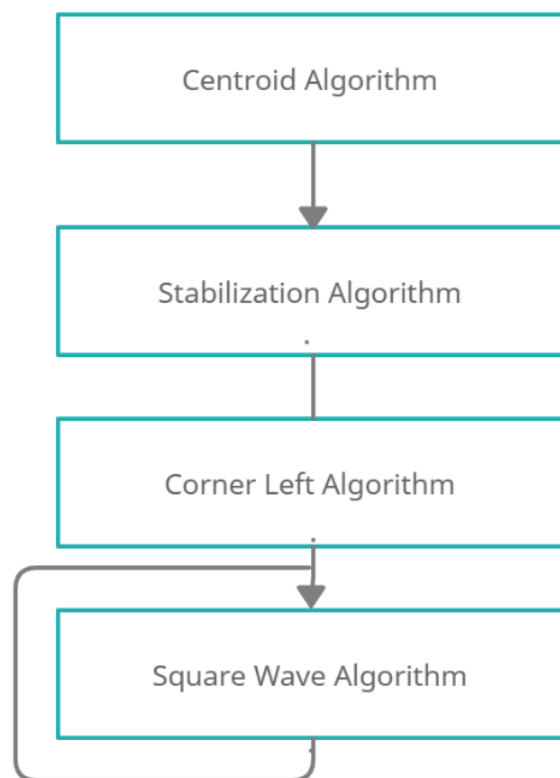


Path Finder Algorithm



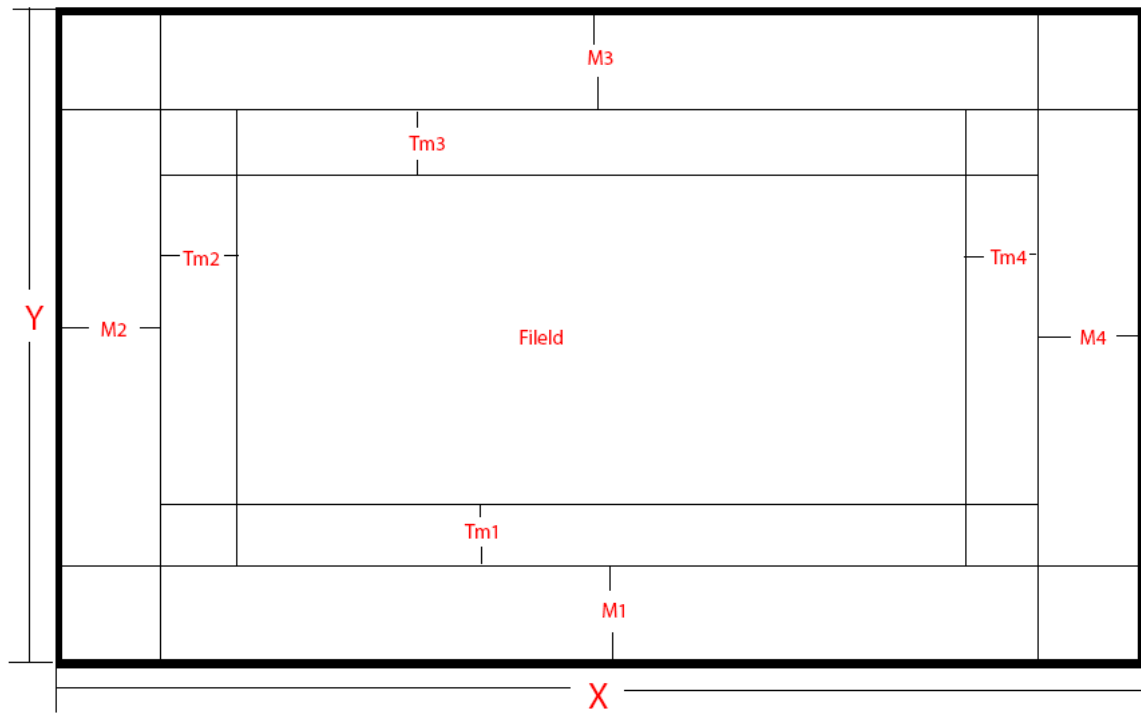
The first 3 algorithm called set-up algorithm or starting algorithm

Last one is called loop algorithm or process algorithm

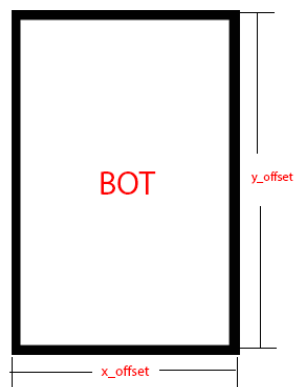
Condition for Algorithm

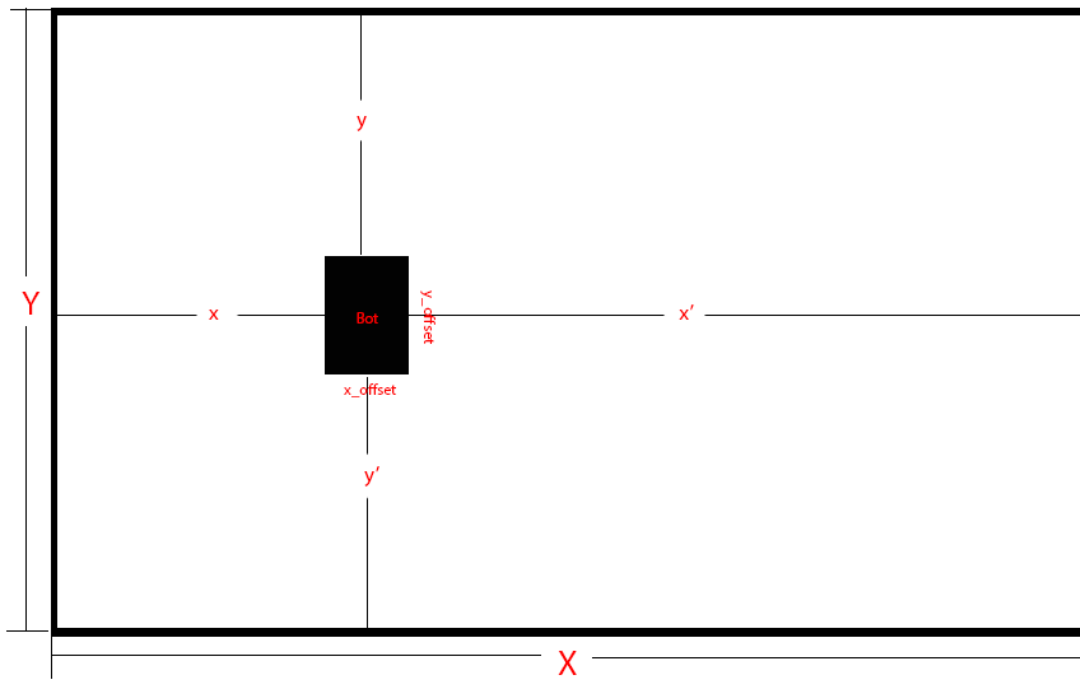
- 1) The dimension of one side should be up to 4 meter
- 2) The filed should a rectangle with 1:2 ratio (landscape)
- 3) Contain a complete border

Field set up



- 1) X = total field length
- 2) Y = total field breadth
- 3) $M = m1 = m2 = m3 = m4$ = margin
- 4) TM = turning margin

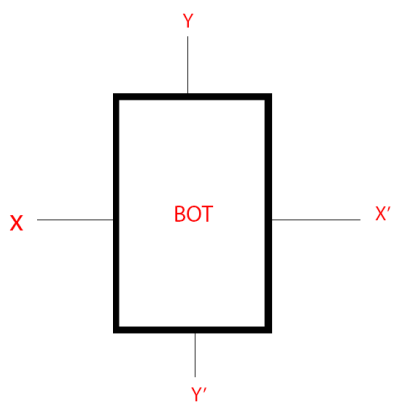




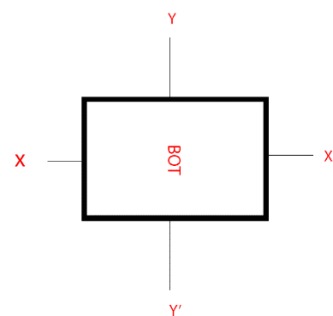
$$X = (x + x_offset) + x'$$

$$Y = (x + y_offset) + y'$$

Orientation

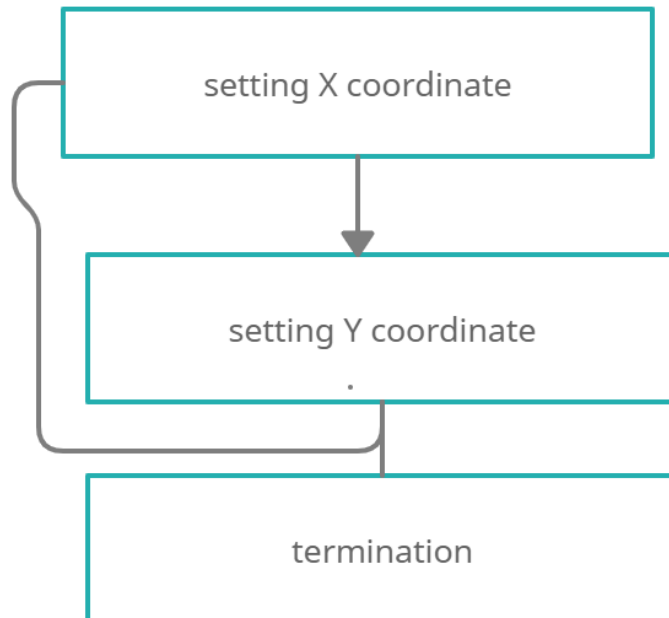


Ornt_1



ornt_2

Centroid Algorithm

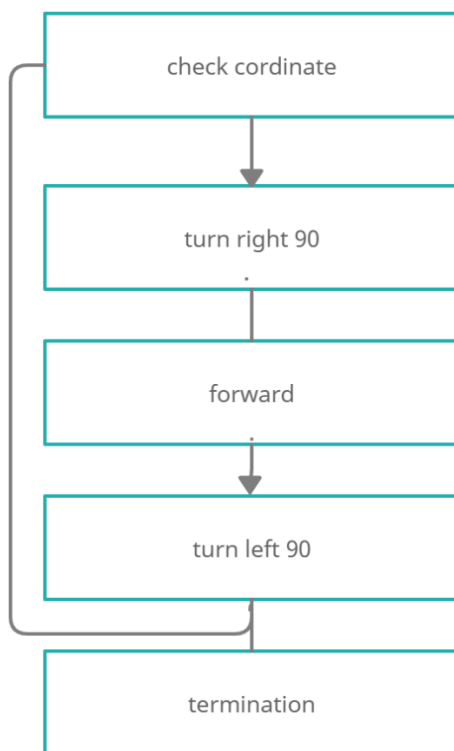


- 1) Step – 1
Check x and x'
Check y and y'
- 2) Step 2
If any two values are not equal
Start algorithm if equal terminate from algorithm
- 3) Step 3 (for x coordinate)
Check x and x'
 $x - x' = \text{weight}(w)$
 $w_0 \cdot w = \text{Delayweight} (Dw)$

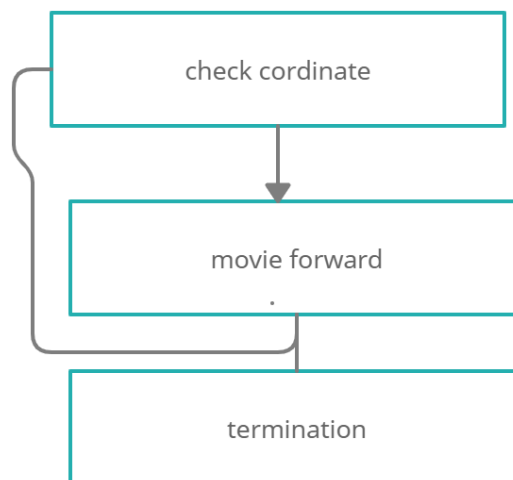
 $x - x' = w$
 $w_0 \cdot w = Dw$
 $w_0 = 4000$
check $x > x'$
if x' is greater

turn 90 right

- 4) Step 4
Move forward with delay weight
Stop
- 5) Step 5
Turn left 90
Stop
- 6) Step 6
Repeat step 1



X coordinate



y coordinate

Centroid for Y coordinate

- 1) Step 1

Check y and y'

$$y - y' = w$$

$$w_0 \cdot w = Dw \mid w_0 = 4000$$

check $y > y'$

if y is grater

2) Step 2

Move forward with delay time

Stop

3) Step 3

Repeat step 1

Orientation

1) Step 1

Check x, x'

Check y, y'

2) Step 2

$x > y$

no change

ornt_1

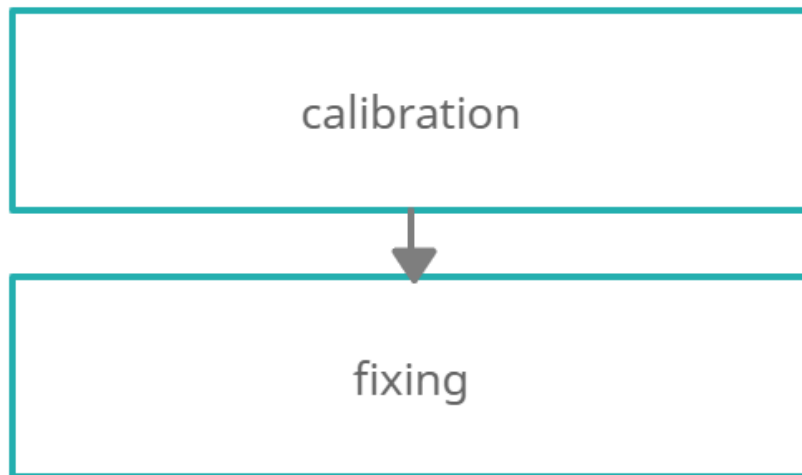
3) Step 3

$X < y$

Rotate 90

Ornt_1

Stabilization



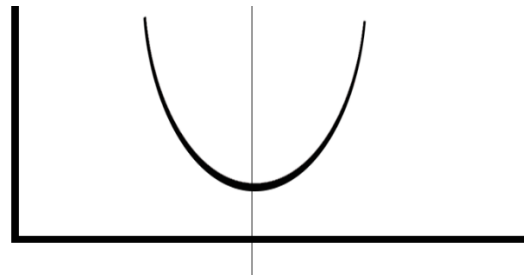
- 1) Step 1
 - Check value of x and x'
 - Store values
 - Give $w_0 = 3000$

- 2) Step 2
 - If $x < x'$
 - Clockwise
 - If $x > x'$
 - Anti clockwise

- 3) Step 3
 - Store new x and x'
 - Stop

- 4) Step 4

Plot graph



Take avg

Set new value of x and x'

5) Step 5

Check value of x and x'

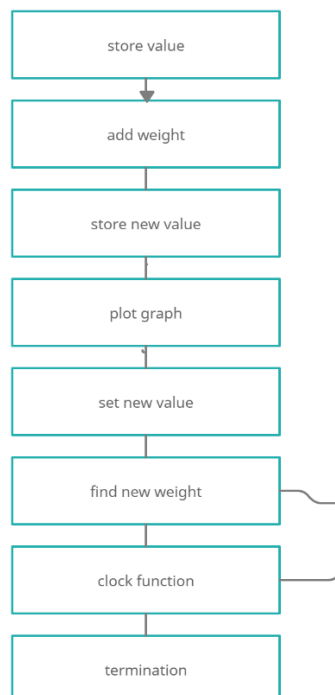
$$x - x' = w$$

$$w \cdot w_0 = Dw$$

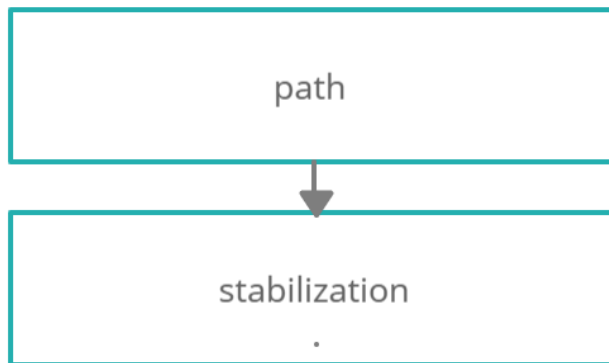
6) Step 6

Check with ref

Adjust the coordinate



Corner left algorithm



1) Step 1

Reverse up to margin

2) Step 2

Rotate 90 left

Call stabilization function

3) Step 3

Forward

4) Step 4

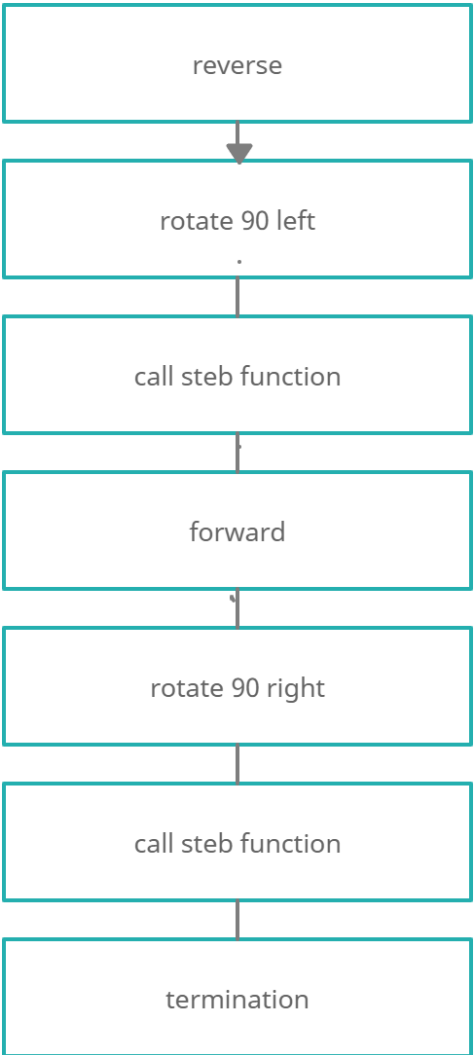
Stop

Rotate 90 right

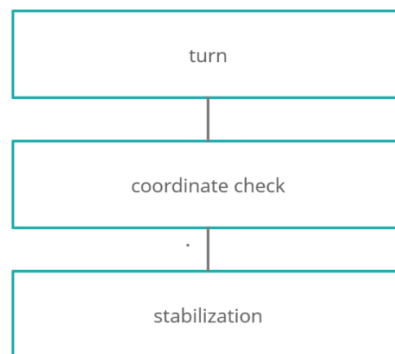
Call stabilization function

5) Step 5

termination



Square wave Algorithm



1) Step 1

Go forward

Check stabilization

2) Step 2

Stop

Right turn

Stabilization

Right turn

Reset coordinate x

$X + x_offset$

$X' - x_offset$

Stabilization function

3) Step 3

Forward

Left turn

Stabilization

Left turn

Reset coordinate

$2x + x_offset$

$2x' - x_offset$

4) Step 4

Repete step 1

