Longest Common Substring

Problem Statement Suggest Edit

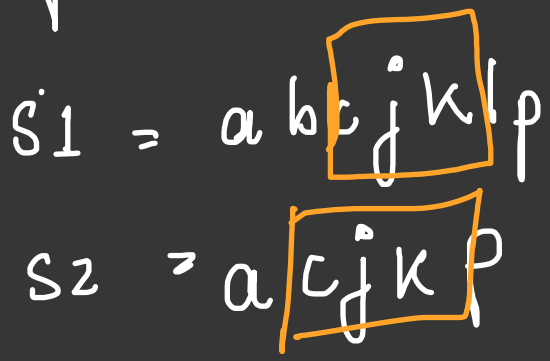
You have been given two strings 'STR1' and 'STR2'. You have to find the length of the longest common substring.
A string “s1” is a substring of another string “s2” if “s2” contains the same characters as in “s1”, in the same order and in continuous fashion also.

For Example :

```
If 'STR1' = “abcjklp” and 'STR2' = “acjkp”  then the output will be 3.

Explanation: The longest common substring is “cjk” which is of length 3.
```

for example,



length: 3

cjk is in both string in same consecutive manner

Output

3

Observe the Question / Problem Statement

S1 = abd

S2 = a b c d

ab
abc
} ans

f(3, 4)

ans = 1

f(2, 3) ans = 1

(1, 0, 2)

2

ans = ans + 0

f(1, 3)

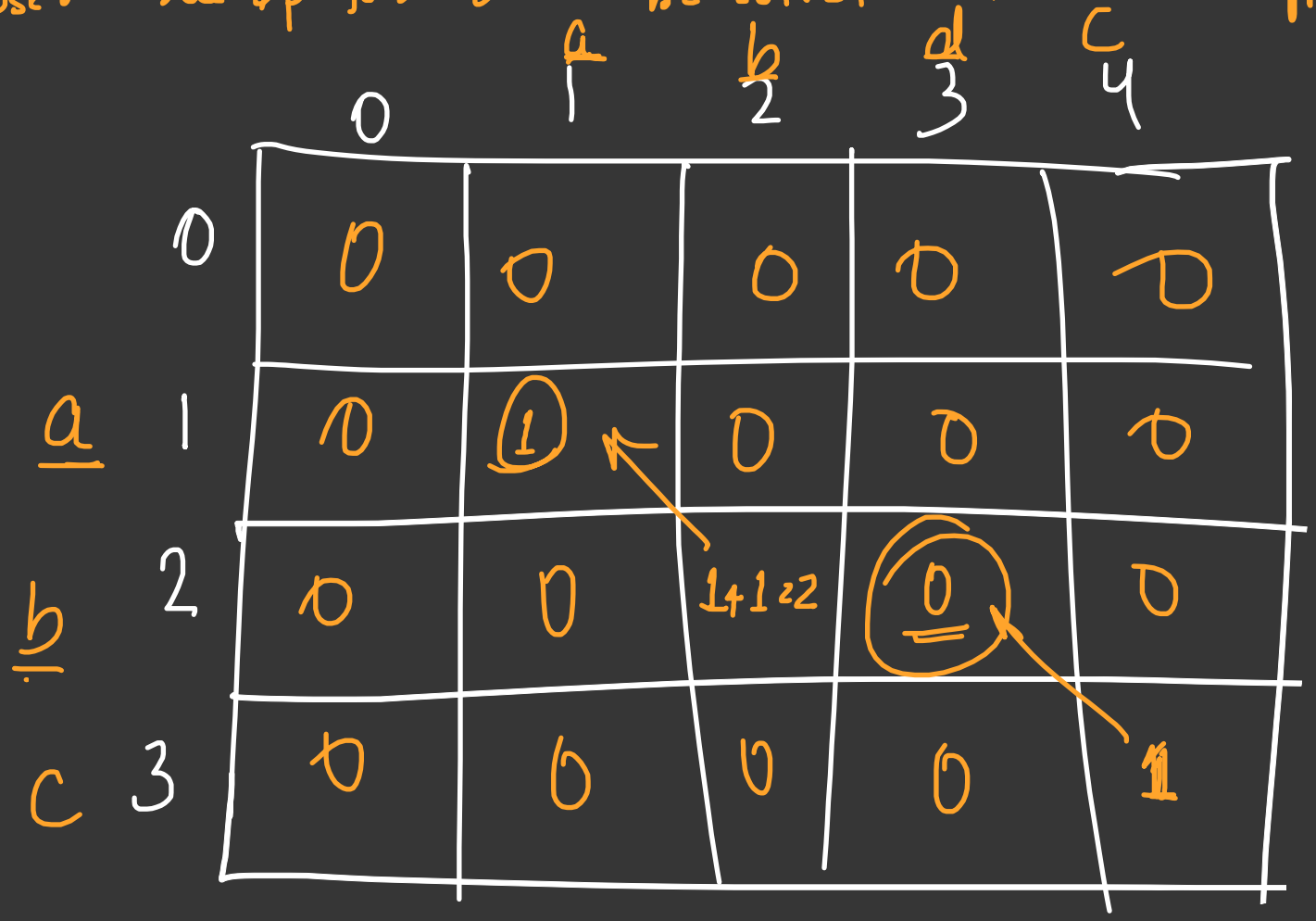
f(2, 2) 2

ans = 1 + 1

2

f(

Let observe the dp table if it can be solved in Tabulation efficiently:



abc → 3

abdc → 4

ans = 2

ans = 2

Pseudo code for recursion:

Similar to Subsequence but we keep count variable to count the total length and when there is break we make it zero and max of all is return

```
f(i, j) ans = 0
if (i == 0, j == 0) return ans,
 if (s[i] == s[j]) ans = f(i-1, j-1) ans+1,
 ans = max (ans, max(f(i-1, j), f(j, i-1)) ans = 0;

 return ans
```