In JavaScript, **event listeners** are used to execute code in response to specific **events** (like a user clicking a button, typing in an input, moving the mouse, etc.).

**Basic Syntax:**

element.addEventListener(event, function);

* event: The name of the event (e.g., "click", "mouseover", "keydown”)
* function: The callback function to run when the event occurs

**Example 1: Click Event on Button**

<button id="myBtn">Click Me</button>

<script>

const button = document.getElementById("myBtn");

button.addEventListener("click", function() {

alert("Button was clicked!");

});

</script>

**Example 2: Mouse Over Event**

document.getElementById("myDiv").addEventListener("mouseover", function () {

console.log("Mouse is over the div!");

});

**Example 3: Using a Named Function**

function greet() {

console.log("Hello!");

}

document.getElementById("btn").addEventListener("click", greet);

**Removing an Event Listener**

button.removeEventListener("click", greet);

**Common Event Types**

| **Event Type** | **Description** |
| --- | --- |
| click | Mouse click |
| dblclick | Double-click |
| mouseover | Mouse hovers over an element |
| mouseout | Mouse leaves the element |
| keydown | Key is pressed |
| keyup | Key is released |
| submit | Form is submitted |
| change | Input element value changes |
| load | Page or image is loaded |

**1. click – Mouse Click**

<button id="btnClick">Click Me</button>

<script>

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

alert("Button clicked!");

});

</script>

**2. dblclick – Double Click**

<button id="btnDouble">Double Click Me</button>

<script>

document.getElementById("btnDouble").addEventListener("dblclick", function() {

alert("Button double-clicked!");

});

</script>

**3. mouseover – Mouse Over an Element**

<div id="hoverDiv" style="width:150px;height:100px;background-color:lightblue;">

Hover over me

</div>

<script>

document.getElementById("hoverDiv").addEventListener("mouseover", function() {

console.log("Mouse is over the box");

});

</script>

**4. mouseout – Mouse Leaves an Element**

<div id="outDiv" style="width:150px;height:100px;background-color:lightgreen;">

Move mouse out

</div>

<script>

document.getElementById("outDiv").addEventListener("mouseout", function() {

console.log("Mouse left the box");

});

</script>

**5. keydown – Key is Pressed Down**

<input type="text" id="keyInput" placeholder="Type here">

<script>

document.getElementById("keyInput").addEventListener("keydown", function(event) {

console.log("Key pressed:", event.key);

});

</script>

**6. keyup – Key is Released**

<input type="text" id="keyUpInput" placeholder="Release key">

<script>

document.getElementById("keyUpInput").addEventListener("keyup", function(event) {

console.log("Key released:", event.key);

});

</script>

**7. submit – Form Submission**

<form id="myForm">

<input type="text" required>

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

</form>

<script>

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

event.preventDefault(); // Prevent actual form submission

alert("Form submitted!");

});

</script>

**8. change – Input Value Changed (used for select, checkbox, etc.)**

<select id="fruitSelect">

<option value="">Select a fruit</option>

<option value="apple">Apple</option>

<option value="banana">Banana</option>

</select>

<script>

document.getElementById("fruitSelect").addEventListener("change", function() {

console.log("Selected fruit:", this.value);

});

</script>

**9. load – Page or Image Loaded**

<img id="myImage" src="https://via.placeholder.com/150" alt="Sample Image">

<script>

document.getElementById("myImage").addEventListener("load", function() {

console.log("Image has loaded!");

});

</script>