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4-DP-Longest non-decreasing Subsequence

| | |
|--------------|-------------------------------------|
| Started on | Wednesday, 5 November 2025, 6:50 AM |
| State | Finished |
| Completed on | Wednesday, 5 November 2025, 6:51 AM |
| Time taken | 39 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 %)

```
1 #include <stdio.h>
2
3 int main() {
```

```

4   int n;
5   scanf("%d", &n);
6   int arr[n];
7   for (int i = 0; i < n; i++)
8       scanf("%d", &arr[i]);
9
10  int dp[n];
11  for (int i = 0; i < n; i++)
12      dp[i] = 1;
13
14  for (int i = 1; i < n; i++)
15      for (int j = 0; j < i; j++)
16          if (arr[i] >= arr[j] && dp[i] < dp[j] + 1)
17              dp[i] = dp[j] + 1;
18
19  int max = dp[0];
20  for (int i = 1; i < n; i++)
21      if (dp[i] > max)
22          max = dp[i];
23
24  printf("%d\n", max);
25  return 0;
26 }
27

```

| | Input | Expected | Got | |
|---|-----------------------|----------|-----|---|
| ✓ | 9 -1 3 4 5 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.

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