ASSIGNMENT 4

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-> Event Bubbling (Bottom to Top)

The event starts at the target element (child) and bubbles up to its ancestors

(parent, grandparent, etc.).

-> Event Capturing (Top to Bottom)

The event starts at the top-most element (grandparent) and goes down to the target element (child).

### Perform Different Operation in Each Phase

document.getElementById("grandparent").addEventListener("click", () => {

console.log("grandparent clicked (capturing)");

}, true);

document.getElementById("parent").addEventListener("click", () => {

console.log("parent clicked (capturing)");

}, true);

document.getElementById("child").addEventListener("click", () => {

console.log("child clicked (capturing)");

}, true);

// Bubbling Phase

document.getElementById("child").addEventListener("click", () => {

console.log("child clicked (bubbling)");

});

document.getElementById("parent").addEventListener("click", () => {

console.log("parent clicked (bubbling)");

});

document.getElementById("grandparent").addEventListener("click", () => {

console.log("grandparent clicked (bubbling)");

});

-> **HTML structure**

<div id="grandparent">

Grandparent

<div id="parent">

Parent

<div id="child">Child</div>

</div>

</div>

**Event Bubbling (Bottom → Up)**

Definition: Event bubbling is the default behavior in JavaScript where an event starts from the target element and bubbles up through its ancestors (parent → grandparent → ...).

Example: If you click a button inside a div inside another div:

The event is first handled by the button,

then moves to the parent div,

then to the grandparent div, and so on.

Code Example:

element.addEventListener("click", handler); // Bubbling by default

**Event Capturing (Top → Down)**

Definition: In event capturing, the event starts from the top (root/ancestor) and travels down to the target element.

Example: If you click a button:

First the document or outermost div handles the event,

then the next inner parent,

until it reaches the button.

Code Example:

element.addEventListener("click", handler, true); // true = capture phase