Description | Hints | Submissions | Discussions | Notes

LCS of 3 Strings

Difficulty	Time Limit	Memory	Score
[illegible]	5 sec	256000KB	100

80/80 XP | 30/30

Description

Given 3 strings $s1$, $s2$ and $s3$, the task is to find the length of the longest common sub-sequence in all three given strings.

Input Format

First-line contains T - the number of test cases.

Each test case contains 3 strings in a single line.

Output Format

For each test case, print the length of the longest common subsequence in all the 3 given strings, in a new line.

Constraints

$1 \leq T \leq 100$

$1 \leq |s1| \leq 100$

$1 \leq |s2| \leq 100$

$1 \leq |s3| \leq 100$

Sample Input 1

Copy

```
3
abc abc bbc
algozenith algo algorithm
algo zenith zen
```

Sample Output 1

Copy

```
2
```

C++14 | 00:00:00 | 12 px

```cpp
#include<bits/stdc++.h>
using namespace std;
#define endl "\n"
using lli=long long int;
using pp=pair<lli,lli>;
lli m = 1e9 + 7;
string s1,s2,s3;
int dp[101][101][101];
int rec(int i,int j,int k){
    if(i==s1.length() || j==s2.length() || k==s3.length()){
        return 0;
    }

    if(dp[i][j][k]!=-1){
        return dp[i][j][k];
    }

    int ans=-1e9;
    ans=max({rec(i+1,j,k),rec(i,j+1,k),rec(i,j,k+1)});

    if(s1[i]==s2[j] && s2[j]==s3[k]){
        ans=max(ans,1+rec(i+1,j+1,k+1));
    }

    return dp[i][j][k]=ans;

}
void solve(){
    memset(dp, 1,sizeof(dp));
```

Sample Tests | Manual Tests

Console | Run on Sample