8. Event Handling in React

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📘 Why Event Handling Matters

Event handling lets users interact with a React app — clicks, inputs, hovers, and more — to create dynamic, responsive experiences.

🗨️ Key Concepts

✅ Handling Events in JSX

React uses camelCase syntax and functions to handle events.

```
function ClickButton() {
  function handleClick() {
    alert('Button clicked!');
  }
  return <button onClick={handleClick}>Click Me</button>;
}
```

✅ Passing Arguments to Event Handlers

Use arrow functions to pass parameters.

```
function Greet({ name }) {
  const greet = (user) => alert(`Hello, ${user}!`);
  return <button onClick={() => greet(name)}>Say Hello</button>;
}
```

✅ Synthetic Events

React wraps native browser events into a cross-browser wrapper called SyntheticEvent for consistency.

```
function InputLogger() {
  function handleChange(e) {
    console.log('Value:', e.target.value);
  }
  return <input onChange={handleChange} />;
}
```

📊 Visual Overview

```
flowchart TD
  A[User Clicks Button] --> B[Event Handler Triggered]
  B --> C[Custom Function Executed]
  C --> D[State Updated / Action Performed]
```

💡 Guidelines

- Use camelCase (`onClick` , `onChange` , etc.).

- Avoid binding in render: use arrow functions.

- Define event handlers outside of JSX for clarity.

- Use `e.preventDefault()` for preventing default actions.

📝 Practice Exercises

1. Create a button that triggers an alert.

2. Log keystrokes in an input field.

3. Pass an argument to an event handler.

4. Prevent form submission using `e.preventDefault()` .

❓ Quiz Questions

1. How do you attach an event handler to a button in React?
a) onclick="handleClick()"
b) onClick = handleClick()
✅ **c) onClick={handleClick}**
d) click={handleClick}

2. What does SyntheticEvent do?
a) Converts JSX to HTML
b) Makes events browser-specific
✅ **c) Normalizes browser events for consistency**
d) Prevents events from firing

3. How do you pass arguments to an event handler?
a) handler(arg)
b) onClick={handler(arg)}
✅ **c) onClick={() => handler(arg)}**
d) withParams(handler, arg)

4. What is the purpose of `e.preventDefault()` ?
a) Stop JSX from rendering
b) Disable event handling
✅ **c) Prevent default browser behavior (e.g., form submission)**
d) Call an API