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

Started on	Friday, 18 October 2024, 2:21 PM
State	Finished
Completed on	Friday, 18 October 2024, 2:25 PM
Time taken	4 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

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
#include <stdio.h>
#include <string.h>
#define MAX 1000
int Common(char *s1, char *s2) {
    int m = strlen(s1);
    int n = strlen(s2);
    int dp[MAX][MAX];
    for (int i = 0; i <= m; i++) {
        for (int j = 0; j <= n; j++) {
            if (i == 0 || j == 0) {
                dp[i][j] = 0;
            }
            else if (s1[i - 1] == s2[j - 1]) {
                dp[i][j] = dp[i - 1][j - 1] + 1;
            }
            else {
                dp[i][j] = (dp[i - 1][j] > dp[i][j - 1]) ? dp[i - 1][j] : dp[i][j - 1];
            }
        }
    }
    return dp[m][n];
}
int main() {
    char s1[MAX], s2[MAX];
    scanf("%s", s1);
    scanf("%s", s2);
    int lcsLength = Common(s1, s2);
    printf("%d\n", lcsLength);
    return 0;
}
```

	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 ►