**Code:**

#include <bits/stdc++.h>

using namespace std;

int lcsUtil(string& s1, string& s2, int ind1, int ind2, vector<vector<int>>& dp) {

if (ind1 < 0 || ind2 < 0) return 0;

if (dp[ind1][ind2] != -1)

return dp[ind1][ind2];

if (s1[ind1] == s2[ind2])

return dp[ind1][ind2] = 1 + lcsUtil(s1, s2, ind1 - 1, ind2 - 1, dp);

else

return dp[ind1][ind2] = max(lcsUtil(s1, s2, ind1, ind2 - 1, dp), lcsUtil(s1, s2, ind1 - 1, ind2, dp));

}

int lcs(string s1, string s2) {

int n = s1.size();

int m = s2.size();

vector<vector<int>> dp(n, vector<int>(m, -1));

return lcsUtil(s1, s2, n - 1, m - 1, dp);

}

int main() {

string s1,s2;

cout<<"Enter String 1: ";

cin>>s1;

cout<<"Enter String 2: ";

cin>>s2;

auto start = chrono::steady\_clock::now();

cout << "The Length of Longest Common Subsequence is " << lcs(s1, s2) << endl;

auto end = chrono::steady\_clock::now();

auto diff = end - start;

cout <<"Execution time: "<< chrono::duration <double, milli> (diff).count() << " ms\n";

return 0;

}

**Output:**

