



SHREE L. R. TIWARI COLLEGE OF ENGINEERING

Approved by AICTE & DTE, Maharashtra State & Affiliated to University of Mumbai, NAAC Accredited, NBA Accredited program,
ISO 9001:2015 Certified | DTE Code No: 3423, Recognized under Section 2(f) of the UGC Act 1956, Minority Status (Hindi Linguistic)

Name: Samit Dubey

Roll no.: 22 Div: A

Batch: A1

Program:

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

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

```
void LCS_Length(char X[], char Y[], int m, int n, int c[][n+1], char b[][n+1]) {  
    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 (X[i - 1] == Y[j - 1]) {  
                c[i][j] = c[i - 1][j - 1] + 1;  
                b[i][j] = '\\';  
            } else if (c[i - 1][j] >= c[i][j - 1]) {  
                c[i][j] = c[i - 1][j];  
                b[i][j] = '^';  
            } else {  
                c[i][j] = c[i][j - 1];  
                b[i][j] = '<';  
            }  
        }  
    }  
}
```

```
void Print_LCS(char b[][100], char X[], int i, int j) {  
    if (i == 0 || j == 0)  
        return;  
    if (b[i][j] == '\\') {  
        Print_LCS(b, X, i - 1, j - 1);  
        printf("%c", X[i - 1]);  
    } else if (b[i][j] == '^') {  
        Print_LCS(b, X, i - 1, j);  
    } else {  
        Print_LCS(b, X, i, j - 1);  
    }  
}
```

```
int main() {  
    char X[100], Y[100];
```



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```
printf("Enter the first string: ");
scanf("%s", X);

printf("Enter the second string: ");
scanf("%s", Y);

int m = strlen(X), n = strlen(Y);
int c[m+1][n+1];
char b[m+1][n+1];

LCS_Length(X, Y, m, n, c, b);

printf("The Longest Common Subsequence (LCS) is: ");
Print_LCS(b, X, m, n);
printf("\n");

return 0;
}
```

Output:

Enter the first string: ABCBDAB

Enter the second string: BDCAB

The Longest Common Subsequence (LCS) is: BCAB