Code:

```
#include<stdio.h>
#include<string.h>

int i,j,m,n,c[20][20];
char x[20],y[20],b[20][20];

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';
                                    }
                        }
}
int main()
{
```

```c
                printf("Enter 1st sequence:");
                scanf("%s",x);
                printf("Enter 2nd sequence:");
                scanf("%s",y);
                printf("\nThe Longest Common Subsequence is ");
                lcs();
                print(m,n);
    return 0;
}
```
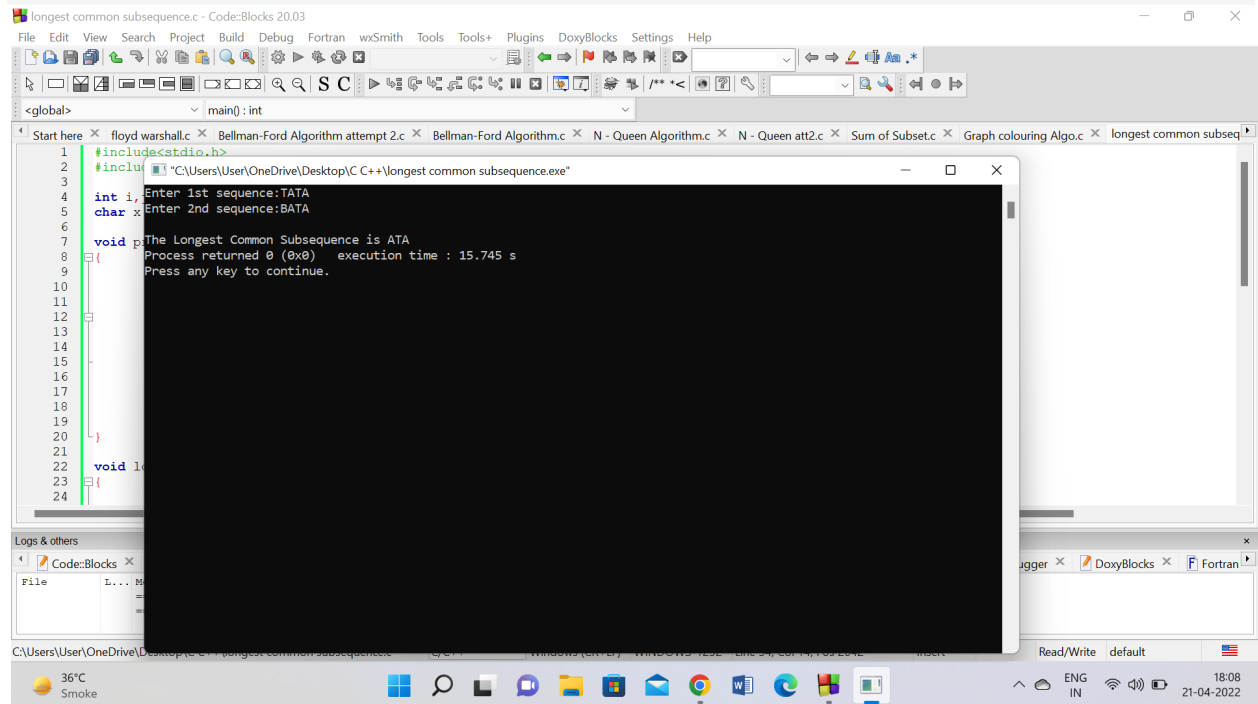
```
 1    #include<stdio.h>
 2    #inclu
 3
 4    int i,
 5    char x
 6
 7    void p
 8   {
 9
10
11
12
13
14
15
16
17
18
19
20   }
21
22    void l
23   {
24
```

"C:\Users\User\OneDrive\Desktop\C C++\longest common subsequence.exe"

```
Enter 1st sequence:TATA
Enter 2nd sequence:BATA

The Longest Common Subsequence is ATA
Process returned 0 (0x0)   execution time : 15.745 s
Press any key to continue.
```

Q. X = BDCABA

Y = ABCBDAB

	O	A	B	C	B	D	A	B
O	0	0	0	0	0	0	0	0
B	0	0	1	1	1	1	1	1
D	0	0	1	1	1	2	2	2
C	0	0	1	2	2	2	2	2
A	0	1	1	2	2	2	3	3
B	0	1	2	2	3	3	3	4
A	0	1	2	2	3	3	4	4

LCS len ~4

LCS = BDAB