

National University of Computer and Emerging Sciences



Laboratory Manual

for

Web Engineering (SL3003)

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Section	6C 1,2
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Lab 6: React, Props, & State

Objectives

- Understand and implement **Local Storage, Session Storage, and Cookies**.
- Learn about **JavaScript Closures** and their practical use cases.
- Explore **Event Phases** and implement **Event Delegation** for optimized event handling.
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Task 1: Working with Local Storage, Session Storage, and Cookies

Instructions:

1. **Create an HTML form** with an input field for the user's name and a submit button.
2. **Store the entered name in Local Storage, Session Storage, and Cookies** based on the user's selection.
3. **Retrieve the stored values** and display them on the page.
4. **Provide a 'Clear Storage' button** to remove stored values.

Implementation Hints:

- Use `localStorage.setItem()` and `localStorage.getItem()` for **Local Storage**.
- Use `sessionStorage.setItem()` and `sessionStorage.getItem()` for **Session Storage**.
- Use `document.cookie` to **set and retrieve cookies**.

Expected Features:

✓ Form to input and save name ✓ Buttons to store in **Local Storage, Session Storage, or Cookies** ✓ Display stored data on page load ✓ Clear storage option

Task 2: Understanding JavaScript Closures

Instructions:

1. **Create a function counter that returns another function** to increment and display a count.
2. **Ensure the count is private** using a closure.
3. **Call the function multiple times** and observe how the count persists.

Implementation Hints:

- Use a **nested function** to maintain state.
- Example structure:

```
function counter() {  
  let count = 0;  
  return function() {  
    count++;  
    console.log(count);  
  };  
}
```
- Call the returned function multiple times to see the count persist.

Expected Features:

✓ A function that returns another function ✓ The inner function modifies the outer function's variable ✓ Persistent count maintained across calls

Task 3: Event Phases and Event Delegation

Instructions:

1. **Create an HTML list () with multiple items.**
2. **Demonstrate event bubbling and capturing** by logging messages when clicking different elements.
3. **Implement event delegation** to handle clicks on dynamically added items.

Implementation Hints:

- Add `click` event listeners to both `` and `` elements.
 - Use `event.stopPropagation()` to stop bubbling if necessary.
 - Implement event delegation by adding the event listener **only on **, and use `event.target` to identify which `` was clicked.
 - Console logs demonstrating **event bubbling and capturing**
 - Clicking an `` triggers the event via **event delegation**
 - Dynamically added `` items also work without adding new event listeners
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