



Advanced Web Programming

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A photograph of a white ceramic cup and saucer resting on a light-colored wooden desk. A small tea bag with a cartoon character is visible in the cup. To the left, the edge of a silver laptop is seen. In the background, there's a dark green mug and some colorful, out-of-focus lights.

Lab 4

Assignment 1

Enhance the to-do list app from Lab 3 by adding “Assign to Member”, “Due date” fields.

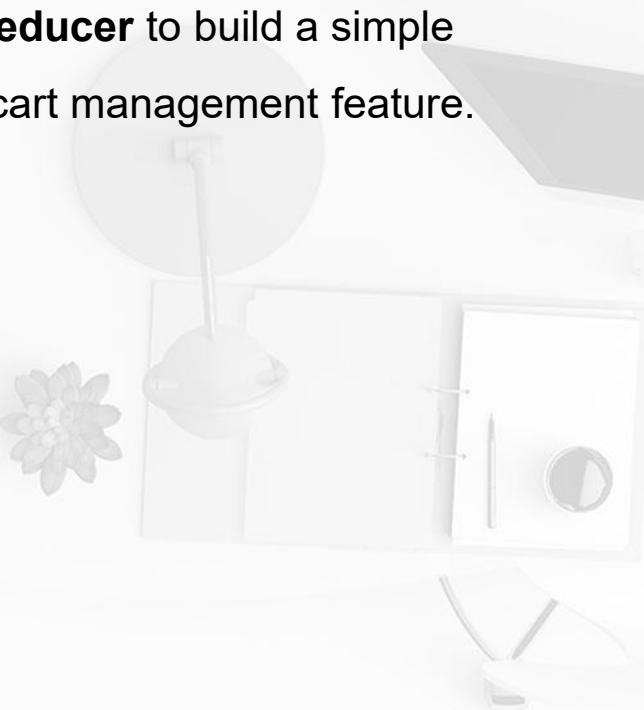
My To Do List

Title...	Member	03/16/2025	Remove	Add
Task 1 - Giàu - 15.1.2025			x	
✓ Task 2 - Thanh - 16.1.2025			x	
Task 3 - Nhi - 16.2.2025			x	



Assignment 2

Use **useReducer** to build a simple shopping cart management feature.



Products

Laptop - \$1000

Phone - \$500

Headphones - \$100

Shopping Cart

Headphones - \$100 x 1

Phone - \$500 x 2

Total: \$1100

Assignment 3

Use **useRef** to automatically focus the search box when the page is loaded.

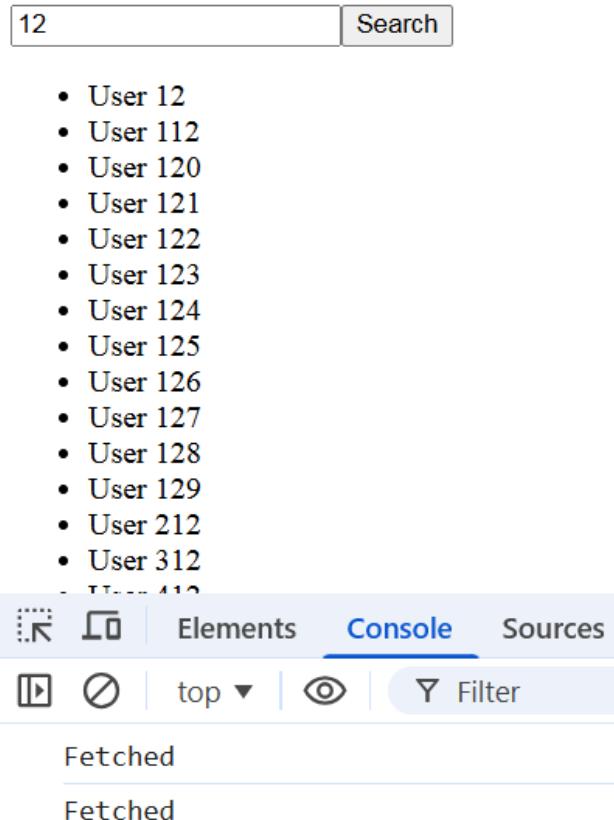
Search results:

These are some results.

Assignment 4

A web application renders a large dataset (e.g., 10,000+ users) and includes a user filtering feature.

Use **useMemo** to optimize the **filterUsers()** function, ensuring that the component does not re-render and that data is not refetched until the **Search** button is clicked.



The screenshot shows a browser's developer tools console tab labeled "Console". At the top, there is a search bar containing the number "12" and a "Search" button. Below the search bar is a list of user entries, each preceded by a bullet point. The list contains 20 entries, starting from "User 12" and ending with "User 312". At the bottom of the list, there is a small text fragment "Fetched". The "Console" tab is highlighted in blue, indicating it is active. Other tabs visible include "Elements", "Sources", and "Filter".

```
12
Search
• User 12
• User 112
• User 120
• User 121
• User 122
• User 123
• User 124
• User 125
• User 126
• User 127
• User 128
• User 129
• User 212
• User 312
Fetched
```

Assignment 4

- This is sample code to generate the user list.

```
const users = Array.from({ length: 10000 }, (_, i) => ({  
  id: i + 1,  
  name: `User ${i + 1}`,  
});
```

- This is sample code to change state of the Additional Option.

```
{/* const [check, setCheck] = useState(false); */}  
<input type="checkbox" checked={check}  
onChange={(e) => setCheck(e.target.checked)} /> Additional Option
```

Assignment 5

Use **Tailwind CSS** to style the shopping cart section below.



Products

Laptop - \$1000

Add to Cart

Phone - \$500

Add to Cart

Headphones - \$100

Add to Cart

Shopping Cart

Headphones - \$100 x 1

Remove

+

-

Phone - \$500 x 2

Remove

+

-

Total: \$1100

Clear Cart

Assignment 6*

Use the **MUI Data Grid** and **AG Grid** components to display a product list. Each product should have **six properties**: ID, title, image link, price, quantity, and category.

Note: Students should create a list of **at least six products** to be displayed in the table.