```
<script>
document.getElementById("btn").onclick = function () {
    alert("Button was clicked");
};
</script>
```

Works well, but it can only attach **one** event handler.

3. Using `addEventListener()` (Best Method)

The recommended and modern method.

```
<button id="btn">Click Me</button>
```

```
<script>
document.getElementById("btn").addEventListener("click", function () {
    alert("Button clicked using addEventListener()");
});
</script>
```

Benefits:

- You can attach **multiple** event handlers
 - Clean and professional
 - Works for all events
-

Common Event Types With Examples

Click Event

```
<button id="saveBtn">Save</button>
```

```
<script>
document.getElementById("saveBtn").addEventListener("click", function() {
    console.log("Save button clicked");
});
</script>
```

Mouse Events

Mouse Over

```
<div id="box" style="width:100px; height:100px; background:lightblue;"></div>
```

```
<script>
document.getElementById("box").addEventListener("mouseover", function () {
    console.log("Mouse is over the box");
});
</script>
```

Key Press Event

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

```
<script>
```

```
document.getElementById("inputBox").addEventListener("keydown", function () {  
    console.log("Key pressed");  
});  
</script>
```

Change Event

```
<select id="cities">  
    <option>Delhi</option>  
    <option>Mumbai</option>  
</select>  
  
<script>  
document.getElementById("cities").addEventListener("change", function () {  
    console.log("Dropdown value changed");  
});  
</script>
```

Page Load Event

```
<script>  
window.addEventListener("load", function () {  
    console.log("Page fully loaded");  
});  
</script>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <title>JavaScript Events Demo</title>
```

```
    <style>
```

```
        body {
```

```
            font-family: Arial;
```

```
            padding: 20px;
```

```
        }
```

```
        #box {
```

```
width: 150px;

height: 150px;

background: lightblue;

margin-bottom: 20px;

text-align: center;

line-height: 150px;

border-radius: 10px;

transition: 0.3s;

}
```

```
#btn {

padding: 10px 20px;

background: green;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}
```

```
#city {

margin-top: 20px;

padding: 8px;

}
```

```
#nameInput {

padding: 8px;

margin-top: 20px;
```

```
width: 200px;

}
```

```
#formSection {

margin-top: 20px;

}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>JavaScript Events Example</h1>
```

```
<!-- Click event -->
```

```
<button id="btn">Click Me</button>
```

```
<p id="clickMsg"></p>
```

```
<!-- Mouse events -->
```

```
<div id="box">Hover Me</div>
```

```
<p id="hoverMsg"></p>
```

```
<!-- Keydown event -->
```

```
<input type="text" id="nameInput" placeholder="Type something...">
```

```
<p id="keyMsg"></p>
```

```
<!-- Change event -->
```

```
<select id="city">
```

```
<option value="">Select City</option>

<option value="Delhi">Delhi</option>

<option value="Mumbai">Mumbai</option>

<option value="Kolkata">Kolkata</option>

</select>

<p id="cityMsg"></p>


<!-- Submit event -->

<div id="formSection">

  <form id="myForm">

    <input type="text" id="email" placeholder="Enter Email" required>

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

  </form>

  <p id="submitMsg"></p>

</div>


<script>

  // Page Load Event

  window.addEventListener("load", function () {

    console.log("Page loaded successfully");

  });


  // Click Event

  document.getElementById("btn").addEventListener("click", function () {

    document.getElementById("clickMsg").textContent = "Button was clicked!";

  });

}
```

```
// Mouse Events
```

```
let box = document.getElementById("box");
```

```
box.addEventListener("mouseover", function () {
```

```
    box.style.background = "orange";
```

```
    document.getElementById("hoverMsg").textContent = "Mouse is over the box";
```

```
});
```

```
box.addEventListener("mouseout", function () {
```

```
    box.style.background = "lightblue";
```

```
    document.getElementById("hoverMsg").textContent = "Mouse left the box";
```

```
});
```

```
// Keydown Event
```

```
document.getElementById("nameInput").addEventListener("keydown", function () {
```

```
    document.getElementById("keyMsg").textContent = "You pressed a key!";
```

```
});
```

```
// Change Event
```

```
document.getElementById("city").addEventListener("change", function () {
```

```
    let selectedCity = this.value;
```

```
    document.getElementById("cityMsg").textContent = "You selected: " + selectedCity;
```

```
});
```

```
// Form Submit Event
```

```
document.getElementById("myForm").addEventListener("submit", function (event) {
```

```
    event.preventDefault(); // prevent page refresh
```

```
    let email = document.getElementById("email").value;

    document.getElementById("submitMsg").textContent = "Form submitted with email: " +
email;

    });

</script>

</body>

</html>
```