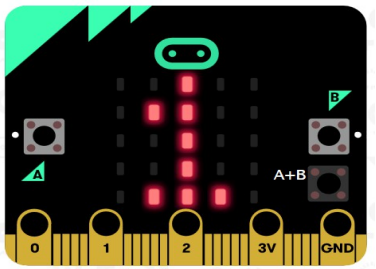
2

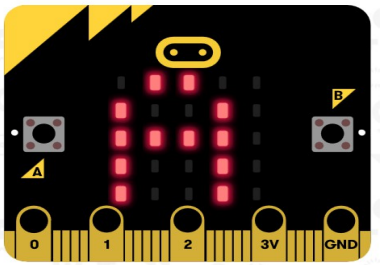
micro:bit 2

Úlohy na cvičenie:

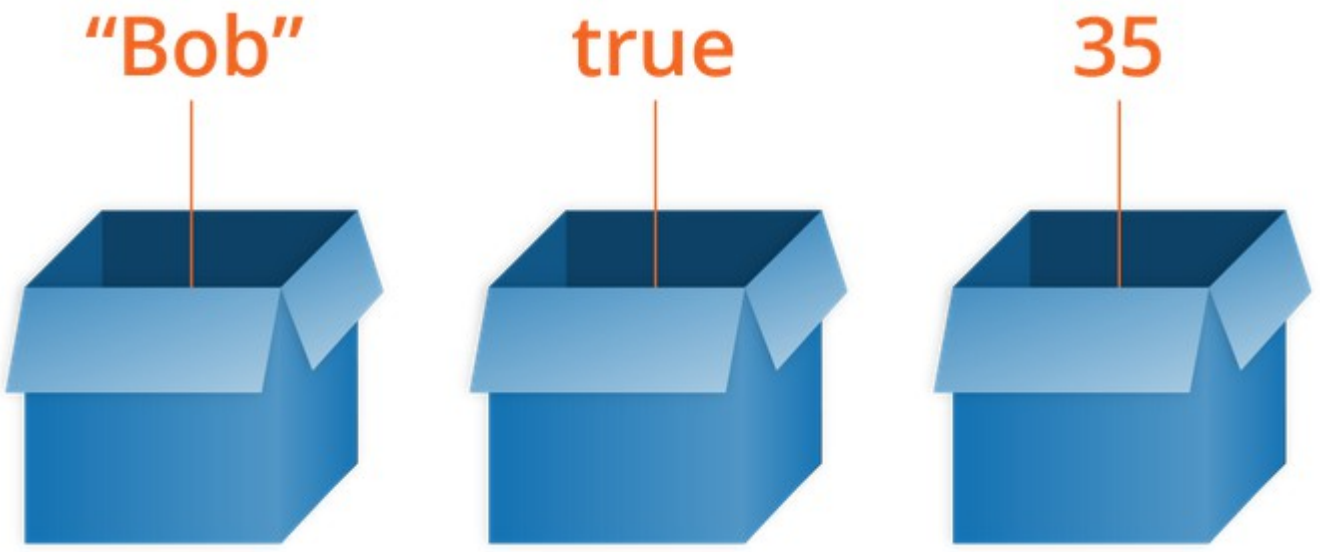
* Naprogramujte hru kameň, papier, nožnice
* Naprogramujte aspoň dve rozličné logické funkcie premenných A a B



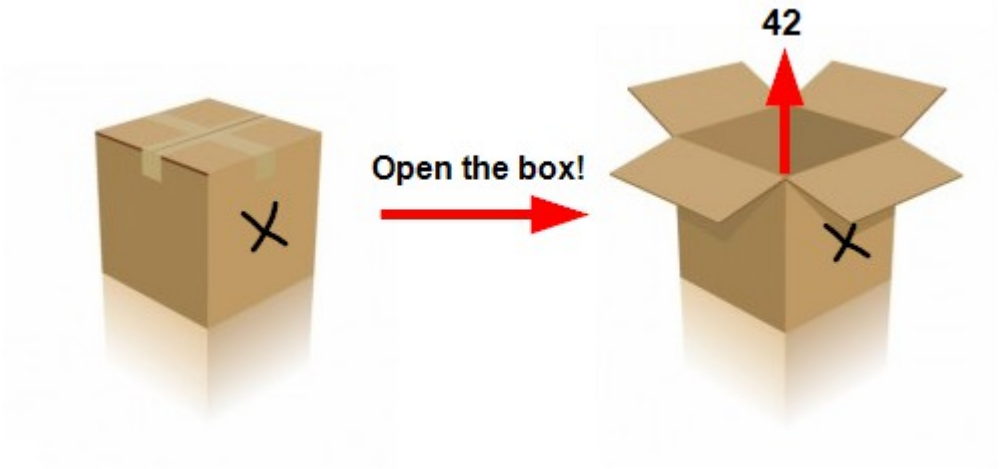
* Naprogramujte tester reakčnej doby

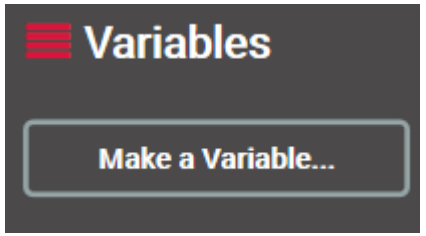


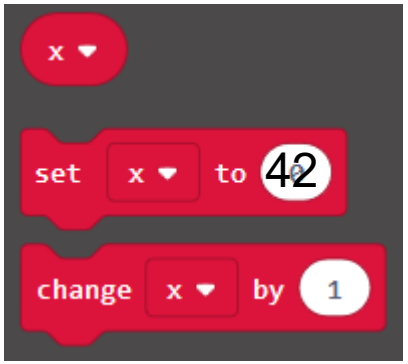
Premenná
variable



Premenná
variable





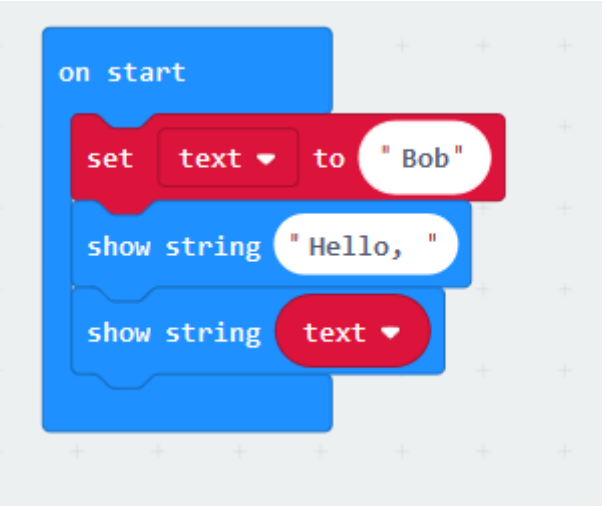



```
int x;

x = 42;

x = x + 1;
```

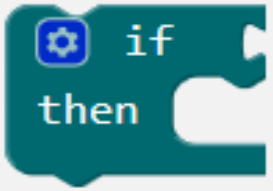
C++




```
let text = "Bob"
basic.showString("Hello, ")
basic.showString(text)
```

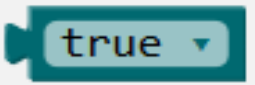
javascript

Logic



if

Conditional statement.

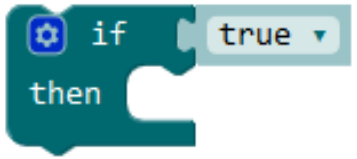


Boolean

True or false values.

If

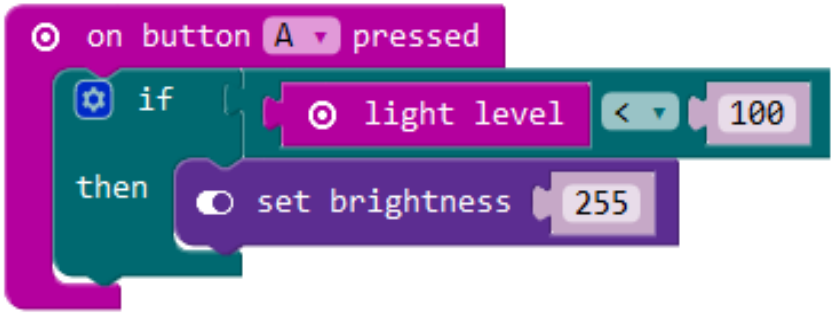
Conditionally run code depending on whether a Boolean condition is true or false.

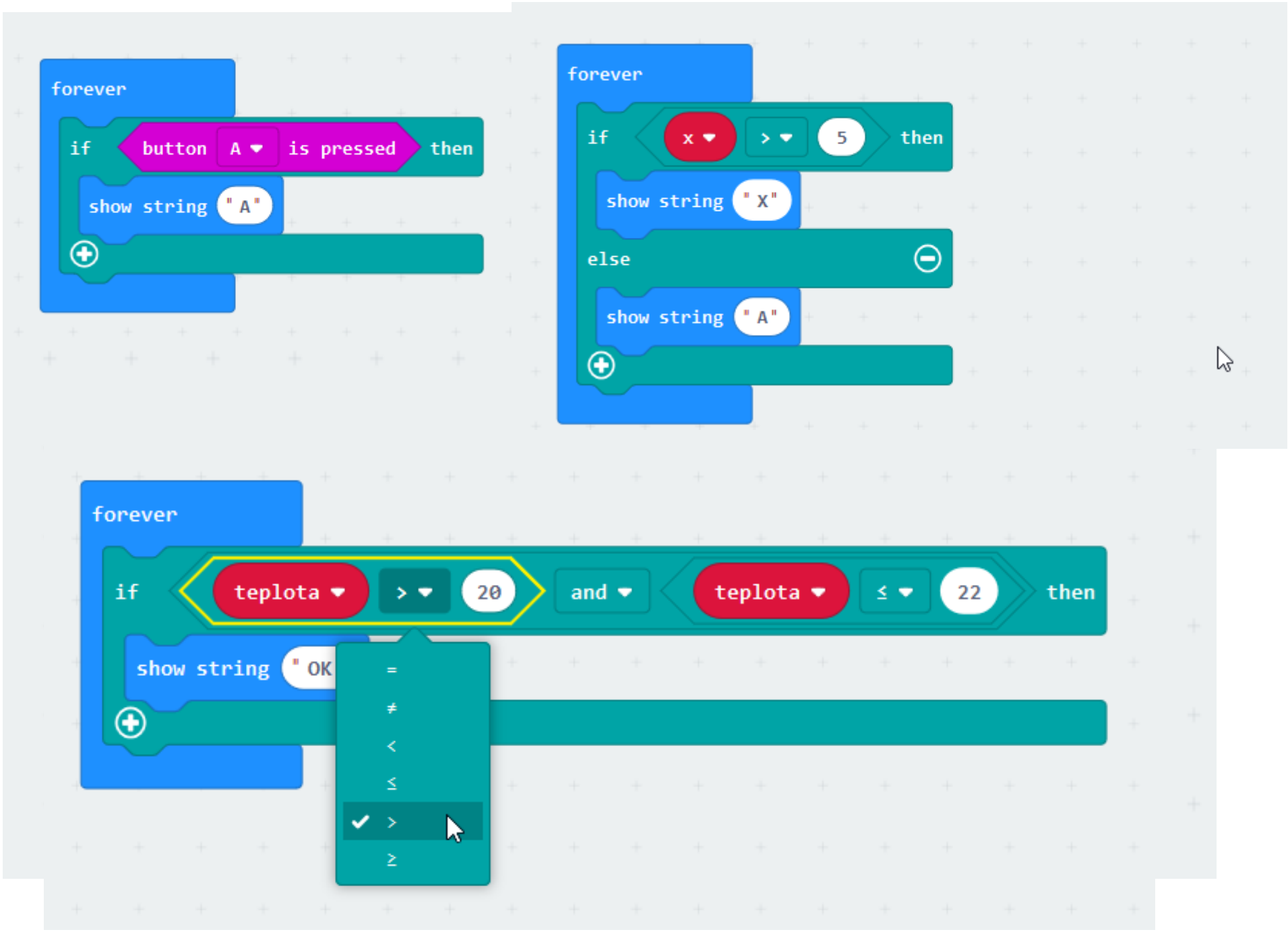


Click on the dark blue gear icon (see above) to add an *else* or *if* to the current block.

Example: adjusting screen brightness

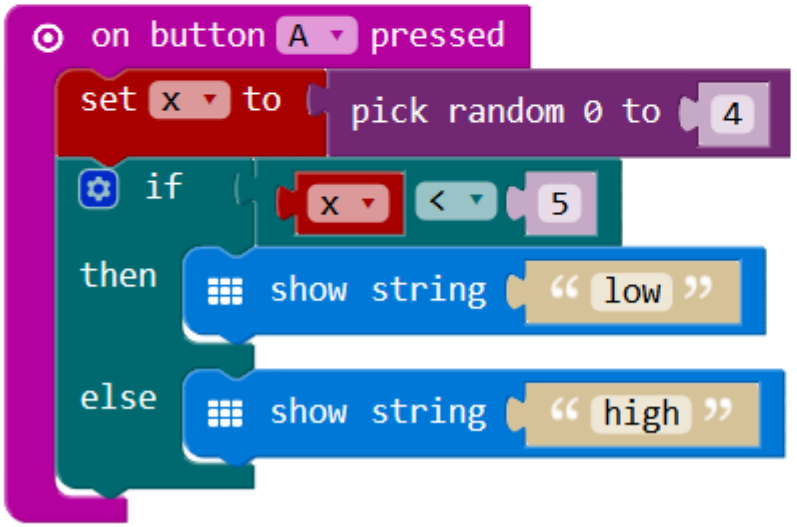
If the light level is `< 100`, this code sets the brightness to `255` when the button A is pressed:

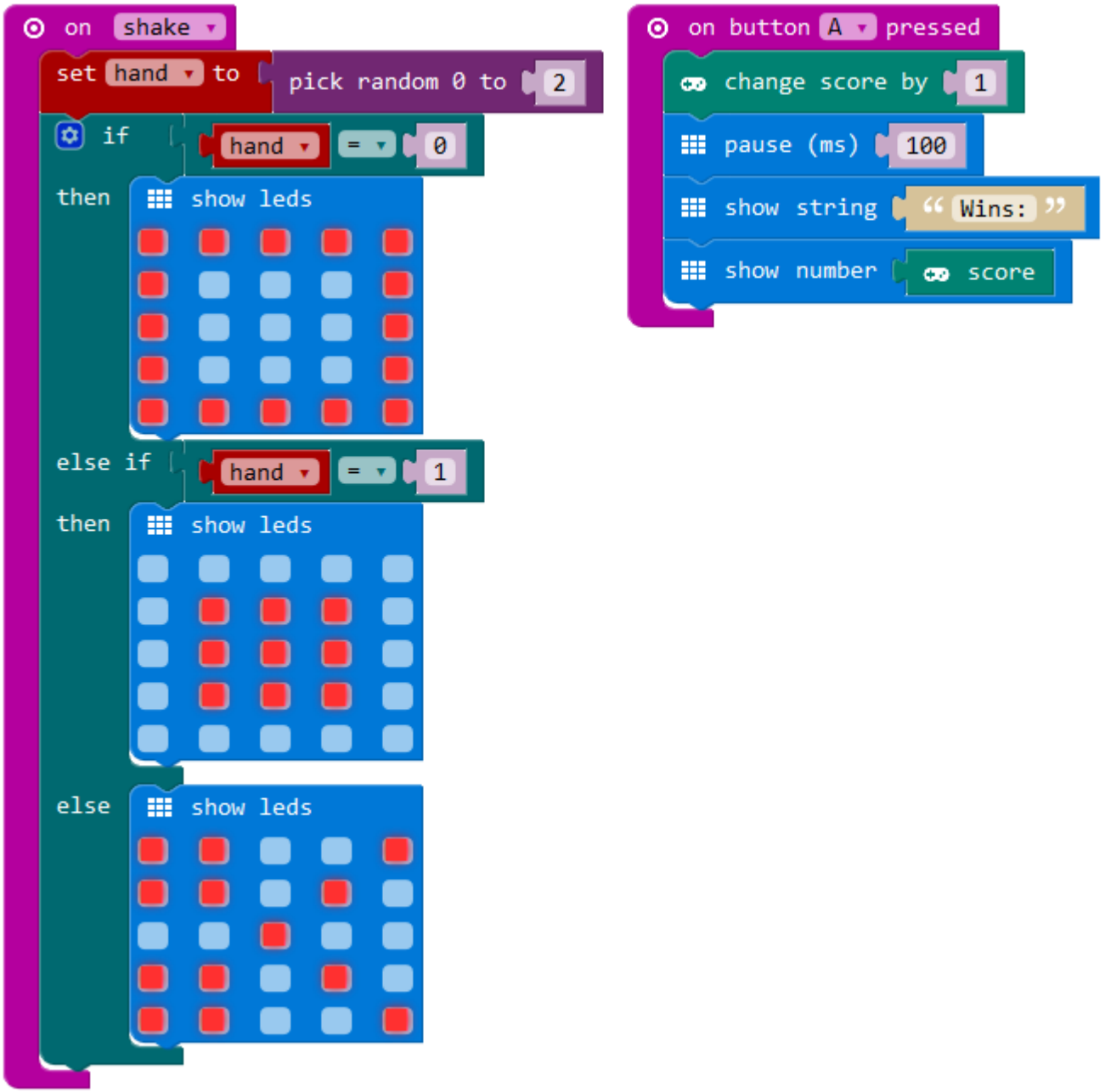



forever
if button A is pressed then
show string " A"
forever
if x > 5 then
show string " X"
else
show string " A"
forever
if teplota > 20 and teplota ≤ 22 then
show string " OK
=
≠
<
≤
>
≥

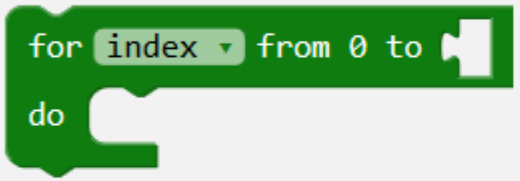
Example: Comparisons of numbers and strings

When you compare two Numbers, you get a Boolean value, such as the comparison `x < 5` in the code below:




on shake
set hand to pick random 0 to 2
if hand = 0
then
show leds
else if hand = 1
then
show leds
else
show leds
on button A pressed
change score by 1
pause (ms) 100
show string "Wins:"
show number score

Loops



for

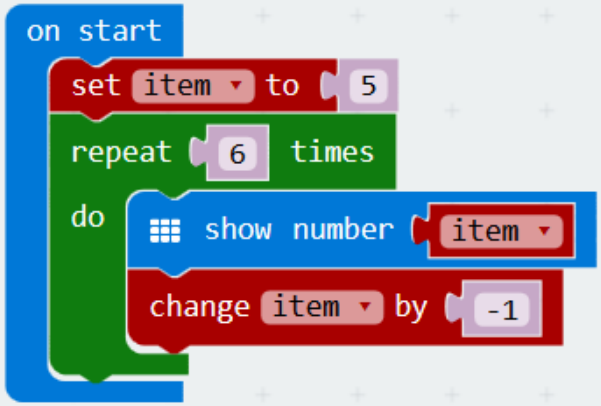
Repeat code for a given number of times using an index.

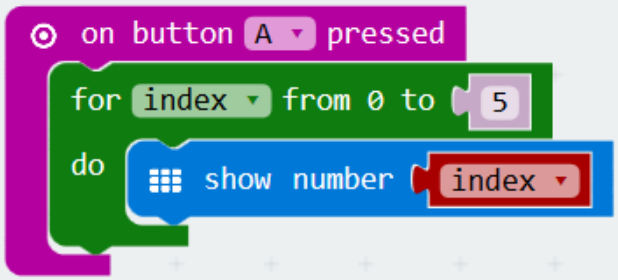
while

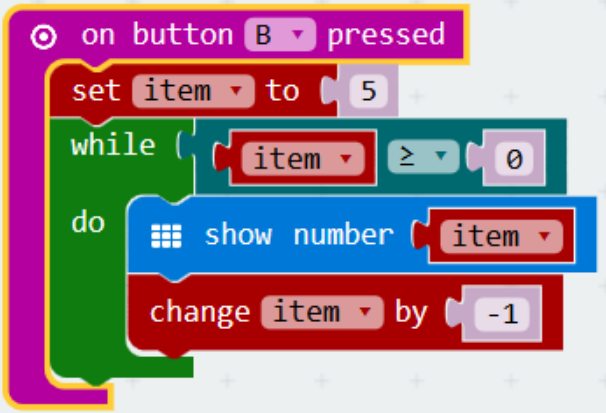
Repeat code while a condition is true.

repeat

Repeat code for a given number of times.


on start
set item to 5
repeat 6 times
do
show number item
change item by -1


on button A pressed
for index from 0 to 5
do
show number index

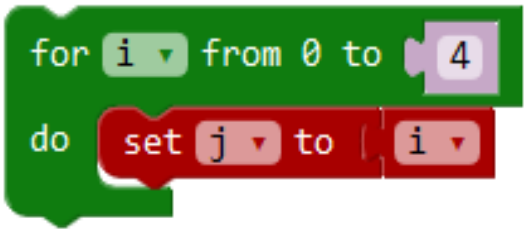

on button B pressed
set item to 5
while item ≥ 0
do
show number item
change item by -1

Repeat

Run part of the program the number of times you say.

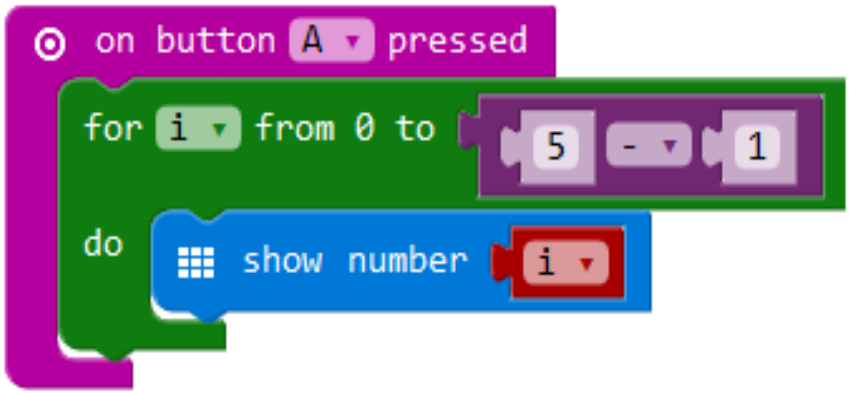
For

Run part of the program the number of times you say.



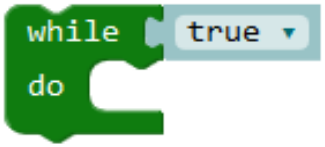
Example: Count to 4

This program will show the numbers 0, 1, 2, 3, and 4 one after another on the LED screen.



While

Repeat code while a Boolean `condition` is true.

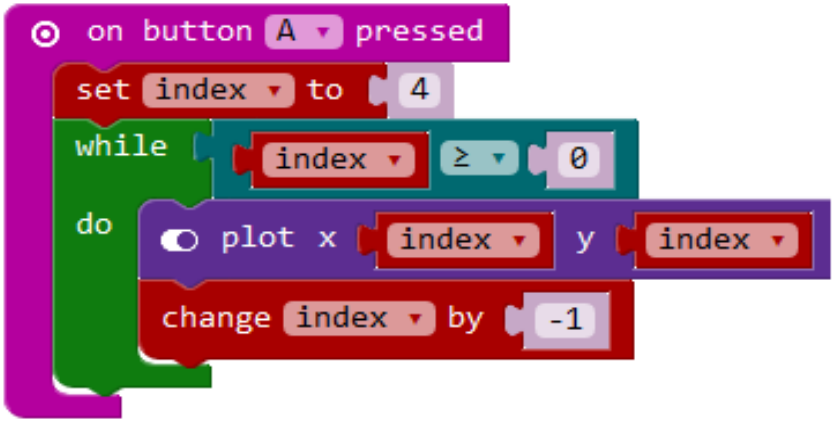


The while loop has a *condition* that evaluates to a Boolean value.

The condition is tested before any code runs. Which means that if the condition is false, the code inside the loop doesn't execute.

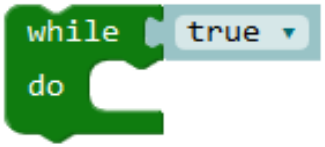
Example: diagonal line

The following example uses a while loop to make a diagonal line on the LED screen (points `0, 0`, `1, 1`, `2, 2`, `3, 3`, `4, 4`).



While

Repeat code while a Boolean `condition` is true.

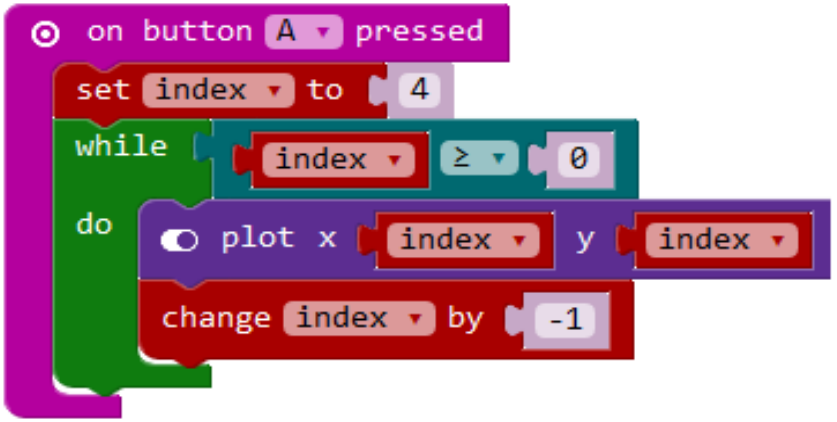


The while loop has a *condition* that evaluates to a Boolean value.

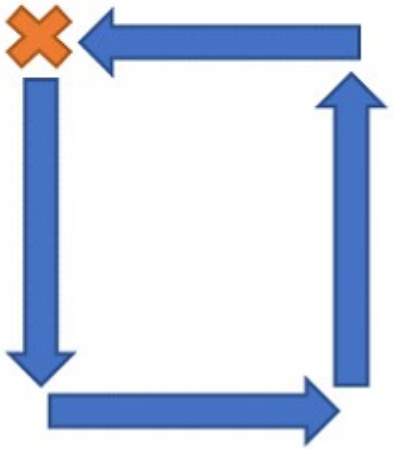
The condition is tested before any code runs. Which means that if the condition is false, the code inside the loop doesn't execute.

Example: diagonal line

The following example uses a while loop to make a diagonal line on the LED screen (points `0, 0`, `1, 1`, `2, 2`, `3, 3`, `4, 4`).

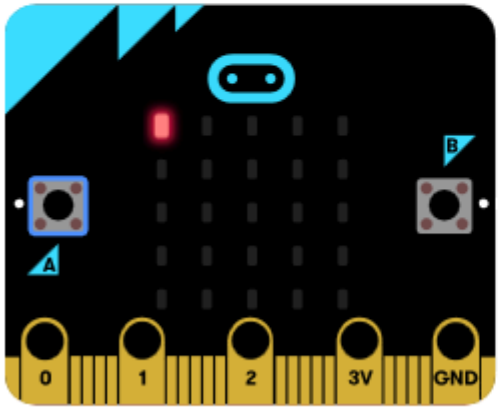


1. Step forward
2. Turn left
3. Step forward
4. Turn left
5. Step forward
6. Turn left
7. Step forward
8. Turn left



```
on button A pressed
    repeat 4 times
    do
        item move by 4
        item turn right by (°) 90
```

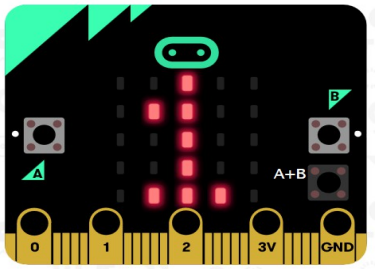
```
on start
    set item to create sprite at x: 0 y: 0
```



micro:bit 2

Úlohy na cvičenie:

* Naprogramujte animáciu na reálnej micro:bit doštičke
* Naprogramujte hru kameň, papier, nožnice
* Naprogramujte aspoň dve rozličné logické funkcie premenných A a B



* Naprogramujte tester reakčnej doby