✨ LECURE 22 — EVENTS IN JAVASCRIPT

🌱 FIRST-THOUGHT PRINCIPLE (Desi Style)

Soch lo **web page ek mela** 🎪 hai:

- Button dabaya → **click** 🖱️

- Form bhara → **submit** 📝

- Keyboard bajaya → **keydown** ⌨️

👉 **Event = page pe hone wali koi bhi ghatna**,
aur **JavaScript turant react karti hai.**

📌 *Jaise real life me bell bajti hai aur gate khulta hai.*

🏷️ What is an Event?

🔷 Definition

Event = Browser ke andar hone wali action/ghatna, jaise:

- Click

- Scroll

- Typing

- Mouse movement

- Form submit

👉 JavaScript **addEventListener()** se in events ko **sunti** 👂 hai.

🎧 Event Listener

🔷 Syntax

```
element.addEventListener("eventName", callbackFunction);
```

📌 **callback function tab chalega jab event hoga**, pehle nahi.

🖱 MOUSE EVENTS

Event	Kab trigger hota hai
click	Ek baar click
dblclick	Double click
mousedown	Button dabate hi
mouseup	Button chhodte hi
mouseover	Mouse andar aate hi
mouseout	Mouse bahar jaate hi
mousemove	Mouse move ho

✅ Example

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

<script>

const btn = document.getElementById("btn");


btn.addEventListener("click", () => console.log("Button clicked"));

btn.addEventListener("dblclick", () => console.log("Double clicked"));

btn.addEventListener("mouseover", () => console.log("Mouse entered"));
```

```
btn.addEventListener("mouseout", () => console.log("Mouse left"));

</script>
```

⌨️ KEYBOARD EVENTS

Event	Meaning
keydown	Key dabate hi
keyup	Key chhodte hi

```
document.addEventListener("keydown", (e) => {

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

});
```

📝 FORM EVENTS

Event	Kaam
submit	Form submit
change	Value change
focus	Cursor aaya
blur	Cursor gaya

```
form.addEventListener("submit", (e) => {

  e.preventDefault(); // page reload roko

});
```

🎁 EVENT OBJECT (BOSS CHEEZ)

Jab event hota hai → JS ek **event object** deta hai
📦 jisme **bahut saari info hoti hai**

🔷 Important Properties

Property	Meaning
event.type	Kaunsa event
event.target	Kis element pe
event.clientX/Y	Mouse position
event.key	Konsi key

```js
btn.addEventListener("click", (event) => {

  console.log(event.type);

  console.log(event.target);

});
```

🎲 EVENT OBJECT METHODS

🔴 preventDefault()

Default browser ka kaam rokta hai

```js
form.addEventListener("submit", e => e.preventDefault());
```

🔴 stopPropagation()

Parent tak event jane se rokta hai

🌍 REAL-LIFE ANALOGY (Door Bell 🛎️)

Real Life	Web
Bell	Button
Bell bajna	Click
Gate khulna	JS function

🚀 SMALL PROJECT — DYNAMIC QUOTE GENERATOR

🧱 HTML (Structure)

```
<div class="container">

  <h1>Dynamic Quote Generator</h1>

  <div class="quote-box">

    <p id="quote">Honesty is the Best Policy</p>

  </div>

  <button>Generate Quotes</button>

</div>
```

📌 Button → event trigger karega
📌 `<p id="quote">` → text change hoga

🧠 JAVASCRIPT (WITH EXPLANATION)

```
const quotes = [

  "The best way to predict the future is to create it. — Peter Drucker",

  "Success is not final, failure is not fatal. — Winston Churchill",

  "The only way to do great work is to love what you do. — Steve Jobs"

];
```

👉 **quotes array** = data store (database jaisa)

◆ Button Access

```
const button = document.querySelector("button");
```

◆ Event Listener

```
button.addEventListener("click", (event) => {

  console.log(event);          // pura event object

  console.log(event.target);   // button

  console.log(event.type);     // click

  console.log(event.clientX);  // mouse X

  console.log(event.clientY);  // mouse Y
```

👉 **Event object me mouse + element + type sab hota hai**

◆ Random Quote Logic

```
const text = document.getElementById("quote");

const index = Math.floor(Math.random() * quotes.length);

text.textContent = quotes[index];

});
```

🧠 Behind the scenes

- `Math.random()` → 0–1

- `quotes.length` → array size

- `Math.floor()` → index integer

- `textContent` → safe text change

⌨️ BONUS: Keyboard Event (Enter key)

```javascript
document.addEventListener("keydown", (event) => {

  if (event.key === "Enter") {

    const index = Math.floor(Math.random() * quotes.length);

    document.getElementById("quote").textContent = quotes[index];

  }

});
```

👉 Ab **Enter press** karne se bhi quote change

📦 OUTPUT

- Button click → naya quote

- Mouse move → position milti

- Enter key → quote change

🔁 QUICK SUMMARY (EXAM / INTERVIEW)

- **Event** = koi bhi user action

- **addEventListener()** = event sunta hai

- **Event object** = full info ka dabba

- **preventDefault()** = default kaam roko

- **stopPropagation()** = bubbling roko

- **event.target** = jispe click hua

- **Real power** = Events + DOM

🧠 ONE-LINE GOLDEN LINE

"**Event user karta hai, reaction JavaScript karti hai.**"