

PROGRAM:

```
#include <stdio.h>

#include <string.h>


#define UP 0
#define LEFT 1
#define TOPLEFT 2


void printSubsequence(int, int);


int C[100][100], B[100][100];
char str1[100], str2[100];
int m, n;


int main() {
    printf("Enter string 1 : ");
    scanf("%s", str1);
    printf("Enter string 2 : ");
    scanf("%s", str2);


    m = strlen(str1);
    n = strlen(str2);


    for(int i = 0; i <= m; i++)
        C[i][0] = 0;


    for(int j = 0; j <= n; j++)
        C[0][j] = 0;
```

```

for(int i = 1; i <= m; i++) {
    for(int j = 1; j <= n; j++) {
        if(str1[i-1] == str2[j-1]) { //NOTE: i and j are 1-indexed, so we do i-1 and j-1
            C[i][j] = C[i-1][j-1] + 1;
            B[i][j] = TOPLEFT;
        }
        else {
            if(C[i-1][j] >= C[i][j-1]) {
                C[i][j] = C[i-1][j];
                B[i][j] = UP;
            }
            else {
                C[i][j] = C[i][j-1];
                B[i][j] = LEFT;
            }
        }
    }
}

printf("\nTotal length of characters: %d\n", C[m][n]);
printf("The longest common subsequence is : ");

printSubsequence(m, n);

return 0;
}

```

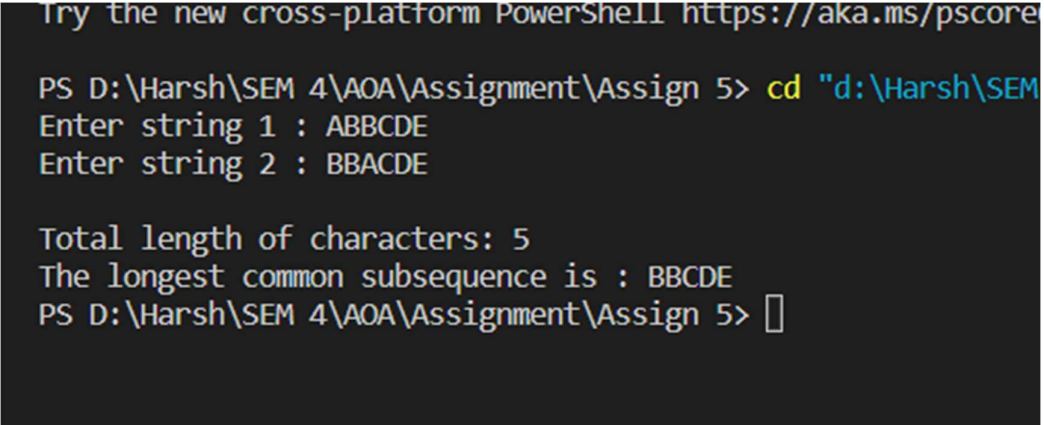
```

void printSubsequence(int i, int j) {
    if(i == 0 || j == 0)
        return;
}

```

```
if(B[i][j] == LEFT)
    printSubsequence(i, j-1);
else if(B[i][j] == UP)
    printSubsequence(i-1, j);
else {
    printSubsequence(i-1, j-1);
    printf("%c", str1[i-1]);
}
}
```

OUTPUT:



```
Try the new cross-platform PowerShell https://aka.ms/powershell

PS D:\Harsh\SEM 4\AOA\Assignment\Assign 5> cd "d:\Harsh\SEM 4\AOA\Assignment\Assign 5"
Enter string 1 : ABBCDE
Enter string 2 : BBACDE

Total length of characters: 5
The longest common subsequence is : BBCDE
PS D:\Harsh\SEM 4\AOA\Assignment\Assign 5> 
```