**## LCS**

loop(i, 0, n - 1)

{

cin >> t1[i];

}

loop(i, 0, m - 1)

{

cin >> t2[i];

}

loop(i, 0, n)

{

loop(j, 0, m)

{

if (i == 0 || j == 0)

{

lcs[i][j] = 0;

}

else if (t1[i - 1] == t2[j - 1])

{

lcs[i][j] = lcs[i - 1][j - 1];

}

else

{

lcs[i][j] = max(lcs[i - 1][j], lcs[i][j - 1]);

}

}

}

**## LIS**

loop(i, 0, cnt-1)

{

int u = lower\_bound(m.bgn, m.bgn+lis, num[i])-m.bgn;

m[u] = num[i];

t[u] = i;

if (u == lis)

{

lis++;

}

r[i] = (u > 0 ? t[u - 1]:-1);

}

**## Edit Distance**

m = str1.sz;

n = str2.sz;

DP[0][0] = path[0][0] = 0;

loop(i, 1, n)

{

DP[0][i] = i;

path[0][i] = 'I';

}

loop(j, 1, m)

{

DP[j][0] = j;

path[j][0] = 'D';

}

loop(i, 1, m)

{

loop(j, 1, n)

{

if (str1[i - 1] == str2[j - 1])

{

DP[i][j] = DP[i - 1][j - 1];

path[i][j] = 0;

}

else

{

k = min3(DP[i - 1][j - 1], DP[i - 1][j], DP[i][j - 1]);

DP[i][j] = 1 + k;

if (k == DP[i - 1][j - 1])

{

path[i][j] = 'C';

}

else if (k == DP[i - 1][j])

{

path[i][j] = 'D';

}

else if (k == DP[i][j-1])

{

path[i][j] = 'I';

}

}

}

}

**## BackTracking**

void printCmnd(int a, int b)

{

if (a >= 0 && b >= 0)

{

switch (path[a][b])

{

case 0:

printCmnd(a - 1, b - 1);

break;

case 'D':

printCmnd(a - 1, b);

sprintf(temp, "D%c%02d", str1[a-1], a+ins-dlt);

dlt++;

cout << string(temp);

break;

case 'I':

printCmnd(a, b - 1);

sprintf(temp, "I%c%02d", str2[b-1], b);

ins++;

cout << string(temp);

break;

case 'C':

printCmnd(a - 1, b - 1);

sprintf(temp, "C%c%02d", str2[b - 1], a+ins-dlt);

cout << string(temp);

break;

}

}

}

#define \_CRT\_SECURE\_NO\_WARNINGS

#include<iostream>

#include<sstream>

#include<cstdio>

#include<cmath>

#include<cstdlib>

#include<cctype>

#include<cstring>

#include<climits>

#include<iomanip>

#include<string>

#include<vector>

#include<stack>

#include<queue>

#include<deque>

#include<set>

#include<map>

#include<list>

#include<algorithm>

#include<utility>

#include<functional>

typedef long long LL;

typedef unsigned long long ULL;

typedef vector<int> VI;

typedef vector<double> VD;

typedef vector<char> VC;

typedef vector<string> VS;

typedef list<int> LI;

typedef map<int, int> MII;

typedef map<string, int> MSI;

typedef map<int, string> MIS;

typedef pair<int,int> PII;

#define psb(x) push\_back(x)

#define psf(x) push\_front(x)

#define ppb pop\_back()

#define ppf pop\_front()

#define pop pop()

#define front front()

#define back back()

#define bgn begin()

#define end end()

#define emp empty()

#define clr clear()

#define sz size()

#define sp setprecision

#define fx fixed

#define fst first

#define snd second

#define reset(a) memset(a,0,sizeof(a))

#define assign(a,b) memset(a,b,sizeof(a))

#define assignmx(a) memset(a,127,sizeof(a))

#define assignmn(a) memset(a,128,sizeof(a))

#define max3(x, y, z) max(x, max(y, z))

#define min3(x, y, z) min(x, min(y, z))

#define max4(w, x, y, z) max(w, max(x, max(y,z)))

#define min4(w, x, y, z) min(w, min(x, min(y, z)))

#define range(r,c) ((r >=0 && r <row) && (c >=0 && c <column))

#define getch char ch=getchar()

#define gtl(str) getline(cin,str)

#define loop(x,r,n) for(x = r ; x <= n ; x++)

#define rloop(x, r, n) for (x = r; x >= n; x--)

#define test(t) for(int o = 1 ; o <= t ; o++)

#define printcs cout << "Case " << o << ": ";

#define nl cout << "\n"

//int X4[] = { 0, -1, 0, 1 };

//int Y4[] = { -1, 0, 1, 0 };

//int X8[] = { -1, -1, -1, 0, 0, 1, 1, 1 };

//int Y8[] = { -1, 0, 1, -1, 1, -1, 0, 1 };

//int X3D6[] = { 0, 0, -1, 1, 0, 0 };

//int Y3D6[] = { -1, 1, 0, 0, 0, 0 };

//int Z3D6[] = { 0, 0, 0, 0, -1, 1 };

//bool flag, flag1, flag2, flag3;

//int row, column;

int i, j, k;

#define INFMX 2139062143

#define INFMN -2139062144

#define pi acos(-1.0)

#define N 100001