Soldiers_avoid_bullets

1.Learning goal

In this course, we learn how to make a Soldier avoid bullets game.

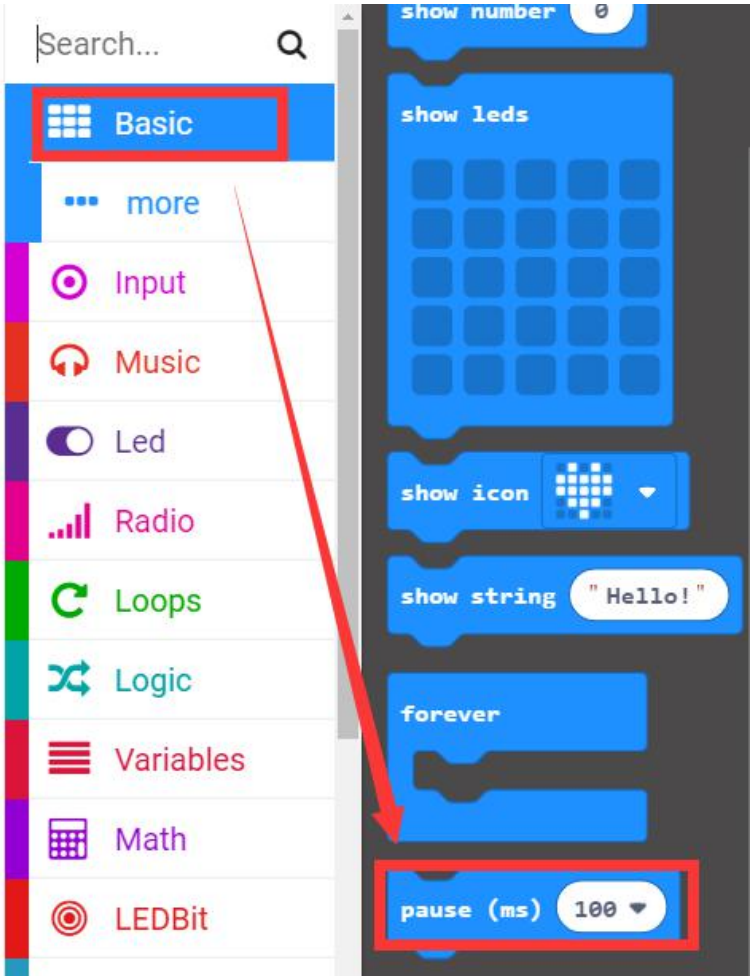
2.Programming method

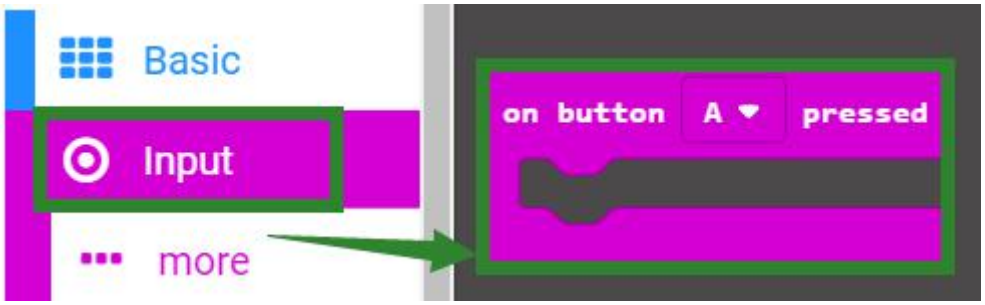
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: **http://microbit.org/** to enter the programming interface. Add the Yahboom package **https://github.com/lzty634158/LED-Bit** to program.

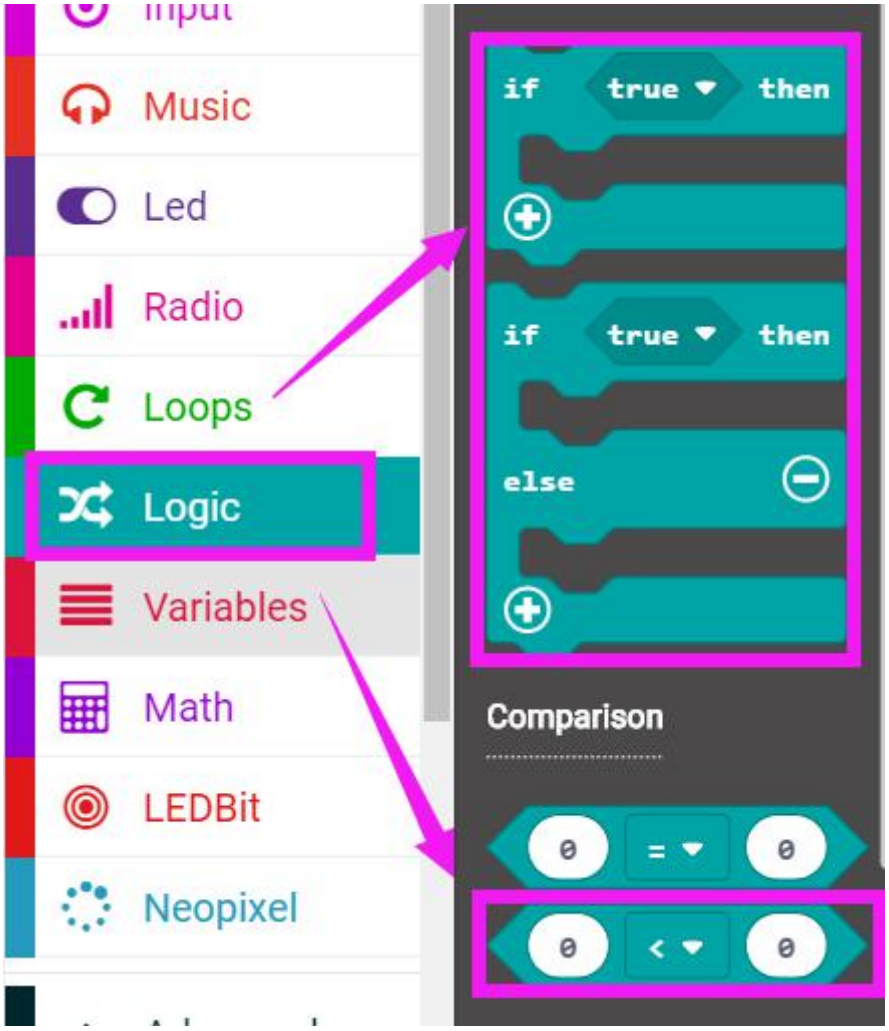
Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: **https://github.com/lzty634158/LED-Bit ,** you can program.

3.Looking for blocks

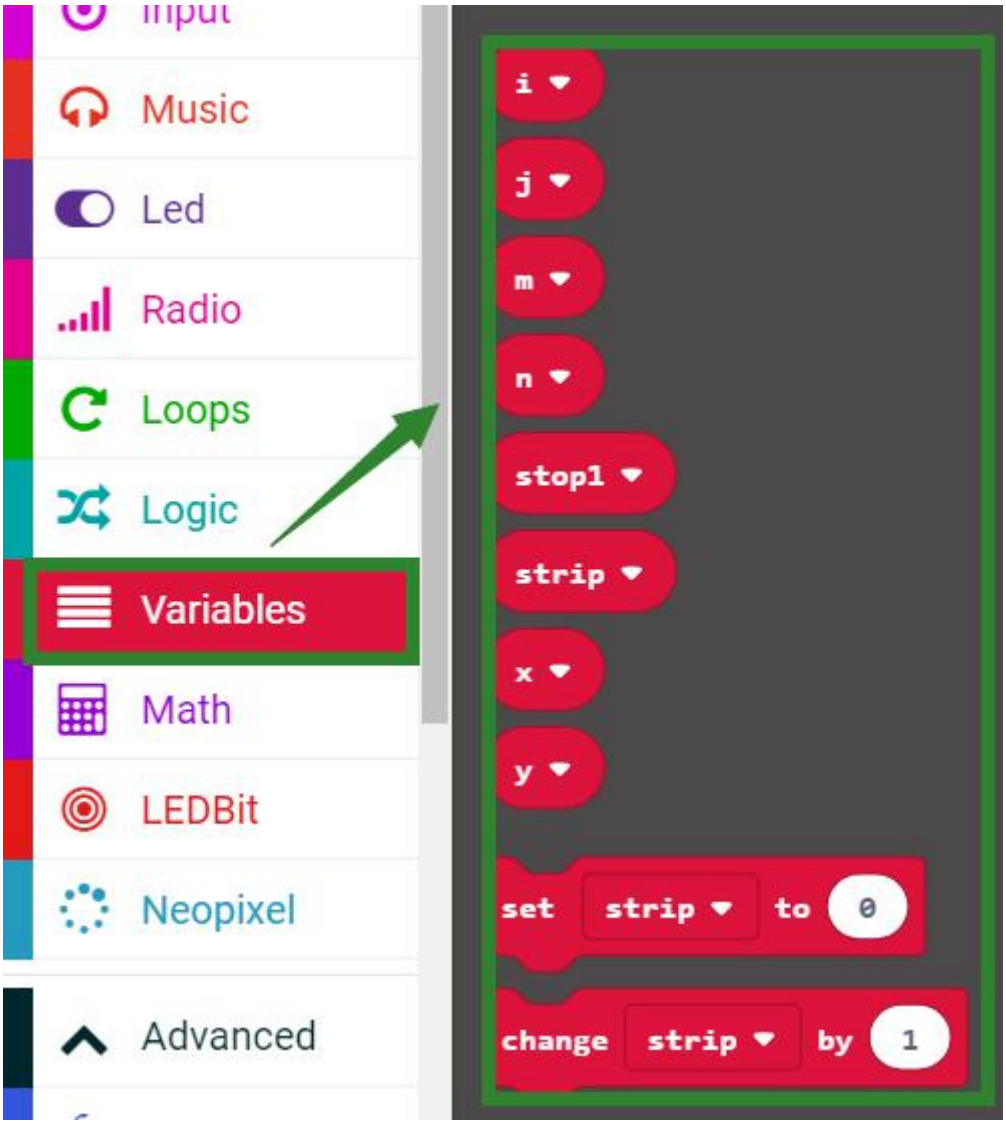
The following is the location of the building blocks required for this programming.

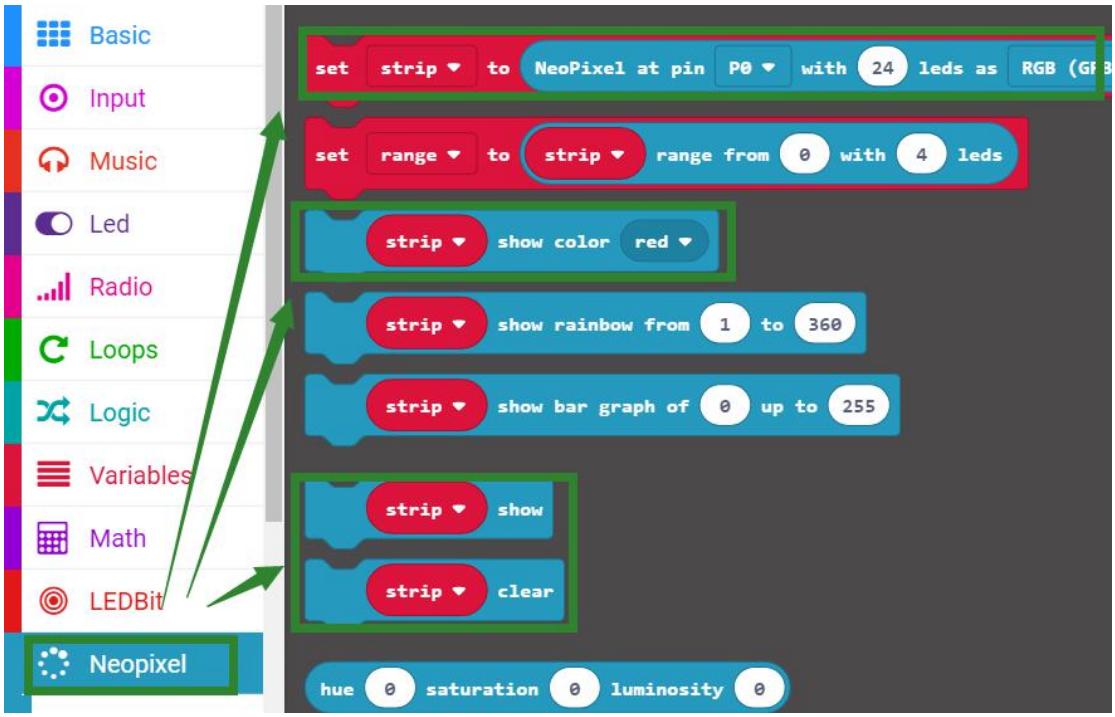


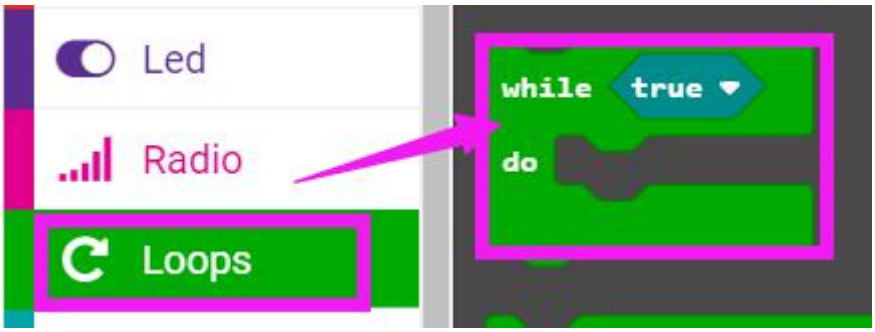

Basic
Input
more
on button A pressed

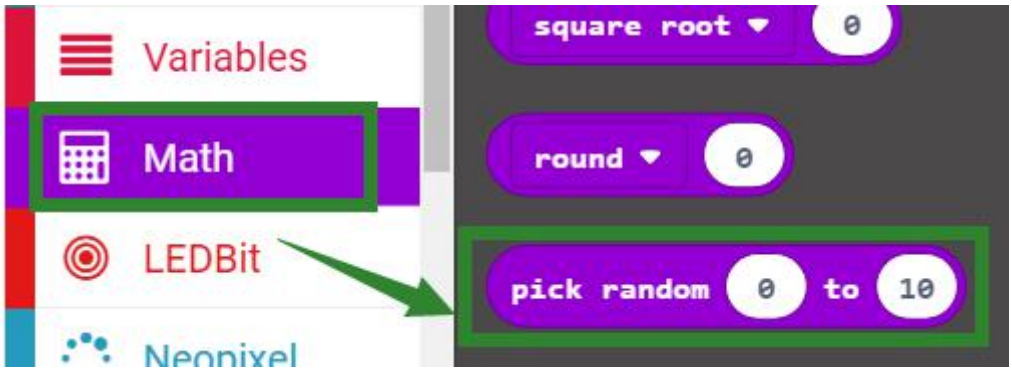

Music
Led
Radio
Loops
Logic
Variables
Math
LEDBit
Neopixel
if true then
if true then
else
Comparison
0 = 0
0 < 0


Math
LEDBit
Neopixel
LED expression Draw X 0 Y 0 OFF
LED expression Clear

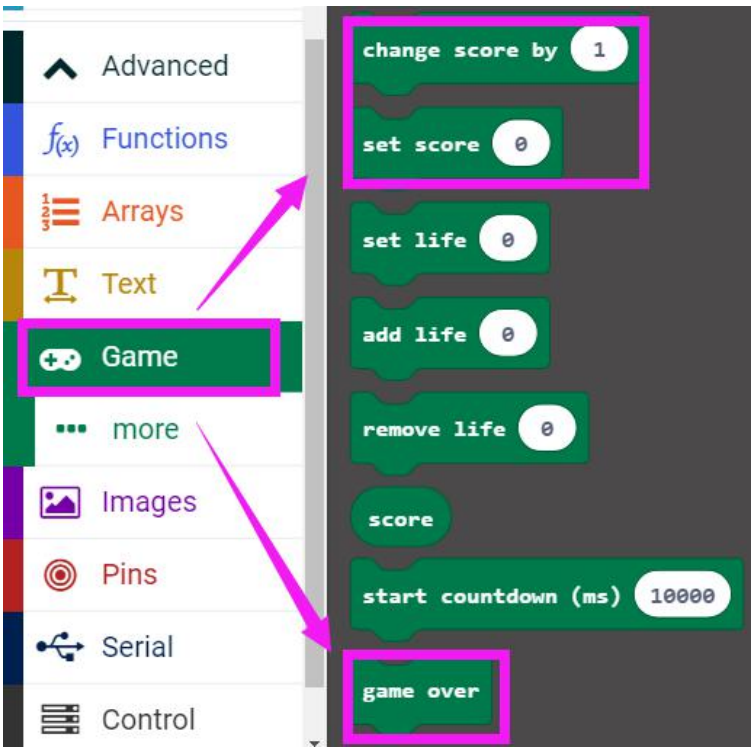

Music
Led
Radio
Loops
Logic
Variables
Math
LEDBit
Neopixel
Advanced
i
j
m
n
stop1
strip
x
y
set strip to 0
change strip by 1


Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
LEDBit
Neopixel
set strip to NeoPixel at pin P0 with 24 leds as RGB (GR
set range to strip range from 0 with 4 leds
strip show color red
strip show rainbow from 1 to 360
strip show bar graph of 0 up to 255
strip show
strip clear
hue 0 saturation 0 luminosity 0


Led
Radio
Loops
while true
do


Variables
Math
LEDBit
Neopixel
square root 0
round 0
pick random 0 to 10

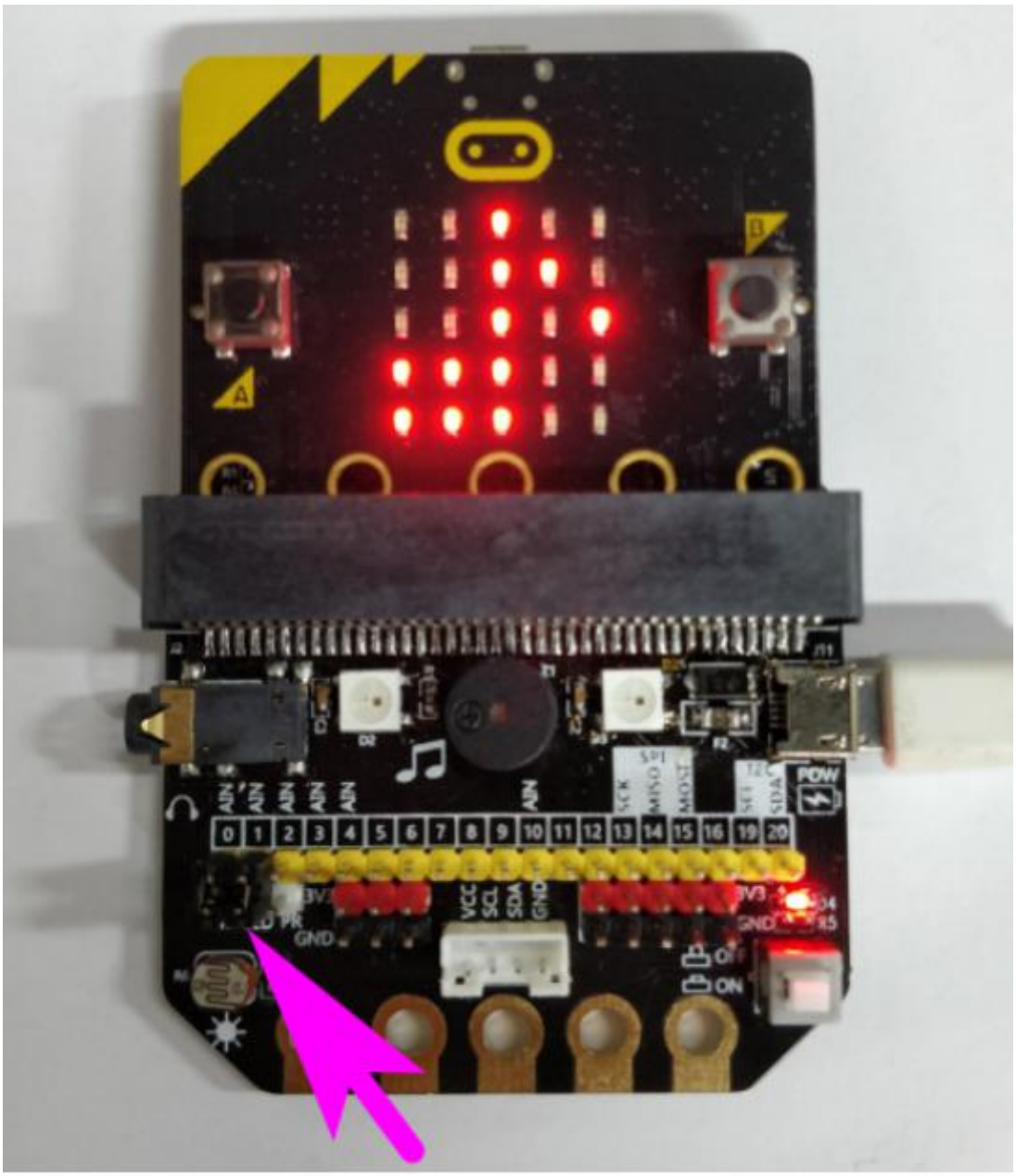

Music
Led
Radio
Loops
ring tone (Hz) Middle C
rest(ms) 1 beat
start melody dadadum repeating once



4.Combine building block

Please refer to the hex file for the procedure of this experiment.

Note: The jumper cap needs to be connected to the P0 and FM, the P1 and LED pins. As shown below.



5. Game rules

After the program is successfully downloaded,

LED: bit will be illuminated for 1 second in full screen, then the full screen will be off, and the coordinates (7, 7) will be illuminated, indicating "soldier".

Then, LED: bit will randomly drop a lot of small points, indicating "bullet",

We can control the "soldier" to move around by pressing the A and B buttons to avoid the "bullet". When the two meet together, it means that the "soldier" is hit by the "bullet". At this time, the LED: bit will be The crying face is displayed, and the two programmable RGB on the Basic:bit expansion board lights up in blue. At the same time, the buzzer will play one end of the music, game score reduced by 1.

When the two did not come together, it means that the "soldier" was not hit by

the "bullet" and game score no change.

!!!Note: This game is a group of ten times, which means that the “bullet” will be randomly dropped ten times. After ten times, the game will end. LED:bit will be off in full screen. The micro:bit dot matrix will display the animation of the game ending. “GAME OVER "," SCORE" and scores.

The total score of this game is 10. The "soldier" is hit by "bullet", the score reduced by 1. If the "soldier" has not been hit all the time, its score is 10. If it is hit 10 times or more, its score is 0.

If you need to restart the game, press the micro:bit reset button.