✅ JavaScript Day 7: Events & Event Listeners

◆ 1. What is an Event?

An **event** is a user interaction that happens in the browser like a click, keypress, scroll, etc.

They allow websites to respond to **user actions**.

◆ 2. `addEventListener()` – Adding an Event Listener

📌 **Syntax:**

```js
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element.addEventListener("eventType", callbackFunction);
```

🧠 **Example:**

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

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

◆ 3. Mouse Events

✅ Common Mouse Events:

- click → When element is clicked

- dblclick → Double click

- mouseover → Mouse enters element

- mouseout → Mouse leaves element

🧠 Example:

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

<script>
  const box = document.getElementById("box");

  box.addEventListener("mouseover", function() {
    box.style.backgroundColor = "lightblue";
  });

  box.addEventListener("mouseout", function() {
    box.style.backgroundColor = "white";
  });
</script>
```

🔹 4. Keyboard Events

✅ Common Keyboard Events:

- keydown → Key is pressed

- keyup → Key is released

🧠 Example:

```html
html
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<input id="nameInput" type="text" />

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

◆ 5. Input & Form Events

✅ input Event (Live typing detection):

```html
html
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<input id="textInput" type="text" />
<p id="output"></p>

<script>
  document.getElementById("textInput").addEventListener("input",
function(e) {
    document.getElementById("output").innerText = e.target.value;
  });
</script>
```

✅ change Event (on select):

```html
html
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<select id="lang">
  <option value="js">JavaScript</option>
  <option value="py">Python</option>
</select>

<script>
```

```js
    document.getElementById("lang").addEventListener("change",
function(e) {
    console.log("Selected:", e.target.value);
  });
</script>
```

◆ 6. `event` Object & `event.target`

When an event runs, it automatically passes an **event object** which holds info about the event.

js
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```js
element.addEventListener("click", function(event) {
  console.log(event.target); // The clicked element
});
```

◆ 7. Removing Event Listeners
js
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```js
function greet() {
  alert("Hello!");
  button.removeEventListener("click", greet); // remove after first click
}

const button = document.getElementById("btn");
button.addEventListener("click", greet);
```

✅ Day 7 Tasks (Without Code Solutions)

> 🧠 Solve these tasks by yourself. Use your understanding of event types and listener logic.

◆ **Task 1: Button Click Background Change**

👉 **When the user clicks a button, toggle background between white and yellow**

◆ **Task 2: Hover Effect**

👉 **On hovering a box, make its background blue. On mouse leave, make it white again**

◆ **Task 3: Key Logger**

👉 **As user types in an input box, update a paragraph with the live text**

◆ **Task 4: Dropdown Change**

👉 **When a user selects an option from a dropdown, print that value in the console**

◆ **Task 5: One-Time Alert**

👉 **A button that shows an alert only once — after that, it does nothing**

◆ **Bonus Task: Detect Enter Key**

👉 **In an input box, when user presses `Enter`, show an alert**