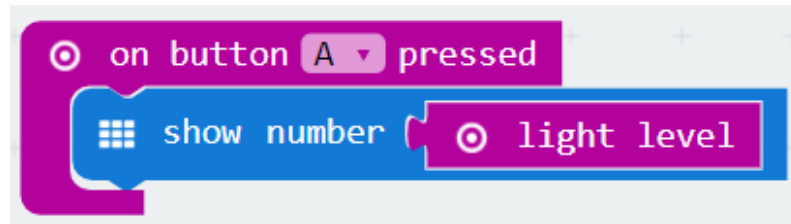


Automatic Lighting System

You are going to create an automatic lighting system that turns on an LED when the light is below a certain level.

1. Take a look at the code given below. What do you think it will do?:



Go to makecode.microbit.org and create this program.

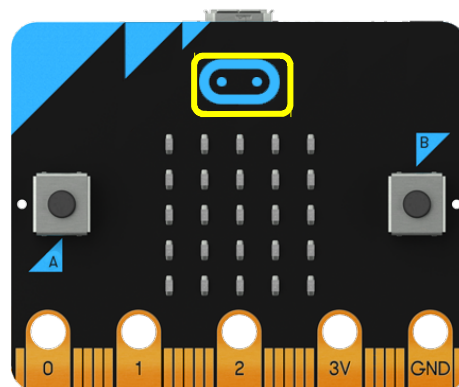
2. Download your program by clicking on the 'Download' button.



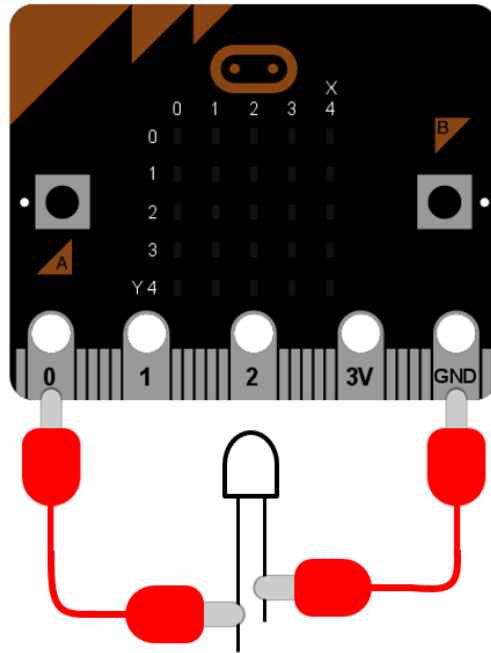
Plug your micro:bit into the computer using the USB cable provided. It will appear just like a memory stick would on your computer. You need to copy the program you just downloaded onto it.

3. Take readings from the light sensor under these conditions:

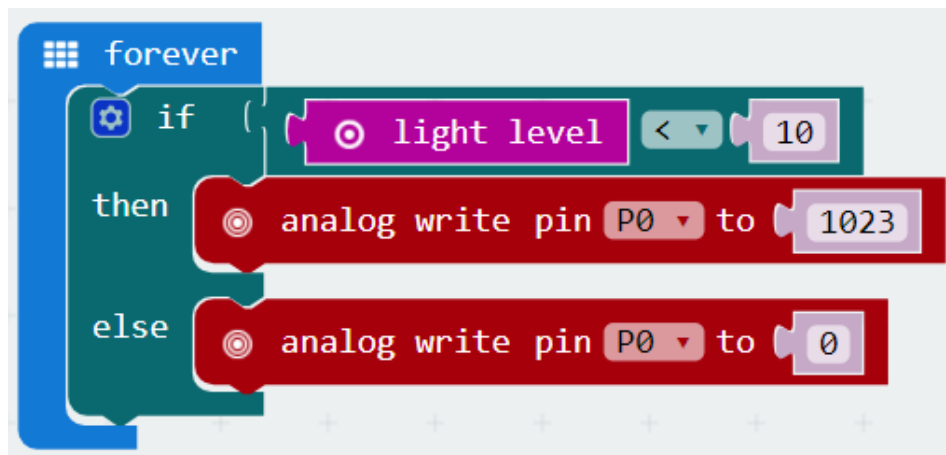
Condition	Reading
Light sensor covered (put finger on the logo)	
micro:bit shaded with one hand	
micro:bit shaded with two hands	



4. Connect the LED to the micro:bit using crocodile clips as shown in the diagram below:



5. Add the code shown below to your program. This will check the light sensor reading and if it is below a set threshold the LED will be turned on. You need to choose the threshold based on the readings you collected earlier.



6. Now test your system with different lighting levels.

Extension:

Changing the value that is written to pin 0 (currently 1023) will change the brightness of the LED. It can be set to any value between 0 and 1023. Add more conditions to your IF statement that will change the brightness of the LED at different light levels.