

micro:bit Tinker Kit Project 04 - Simple Alarm Box

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What you will learn

In this project, we are going to create a simple alarm device which will alert the owner if someone has stolen his or her property. The red LED will blink when the crash sensor detects that the object has been taken away. Otherwise, the green LED will light up continuously. The OLED will display the status of the device.

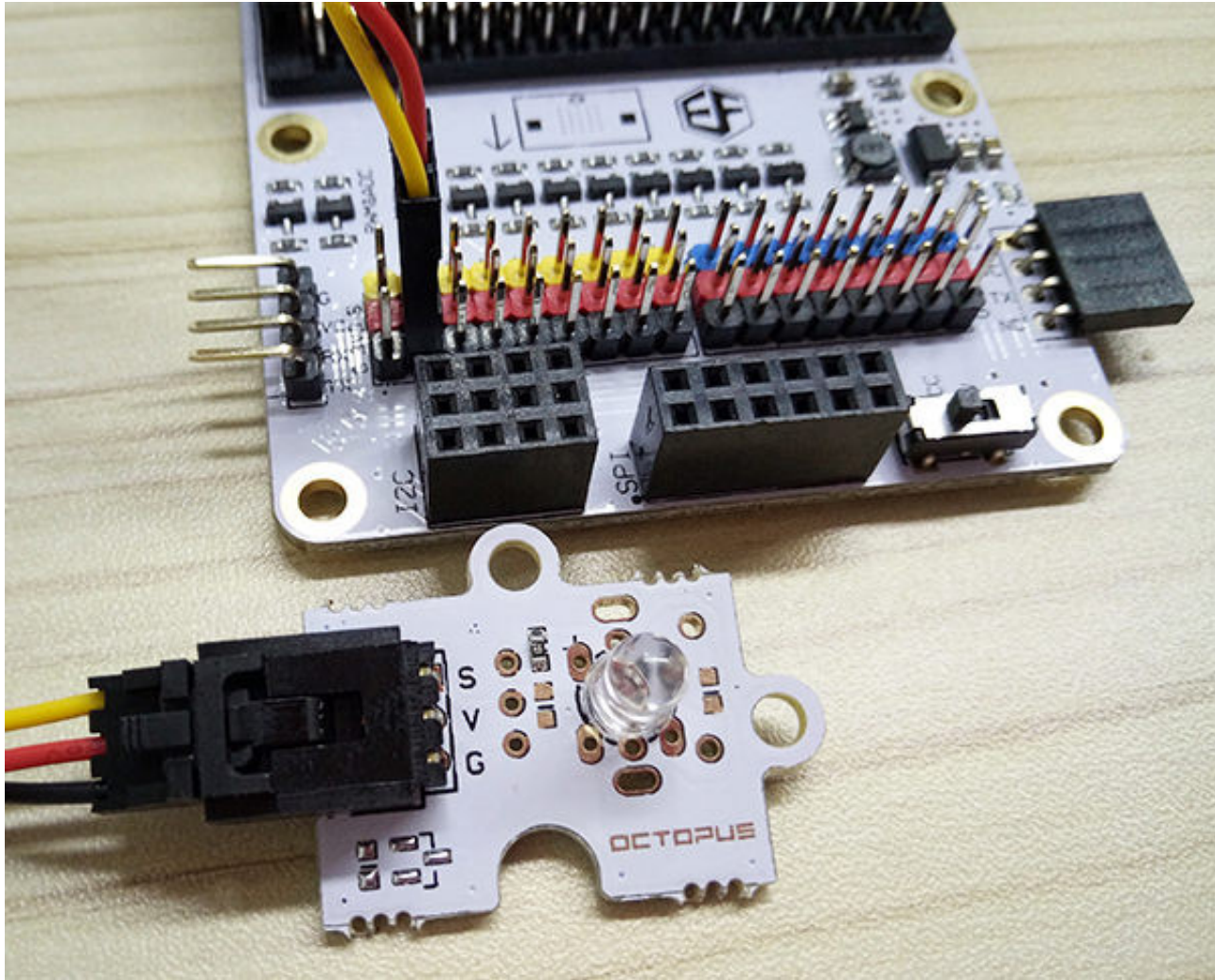
- Get to know the Octopus LED, normal LED, Crash sensor and OLED
- Make something with different types of LED
- Make something with Crash sensor and OLED

What you need

- 1 x BBC micro:bit
- 1 x Micro USB cable
- 1 x Breakout board
- 1 x Octopus LED
- 1 x Crash Sensor
- 1 x OLED
- 1 x LED
- 2 x Female to Female jumper wires

How to assemble

Step 1 – Components

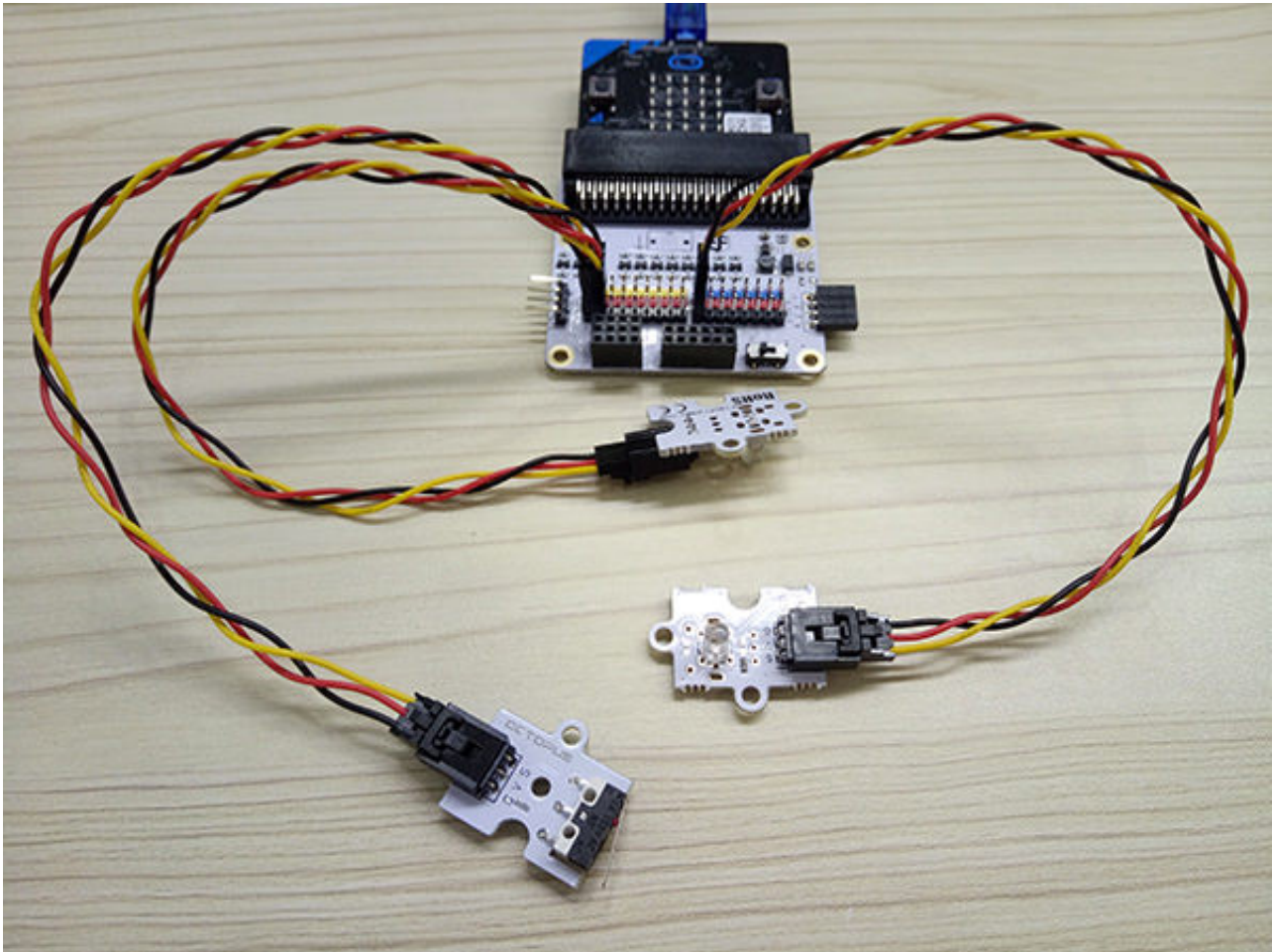
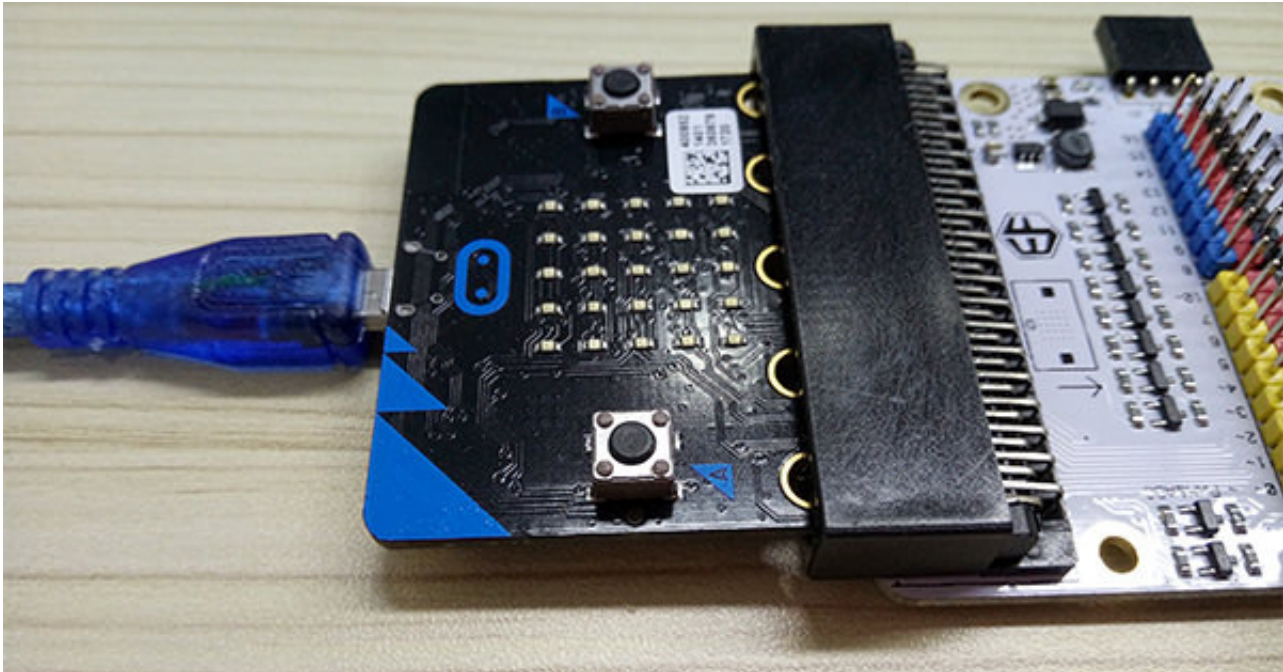


Connect LED module to pin 1.

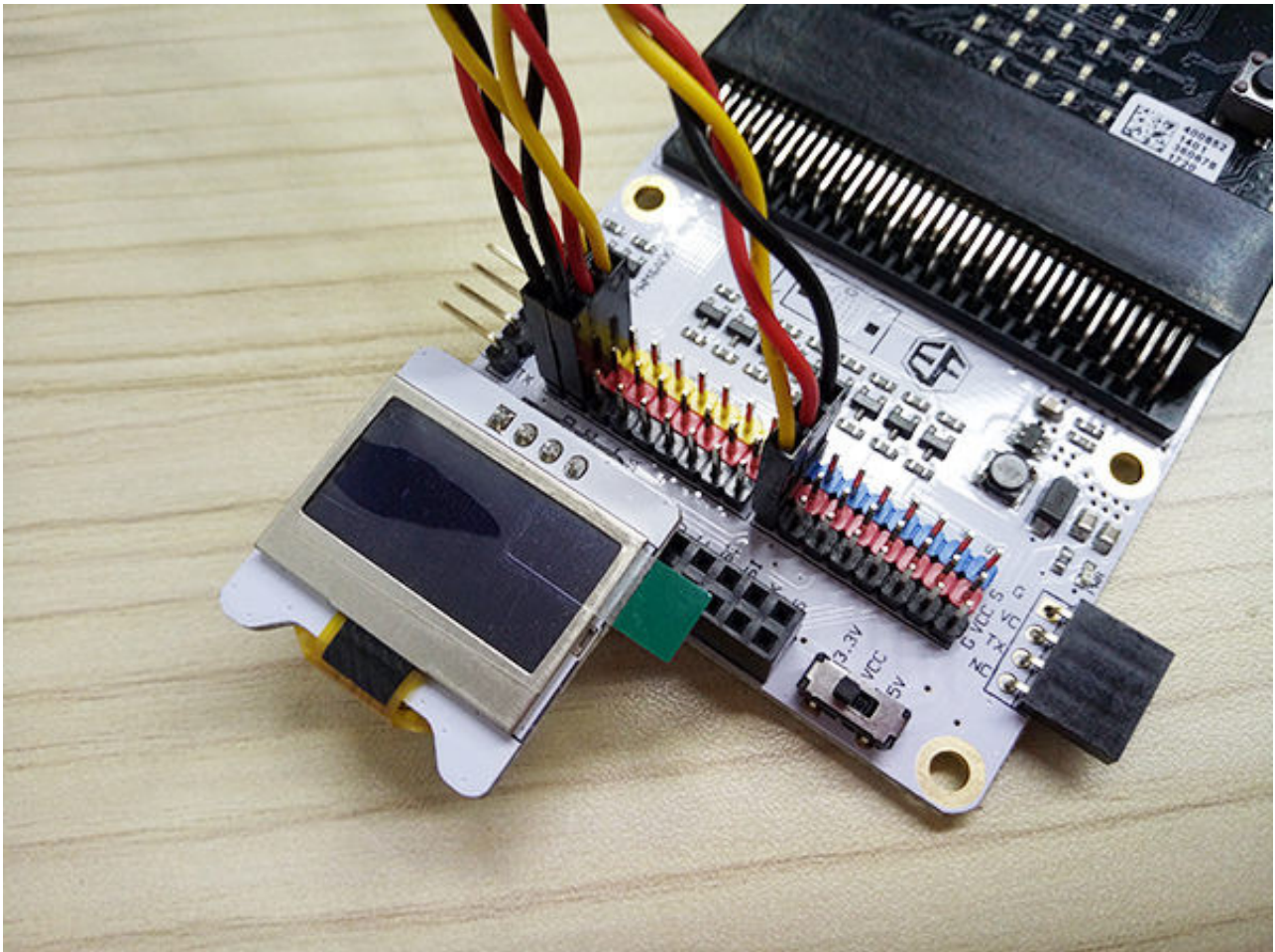
Pi Supply

The Maker Emporium

<https://learn.pi-supply.com>



Connect the USB cable to the micro:bit and then to the breakout board as shown in the picture above. Making sure that the colour of the wire follows the colour of the pins on the break out board, plug in the crash sensor to Pin 0 and the Octopus LED to Pin 8. Lastly, plug in the OLED as shown in the picture above. You should be able to plug it into any of the three rows.



Step 2 – Pre-coding

We'll need to add a package of code to be able to use our kit components. Click on **Advanced** in the Code drawer to see more code sections and look at the bottom of the Code Drawer for **Extensions**.

This will open up a dialog box. Search for "**tinker kit**" and then click it to download this package.

Add Package... ?



Tinker kit



tinkercademy-tinker-kit
MakeCode package for modules in the Elecfraks-Tinkercademy Tinker Kit (beta)

Note: If you get a warning telling you some packages will be removed because of incompatibility issues, either follow the prompts or create a new project in the Projects file menu.

Step 3 – Coding



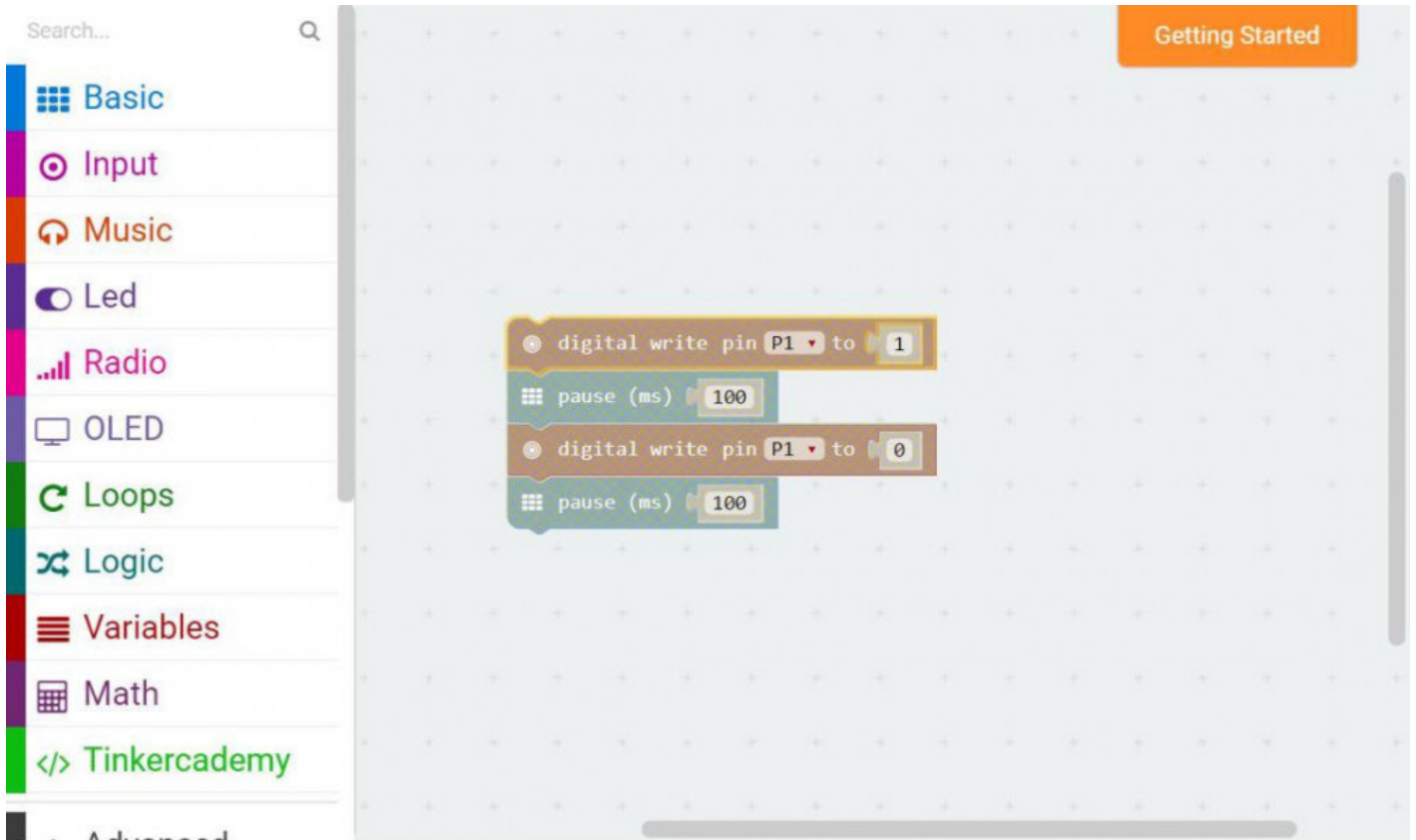
Search...

- Basic
- Input
- Music
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- Radio
- OLED
- Loops
- Logic
- Variables
- Math
- Tinkercademy

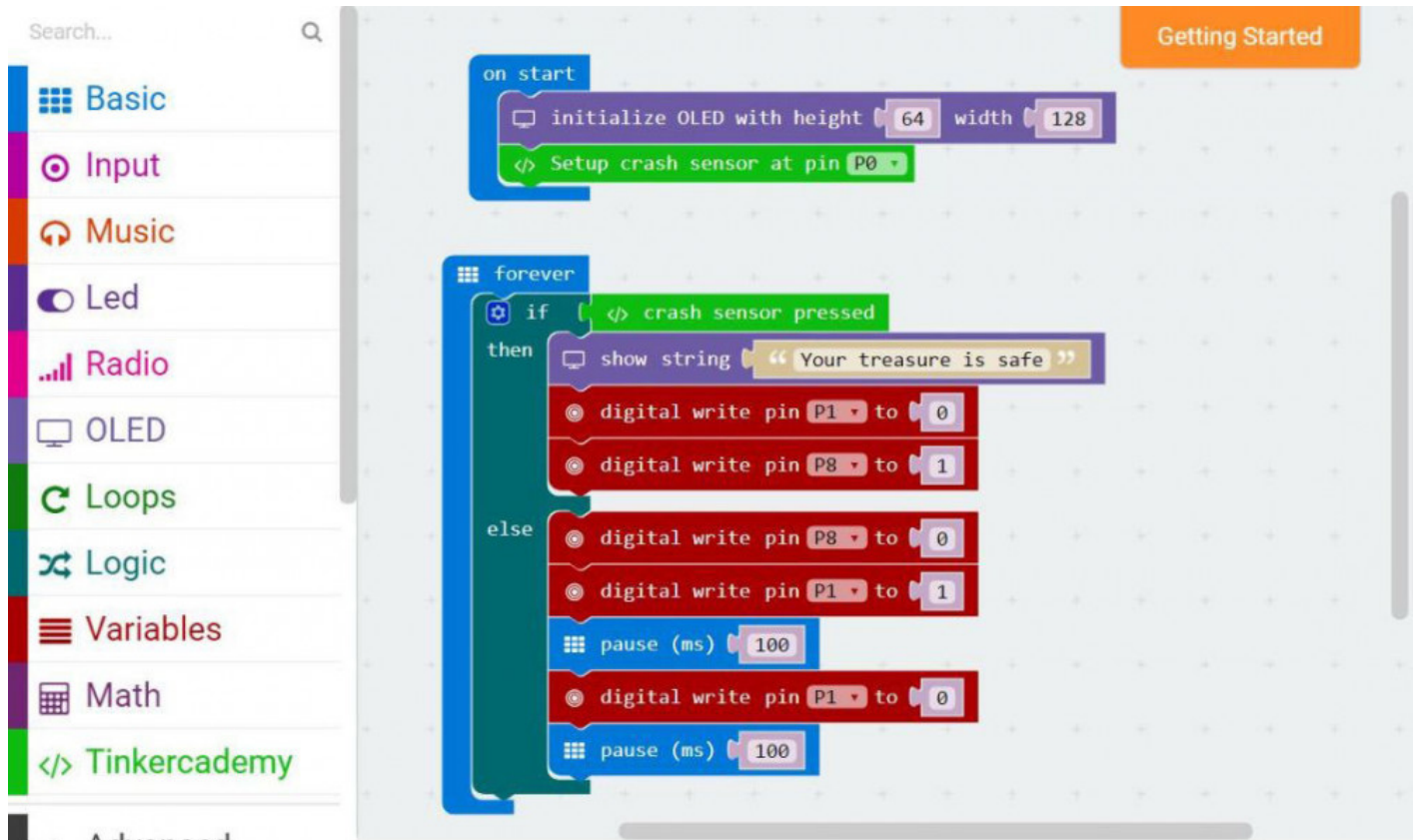
Getting Started

```
on start  
  initialize OLED with height 64 width 128  
  Setup crash sensor at pin P0
```

After that, use blocks under the Tinkercademy section to initialize the OLED and Crash Sensor as shown in the picture



This part of the code allows the red LED to blink continuously. You can adjust the speed of blinking by changing the pause period.



Since there are only two conditions, we need only one 'else-if' statement. When the Crash Sensor is pressed, the green Octopus LED will light up. Or else, if no force is applied to the Crash Sensor, the red LED will blink continuously.

If you don't want to type these code by yourself, you can directly download the whole program from the link below:

https://makecode.microbit.org/_LvC6e0UfWH7c

Or, you can download from the page below:

Step 4 – Succeed

Let's download code into it and run it. Let's find a book or something else and place it on the top of device, then see what will happen. We can see the green light illuminates as showed in the picture below. When we take away the book or something else you placed, you can see the red light starts to flash while the green light turned off.



Tinker Kit Projects

- Project 01 - Music Machine
- Project 02 - Smart Light
- Project 03 - Electro-Theremin
- Project 04 - Simple Alarm Bot
- Project 05 - Plant Monitoring Device
- Project 06 - Intruder Detection

- Project 07 - Fish Feeder
- Project 08 - Motion Detector
- Project 09 - Lie Detector
- Project 10 - PADDLEBALLSUPERSMASHEM
- Project 11 - Avoid Asteroids
- Project 12 - Remote Control Everything
- Project 13 - micro:bit Car
- Project 14 - Flipping Pancakes
- Project 15 - Maze Runner
- Project 16 - QUICK MATHS
- Project 17 - Pitch Perfect
- Project 18 - Finger Dexterity
- Project 19 - Electric Spirit Level
- Project 20 - Space Shooter
- Project 21 - Flappy Bird
- Project 22 - Wire Transmission
- Project 23 - Snake Game