

Game Complete

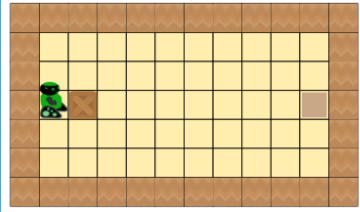
1. Shokoban(1)

a. Version 1

Version☆☆ Version☆☆☆ Version☆☆☆☆

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

3 blocks remaining on 5 allowed.



Robot Program

- repeat 8 time
- do push the box

turn left

turn right

go forward

push the box

repeat 10 time

do

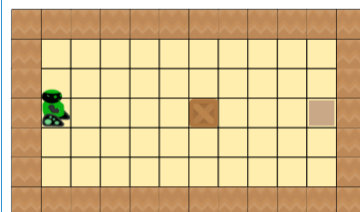
Validate the program

b. Version 2

Version☆☆ Version☆☆☆ Version☆☆☆☆

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

2 blocks remaining on 6 allowed.



Robot Program

- repeat 4 time
- do go forward

- repeat 4 time
- do push the box

turn left

turn right

go forward

push the box

repeat 10 time

do

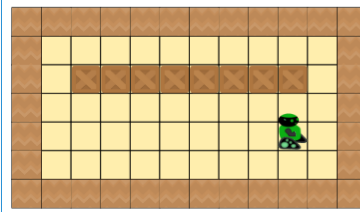
Validate the program

c. Version 3

Version☆☆ Version☆☆☆ Version☆☆☆☆

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

7 blocks remaining on 15 allowed.



Robot Program

- repeat 8 time
- do
- go forward
- turn left
- push the box
- turn left
- turn left
- go forward
- turn left

turn left

turn right

go forward

push the box

repeat 10 time

do

Validate the program

Congratulations, the boxes are correctly placed!

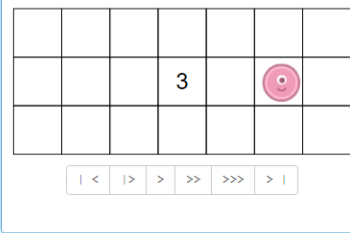
Congratulations, the boxes are correctly placed!

2. How to use 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.



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
```

Well done, your robot has written the right numbers!

3. Paint using the number(1)

a. Version 1

Version ☆☆☆

Version ☆☆☆

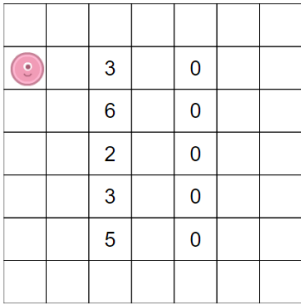
Version ☆☆☆

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

26 remaining blocs on 40 allowed.



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 number on the box
go to the right
go to the right
set the number of the box to memory of the robot
go down
go to the left
go to the left
```

b. Version 2

Version ☆☆☆

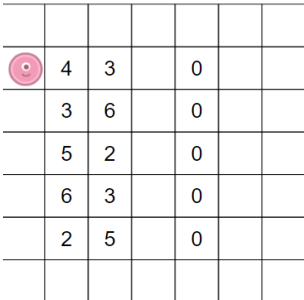
Version ☆☆☆

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.



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. Version 3

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

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 8 time
do
go to the left
go down

```

4. Paint using the number(2)

a. Version 1

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

Robot Program

```

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

```

b. Version 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.

15 blocks remaining on 30 allowed.

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

```

c. Version 3

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.

72 blocks remaining on 100 allowed.

Test 1

Test 2

Test 3

Validate the program

Reload your best answer.

Actions
Sensors
Variables
Loops
Logic
Math

```

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
  
```

5. Paint using the number(3)

a. Version 1

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.

6 blocks remaining on 15 allowed.

Test 1

Test 2

Validate the program

Reload your best answer.

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
  
```

nbBlackPoints

```

set nbBlackPoints to
increment nbBlackPoints of 1
  
```

b. Version 2

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

Test 2

Validate the program

Reload your best answer.

Robot Programm

```

Move to the right
set nbBlackPoints to number of the box
increment nbBlackPoints of 2
repeat number of the box time
do
  move down
  repeat nbBlackPoints time
  do
    Move to the right
    paint the box
  repeat nbBlackPoints time
  do
    move left
  
```

c. Version 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.

Test 1 Correct answer

7 blocks remaining on 30 allowed.

Robot Program

```

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 D of 1
  repeat D time
  do
    Move to the right
    paint the box
  repeat D time
  do
    move left
        
```

6. Shokoban(2)

a. Version 1

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

Test 1

9 blocks remaining on 20 allowed.

Robot Program

```

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 4 time
do
  push the box
        
```

b. Version 2

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

9 blocks remaining on 30 allowed.

Robot Program

```

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
        
```

Test 2

c. Version 3

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

10 blocks remaining on 40 allowed.

Test 1 Correct answer

All tests: Congratulations, the boxes are correctly placed!

Test 2 Correct answer

Test 3 Correct answer

Robot Program

```

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 1 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.

6 blocks remaining on 20 allowed.

Test 1 Correct answer

Test 2 Correct answer

Validate the program

Well done, your robot has written the right numbers!

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
  
```

8. Paint the dots(easy)

a. Version 1

Version☆☆ Version☆☆☆ Version☆☆☆☆

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

17 blocks remaining on 20 allowed.

Test 1 Correct answer

Validate the program

Reload your best answer.

Robot Program

```

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

b. Version 2

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
 repeat 10 time
 do

c. Version 3

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!