Dashboard / My courses / CS23331-DAA-2023-CSE / Dynamic Programming / 4-DP-Longest non-decreasing Subsequence

Started on	Tuesday, 29 October 2024, 1:46 PM
State	Finished
Completed on	Tuesday, 29 October 2024, 1:52 PM
Time taken	6 mins 26 secs
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 %)

```
#include <stdio.h>

int lengthOfLNDS(int arr[], int n) {
    if (n == 0) return 0;

    int dp[n];
    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]) {
                if (dp[i] < dp[j] + 1) {
                    dp[i] = dp[j] + 1;
                }
            }
        }
    }

    int maxLength = 0;
    for (int i = 0; i < n; i++) {
        if (maxLength < dp[i]) {
            maxLength = dp[i];
        }
    }

    return maxLength;
}

int main() {
    int n;
    scanf("%d", &n);
    int arr[n];
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    int result = lengthOfLNDS(arr, n);
    printf("%d\n", result);
    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

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