Started on	Sunday, 10 November 2024, 10:19 PM
State	Finished
Completed on	Wednesday, 20 November 2024, 1:52 PM
Time taken	9 days 15 hours
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

Question **1**

Correct

Mark 1.00 out of 1.00

Problem statement:

Find the length of the Longest Non-decreasing Subsequence in a given Sequence.

Eg:

Input:9

Sequence:[-1,3,4,5,2,2,2,2,3]

the subsequence is [-1,2,2,2,2,3]

Output:6

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
#include <stdlib.h>
void LIS(int arr[], int n) {
    if (n == 0) {
        printf("0\n");
        return;
    }
    int *dp = (int *)malloc(n * sizeof(int));
    int maxLength = 1;

    for (int i = 0; i < n; i++) {
        dp[i] = 1;
    }
    for (int i = 1; i < n; i++) {
        for (int j = 0; j < i; j++) {
            if (arr[i] >= arr[j]) {
                dp[i] = (dp[i] > dp[j] + 1) ? dp[i] : dp[j] + 1;
            }
        }
        if (dp[i] > maxLength) {
            maxLength = dp[i];
        }
    }
    printf("%d\n", maxLength);
    free(dp);
}
int main() {
    int n;
    scanf("%d", &n);
    int *arr = (int *)malloc(n * sizeof(int));
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    LIS(arr, n);
    free(arr);
    return 0;
}
```

	Input	Expected	Got	
✔	9 -1 3 4 5 2 2 2 2 3	6	6	✔
✔	7 1 2 2 4 5 7 6	6	6	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

◄ 3-DP-Longest Common Subsequence

Jump to...

1-Finding Duplicates-O(n^2) Time Complexity,O(1) Space Complexity ►