Dashboard / My courses / CS23331-DAA-2023-CSE / Dynamic Programming / 3-DP-Longest Common Subsequence

Started on	Wednesday, 20 November 2024, 7:39 PM
State	Finished
Completed on	Wednesday, 20 November 2024, 7:41 PM
Time taken	1 min 48 secs
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

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Question **1**

Correct

Mark 1.00 out of 1.00

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 azb	2

Answer: (penalty regime: 0 %)

```c
1  #include <stdio.h>
2  #include <string.h>
3
4  int longestCommonSubsequence(char *s1, char *s2) {
5      int m = strlen(s1);
6      int n = strlen(s2);
7      int dp[m+1][n+1];
8
9      for (int i = 0; i <= m; i++) {
10         for (int j = 0; j <= n; j++) {
11             if (i == 0 || j == 0) {
12                 dp[i][j] = 0;
13             } else if (s1[i-1] == s2[j-1]) {
14                 dp[i][j] = dp[i-1][j-1] + 1;
15             } else {
16                 dp[i][j] = dp[i-1][j] > dp[i][j-1] ? dp[i-1][j] : dp[i][j-1];
17             }
18         }
19     }
20
21     return dp[m][n];
22  }
23
24  int main() {
25      char s1[100], s2[100];
26      scanf("%s", s1);
27      scanf("%s", s2);
28
29      printf("%d\n", longestCommonSubsequence(s1, s2));
30      return 0;
31  }
```

	Input	Expected	Got	
✔	aab azb	2	2	✔

	Input	Expected	Got	
✔	ABCD ABCD	4	4	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

◄ 2-DP-Playing with chessboard

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4-DP-Longest non-decreasing Subsequence ►