```c
1: //longest common subsequence
2:
3: #include<stdio.h>
4:
5: int size(char A[]){
6:     int c=0,i=0;
7:     while(A[i]!='\0'){
8:         i=i+1;
9:         c=c+1;
10:     }
11:     return c+1;
12:
13:     }
14: void print(char A[]){
15:     int i=0;
16:     printf("        ");
17:     while(A[i]!='\0'){
18:         printf("|_%c_",A[i]);
19:         i=i+1;
20:     }
21:     printf("|_._|");
22: }
23: int max(int a,int b){
24:     if(a>b)return a;
25:     return b;
26: }
27: int LCS(char A[],char B[]){
28:     int LCS[size(A)][size(B)];
29:     for(int r=0;r<size(B);++r)
30:       LCS[r][size(B)-1]=0;
31:     for(int c=0;c<size(A);++c)
32:       LCS[size(A)-1][c]=0;
33:
34:
35:
36:     for(int c=size(B)-2;c>=0;--c){
37:         for(int r=size(A)-2;r>=0;--r){
38:             if(A[r]==B[c])
39:                 LCS[r][c]=1+LCS[r+1][c+1];
40:             else
41:                 LCS[r][c]=max(LCS[r+1][c],LCS[r][c+1]);
42:
43:         }
44:
45:     }  print(B);
46:     printf("\n\n");
47:     for(int i=0;i<size(A);++i)
48:       {
49:
50:         printf("|_%c_| ",A[i]);
51:       for(int j=0;j<size(B);++j)
52:         printf("|_%d_",LCS[i][j]);
53:     printf("|");
54:      printf("\n");
```

```c
55: }
56:     int i=0,j=0;
57:     printf("\nLongest common subsequence is: ");
58:     while(i<=size(A)&&j<=size(B)){
59:         if(A[i]==B[j]){
60:             printf("%c",A[i]);
61:             i++;j++;
62:         }
63:         else{
64:             int k=max(LCS[i+1][j],LCS[i][j+1]);
65:                 if(k==LCS[i+1][j])
66:                     i++;
67:                 else
68:                     j++;
69:
70:         }
71:     }
72:     return LCS[0][0];
73:
74: }
75:
76: int main(){
77:     char A[]="sharma";
78:     char B[]="sourav";
79:
80:     int p=LCS(A,B);
81:     printf("\nAnd it's length is %d",p);
82: }
```