

Atypon  
Java and DevOps training  
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Karel Assignment  
Due Aug 3

### Problem Statement :

Divide any map into 4 equal chambers , otherwise divide them into the maximum possible number of equal chambers .

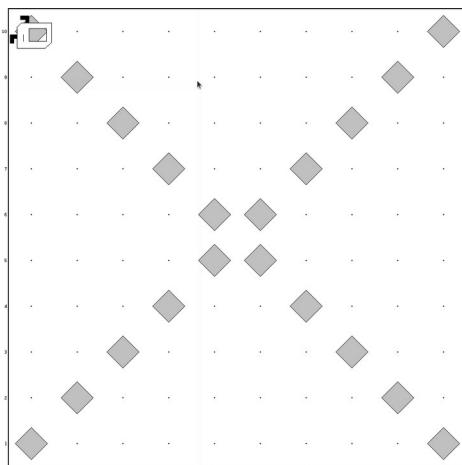
### Problem Solving Cases :

#### Case #1 :

square map(width = height)

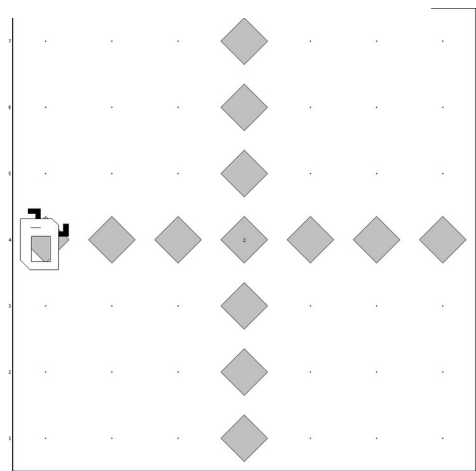
if width and height even

draw line segment between the opposite corners of the square



if width and height odd

draw one horizontal line through the center of right side  
And one vertical line through the center of upper side of the square



## Case #2 :

rectangle map (width > height OR width < height)

possible scenario :

### - width and height is even :

walk 2 vertical line ( $\text{width}/2, \text{width}/2+1$ ) through middle of width **and** 2 horizontal line ( $\text{height}/2, \text{height}/2+1$ ) through middle of height

### - width and height is odd :

walk vertical line through middle of width and horizontal line through middle of height

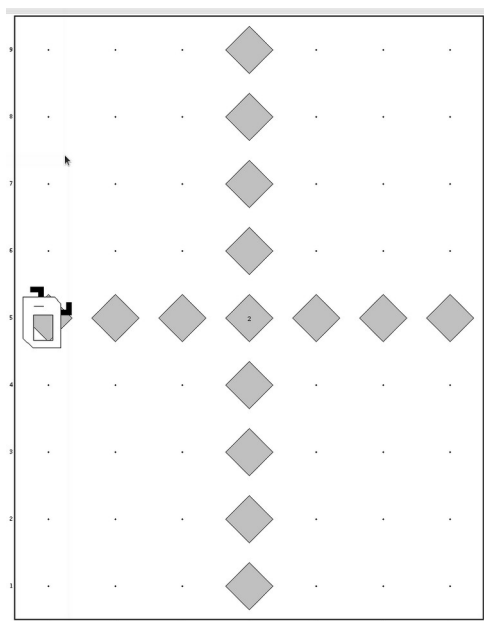
### - height odd and width even:

walk 2 vertical line ( $\text{width}/2, \text{width}/2+1$ ) through middle of width and horizontal line through middle of height

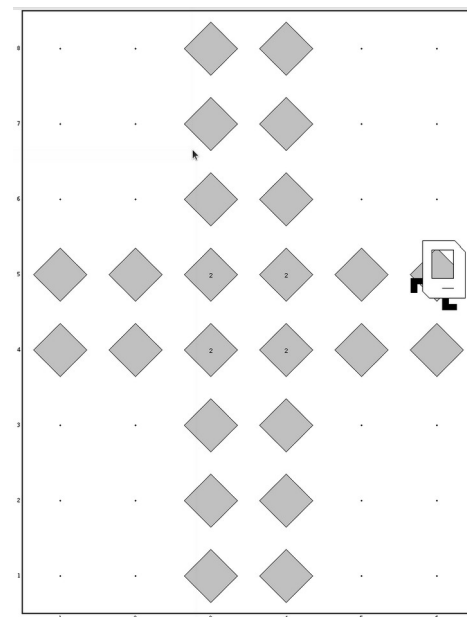
### - height even and width odd :

walk vertical line through middle of width and 2 horizontal line ( $\text{height}/2, \text{height}/2+1$ ) through middle of height

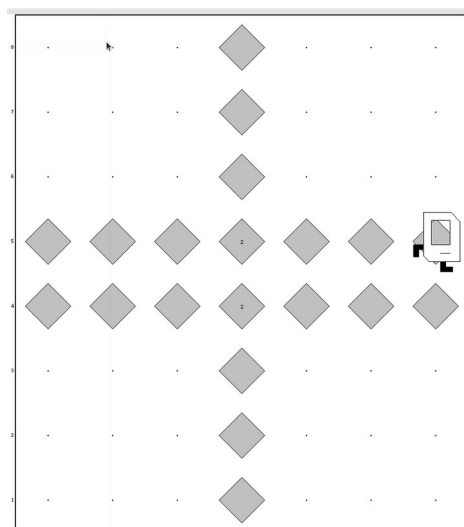
(odd,odd)



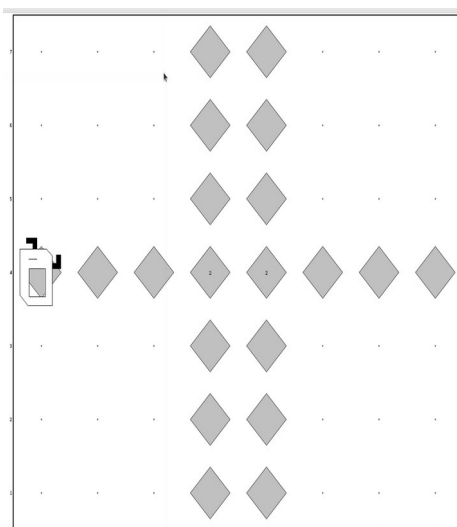
(even,even)



(even,odd)



(odd,even)



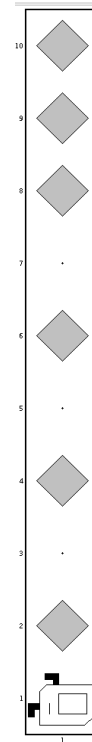
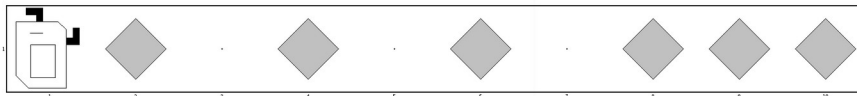
Case #3 :

map (height=1 and width>2 or height>2 width=1)

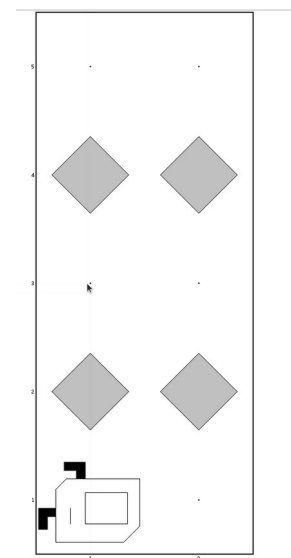
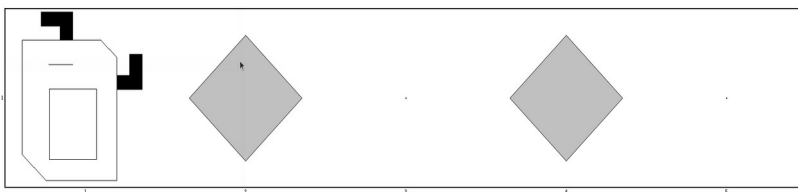
#length = height or width not equal 1

to divide any map with height equal one or width equal one we must use three beeper or more .

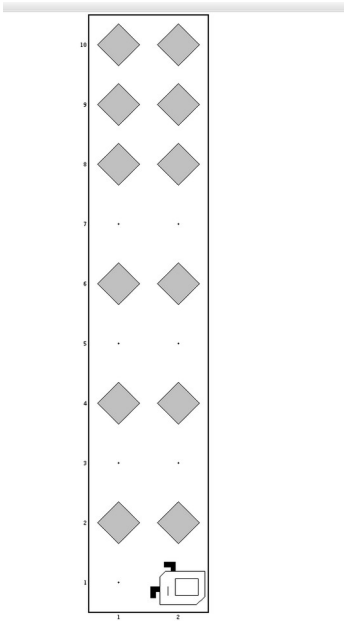
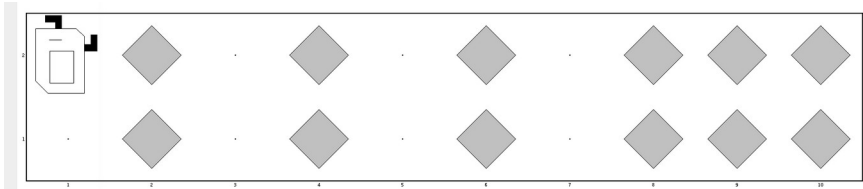
Now , subtract three from length then test if can divide it into four equal part if not , repeat until you got four equal part



if can not divide into four equal chambers (length <7) divide into maximum possible number :



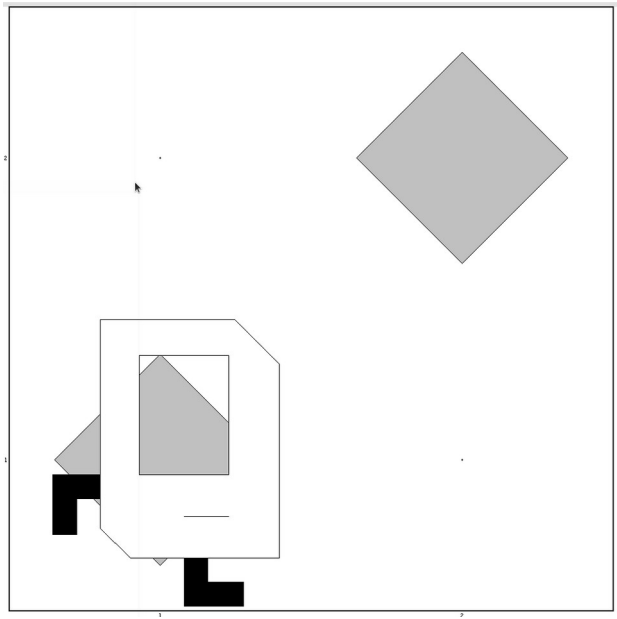
same for (height =2 and width >2 or height>2 width equal 2 ) :



Case #4 :

- map 2x2

just go diagonal through any corner to next corner .



- map 2x1 ,1x2 , 1x1

leave it as is

