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CS23331-DAA-2024-CSE / 3-DP-Longest Common Subsequence



3-DP-Longest Common Subsequence

Started on	Wednesday, 8 October 2025, 8:59 AM
State	Finished
Completed on	Wednesday, 8 October 2025, 9:02 AM
Time taken	3 mins 8 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](#)

Given two strings find the length of the common longest subsequence(need not be contiguous) between the two.

Example:

s1: ggtabe

s2: tgatasb

s1 a g g t a b

s2 g x t x a y b

The length is 4

Solveing it using Dynamic Programming

For example:

Input	Result
aab	2
azb	

Answer: (penalty regime: 0 %)

```

1  #include <stdio.h>
2  #include <string.h>
3
4  #define MAX 100
5
6  int max(int a, int b) {
7      return (a > b) ? a : b;
8  }
9
10 int longestCommonSubsequence(char *s1, char *s2) {
11     int m = strlen(s1);
12     int n = strlen(s2);
13     int dp[MAX][MAX];
14
15     // Initialize base cases
16     for (int i = 0; i <= m; i++)
17         dp[i][0] = 0;
18     for (int j = 0; j <= n; j++)
19         dp[0][j] = 0;
20
21     // Fill the DP table
22     for (int i = 1; i <= m; i++) {
23         for (int j = 1; j <= n; j++) {
24             if (s1[i - 1] == s2[j - 1])
25                 dp[i][j] = dp[i - 1][j - 1] + 1;
26             else
27                 dp[i][j] = max(dp[i - 1][j], dp[i][j - 1]);
28         }
29     }
30 }
```

```

29     }
30
31     return dp[m][n];
32 }
33
34 int main() {
35     char s1[MAX], s2[MAX];
36
37     // Input strings
38     scanf("%s", s1);
39     scanf("%s", s2);
40
41     // Output result
42     printf("%d\n", longestCommonSubsequence(s1, s2));
43
44     return 0;
45 }

```

	Input	Expected	Got	
✓	aab azb	2	2	✓
✓	ABCD ABCD	4	4	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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