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21CE1256

D3

EXP 9

CODE:

#include<stdio.h>

#include<string.h>

#include<conio.h>

int i,j,m,n,c[20][20];

char x[20],y[20],b[20][20];

int count=0;

void print(int i,int j)

{

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

if(b[i][j]=='c')

{

print(i-1,j-1);

printf("%c",x[i-1]);

}

else if(b[i][j]=='u')

print(i-1,j);

else

print(i,j-1);

}

void lcs()

{

m=strlen(x);

n=strlen(y);

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

c[i][0]=0;

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

c[0][i]=0;

//c, u and l denotes cross, upward and downward directions respectively

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

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

{

if(x[i-1]==y[j-1])

{

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

b[i][j]='c';

}

else if(c[i-1][j]>=c[i][j-1])

{

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

b[i][j]='u';

}

else

{

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

b[i][j]='l';

}

count++;

}

}

int main()

{

clrscr();

printf("Enter 1st sequence:");

scanf("%s",x);

printf("Enter 2nd sequence:");

scanf("%s",y);

printf("\nThe Longest Common Subsequence is: ");

lcs();

print(m,n);

printf("\ntime complexity: %d \n",count);

getch();

return 0;

}

OUTPUT:

