The simple graphical editor deals with a rectangular table $M \times N$ ($1 \le M, N \le 250$). Each pixel of the table has its colour. The picture is formed from this square pixels.

The problem is to write a program, which simulates an interactive work of the graphical editor.

Input

Input consists of the editor commands, one per line. Each command is represented by one Latin capital placed in the very beginning of the line. If the command supposes parameters, all the parameters will be given in the same line separated by space. As the parameters there may be: the coordinates of the pixel - two integers, the first one is the column number and belongs to $1 \dots M$, the second one is the row number and belongs to $1 \dots N$, the origin is in the upper left corner of the table; the colour - the Latin capital; file name - in MSDOS 8.3 format.

The editor deals with the following commands:

`I` M N	Creates a new table $M \times N$. All the pixels are colored in white (`O`).
`C`	Clears the table. The size remains the same. All the pixels became white (`O`).
`L` X Y C	Colors the pixel with coordinates (X, Y) in colour C.
`V` X Y_1 Y_2 C	Draws the vertical segment in the column X between the rows Y_1 and Y_2 inclusive in colour C.
`H` X_1 X_2 Y C	Draws the horizontal segment in the row Y between the columns X_1 and X_2 inclusive in colour C.
`K` X_1 Y_1 X_2 Y_2 C	Draws the filled rectangle in colour C. (X_1, Y_1) is the upper left corner, (X_2, Y_2) is the lower right corner of the rectangle.
`F` X Y C	Fills the region with the colour C. The region R to be filled is defined as follows. The pixel (X, Y) belongs to this region. The other pixel belongs to the region R if and only if it has the same colour as pixel (X, Y) and a common side with any pixel which belongs to this region.
`S` *Name*	Writes the picture in the file *Name*.
`X`	Terminates the session.

Output

Every time the command '`S` $NAME$' meets, you should output the file name $NAME$ and the current table, row by row. Each row is represented by a pixels' colours series, see the output sample.

Errors: If as a command there will be a character different from `I, C, L, V, H, K, F, S, X`, the editor should ignore the whole line and pass to the next command.

In case of other errors the program behaviour is unpredictable.

Sample Input

```
I 5 6
L 2 3 A
S one.bmp
G 2 3 J
F 3 3 J
V 2 3 4 W
H 3 4 2 Z
S two.bmp
X
```

Sample Output

```
one.bmp
OOOOO
OOOOO
OAOOO
OOOOO
OOOOO
OOOOO
two.bmp
JJJJJ
JJZZJ
JWJJJ
JWJJJ
JJJJJ
JJJJJ
```