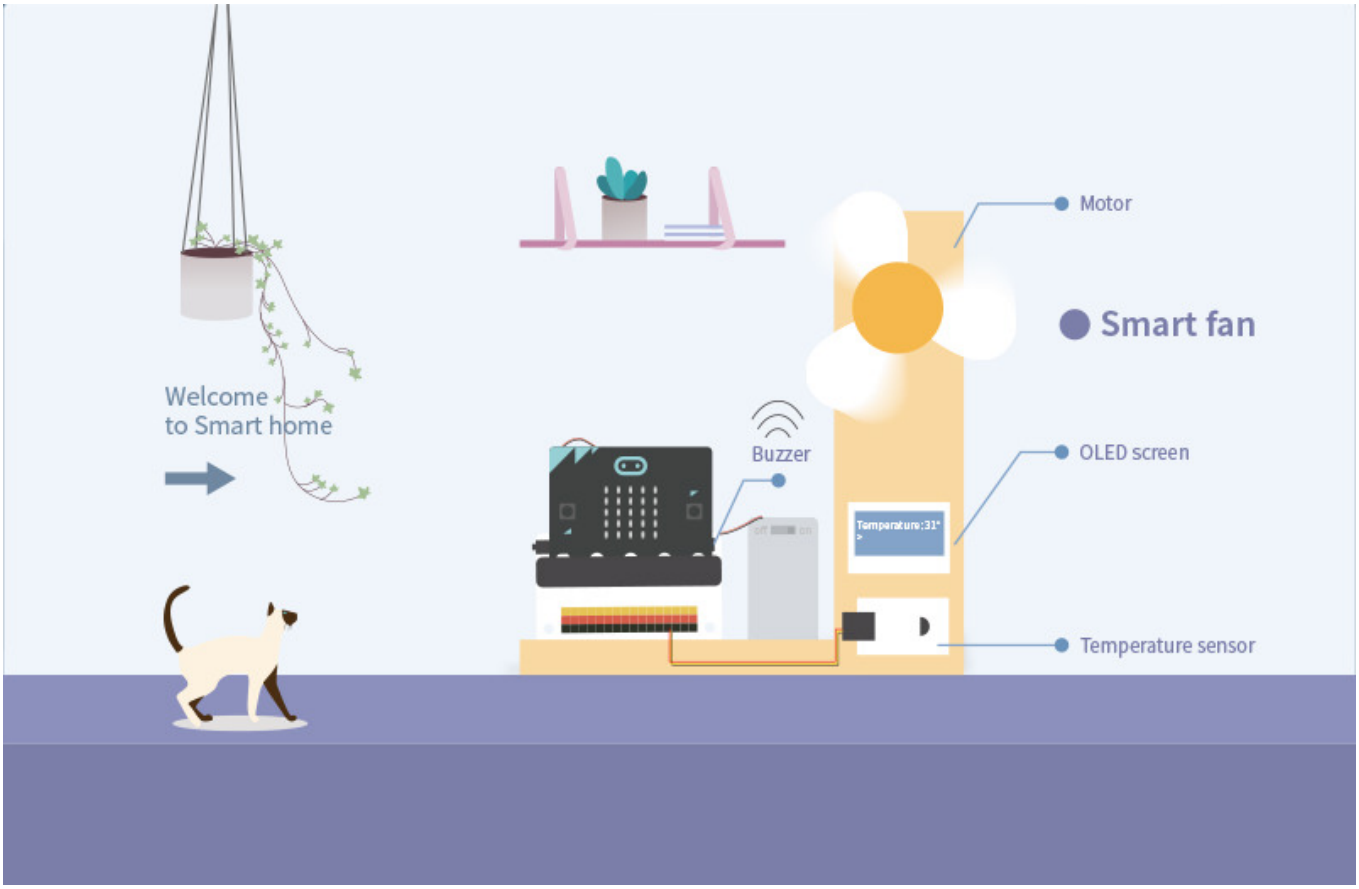
4. cas 02 Ventilateur intelligent



4.1. But

- Fabriquez un ventilateur de contrôle de température intelligent.

4.2. Matériaux

- 1 x kit maison intelligente
- 1 x carton ondulé
- 2 x petits bâtons
- 1x colle

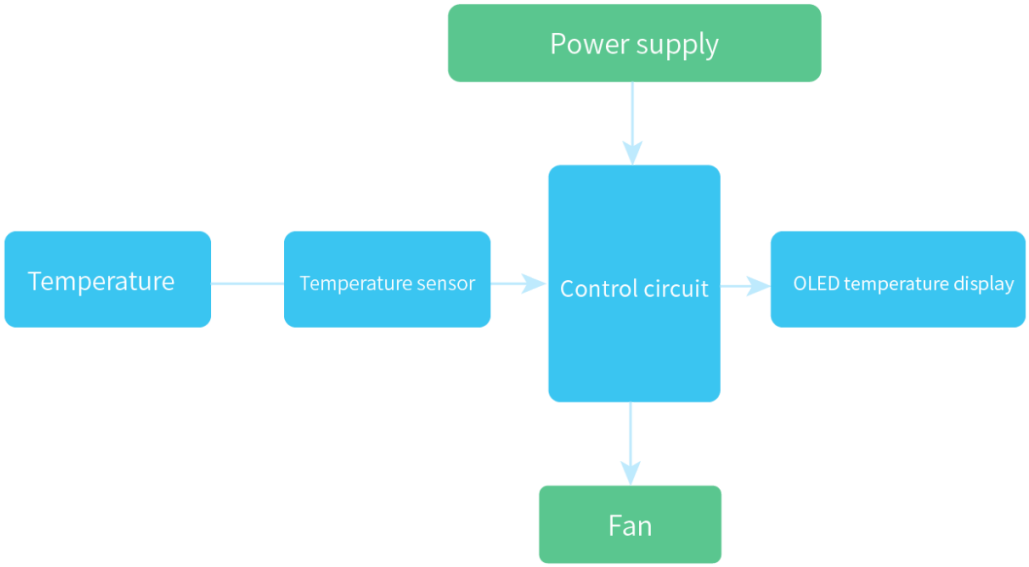
4.3. Fond

###Signification du ventilateur de contrôle de température intelligent

- Le ventilateur de contrôle de température intelligent est une base de produits créée sur la maison intelligente. C'est-à-dire que la science vient de la vie.

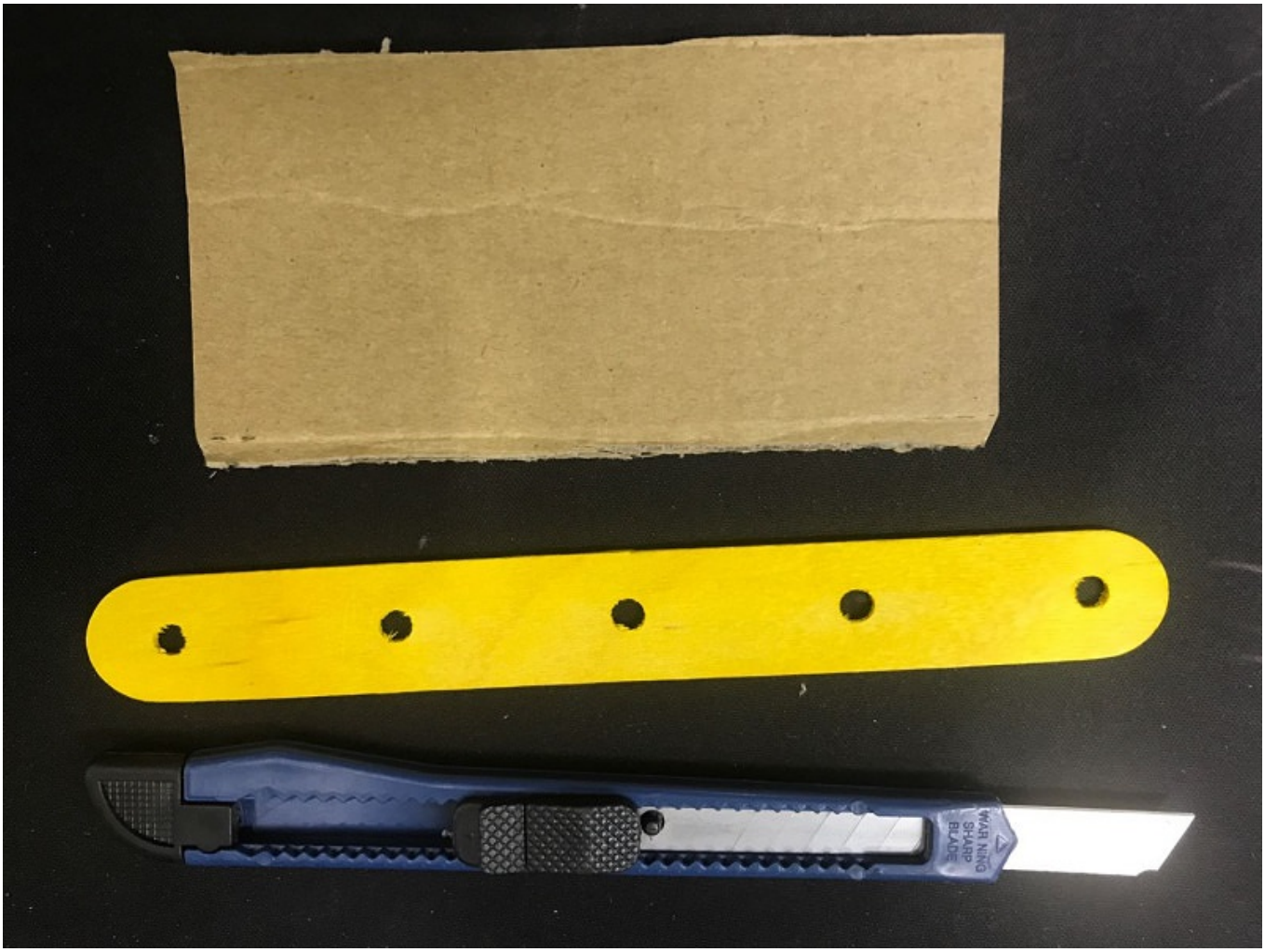
Qu'est-ce qu'un ventilateur de contrôle de température intelligent

- La pièce sera à haute température lorsque le degré de température est supérieur à 30 ° et rendra les gens mal à l'aise. Le capteur de température enverra ce signal à micro:bit et micro:bit enverra ce signal au ventilateur. Ensuite, le ventilateur fonctionnera jusqu'à ce que le degré de la pièce soit inférieur à 30° pour maintenir la pièce à une température confortable.

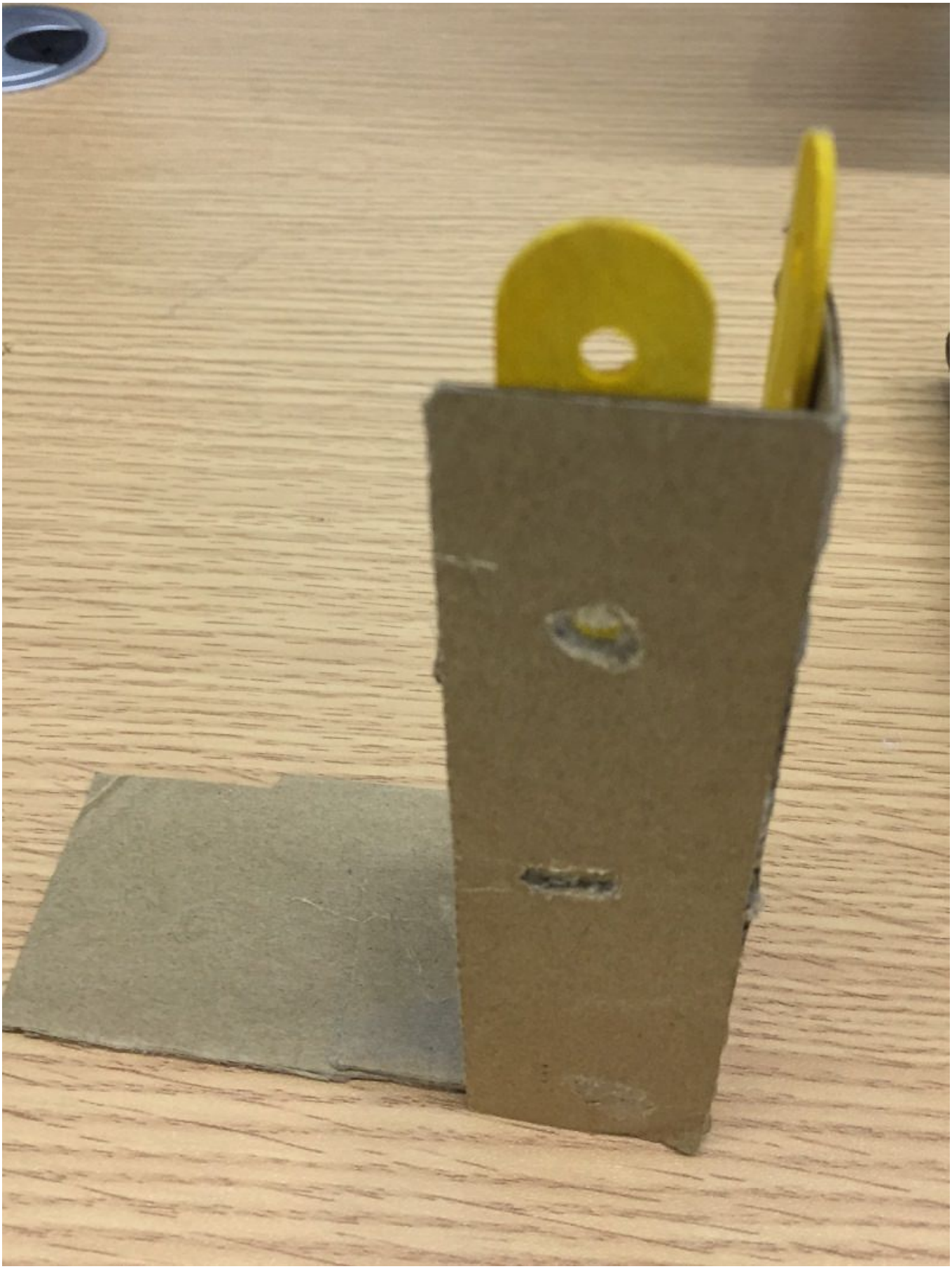


4.4. Fonctionnement pratique

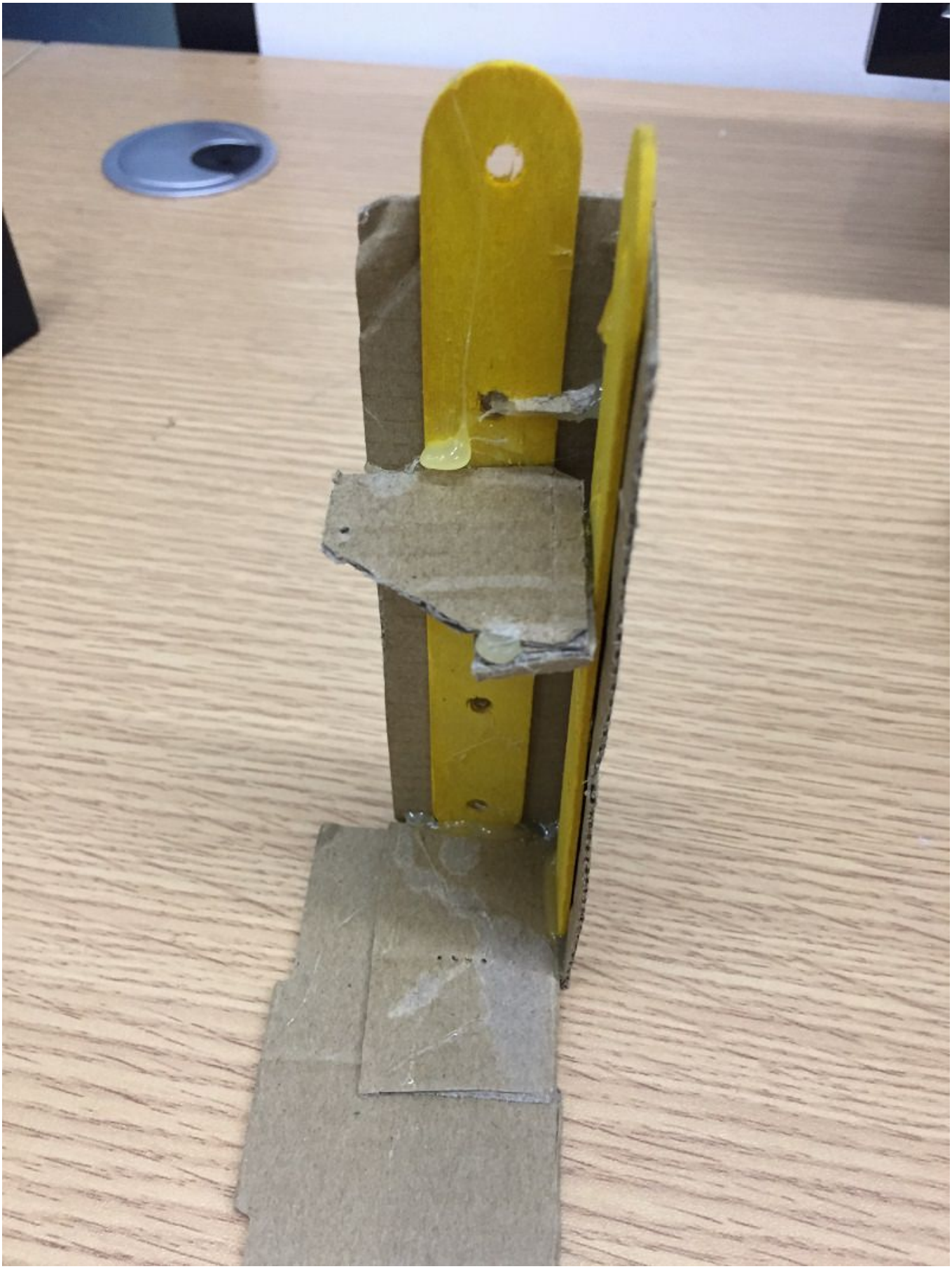
Matériaux : carton ondulé et cutter



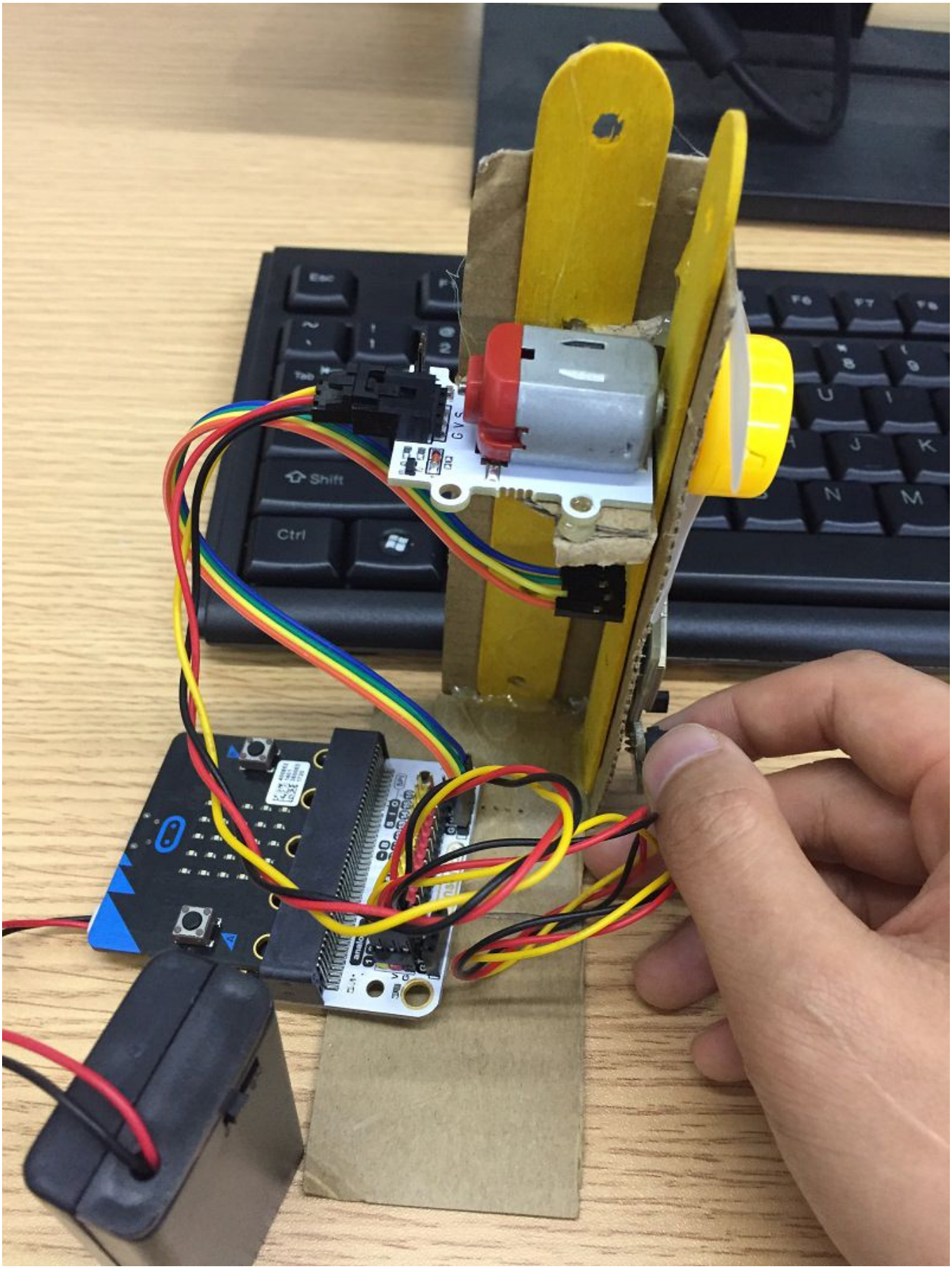
Construire comme ci-dessous image：



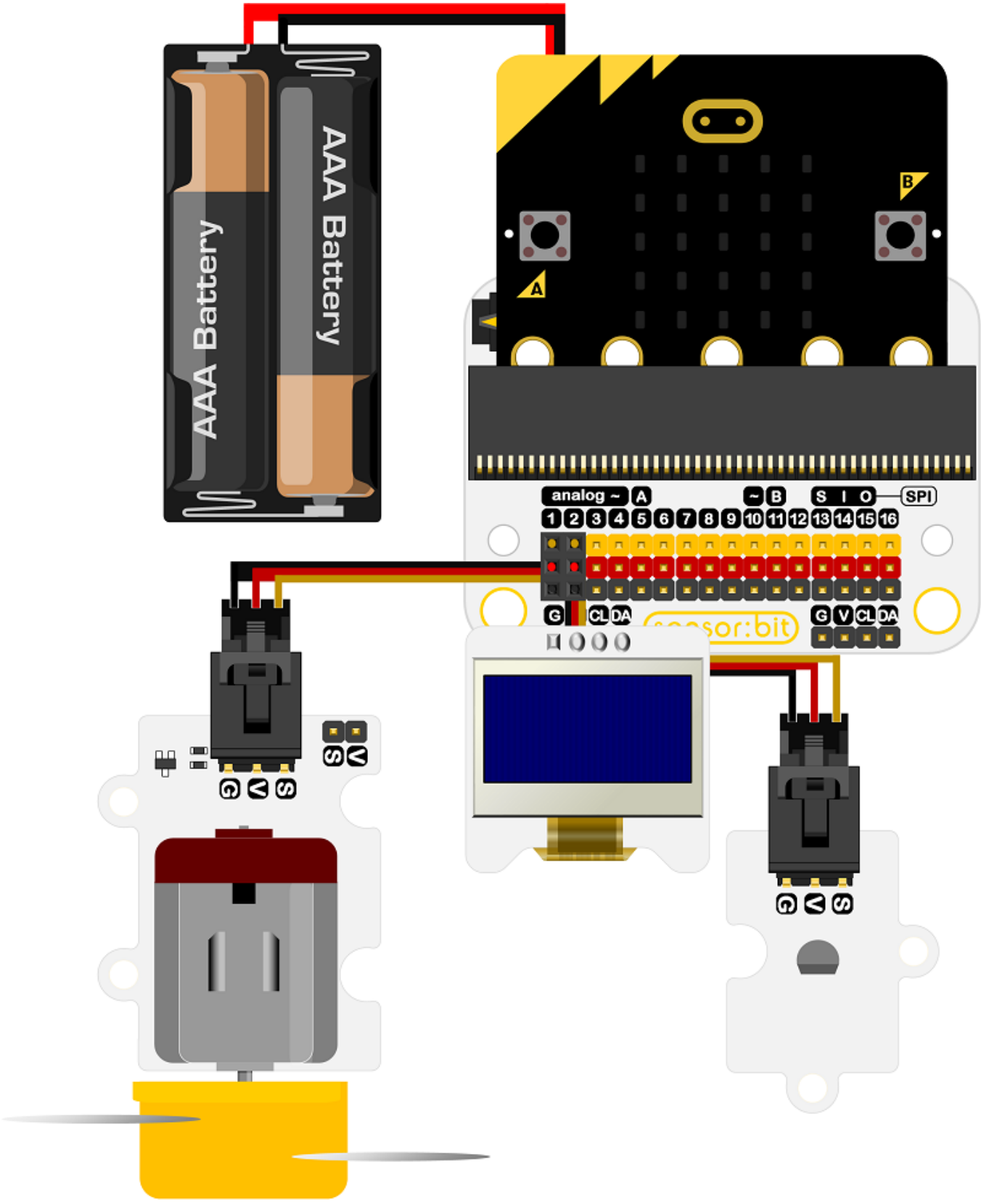
Côté



Collez les appareils comme ci-dessous :



4.5. Connexion matérielle



4.6. Software

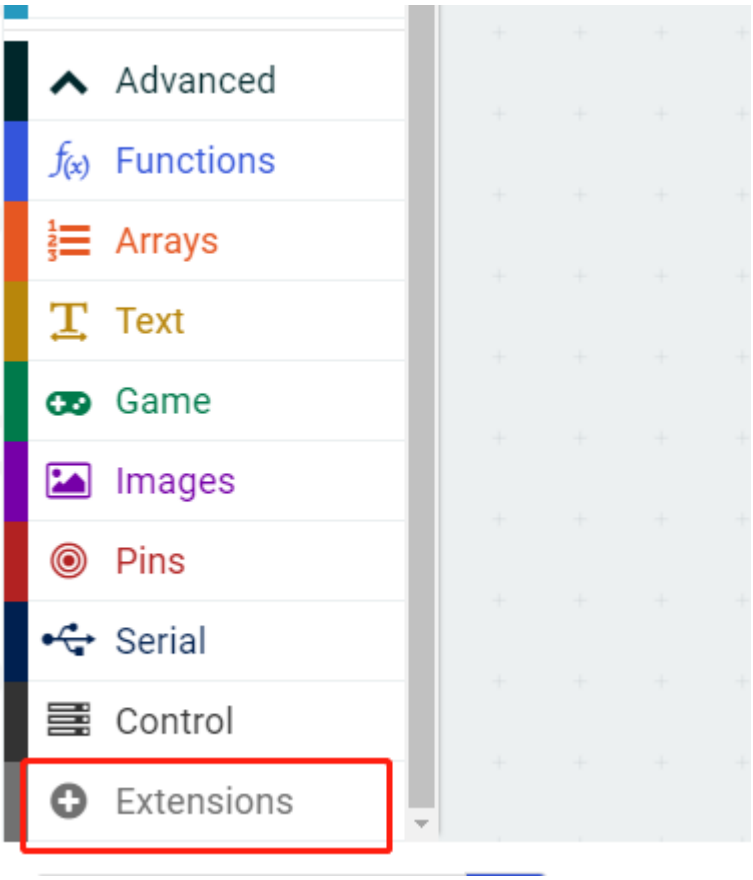
makecode

Edge Connector Data Sheet

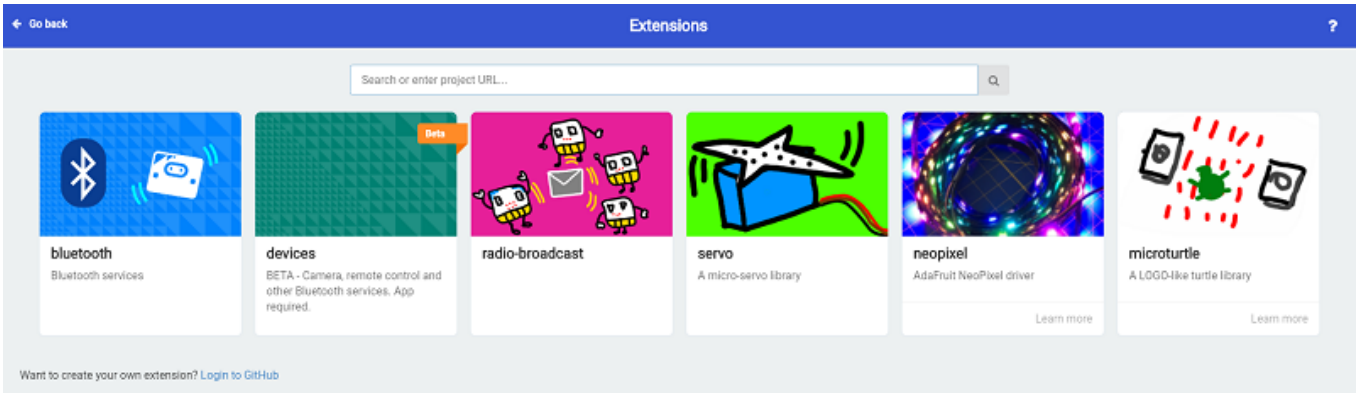
4.7. Programming

Step 1

Go to MakeCode page, click Advanced in the code block and click on Extensions.



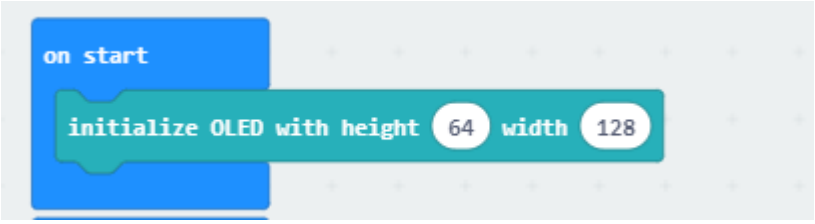
We need to add a new codebase for programming of smart home. Finding “Add Package” in the bottom of code block and click it. Then a message box will show up, search “smart home”， and download this new codebase.



Note：If there is a hint says some codebase will be deleted because of incompatibility. Don’t worry. You could go ahead as the hint or build a new item in item menu bar.

Step 2

Drag on start block from Basic and drag initialize OLED block from OLED, change height to 64, width to 128.

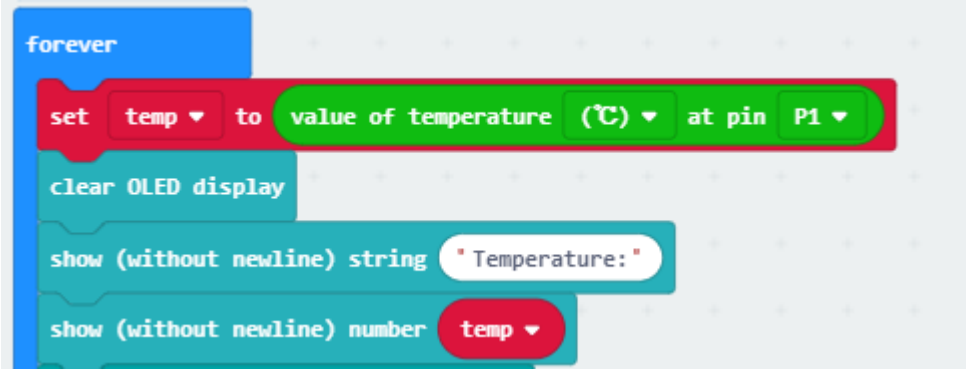


Drag forever block from Basic, add temp variables in Variable, then drag set item to snap into forever, change item to temp and drag value of temperature behind it. Change value of temperature to °C and at pin to P1.

Step 3

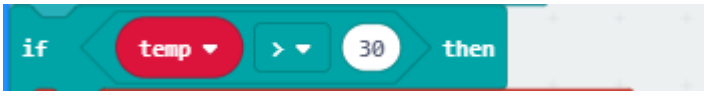
Now let's start OLED code.

Drag clear OLED display under set temp to. Then,drag show (without newline) string 'Temperature' under clear OLED display. Last, drag show(without newline) number temp."Without newline" is for newline displaying string and temperature value.



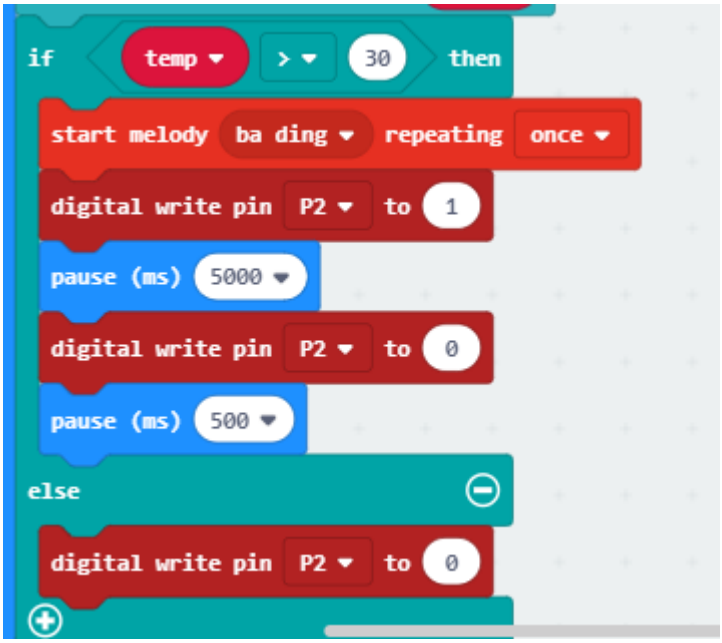
Step 4

Our goal is using micro:bit driving the fan when the value of temperature is higher than 30°, so temp>30 is a judgement condition. In that way, we need drag "if else" from Logic, set temp>30.



Step 5

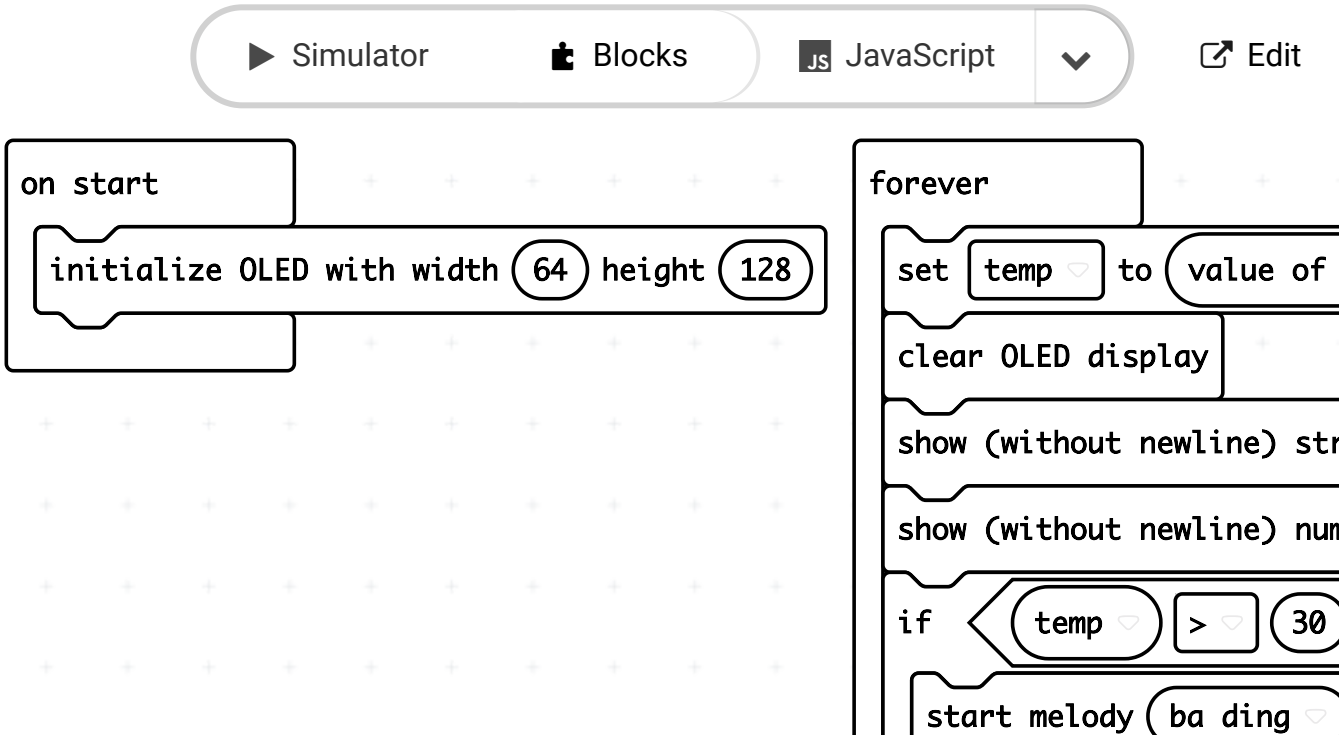
We add start melody repeating under if ,set melody to ba ding and repeat once， micro:bit will send signal to fan through P2. Then set fan works 5 seconds and stops 5 seconds. The temperature sensor judge whether go loop by gotting the temperature degree. Else means if above condistion were false, the fan will keep rest.

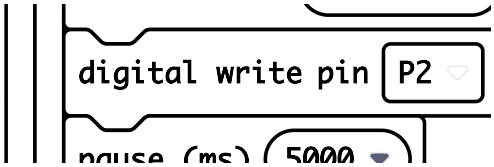


Programming

Make code：https://makecode.microbit.org/_PKXir0c1V6TX

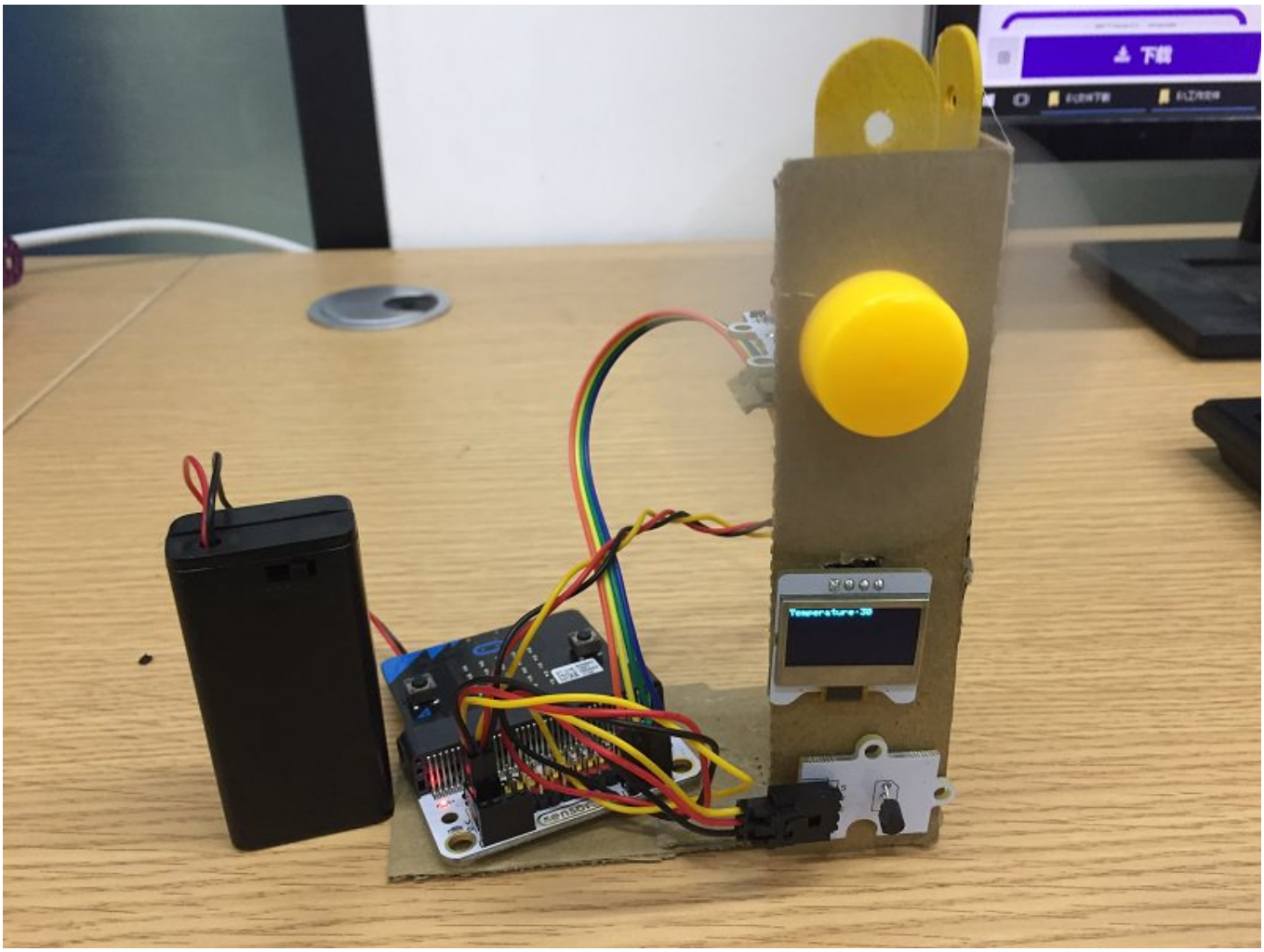
You also could directly download program visit website as below:



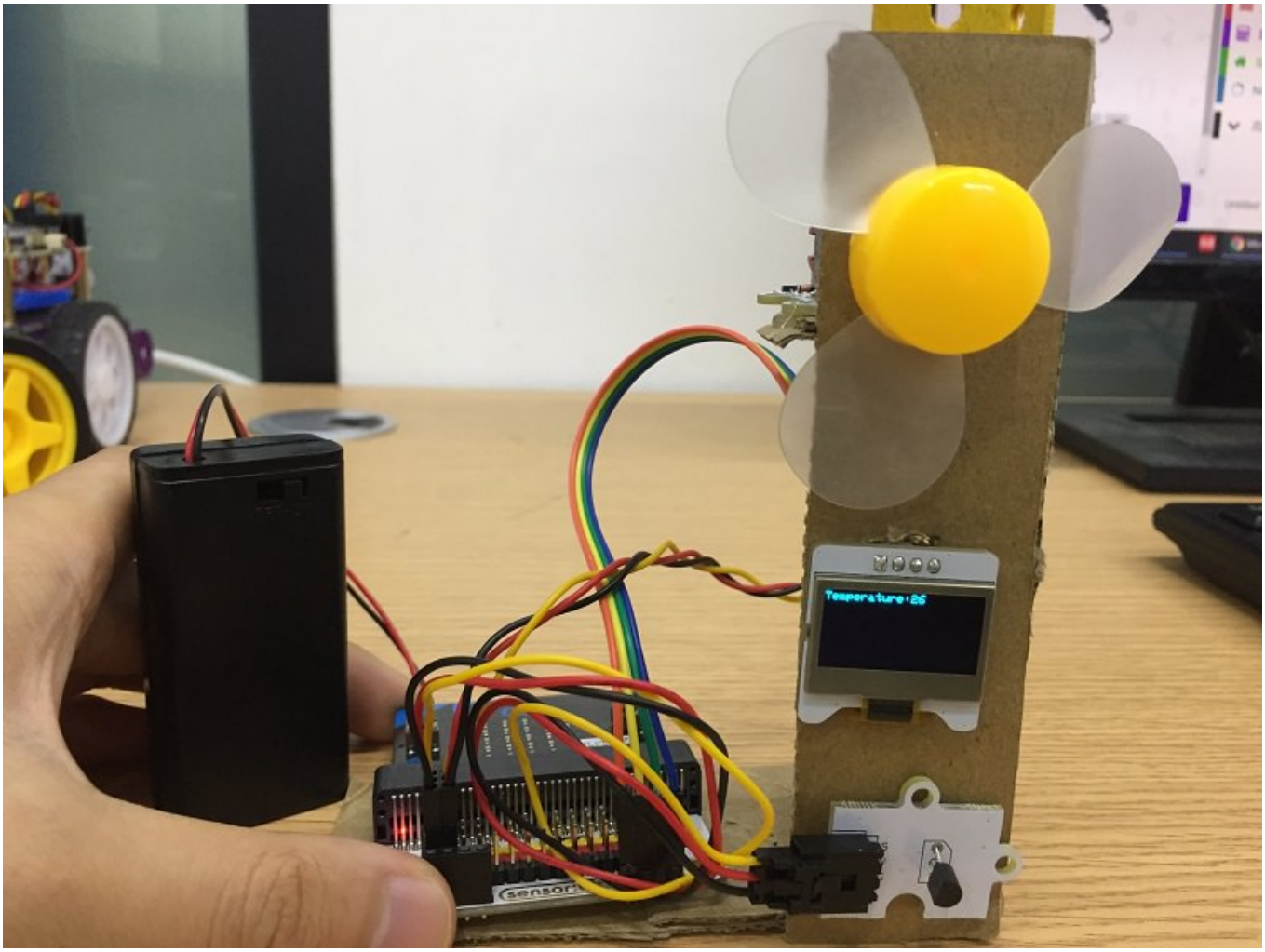


4.8. Result

When temperature degree is higher than 30°, buzzer “ba ding” , fan driving to keep room comfortable.



When temperature degree is less than 30°, the fan will automatically stop, and the room at comfortable temperature.



4.9. Think

How to adjust speed of fan to control cooling rate in the room.

4.10. Questions

- It works well if powering by the USB only without the battery holders, but if the current temperature is over the threshold value, the fan doesn't.
- If powering by the battery holders only without the USB, the fan works well and the detected temperature will be slightly higher than the real one.
- Si vous alimentez simultanément les supports de batterie et l'USB, le ventilateur fonctionne bien et atteint la température normale (notez que vous devez détecter la température dans la mesure où le ventilateur du moteur ne fonctionne pas).

4.11. Plus d'information