MWC '15 #8 P2: ASCII Art

Time limit: 0.6s **Memory limit:** 256M

aurpine used to be a pixel painter. However, times have changed. Technology has advanced. These days, it's all about *ASCII*. Foreign to the new style, he has become depressed. Cheer him up by writing a program featuring the primitive tools he knows from pixel painting. Each operation will be given to you on a single line.

The features and operations are:

- `c n` change the *colour* used to the given ASCII character `n`. The letter `c` will strictly be followed by a single space, followed by the character. The *colour* could be a space.
- `r x y w h` draw a rectangle starting at (x, y) $(0 \leq x, y)$ with a width (columns) and height (rows) of w and h respectively $(1 \leq w, h)$.
- `f x y w h` draw a filled rectangle starting at (x, y) $(0 \leq x, y)$ with a width (columns) and height (rows) of w and h respectively $(1 \leq w, h)$.
- `h y a b` draw a horizontal line on row y $(0 \leq y)$ from column a to b (inclusive) $(0 \leq a \leq b)$.
- `v x a b` draw a vertical line on column x $(0 \leq x)$ from row a to b (inclusive) $(0 \leq a \leq b)$.
- `d x y` draw a dot (pixel) at (x, y) $(0 \leq x, y)$.
- `s` save the picture (print the art and close your program).

The default (starting) colour is a period `.`. The grid initiates with a width and height of 0. It expands so that any edited character/pixel is included in the rectangular area. Note that the point $(0, 0)$ is not necessarily always drawn. The background (where nothing has been drawn) defaults to a space character ` `. When printing, pad and trail spaces so that the output consists of R rows with C characters on each line where R and C are respectively the rows and columns expanded to. Characters get overwritten when drawn.

Input Specification

$1 \leq C, R \leq 100$

The farthest pixel ever drawn is at $(99, 99)$.

There will be at most 100 commands. Input will always end with `s` on a single line. The finished artwork will never be empty.

Output Specification

A grid of C by R characters – the resulting artwork created by **aurpine**.

Note: Output must match **exactly**.

Sample Input 1

```
r 1 1 5 3
c -
h 3 2 4
c |
v 2 1 3
c +
d 2 3
s
```

Sample Output 1

```
.|...
.|  .
.+--.
```

Explanation for Sample Output 1

First, the 5 by 3 rectangle is drawn with the default colour.

```
.....
.   .
.....
```

Then the colour is changed to `-`. And a horizontal line is drawn.

```
.....
.   .
.---.
```

The colour is changed once again and a vertical line is drawn.

```
.|...
.|  .
.|--.
```

The colour is changed to `+` and a dot is drawn to yield the final drawing.

```
.|...
.|  .
.+--.
```

Sample Input 2

```
c X
f 2 5 8 2
c x
r 1 2 10 3
d 6 5
d 10 5
d 9 3
c >
f 4 3 5 2
c -
d 6 3
d 8 3
d 11 3
d 5 4
d 7 4
d 9 4
c O
d 3 3
c /
d 3 1
d 5 1
d 7 1
c ,
d 9 1
c `
d 11 5
c
d 1 2
d 10 2
d 4 3
d 2 4
d 3 4
d 4 5
d 8 5
d 2 6
d 6 6
s
```

Sample Output 2

```
  / / / ,
 xxxxxxxx
x 0 >->-xx-
x  >->->-x
 XX XxX Xx`
  XXX XXX
```