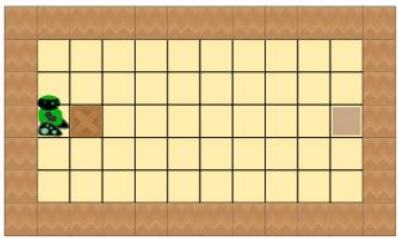


PNC Algorithm

1- Sokoban (1)

a) Version1



| < | > > >> > |

Validate the program

Reload your best answer.

3 blocks remaining on 5 allowed.

turn left

turn right

go forward

push the box

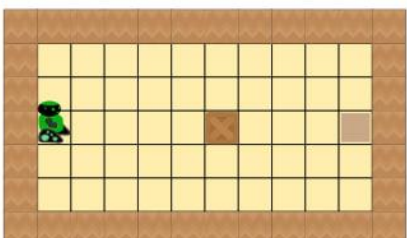
repeat 10 time
do

Robot Programm

repeat 8 time
do push the box

Restart

b) Version2



| < | > > >> > |

Validate the program

Score obtained: ★★☆☆
Your score remains the same.

2 blocks remaining on 6 allowed.

turn left

turn right

go forward

push the box

repeat 10 time
do

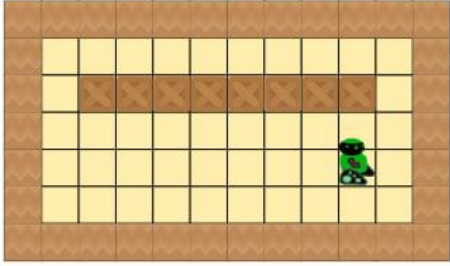
Robot Programm

repeat 4 time
do go forward

repeat 4 time
do push the box

Restart

c) Version3



Conratulations, the boxes are correctly placed!

Validate the program

Conratulations, the boxes are correctly placed!

Score obtained: ★★★★★
This is the best possible score on this subject;
congratulations!

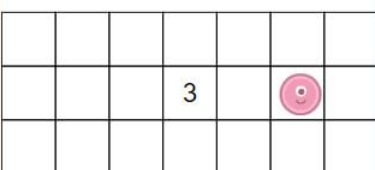
7 blocks remaining on 15 allowed.

turn left
turn right
go forward
push the box
repeat 10 time
do

Robot Programm
repeat 8 time
do
go forward
turn left
push the box
turn left
turn left
go forward
turn left

Restart

2-How to use a variable



Well done, your robot has written the right numbers!

Validate the program

Well done, your robot has written the right numbers!

Your score is now: 40on40.

2 blocks remaining on 10 allowed.

Move to the right
write the number
number of the box
memory of the robot
set memory of the robot to

Robot Programm
Move to the right
Move to the right
set memory of the robot to number of the box
Move to the right
Move to the right
write the number memory of the robot
set memory of the robot to

Restart

3-Paint using the number (1)

a) Version1

20 remaining blocs on 40 allowed.

Submit programm

Robot Program

```
go to the right
go to the left
go down
set the number of the box to
number on the box
repeat 10 time
do
memory of the robot
set memory of the robot to
increment memory of the robot of 1
```

Restart

Obtained score: ★★
Your score stays the same.

b) Version2

Version ★★ Version ★★★ Version ★★★★★

Program the robot to write in the zero column on each line, the sum of the two numbers on the left.
After storing first number of the row in the variable "Robot memory", you will have to modify it to add the second number.

23 remaining blocs on 40 allowed.

Submit programm

Robot Program

```
repeat 5 time
do
go to the right
set memory of the robot to number on the box
go to the right
increment memory of the robot of number on the box
go to the right
go to the right
set the number of the box to memory of the robot
repeat 4 time
do
go to the left
go down
```

c) Version3

Version ☆☆☆

Version ☆☆☆

Version ☆☆☆☆☆

Program the robot to write instead of zeros to right of each line, the sum of the numbers in the left part of the line.

20 remaining blocs on 40 allowed.

		2	3	4	3	2	14
		3	5	3	2	2	15
		4	6	2	4	2	18
		5	5	1	1	2	14
		6	4	2	3	1	16

<

>

>>

>>>

>>>>

Submit program

Well done, you've entered the correct numbers!

Robot Program

repeat 5 time

do

go to the right

go to the right

set memory of the robot - to number on the box

repeat 4 time

do

go to the right

increment memory of the robot - of number on the box

go to the right

go to the right

set the number of the box to memory of the robot -

repeat 6 time

do

go to the left

go down

go to the right

go to the left

go down

set the number of the box to

number on the box

repeat 10 time

do

1 + 1

0

memory of the robot -

set memory of the robot - to

Well done, you've entered the correct numbers!

Restart

4-Paint using the number (2)

a) Version1

Version☆☆
Version☆☆☆
Version☆☆☆☆

Program the robot to pick up each ball and put it in a hole. The robot can only carry one ball at a time. The number of balls is indicated in front of the robot. You have to use it!

Test 1

8 blocks remaining on 20 allowed.

move up

move down

move left

Move to the right

pick up the ball

drop the ball

write the number

number of the box

repeat 10 time

do

Robot Programm

Move to the right

set number of balls to number of the box

Move to the right

Move to the right

repeat number of balls time

do

move up

pick up the ball

Move to the right

drop the ball

move left

Test 2
Test 3

Validate the program

b) Version2

Version☆☆

Version☆☆☆

Version☆☆☆☆

Program the robot to pick up each ball and put it in a hole. The robot can only carry one ball at a time.

15 blocks remaining on 30 allowed.

Navigation buttons: | < | > | >> | >>> | > |

Validate the program

Reload your best answer.

Robot Programm

```

increment number of moves of 1
repeat 8 time
do
  repeat number of moves time
  do
    move up
  Move to the right
  pick up the ball
  repeat number of moves time
  do
    move down
  drop the ball
  increment number of moves of 1

```

Voir la solution

c) Version3

✓ Test 1 Correct answer

✓ Test 2 Correct answer

Navigation buttons: | < | > | >> | >>> | > |

✓ Test 3 Correct answer

Validate the program

Score obtained: ☆☆☆☆☆
Your score remains the same.

72 blocks remaining on 100 allowed.

Robot Programm

```

Move to the right
set x to 0
repeat as long as on a ball
do
  Move to the right
  increment x of 1
move left
repeat until not on a ball
do
  move left
Move to the right
repeat x time
do
  pick up the ball
  Move to the right
  repeat as long as on a ball
  do
    Move to the right
  drop the ball
  move left
  repeat until not on a ball
  do
    move left
  Move to the right

```

Voir la solution

5-Paint using the number (3)

a) Version1

Version☆☆

Version☆☆☆

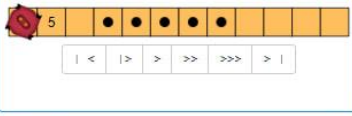
Version☆☆☆☆

Program the robot to paint all the boxes marked with a black dot.

The number in front of the robot indicates how many boxes are marked, a little further. He must therefore read this number, store it in his memory through a variable and then use the contents of this variable in the program.

Note that this exercise contains two tests. The robot program must work on each of the two tests.

Test 1



5

| < | > | >> | >>> | > |

Test 2

Validate the program

Reload your best answer.

6 blocks remaining on 15 allowed.

Robot Programm

Move to the right

set nbBlackPoints to number of the box

Move to the right

Move to the right

repeat nbBlackPoints time

do paint the box

Move to the right

number of the box

repeat 10 time

do

nbBlackPoints

set nbBlackPoints to

increment nbBlackPoints of 1

b) Version2

Version☆☆

Version☆☆☆

Version☆☆☆☆

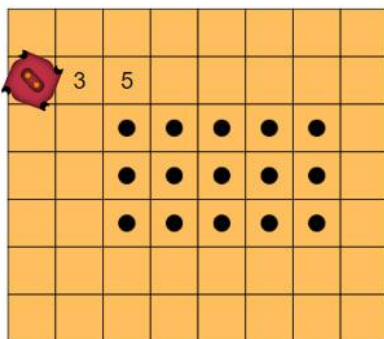
Program the robot to paint all the boxes marked with a black dot.

In front of the robot are two numbers: the number of rows and the number of columns in the rectangle of mark

To solve this exercise, you will need to create two variables, to store these two numbers. Call them for example *nbColumns*.

Note that this exercise contains two tests. The robot program must work on each of the two tests.

Test 1



3 5

| < | > | >> | >>> | > |

Test 2

10 blocks remaining on 25 allowed.

Robot Programm

Move to the right

set nbBlackPoint to number of the box

increment nbBlackPoint of 2

repeat number of the box time

do move down

repeat nbBlackPoint time

do Move to the right

paint the box

repeat nbBlackPoint time

do move left

Actions

Sensors

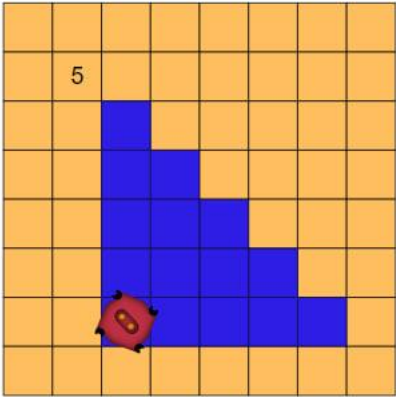
Variables

Loops

c) Version3

✓ Test 1 Correct answer

7 blocks remaining on 30 allowed.



All tests: Bravo, votre robot a peint le motif !

✓ Test 2 Correct answer

Validate the program

Bravo, votre robot a peint le motif !

Score obtained: ★★★★★
Your score remains the same.

Restart

Robot Programm

```

Move to the right
set repeat to number of the box
move down
Move to the right
paint the box
set repeat to repeat - 1
repeat repeat time
do
  move down
  paint the box
  increment V of 1
  repeat V time
  do
    Move to the right
    paint the box
  repeat V time
  do
    move left
  
```

6- Sokoban (2)

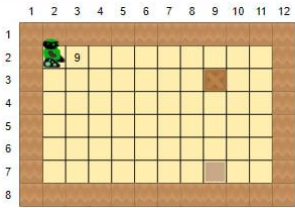
a) Version1

Version★☆☆ Version★★★ Version★★★★★

Program the robot to push the box to the marked square.
The number in front of the robot indicates the column where there is a box to push.
Please note, your program must work on all three tests. Watch them before programming!
You may need to use a variable

9 blocks remaining on 20 allowed.

Test 1



Test 2

Test 3

Validate the program

Reload your best answer.

Robot Programm

```

push the box
go forward
set box column to number on the cell
repeat until robot column == box column
do
  go forward
  turn right
  repeat 3 time
  do
    push the box
  
```

box column
newvar
set box column to
set newvar to
increment box column of 1
increment newvar of 1

b) Version2

Version☆☆
Version☆☆☆
Version☆☆☆☆

Program the robot to push the box to the marked square.

The numbers in front of the robot correspond to the coordinates of the box:

- The first number indicates the row
- The second number indicates the column

Please note, your program must work on all three tests. Watch them before programming!

You may need to use a variable

Test 1

Test 2

Test 3

Validate the program

9 blocks remaining on 30 allowed.

Actions

Sensors

Variables

Loops

Logic

Math

Robot Programm

```

go forward
set box row to number on the cell
go forward
set box column to number on the cell - 1
turn right
repeat until box row == robot line
do go forward
turn left
repeat until box column == robot column
do go forward
push the box
                    
```

c) Version3

Version☆☆
Version☆☆☆
Version☆☆☆☆

Program the robot to push the boxes onto the boxes marked.

The number in the bottom left corner indicates the number of cases present on the grid.
The number at the bottom of each column indicates the row on which it there is a case.

Please note, your program must work on all three tests. Watch them before programming!

You may need to use a variable

✓ Test 1 Correct answer

All tests: Congratulations, the boxes are correctly placed!

✓ Test 2 Correct answer

✓ Test 3 Correct answer

10 blocks remaining on 40 allowed.

Actions

Sensors

Variables

Loops

Logic

Math

```

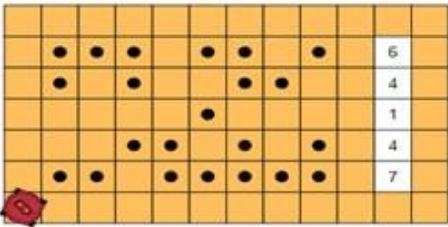
go forward
set nbBox to number on the cell
turn left
go forward
repeat nbBox time
do
  go forward
  set nbRow to number on the cell - 1
  turn left
  repeat until nbRow == robot line
  do go forward
  set nb to 3
  repeat until nb == robot line
  do push the box
turn right
turn right
repeat 4 time
                    
```


7- Compute the sum

Version☆☆

Program the robot so that, on each line, it counts the boxes marked with a black dot. He must write the result on the box white at the end of each line.
Note that this exercise contains several tests. The same program should work on all tests.

Test 1 Correct answer



6 blocks remaining on 20 allowed.

Robot Program

```
repeat 5 time
do
  repeat 10 time
  do
    Move to the right
    if on a marked box
    do
      increment nbBlackPoints of 1
  write the number nbBlackPoints
  repeat 10 time
  do
    move left
  set nbBlackPoints to 0
  move down
```

Move to the right
move left
move down
write the number
on a marked box
repeat 10 time
do
if
do

Validate the program

Well done, your robot has written the right numbers!

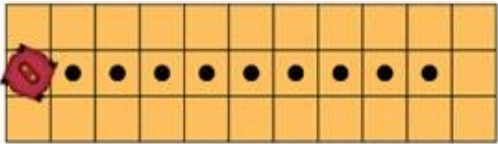
8- Paint the dots (easy)

a) Version1

Version☆☆ Version☆☆☆ Version☆☆☆☆

Program the robot to paint all the boxes marked with a black dot.

17 blocks remaining on 20 allowed.



Robot Program

```
repeat 9 time
do
  Move to the right
  paint the box
```

Move to the right
move up
move left
move down
paint the box
repeat 10 time
do

Validate the program

Reload your best answer.

b) Version2

Version☆☆
Version☆☆☆
Version☆☆☆☆

Program the robot to paint all the boxes marked with a black dot.

| <
| >
>
>>
>>>
> |

11 blocks remaining on 20 allowed.

Move to the right

move up

move left

move down

paint the box

repeat 10 time

do

Robot Programm

Move to the right

repeat 2 time

do

Move to the right

paint the box

repeat 7 time

do

move up

paint the box

Move to the right

paint the box

c) Version3

Version☆☆
Version☆☆☆
Version☆☆☆☆

Program the robot to paint all the boxes marked with a black dot.

| <
| >
>
>>
>>>
> |

5 blocks remaining on 20 allowed.

Move to the right

move up

move left

move down

paint the box

repeat 10 time

do

Robot Programm

repeat 2 time

do

Move to the right

paint the box

repeat 5 time

do

move up

paint the box

Move to the right

paint the box

Move to the right

paint the box

repeat 5 time

do

move down

paint the box

Move to the right

paint the box

Validate the program

Bravo, votre robot a peint le motif !

Score obtained: ☆☆☆☆

This is the best possible score on this subject; congratulations!

