

CS23331-Design and Analysis of Algorithms-2023 Batch-CSE

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Started on	Tuesday, 29 October 2024, 2:35 PM
State	Finished
Completed on	Tuesday, 29 October 2024, 2:44 PM
Time taken	8 mins 54 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1

Correct

Mark 1.00 out of 1.00

Flag question

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 %)

```
1 #include<stdio.h>
2 int main(){
3     int n,maxLength;
4     scanf("%d",&n);
5     int arr[n];
6     for(int i=0;i<n;i++){
7         scanf("%d",&arr[i]);
8     }
9     int dp[n];
10    for(int i=0;i<n;i++){
11        dp[i]=1;
12    }
13    for(int i=1;i<n;i++){
14        for(int j=0;j<i;j++){
15            if(arr[j]<=arr[i] && dp[i]<dp[j]+1){
16                dp[i]=dp[j]+1;
17            }
18        }
19    }
20    for(int i=0;i<n;i++){
21        if(dp[i]>maxLength){
22            maxLength=dp[i];
23        }
24    }
25    printf("%d",maxLength);
26 }
```

	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.

Finish review

← 3-DP-Longest Common Subsequence

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