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between the three strings is defined as $\sum_{i=1}^n |a[i]-b[i]| + |a[i]-c[i]|$ where |a[i]-b[i]| and |a[i]-c[i]|

are the absolute differences between ASCII values of the characters at the position i in strings a,b and a,crespectively. However, the string a can be rotated cyclically (for example the rotations of the string xyz are xyz, zxy, yzx). There are a total of n possible rotations of a string of length n.

Print the maximum and minimum difference of the three strings for all the possible rotations of the string a.

First line: Single integer n (the length of the three strings)

Next three lines: Strings a,b and c respectively

Output Format:

Print two space-separated integers: the maximum and minimum difference of the three strings for all possible rotations of string a.

Constraints

$1 \leq n \leq 100000$

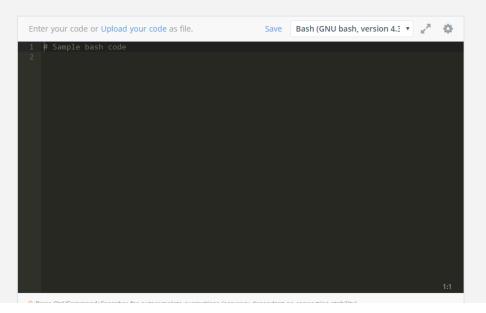


Explanation

The minimum difference is obtained when the first string is rotated cyclically once while the difference is maximum without any rotation.

Time Limit:	3.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Marks are awarded when all the testcases pass.
Allowed Languages:	Bash, C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Swift, Swift-4.1, Visual Basic

CODE EDITOR



BEST SUBMISSIONS LANGUAGE: Bash ▼ There is no solution for this language VIEW ALL SUBMISSION

CONTRIBUTOR



THIS PROBLEM WAS ASKED IN



SOCIAL SHARE

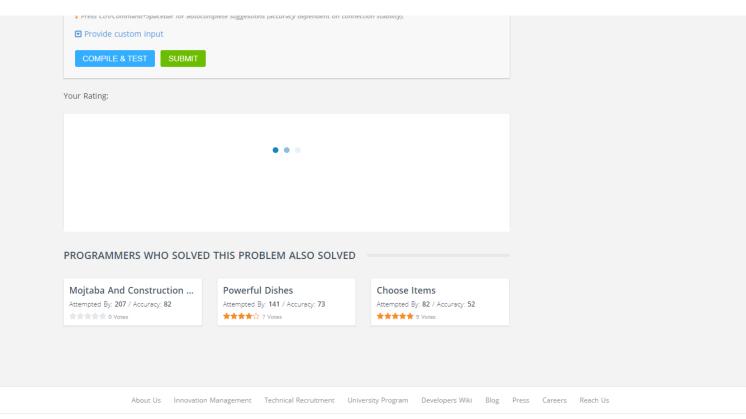












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