

## GOCC15: Google's Online Challenge for Internship (India)

- Difficulty Level : [Expert](#)
- Last Updated : 22 Jul, 2021

I came to know about the opportunity through <https://careers.google.com/jobs/results/> Google's website. Applied for the same with my resume. After two weeks got a mail Invite participating in the coding round. The mail had a unique ID and got the passkey(for login) on the day of the coding round (29th Aug 2020). The slot was open from 15:00 to 17:00 IST.

A coding round was conducted on the HackerEarth platform. The test duration was 60 minutes consisting of two coding questions, every 30 points. I partially solved 2nd one, the solution didn't suffice for test cases with large inputs.

**A Special String:** You are given a string  $S$  consisting of lowercase Latin alphabets  $a-z$ . Find the minimum number of characters that must be changed to make  $S$  special. A string  $S$  is said to be special if and only if for all  $(S[i], S[j])$  where  $(1 \leq i < j \leq N/2)$  and  $(N/2 + 1 \leq j \leq N)$  one of the following conditions is true

- $S[i] > S[j]$
- $S[i] < S[j]$
- $S[i] = S[j]$

$S[i]$  represents the  $i$ th character of string  $S$  (1 based Indexing).

### Input Format:

- The first line contains an integer  $T$  denoting the number of test cases.
- The first line of each test case contains an integer  $N$  denoting the length of  $S$ .
- The second line of each test case contains a string  $S$ .

**Output format:** Print an integer denoting the minimum number of changes required for each test case in a new line.

### Constraints

$1 \leq T \leq 5$

$1 \leq N \leq 10^3$

$N$  is even

### Example :

**Input:** 1  
6  
aababc

**Output:** 2

**Explanation:** Change  $S[4] = 'd'$  (1 based indexing) Change  $S[5] = 'd'$   
New string = 'aabdcd' Now all pair  $(S[i], S[j])$  satisfy the second condition,  $S[i] < S[j]$

**Generating Sequence:** You are given two strings  $A$  of length  $N$  and  $B$  of length  $M$ . These strings contain lowercase English alphabets. You are also given an integer  $K$ . You can change the character of  $x$  in string  $A$  to any other character  $y$ . The cost of this conversion is  $abs(ASCII(x) - ASCII(y))$ . Find the minimum cost required such that the length of the longest common subsequence (LCS) of  $A$  and  $B$  is at least  $K$ .

### Note:

- A subsequence of  $A$  string can be obtained by deleting zero or more characters in  $A$ .
- The longest common subsequence of two strings of  $A$  and  $B$  is a subsequence of  $A$  and  $B$  and has the maximum length among all strings that are a subsequence of  $A$  and  $B$  that would be multiple subsequences for two provided strings for example an LCS of vera and eats is ea.

### Input Format:

- The first line contains an integer  $T$  denoting the number of test cases for each test case.
- The first line of each test case contains three space-separated integers  $N$ ,  $M$ , and  $K$ .
- The next line of each test case contains a string  $A$ .

- The next line of each test case contains a string B.

**Output format:** For each test case, print the minimum cost required in a new line.

**Constraints**

1 ≤ T ≤ 10

1 ≤ N, M ≤ 200

0 ≤ K ≤ min( N, M )

**Example:**

**Input:** 2  
5 4 3      abcba      acyx      3 3 3      abc      abc  
**Output:** 22      0

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