

Events and Event Handling in JavaScript

Understanding JavaScript Events and
Their Handling Mechanisms

Introduction to Events

- Events in JavaScript are actions in the browser, such as clicking a button, submitting a form, or moving a mouse.

Event Handling

- Event Handling refers to writing code that executes in response to events.

Event Listener

- A function that waits for an event to occur and executes code when it happens.

Why Event Handling?

- 1. User Interaction
- 2. Dynamic Web Pages
- 3. Real-Time Feedback
- 4. Enhancing Accessibility
- 5. Responsive Applications
- 6. Event Delegation
- 7. Improved UX
- 8. Backend Communication
- 9. Handling Async Tasks
- 10. Cross-Browser Consistency

Mouse Events

- Examples: click, dblclick, mousedown, mouseup, mouseover, mouseout, mousemove

Keyboard Events

- Examples: `keydown`, `keypress` (deprecated), `keyup`

Form Events

- Examples: submit, reset, focus, blur, change, input

Window/Document Events

- Examples: load, resize, scroll, unload, DOMContentLoaded

Touch Events

- Examples: touchstart, touchend, touchmove, touchcancel

Clipboard Events

- Examples: copy, cut, paste

Drag and Drop Events

- Examples: dragstart, drag, dragover, drop, dragend

Media Events

- Examples: play, pause, ended, volumechange, timeupdate

Focus and Blur Events

- Examples: focus, blur

Custom Events

- Custom events allow developers to define and dispatch their own events.
- Example:
- `const myEvent = new CustomEvent('myCustomEvent', {
 detail: { message: 'Hello, World!' } });`
- `document.addEventListener('myCustomEvent',
 function(event) {`
- `console.log(event.detail.message);`
- `});`
- `document.dispatchEvent(myEvent);`

Ways to Add Event Handlers

- **Inline in HTML:** Add the event handler directly in the HTML tag using attributes like onclick, onmouseover, etc.

```
<button onclick="alert('Button clicked!')">Click Me</button>
```

- **Using JavaScript:** Use `addEventListener()` to attach an event to an element.

```
document.getElementById("myButton").addEventListener("click",  
function(){ alert("Button clicked!");});
```

- **HTML DOM Property:** Assign a function to an event property.

```
document.getElementById("myButton").onclick = function() {  
    alert("Button clicked!");};
```