

```
1 // Array of user names to be searched from
2
3 const users = [
4
5     "Alice Johnson",
6     "Bob Smith",
7     "Charlie Brown",
8     "David Williams",
9     "Evelyn Taylor",
10    "Frank Miller",
11    "Grace Lee",
12    "Hannah Davis",
13    "Ian Thomas"
14
15 ];
16
17 // Get DOM elements
18
19 const SearchInput = document.getElementById("search"); // Search input field
20
21 const userList = document.getElementById("usersList"); // List container to display users
22
23 const noResults = document.getElementById("noResults"); // Message to show when no results are found
24
25 // Function to display the list of users on the screen
26
27 const displayUsers = (users) => {
28
29     // Clear the previous list
30
31     userList.innerHTML = "";
32
33     // If no users match the search, show "no results" message
34
35     if (users.length === 0) {
36
37         noResults.style.display = "block";
```

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38
39     return;
40 }
41
42 // Hide "no results" message when matches exist
43
44 noResults.style.display = "none";
45
46 // Create and append <li> elements for each user
47
48 users.forEach((user) => {
49
50     const li = document.createElement("li");
51
52     li.textContent = user;
53
54     userList.appendChild(li);
55
56 });
57 };
58
59 // Debounce function: delays execution of the passed function until user stops typing for a given delay
60
61 const debounce = (fn, delay) => {
62
63     let timeoutId; // Stores the ID of the timeout between key presses
64
65     return (...args) => {
66
67         // Clear the previous timeout if user types again
68
69         clearTimeout(timeoutId);
70
71         // Set a new timeout to run the function after 'delay' ms
72
73         timeoutId = setTimeout(() => {
74
75             fn(...args); // Call the original function with arguments
```

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76
77     console.log("Debounced fired after", delay / 1000, "seconds");
78
79     }, delay);
80 };
81 };
82
83 // Function to filter users based on input value
84
85 const searchUsers = (users) => {
86
87     // Convert both the input and usernames to lowercase for case-insensitive search
88
89     const filteredUsers = users.filter((user) => user.toLowerCase().includes(SearchInput.value.toLowerCase()));
90
91     // Display the filtered users
92
93     displayUsers(filteredUsers);
94 };
95
96 // Initially display all users
97
98 displayUsers(users);
99
100 // Create a debounced version of the search function (runs after 1 second of no key presses)
101
102 const debouncedSearchUsers = debounce(searchUsers, 1000);
103
104 // Add input event listener to trigger search as user types
105
106 SearchInput.addEventListener("input", () => {
107
108     debouncedSearchUsers(users); // Pass full user list to search function
109
110 });
```