

# String Distance

Let  $A = a_1a_2\dots a_k$  and  $B = b_1b_2\dots b_l$  be strings of lengths  $k$  and  $l$ , respectively. The string distance between  $A$  and  $B$  is defined in the following way ( $d[i,j]$  is the distance of substrings  $a_1\dots a_i$  and  $b_1\dots b_j$ , where  $0 \leq i \leq k$  and  $0 \leq j \leq l$  --  $i$  or  $j$  being 0 represents the empty substring). The definition for  $d[i, j]$  is  $d[0, 0] = 0$  and for  $(i, j) \neq (0, 0)$   $d[i, j]$  is the minimum of all that apply:

- $d[i, j - 1] + 1$ , if  $j > 0$
- $d[i - 1, j] + 1$ , if  $i > 0$
- $d[i - 1, j - 1]$ , if  $i > 0, j > 0$ , and  $a_i = b_j$
- $d[i - 1, j - 1] + 1$ , if  $i > 0, j > 0$ , and  $a_i \neq b_j$
- $d[i - 2, j - 2] + 1$ , if  $i \geq 2, j \geq 2, a_i = b_{j-1}$ , and  $a_{i-1} = b_j$

The distance between  $A$  and  $B$  is equal to  $d[k,l]$ .

For two given strings  $A$  and  $B$ , compute their distance knowing that it is not higher than 100.

## Input

In the first line,  $k$  and  $l$  are given, giving the lengths of the strings  $A$  and  $B$  ( $1 \leq k, l \leq 10^5$ ). In the second and third lines strings  $A$  and  $B$ , respectively, are given.  $A$  and  $B$  contain only lowercase letters of the English alphabet.

## Output

In the first line, write one number, the distance between  $A$  and  $B$ , followed by a newline.

## Example

### Input:

```
8 8
computer
kmpjutre
```

### Output:

```
4
```