Simple interactive graphical editor

Graphical editors allow users to edit images in the same way text editors let us modify documents. Images are represented as an $M \times N$ array of pixels with each pixel given color.

Produce a program that simulates a simple interactive graphical editor.

Input

The input consists of a line containing a sequence of commands. Each command is represented by a single capital letter at the start of the line. Arguments to the command are separated by spaces and follow the command character.

Pixel co-ordinates are represented by a pair of integers: 1) a column number between 1 and M, and 2) a row number between 1 and N. Where $1 <= M, N <= 250$. The origin sits in the upper-left of the table. Colours are specified by capital letters.

Commands

The editor supports 7 commands:

1. **I M N**. Create a new $M \times N$ image with all pixels colored white (O).
2. **C**. Clears the table, setting all pixels to white (O).
3. **L X Y C**. Colors the pixel (X,Y) with color C.
4. **V X Y1 Y2 C**. Draw a vertical segment of color C in column X between rows $Y1$ and $Y2$ (inclusive).
5. **H X1 X2 Y C**. Draw a horizontal segment of color C in row Y between columns $X1$ and $X2$ (inclusive).
6. **F X Y C**. Fill the region R with the color C. R is defined as: Pixel (X,Y) belongs to R. Any other pixel which is the same color as (X,Y) and shares a common side with any pixel in R also belongs to this region.
7. **S**. Show the contents of the current image
8. **X**. Terminate the session

Example

In the example below, > denotes input, => denotes program output.

```
>I56
>L23A
>S
=>
OOOOO
OOOOO
OAOOO
OOOOO
OOOOO
OOOOO
>F33J
>V234W
>H342Z
>S
=>
JJJJJ
JJZZJ
JWJJJ
JWJJJ
JJJJJ
JJJJJ
```

Submission

Please provide us an git repository or if not possible you can send us source files in a common archive format (ZIP, RAR, TAR etc.).

Please send us git repository link or files as described above to matej@devot.team

In case of any questions or problems feel free to reach us.

Good luck and have fun! 🙂