#include <stdio.h>

#include <string.h>

int i, j, m, n, LCS\_table[20][20];

char S1[20] = "ACCDB", S2[20] = "CADA", b[20][20];

void lcsAlgo() {

m = strlen(S1);

n = strlen(S2);

// Filling 0's in the matrix

for (i = 0; i <= m; i++)

LCS\_table[i][0] = 0;

for (i = 0; i <= n; i++)

LCS\_table[0][i] = 0;

// Building the mtrix in bottom-up way

for (i = 1; i <= m; i++)

for (j = 1; j <= n; j++) {

if (S1[i - 1] == S2[j - 1]) {

LCS\_table[i][j] = LCS\_table[i - 1][j - 1] + 1;

} else if (LCS\_table[i - 1][j] >= LCS\_table[i][j - 1]) {

LCS\_table[i][j] = LCS\_table[i - 1][j];

} else {

LCS\_table[i][j] = LCS\_table[i][j - 1];

}

}

int index = LCS\_table[m][n];

char lcsAlgo[index + 1];

lcsAlgo[index] = '\0';

int i = m, j = n;

while (i > 0 && j > 0) {

if (S1[i - 1] == S2[j - 1]) {

lcsAlgo[index - 1] = S1[i - 1];

i--;

j--;

index--; }

else if (LCS\_table[i - 1][j] > LCS\_table[i][j - 1])

i--;

else

j--;

}

// Printing the sub sequences

printf("S1 : %s \nS2 : %s \n", S1, S2);

printf("LCS: %s", lcsAlgo);

}

int main() {

lcsAlgo();

printf("\n");

}