

# Homework

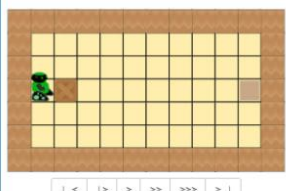
## 1. Practice

1- Sokoban (1) ★★★★★

Version★★ Version★★★ Version★★★★

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

3 blocks remaining on 5 allowed.



Score obtained: ★★  
To get more points, upgrade to a more difficult version.

Robot Program

- repeat 3 time:
  - do push the box
- repeat 10 time:
  - do

Restart

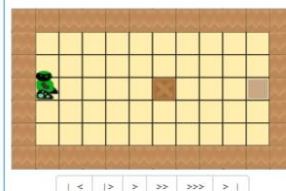
## 2. Practice

1- Sokoban (1) ★★★★★

Version★★ Version★★★ Version★★★★

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

2 blocks remaining on 6 allowed.



Score obtained: ★★  
To get more points, upgrade to a more difficult version.

Robot Program

- repeat 1 time:
  - do go forward
- repeat 1 time:
  - do push the box
- repeat 10 time:
  - do

Restart

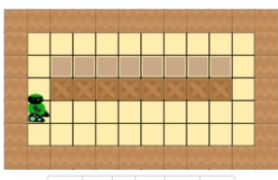
### 3. Practice

#### 1- Sokoban (1) ★★★★★

Version★★★★ Version★★★★ Version★★★★

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

7 blocks remaining on 15 allowed.



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

Robot Program

```
repeat 3 time
do
  go forward
  turn left
  push the box
  turn right
  go forward
  turn left
```

Repeat 10 time

Restart

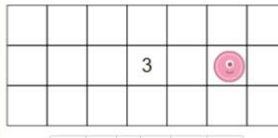
### 4. Practice

#### 2-How to use a variable

We want to program the robot to copy the number 3 into the 0 box

How do you keep the number 3 in memory?

- We use a variable to store the information.
- We can imagine a variable as a box.



Well done, your robot has written the right numbers!

2 blocks remaining on 10 allowed.

Robot Program


```
Move to the right
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

Your score remains the same: 40on40.

## 5. Practice

37 remaining blocs on 40 allowed.

				0		
		6		0		
		2		0		
		3		0		
		5		0		

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

## 6. Practice


← → ↺ pnc-blocky.netlify.app/exercises/2019/e-jf/pnc-variable-2-paint-number/index.html 🔍 📄 ☆ 📱 📺 📶

### 3-Paint using the number (1) ★★★★★

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.

	4	3	0			
	3	6	0			
	5	2	0			
	6	3	0			
	2	5	0			

Submit program

Robot Program

- go to the right
- repeat 5 time
- do
- go to the right
- set memory of the robot 0 to number on the box
- go to the right
- increment memory of the robot 0 of number on the box
- 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

Restart

Obtained score: ★☆☆  
To obtain more points, move on to a harder version of this task.

## 7. Practice

### 3-Point using the number (1) ★★☆☆

Version ★★☆☆ Version ★★☆☆ Version ★★☆☆

Program the robot to copy the numbers in the column left in the right column.  
The robot must read the contents of the box, store it in its memory, go two steps forward, then write the content of its memory in the box.  
You may need to use a variable

25 remaining blocs on 40 allowed

	3		0		
	6		0		
	2		0		
	3		0		
	5		0		

Robot Program

```
go to the right
repeat 5 times
do
go to the right
go to the right
set memory of the robot to 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 times
do
go to the left
go down
memory of the robot
set memory of the robot to
increment memory of the robot of 1
```

Restart

Reload your best answer.

## 8. practice

### 3-Point using the number (1) ★★★★★

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

Robot Program

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

Restart

Well done, you've entered the correct numbers!

## 9. practice

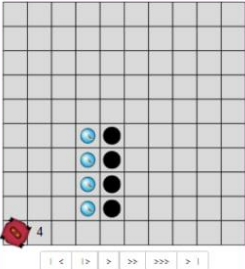
### 4-Point using the number (2) ★★☆☆

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!

8 blocks remaining on 20 allowed.

Test 1



Test 2  
Test 3

Robot Program

move up  
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  
write the number  
number of the box  
repeat 10 time  
do

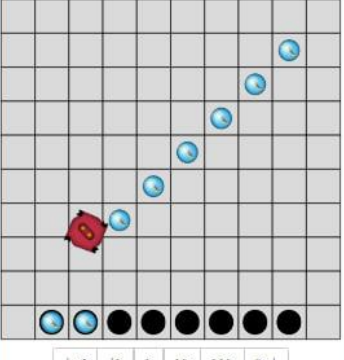
Validate the program

## 10. practice

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.



Validate the program

Robot Program

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

Score obtained: ★★☆☆  
To get more points, upgrade to a more difficult version.

## 11. practice

4-Paint using the number (2) ★★★★★

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.

81 blocks remaining on 100 allowed.

Test 1 Correct answer  
All tests: Well done, you have put the balls away!

Test 2 Correct answer

Test 3 Correct answer

Validate the program

Well done, you have put the balls away!

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

Robot Program

- Move to the right
- set Number\_balls to 0
- repeat as long as on a ball
- do
- Move to the right
- increment Number\_balls of 1
- repeat Number\_balls time
- do
- repeat Number\_balls time
- do
- move left
- pick up the ball
- repeat Number\_balls time
- do
- Move to the right
- drop the ball
- Move to the right

## 12. practice

5-Paint using the number (3) ★★★★★

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 marked boxes.

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

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

10 blocks remaining on 25 allowed.

Test 1

Robot Program

- 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

## 13. practice

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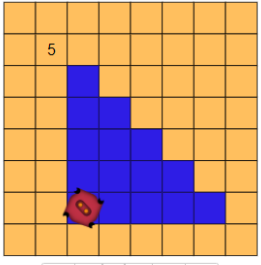
### 5-Paint using the number (3) ⭐⭐⭐

Version ⚙️ Version ⚙️ Version ⭐⭐⭐

Program the robot to paint all the boxes marked with a black dot.  
In front of the robot is a number: the number of lines and columns occupied by the triangle of marked boxes.  
To paint the right number of boxes on each line, you will have to create a variable which for each line, must contain the number of columns to mark. After drawing each line, the content of this variable should be increased by 1.  
Note that this exercise contains two tests. The robot program must work on each of the two tests.

7 blocks remaining on 30 allowed.

✓ Test 1 **Correct answer**



1 < | > >> >>> > |

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

✓ Test 2 **Correct answer**

Validate the program

Robot Programm

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

## 14. Practice

← → ↻ pnc-blocky.netlify.app/exercises/2019/e-jff/pnc-variable-0-sokoban/index.html 🔍 📄 ⭐ 🗨️ ⚙️ 🏠

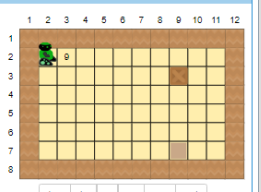
### 6- Sokoban (2) ⭐⭐⭐

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



1 < | > >> >>> > |

Test 2

Test 3

Validate the program

Reload your best answer.

Robot Programm

```
push the box
go forward
set newvar to number on the cell
repeat as long as newvar >= robot column
do
  go forward
turn right
repeat 4 time
do
  push the box
box column -
newvar -
set box column to
set newvar to
increment box column of 1
increment newvar of 1
```

## 15. Practice

### 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.

6 blocks remaining on 20 allowed.

Test 1 **Correct answer**

All tests: Well done, your robot has written the right numbers!

Test 2 **Correct answer**

Validate the program

Well done, your robot has written the right numbers!

Score obtained: ☆☆☆

Your score remains the same.

Robot Program

repeat 5 time

do

repeat 10 time

do

Move to the right

if

on a marked box

do

increment nbBlackPoints - of - on a marked box

write the number - nbBlackPoints -

repeat 10 time

do

move left

set nbBlackPoints - to - 0

move down

Restart

## 16. practice

Version☆☆ Version☆☆☆ Version☆☆☆☆

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

17 blocks remaining on 20 allowed.

Validate the program

Reload your best answer.

Robot Program

repeat 9 time

do

Move to the right

paint the box

Restart



## 17. practice

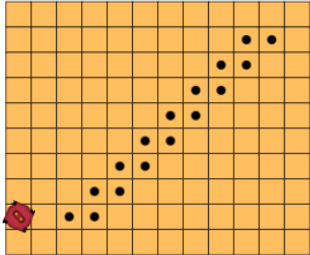
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### Paint the dots ★★☆☆

Version★★ Version★★★ Version★★★★

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

10 blocks remaining on 20 allowed.



Validate the program

Reload your best answer.

Move to the right

move up

move left

move down

paint the box

repeat 10 time

do

Robot Programm

Move to the right

Move to the right

paint the box

repeat 7 time

do

Move to the right

paint the box

move up

paint the box

Move to the right

paint the box

## 18. practice

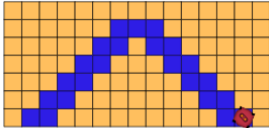
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### Paint the dots ★★★★★

Version★★ Version★★★ Version★★★★

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

5 blocks remaining on 20 allowed.



Bravo, votre robot a peint le motif !

Validate the program

Bravo, votre robot a peint le motif !

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

Move to the right

move up

move left

move down

paint the box

repeat 10 time

do

Robot Programm

Move to the right

paint the box

repeat 5 time

do

Move to the right

paint the box

move up

paint the box

repeat 2 time

do

Move to the right

paint the box

repeat 5 time

do

move down

paint the box

Move to the right

paint the box

Restart

