



HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING API HELP DASHA 🖫 CALENDAR

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

C. Substring Game in the Lesson

time limit per test: 2 seconds memory limit per test: 256 mebibytes input: standard input output: standard output

Mike and Ann are sitting in the classroom. The lesson is boring, so they decided to play an interesting game. Fortunately, all they need to play this game is a string s and a number k ($0 \le k < |s|$).

At the beginning of the game, players are given a substring of s with left border l and right border r, both equal to k (i.e. initially l=r=k). Then players start to make moves one by one, according to the following rules:

- A player chooses l' and r' so that $l' \leq l$, $r' \geq r$ and s[l',r'] is lexicographically less than s[l,r]. Then the player changes l and r in this way: l:=l', r:=r'.
- · Ann moves first.
- · The player, that can't make a move loses.

Recall that a substring s[l,r] ($l\leq r$) of a string s is a continuous segment of letters from s that starts at position l and ends at position r. For example, "ehn" is a substring (s[3,5]) of "aaaehnsvz" and "ahz" is not.

Mike and Ann were playing so enthusiastically that they did not notice the teacher approached them. Surprisingly, the teacher didn't scold them, instead of that he said, that he can figure out the winner of the game before it starts, even if he knows only s and t.

Unfortunately, Mike and Ann are not so keen in the game theory, so they ask you to write a program, that takes s and determines the winner for all possible k.

Input

The first line of the input contains a single string s ($1 \le |s| \le 5 \cdot 10^5$) consisting of lowercase English letters.

Output

Print |s| lines.

In the line i write the name of the winner (print Mike or Ann) in the game with string s and k=i, if both play optimally

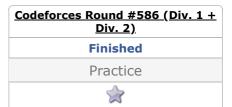
Examples

output

Mike

Mike





→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

→ Submit?

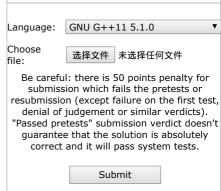
Сору

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest







2019/9/19 Problem - C - Codeforces

• Announcement #2 (ru)

<u>Codeforces</u> (c) Copyright 2010-2019 Mike Mirzayanov The only programming contests Web 2.0 platform Server time: Sep/19/2019 16:09:17^{UTC+8} (h2).

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