**Question 1: What are JavaScript events? Explain the role of event listeners.**

**JavaScript Events**

JavaScript events are actions or occurrences that happen in the browser, often due to user interactions or system-generated changes. Examples of events include:

* Clicking a button (click event)
* Pressing a key (keydown event)
* Moving the mouse (mousemove event)
* Submitting a form (submit event)
* Loading a page (load event)

Events allow JavaScript to dynamically respond to user interactions, making web applications interactive.

**Syntax:**

element.addEventListener("event", function, useCapture);

* element: The HTML element that listens for the event.
* event: The type of event (e.g., "click", "mouseover").
* function: The function to execute when the event occurs.
* useCapture (optional): A Boolean that specifies the event phase (default is false for bubbling phase).

**Example: Adding a Click Event Listener**

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

alert("Button Clicked!");

});

In this example, when the button with id="myButton" is clicked, an alert message is displayed.

**Question 2: How does the addEventListener() method work in JavaScript? Provide an example.**

**How addEventListener() Works in JavaScript**

The addEventListener() method attaches an event handler to an HTML element without overwriting existing event handlers. It listens for a specified event and executes a function when that event occurs.

**Syntax:**

element.addEventListener(event, function, useCapture);

* **element** → The HTML element that listens for the event.
* **event** → A string representing the event type (e.g., "click", "mouseover").
* **function** → The function that executes when the event occurs.
* **useCapture** *(optional, default false)* → A Boolean that controls event propagation (bubbling or capturing).

**Example Using addEventListener():**

**Simple click event:**

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

alert("Button Clicked!");

});