

### D. Card Game

time limit per test: 0.25 seconds  
memory limit per test: 5 megabytes

Muhammad, Ali and Rady are playing Card Game for Three, as below:

- At first, each of the three players has a deck consisting of some number of cards. Each card has a letter 'm', 'a' or 'r' written on it. The orders of the cards in the decks cannot be rearranged.
- The players take turns. Muhammad goes first.
- If the current player's deck contains at least one card, discard the top card in the deck. Then, the player whose name begins with the letter on the discarded card, takes the next turn. (For example, if the card says 'm', Muhammad takes the next turn.)
- If the current player's deck is empty, the game ends and the current player wins the game.

You are given the initial decks of the players. More specifically, you are given three strings  $S_M$ ,  $S_A$  and  $S_R$ .

The  $i_{th}$  ( $1 \leq i \leq |S_M|$ ) letter in  $S_M$  is the letter on the  $i_{th}$  card in Muhammad's initial deck.  $S_A$  and  $S_R$  describes Ali's and Rady's initial decks in the same way.

Determine the winner of the game.

#### Input

The input consists of three lines containing three non-empty strings  $S_M$ ,  $S_A$  and  $S_R$  ( $1 \leq |S| \leq 10^5$ ) — The initial decks of Muhammad, Ali and Rady respectively.

#### Output

If Muhammad will win, print  $M$ . If Ali will win, print  $A$ . If Rady will win, print  $R$ .

#### Examples

input	Copy
mrm mrrr rm	
output	Copy
M	

input	Copy
mara mmra arrr	
output	Copy
R	

#### Note

Explanation of the first sample: The game will progress as below:

- Muhammad discards the top card in his deck, 'm'. Muhammad takes the next turn.
- Muhammad discards the top card in his deck, 'r'. Rady takes the next turn.
- Rady discards the top card in his deck, 'r'. Rady takes the next turn.
- Rady discards the top card in his deck, 'm'. Muhammad takes the next turn.
- Muhammad discards the top card in his deck, 'm'. Muhammad takes the next turn.
- Muhammad's deck is empty. The game ends and Muhammad wins the game.

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

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→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 ( Binary search , Two pointers )
- Juniors Phase 1 Practice #3 ( STL 2 )
- Juniors Phase 1 Practice #2 ( STL 1 )
- Juniors Phase 1 Practice #1 ( Prefix sum , Frequency Array )

Juniors Phase 1 Practice #2 ( STL 1 ).

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the [link](#).

→ Virtual participation

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Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

Submission	Time	Verdict
<a href="#">284716326</a>	Oct/07/2024 06:36	Accepted
<a href="#">246722685</a>	Feb/16/2024 22:53	Accepted
<a href="#">246721826</a>	Feb/16/2024 22:42	Wrong answer on test 3