KING SAUD UNIVERSITY COLLEGE OF COMPUTER AND INFORMATION SCIENCES Computer Science Department	
CSC 111 **Computer Programming - I**	**Lab # 10** Memory Model, Data Structures, and Recursion

Wednesday: Identity Check & Recursive Counting

Write a Python program to count how many times a target value appears in a list using recursion while checking memory reference equality between list copies.

The program should:

1. Store a list of numbers: `[5, 2, 8, 5, 3, 5, 9]`.
2. Define a recursive function `recursive_count(lst, target)` that counts occurrences of `target`:

    a. **Base Case:** If the list is empty (`len(lst) == 0`), return `0`.
    b. **Recursive Case:** Check if the first element `lst[0] == target` and make a recursive call on the slice `lst[1:]`.

3. Define a function `process_search(original_list, target_val)` that:

a. Creates a shallow copy: `copied_list = original_list[:]`.
b. Verifies that `original_list == copied_list` is `True`, but `original_list is copied_list` is `False`.
c. Counts target occurrences using `recursive_count`.
d. Returns the occurrence count and the memory identity status.

4. Ask the user for the search target and display the results.

Sample Run

```
Enter number to search: 5
Occurrences count: 3
Is same memory reference: False
```