Name: Samit Dubey
Roll no.: 22 Div: A
Batch: A1

Program:

```c
#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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```c
    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