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//Write a program to find Longest Common Subsequence.

#include<iostream>

#include<conio.h>

#include<string.h>

#include<stdio.h>

using namespace std;

class Longestcommon

{

public:

    char\* a1, \* b1, a[10], b[10];

    int c[10][10];

    void getdata();

    void LCS();

    void putdata(int, int);

    void sequence(int, int);

};

void Longestcommon::getdata()

{

    cout << "Enter first string:";

    cin >> a;

    cout << "Enter second string:";

    cin >> b;

};

void Longestcommon :: LCS()

{

    int i, j, m, n;

    m = strlen(a);

    n = strlen(b);

    for (i = 0; i <= m; i++)

        c[i][0] = 0;

    for (j = 1; i <= n; j++)

        c[0][j] = 0;

    for (i = 1; i <= m; i++)

        for (j = 1; j <= n; j++)

            if (a[i - 1] == b[j - 1])

                c[i][j] = 1 + (c[i - 1][j - 1]);

            else

                c[i][j] = (c[i - 1][i] > c[i][j - 1] ? c[i - 1][j] : c[i][j - 1]);

    putdata(m, n);

    cout << "\n";

    sequence(m, n);

}

void Longestcommon :: putdata(int m, int n)

{

    int i, j;

    cout << "the resultant matrix....\n";

    cout << "\t";

    for (i = 0; i <= m; i++)

    {

        cout << "\t" << a[i];

    }

    cout << "\n";

    for (i = 0; i <= m; i++)

    {

        if (i > 0)

            cout << "\n" << b[i - 1];

        for (j = 0; j <= n; j++);

        {

            cout << "\t" << c[i][j];

        }

        cout << "\n";

    }

    cout << "Longest common subsequence....\n";

}

void Longestcommon :: sequence(int m, int n)

{

    if (c[m][n] == 0)

        return;

    if (c[m][n] == c[m - 1][n])

        sequence(m - 1, n);

    else  if (c[m][n] == c[m][n - 1])

        sequence(m, n - 1);

    else

    {

        sequence(m - 1, n - 1);

        cout << "\t" << a[m - 1];

    }

}

int main()

{

    Longestcommon l;

    l.getdata();

    l.LCS();

    return 0;

}

Output:

Enter first string:ABAB

Enter second string:AABA

the resultant matrix....

A B A B

-1

A 1877944186

A 2

B 1975679874

A 0

Longest common subsequence....

A B A