

Code:

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#include <bits/stdc++.h>
using namespace std;

const int maxn = 1005;
int dp[maxn][maxn];

int main() {
    string s1, s2;

    cout << "Enter the string 1: " << endl;
    cin >> s1;

    cout << "\nEnter the string 2: " << endl;
    cin >> s2;

    int n1 = s1.length(), n2 = s2.length();

    for (int i = 0; i <= n1; i++) {
        dp[i][0] = 0;
    }

    for (int j = 0; j <= n2; j++) {
        dp[0][j] = 0;
    }

    for (int i = 1; i <= n1; i++) {
        for (int j = 1; j <= n2; j++) {
            if (s1[i - 1] == s2[j - 1]) {
                dp[i][j] = dp[i - 1][j - 1] + 1;
            } else {
                dp[i][j] = max(dp[i - 1][j], dp[i][j - 1]);
            }
        }
    }

    cout << "\nThe length of the LCS: " << dp[n1][n2] << endl;

    int i = n1, j = n2;
    string lcs = "";

    while (i > 0 && j > 0) {
        if (s1[i - 1] == s2[j - 1]) {
            lcs = s1[i-1] + lcs;
            i--;
            j--;
        }
    }
```

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else{
    if(dp[i-1][j] > dp[i][j-1]){
        i--;
    }
    else{
        j--;
    }
}
}

cout<<"\nCharacters in LCS: "<<lcs;

return 0;
}

```

Sample Output:

Enter the string 1:

ABABABACAB

Enter the string 2:

BACAB

The length of the LCS: 5

Characters in LCS: BACAB