

# ATYPON

# Karel The Robot

## Assignment Report

**By Student :  
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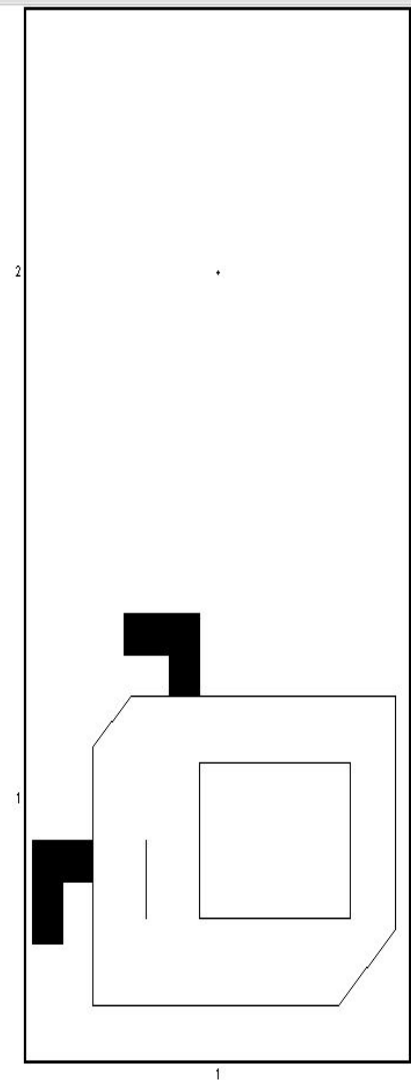
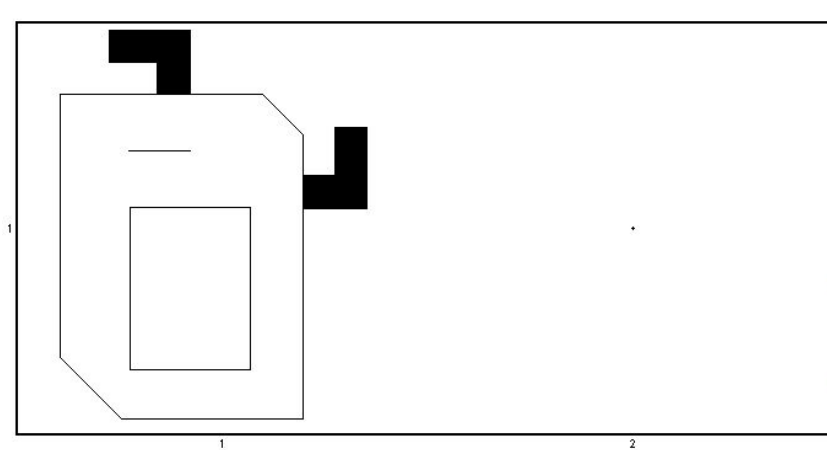
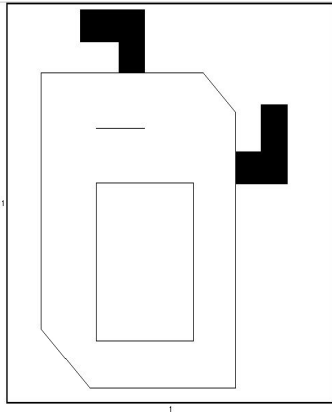
# Problem Statement

Divide a given map into 4 equal chambers, if can't be divided into 4 equal chambers should be divided into the biggest possible number of equal chambers (3, 2, or 1).

# Solving All Cases

## Case #1:

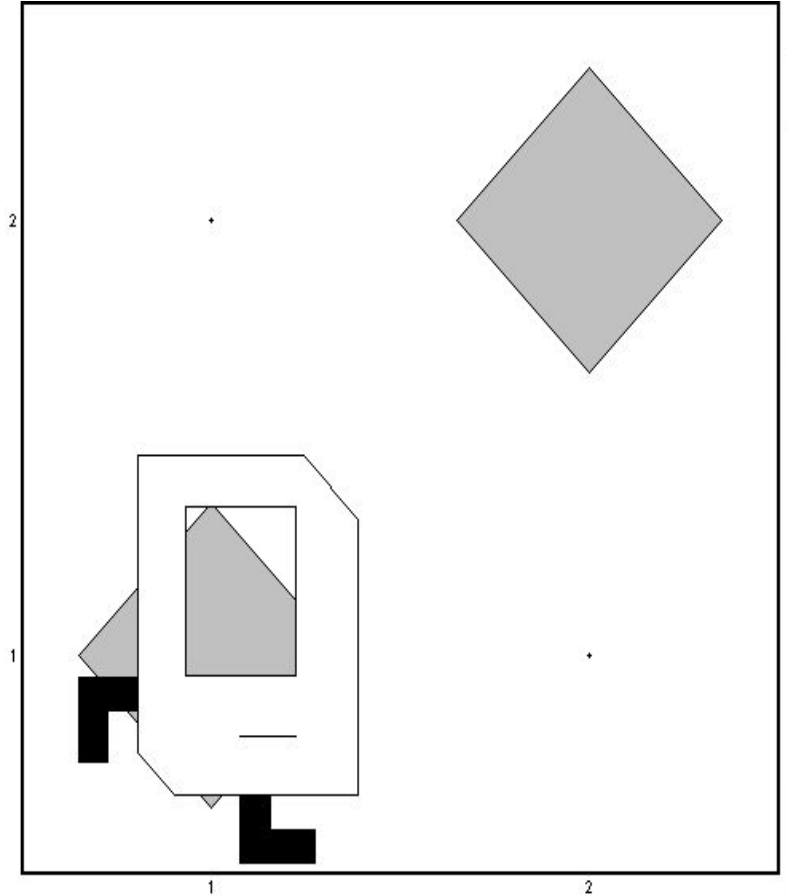
- **Height = 1 and Width = 2 || 1, or Width = 1 and Height = 2.**
  - Leave it as is.



# Solving All Cases

## Case #2:

- **Height = 2 and Width = 2.**
  - Divide map into two triangles.



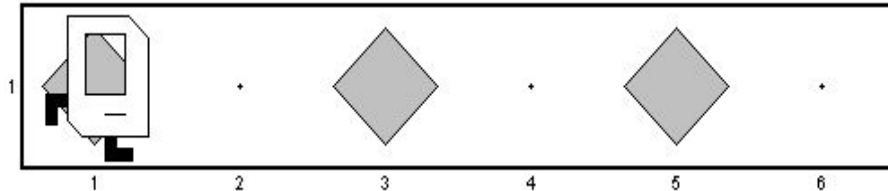
# Solving All Cases

## Case #3:

- **Height = 1.**

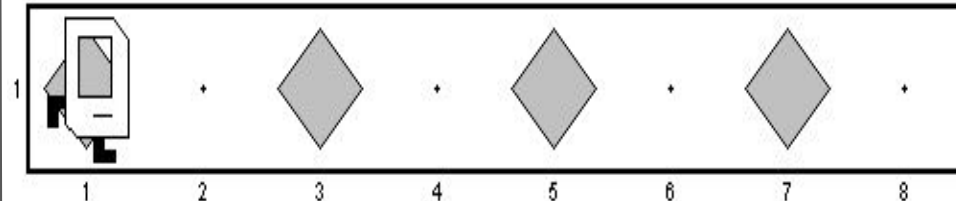
If width  $\leq 6$ :

Can't divide map into 4 equals parts, and divide it into maximum possible number less than 4.



If width  $> 6$ :

Can divide map into 4 equals parts but must check if can use 3 beepers or must more.

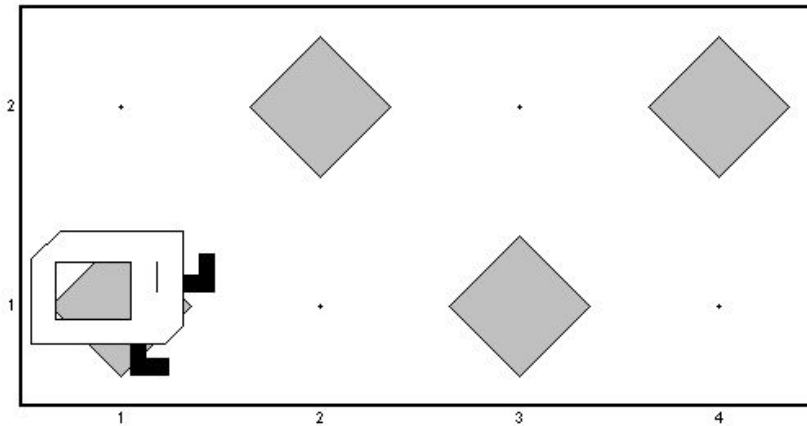


# Solving All Cases

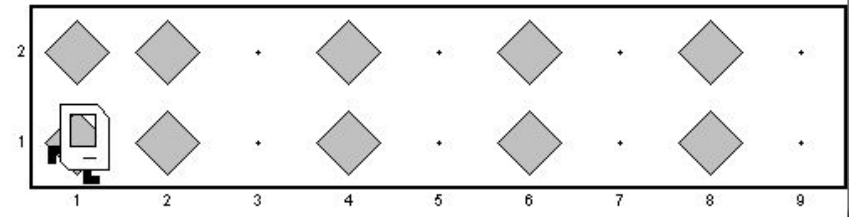
## Case #4:

- Height = 2.

If width  $\leq 6$ :  
check if can divide map into 4 equals parts, if can't; divide it into maximum possible number less than 4.



If width  $> 6$ :  
Can divide map into 4 equals parts  
but must check if can use 3 beepers  
or must more.



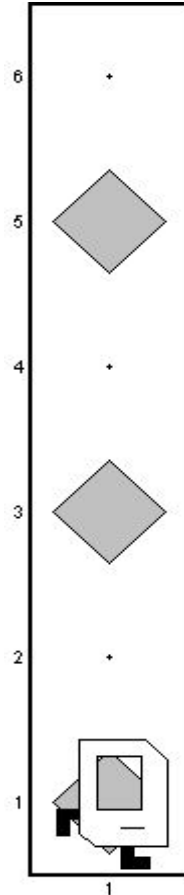
# Solving All Cases

## Case #5:

- **Width = 1.**

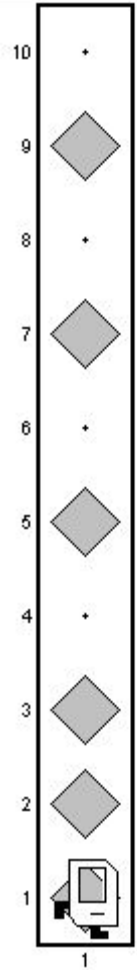
If height  $\leq 6$ :

Can't divide map into 4 equals parts, and divide it into maximum possible number less than 4.



If height  $> 6$ :

Can divide map into 4 equals parts but must check if can use 3 beepers or must more.

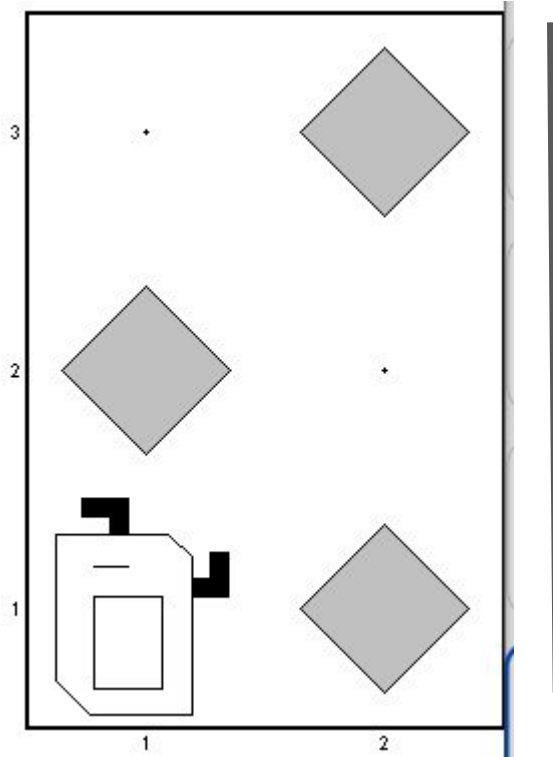


# Solving All Cases

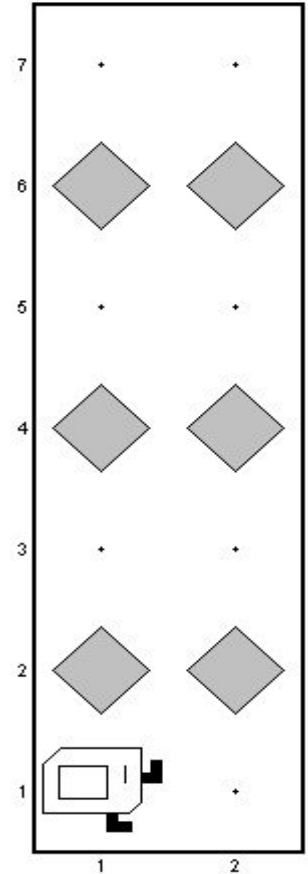
## Case #6:

- Width = 2.

If width  $\leq 6$ :  
As if Height = 2.



If width  $> 6$ :  
As if Height = 2.



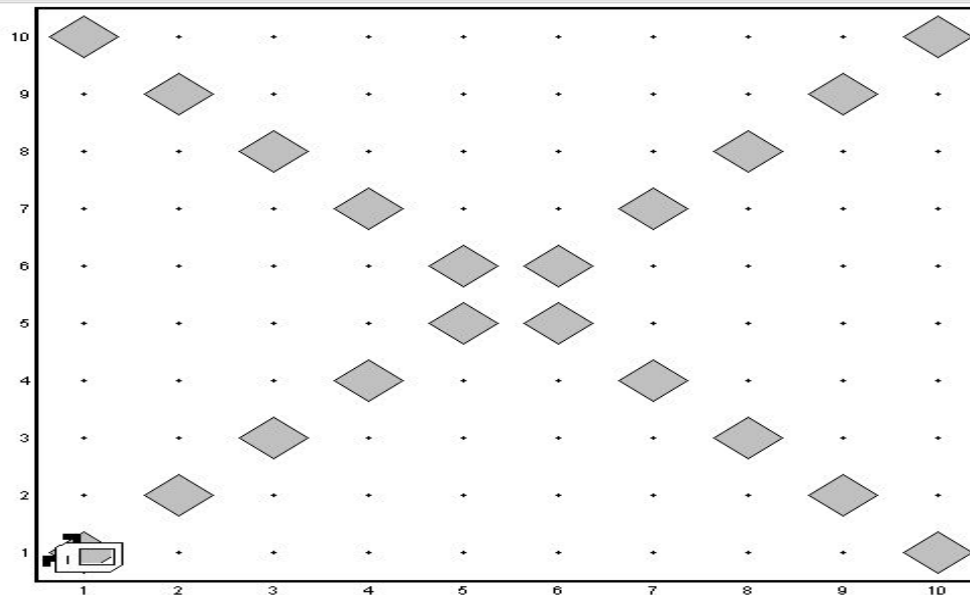


# Solving All Cases

## Case #7:

- Height = Width and height is even number.

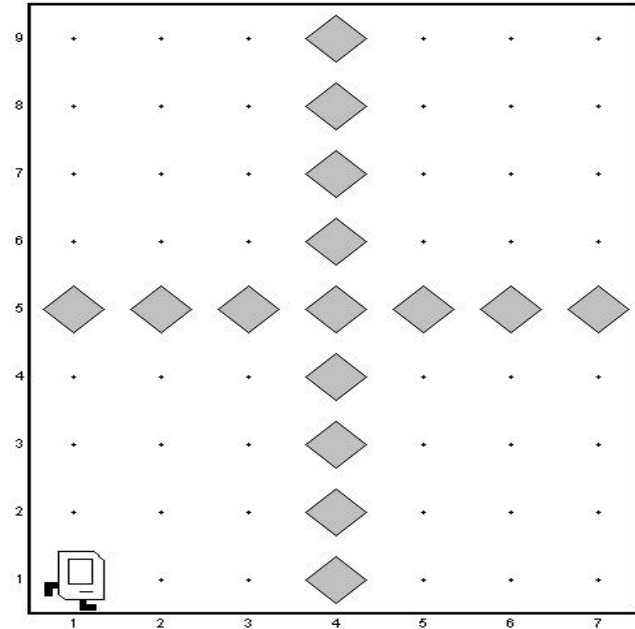
**Draw the line segment between the opposite corners of the square.**



# Solving All Cases

## Case #8:

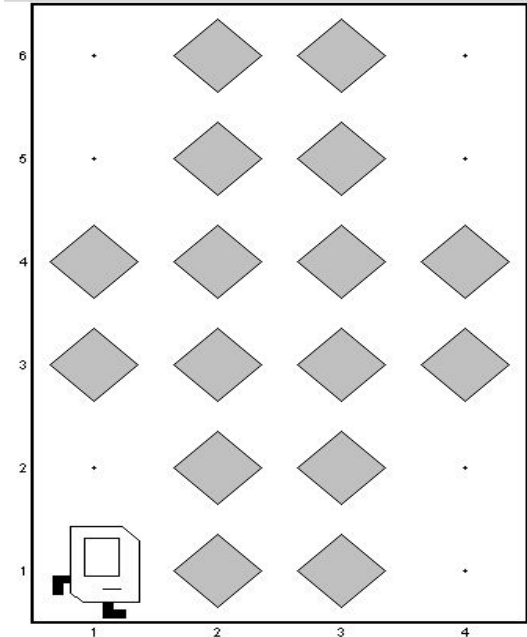
- Height and Width are odd numbers.  
Draw vertical line through middle of width and horizontal line through middle of height.



# Solving All Cases

## Case #9:

- Height and Width are even numbers and not equals.  
Draw double vertical lines through middle of width and double horizontal lines through middle of height.

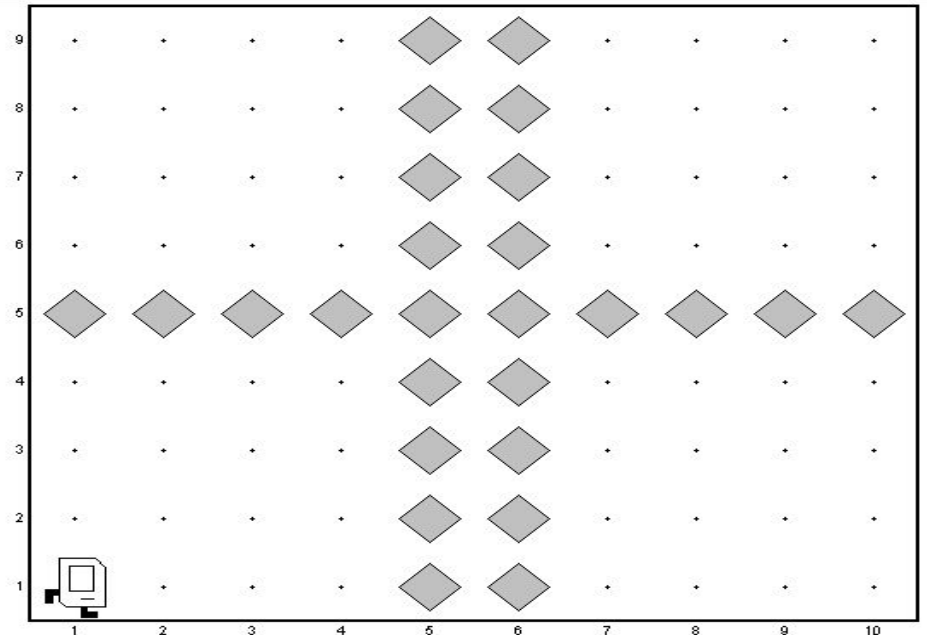


# Solving All Cases

## Case #10:

- Height is odd number and Width is even number.

**Draw double vertical lines through middle of width and horizontal line through middle of height.**



# Solving All Cases

## Case #11:

- Height is even number and Width is odd number.  
Draw vertical line through middle of width and double horizontal lines through middle of height.

