Introduction
Horizontally is a two-player combinatorial game played on a rectangular board divided into rows and columns.

The game is parameterised by three positive integers:

FIELDS is the number of squares of the board occupied by a player in one move,

ROWS is the number of rows of the board,

COLUMNS is the number of columns of the board.

For a FIELD value of 2 the game is known as Domineering and for a FIELD of 3 it is Triomineering.

The players, hereafter referred to as Left and Right, sit at adjacent sides of the board, not opposite each other. The constants VERSES and COLUMNS determine the size of the board from the Right's point of view. Columns are called capital letters, from 'A', and rows are called lowercase letters, from 'a'.

Players take turns making moves, starting with the Left. Left can delegate the right to make the first move to Right.

A player's move is to place a block on the board occupying a coherent set of free squares. The block is FIELDS wide, 1 high and is horizontal from the point of view of the player who placed it, and vertical for the opponent. Playing on a piece of paper, players draw a line horizontal to themselves across a set number of free squares.

A player who cannot make a move when it is his turn, or finds that he does not wish to continue the game, surrenders. The opponent of the player who has surrendered wins even if he himself can no longer make a move.

Board evaluation
We know the winner of a game when the game is over, but sometimes, during the course of a game, we want to determine the current score. We call it the board rating.

We will assume that the board rating from a given player's point of view is the difference between the number of blocks he could put on the board at once and the number of blocks his opponent could put on the board at once.

On a game board with a value of FIELDS equal to 3, VERSES equal to 7 and COLUMNS equal to 11:

```
  A B C D E F G H I J K |
a . . . # . . # . . . . |
b . . . # . . # . . . . |
c # # ##. ## ## ## #. |
d . . . . . .# . . . . . |
e . . # . . # . . ###|
f . .# . . .  ###. . |
g . .#  . . . . . . . . |
----------------------+
```

where occupied fields are marked with '#' and empty fields are marked with '.', the Left player, i.e. looking at the board from the left, can place 6 blocks and the Right player, looking at the board from below, 9. For the Right player, the score of this board is therefore 9 - 6 = 3.

Task
Write a program that plays, as Right, the Level game with the parameters FIELDS, ROWS, COLUMNS.

The execution of the program starts with the Left optionally passing the right of the first move to the Right. After this, the program reads the record of subsequent moves by Left and responds for Right by writing its moves. Right gives up when it cannot make any move. The program terminates when one of the players gives up.

Out of all the possibilities, the program chooses the move of the Right one, after which the board rating will be maximum for him. If there were many such moves, it chooses one of them. The choice is determined, as described below, by the value of the constant SELECT.

Right's choice of move starts by determining a sequence of all moves maximising the board's evaluation, ordered in ascending order of row names and, within a row, in ascending order of column names. Assuming that the length of this sequence is n, the number of the selected move, counted from 0, will be the value of the expression SELECT % n.

The values of FIELDS, VERSES, COLUMNS and SELECT are specified using symbolic constants defined by the -D option of the compiler.

The default values of these constants are given in the program code:

FIELDS has a value of 5,

VERSES has the value 26,

COLUMNS has the value 26,

SELECT has the value 1000.

Data form
At the beginning of the program data there may optionally be a line containing only a '-' sign. It indicates that the right to make the first move has been transferred from the LEFT to the RIGHT.

Subsequent data lines are a record of the Left's moves, one per line. The Left's movement is represented by an uppercase letter and a lowercase letter indicating, respectively, the column in which the block is to be and the row in which the first field of the block is to be.

A line of data containing only a '.' indicates the surrender of the Left.

The form of the result
The program writes the moves of the Right, one per line. When Right surrenders, the program writes a line containing only the '.' character.

The movement of the Right is represented by a lower case letter and an upper case letter indicating, respectively, the row where the block is to be and the column where the first field of the block is to be.

There are no spaces or any other characters not mentioned above in the resulting text of the program.

The diagram in the board evaluation description shows the state of the board after the Left moves have been loaded:

Fc
Ce
Da
Ga
and listing the moves of the Right:

cH
eI
cA
fG