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Section 1

**Ans:**

#include<stdio.h>

#include<string.h>

int Find\_Max(int a, int b)

{

if(a>b)

return a;

else

return b;

}

int main(void)

{

int i, c, k;

char X[20], Y[20];

//char x[] = "ABCF"; char y[] = "ACF";

printf("Enter string number 1 : ");

scanf("%s",X);

printf("Enter string number 2 : ");

scanf("%s",Y);

int Str\_X = strlen(X);

int Stre\_Y = strlen(Y);

int L[Str\_X + 1][Stre\_Y + 1];

printf("Table : ");

for(k = 0; k <= Str\_X; k++)

{

printf("\n");

for(c = 0; c <= Stre\_Y; c++)

{

if(k == 0 || c == 0)

{

L[k][c] = 0;

printf("%d\t",L[k][c]);

}

else if(X[k - 1] == Y[c - 1])

{

L[k][c] = L[k - 1][c - 1] + 1;

printf("%d\t",L[k][c]);

}

else

{

L[k][c] = Find\_Max(L[k - 1][c], L[k][c - 1]);

printf("%d\t",L[k][c]);

}

}

}

k = Str\_X; c = Stre\_Y;

i = L[k][c];

char LCS[i+1];

LCS[i] = '\0';

while(c > 0 && k > 0 )

{

if(X[k - 1] == Y[c - 1])

{

LCS[i - 1] = X[k - 1];

i--; k--; c--;

}

else if(L[k - 1][c] > L[k][c - 1])

k--;

else

c--;

}

printf("\n\n");

printf("LCS: %s\n", LCS);

printf("Length: %d\n", L[Str\_X][Stre\_Y]);

return 0;

}

**Ans:**

#include<stdio.h>

#include<string.h>

char X[20],Y[20];

int count=0,cnt[20][20],Str\_X=0,Str\_Y=0;

void Prinr\_SC(int i,int j)

{

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

cnt[i][j]=0;

else if(X[i-1]==Y[j-1])

{

Prinr\_SC(i-1,j-1);

if(count==cnt[Str\_X][Str\_Y])

{

count=0;

printf("\n");

}

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

count++;

}

else if(cnt[i-1][j]==cnt[i][j-1])

{

Prinr\_SC(i-1,j);

Prinr\_SC(i,j-1);

}

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

Prinr\_SC(i,j-1);

else

Prinr\_SC(i-1,j);

}

void main()

{

int i,j;

printf("Enter 1st string: ");

scanf("%s",X);

printf("Enter 2nd string: ");

scanf("%s",Y);

Str\_X=strlen(X);

Str\_Y=strlen(Y);

for(i=0; i<=Str\_X; i++)

{

for(j=0; j<=Str\_Y; j++)

{

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

cnt[i][j]=0;

else if(X[i-1]==Y[j-1])

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

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

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

else

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

}

}

for(i=0; i<=Str\_X; i++)

{

for(j=0; j<=Str\_Y; j++)

{

printf("%d\t",cnt[i][j]);

}

printf("\n");

}

Prinr\_SC(Str\_X,Str\_Y);

}