

10. Case 09: Invading Detection Device

10.1. Introduction

This is an intrusion detection device. When the ultrasonic sensor detects that someone is approaching, it will automatically turn on a red light and alarm through the buzzer on the micro:bit. If the ultrasonic sensor does not detect anyone, it will automatically turn on green light.



10.2. Quick Start

Materials Required

Nezha expansion board × 1

micro:bit × 1

LED-green × 1

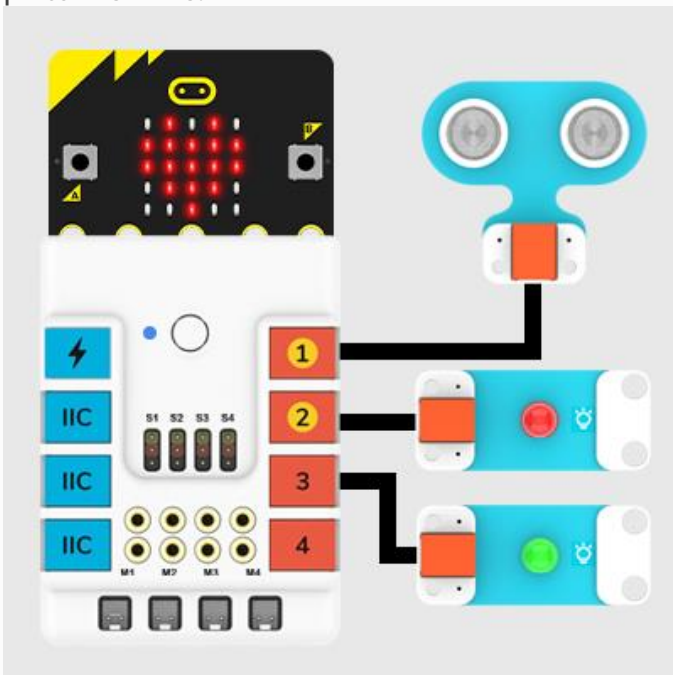
LED-red × 1

Sonar:bit × 1

RJ11 wires × 3

Connection Diagram

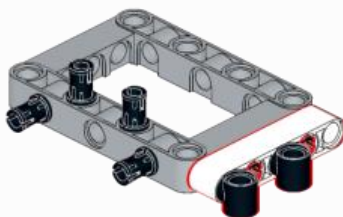
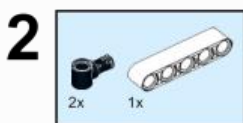
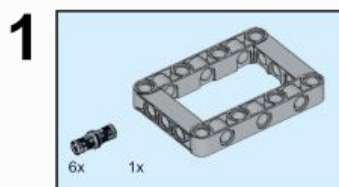
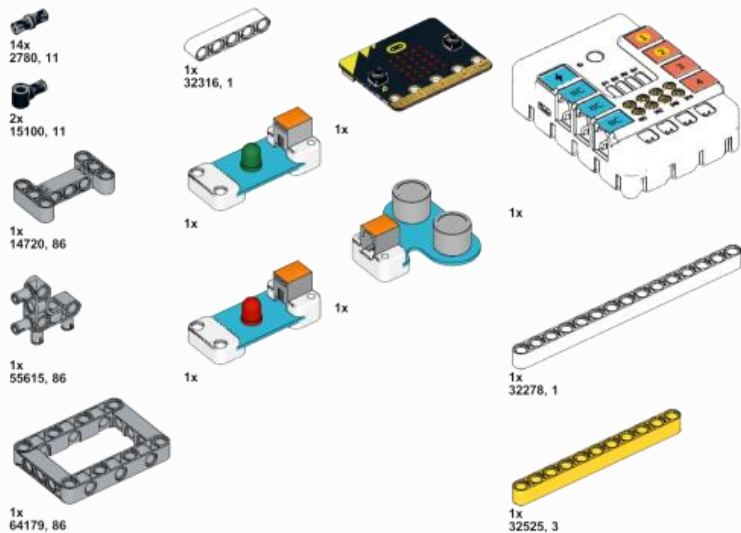
Connect the sonar:bit to J1, red LED to J2 and green LED to J3 on the Nezha expansion board as the picture shows.



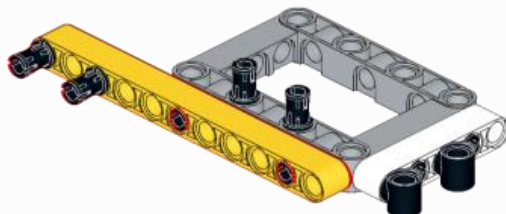
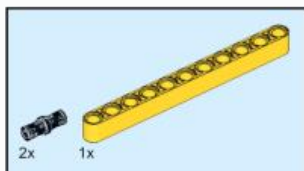
Assembly Video

Video Reference: https://youtu.be/jw9_wlNliHw

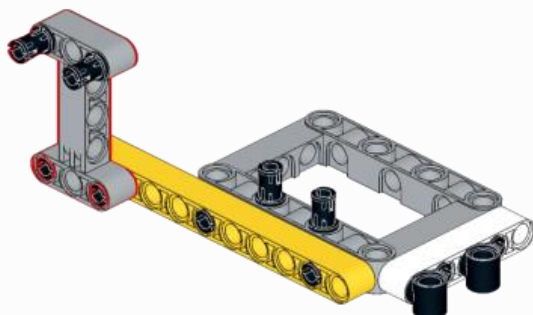
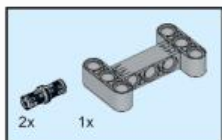
Assembly Steps



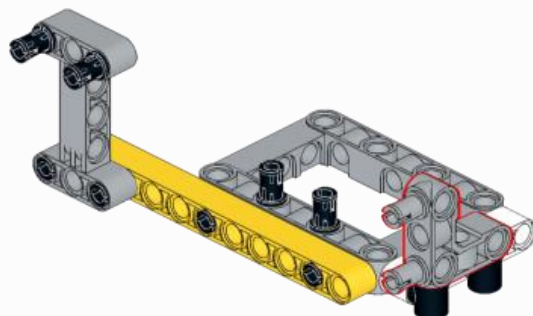
3



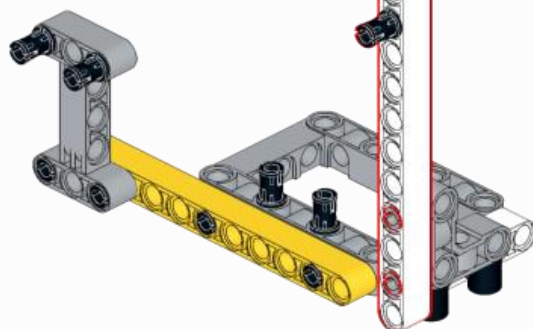
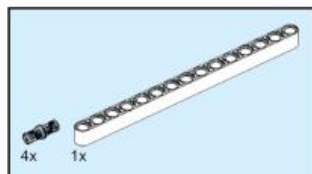
4



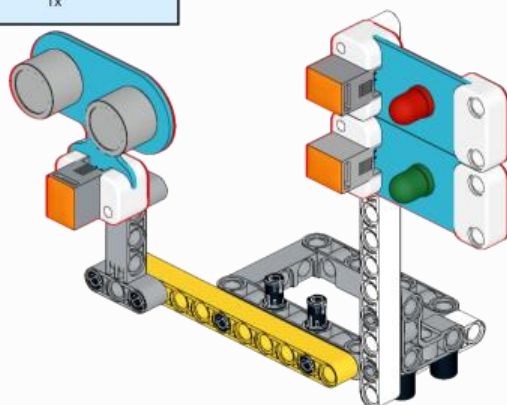
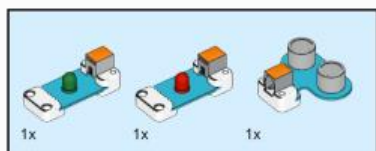
5



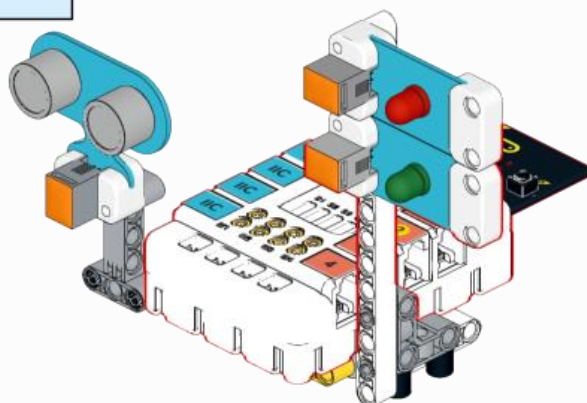
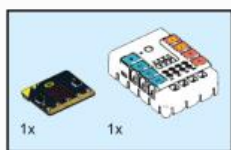
6



7



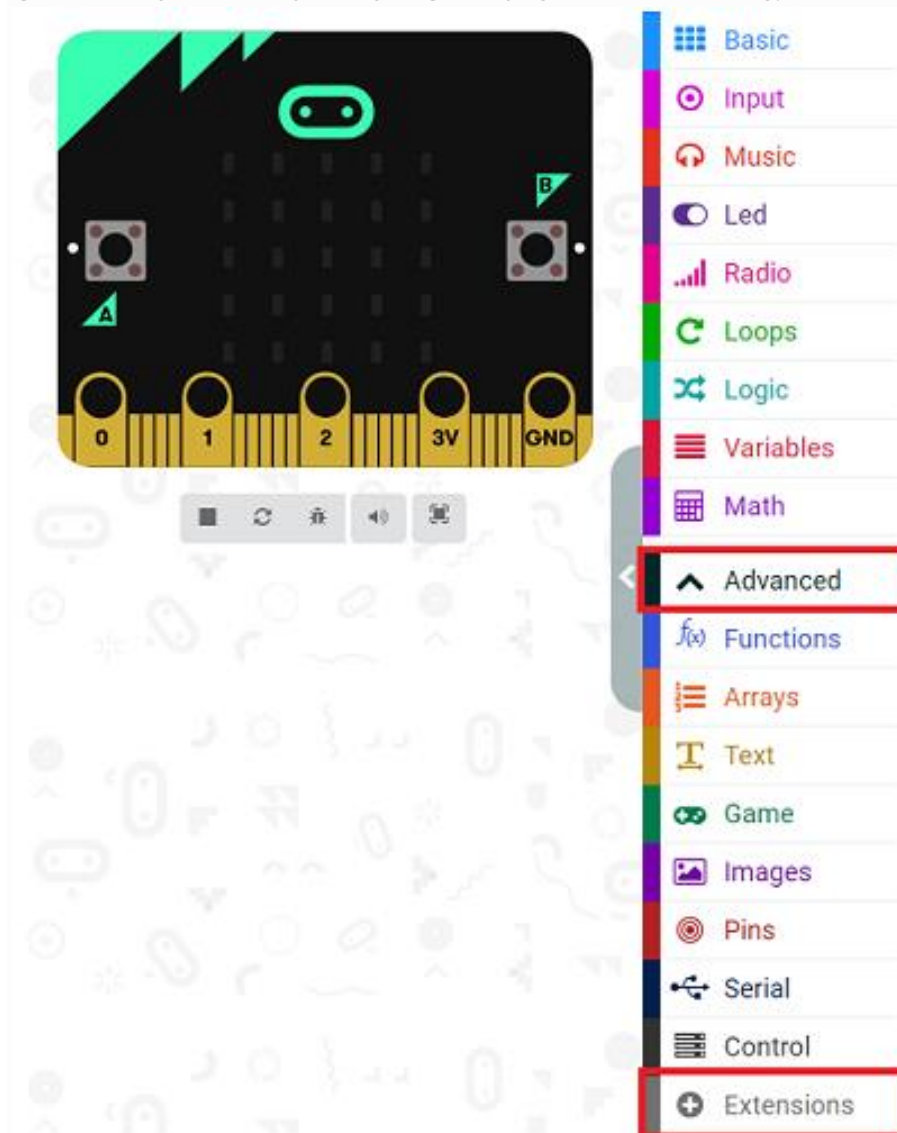
8



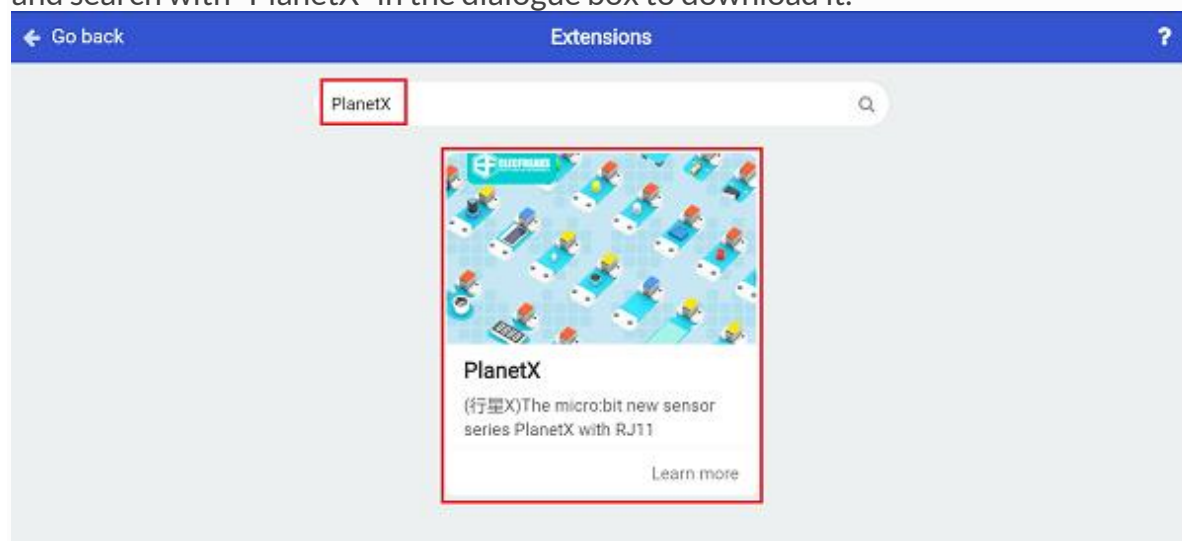
10.3. MakeCode Programming

Step 1

Click “Advanced” in the MakeCode to see more choices.



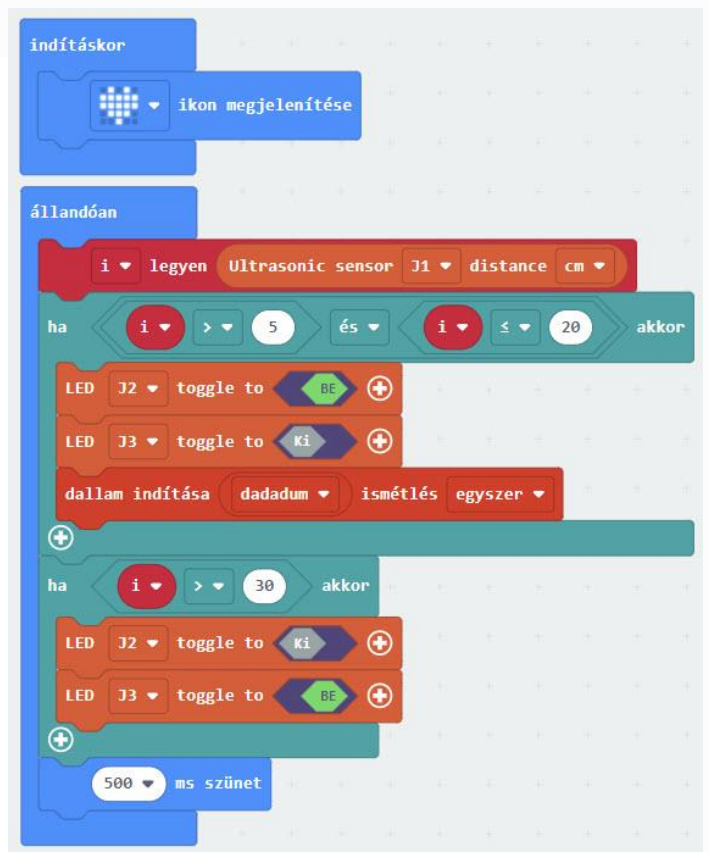
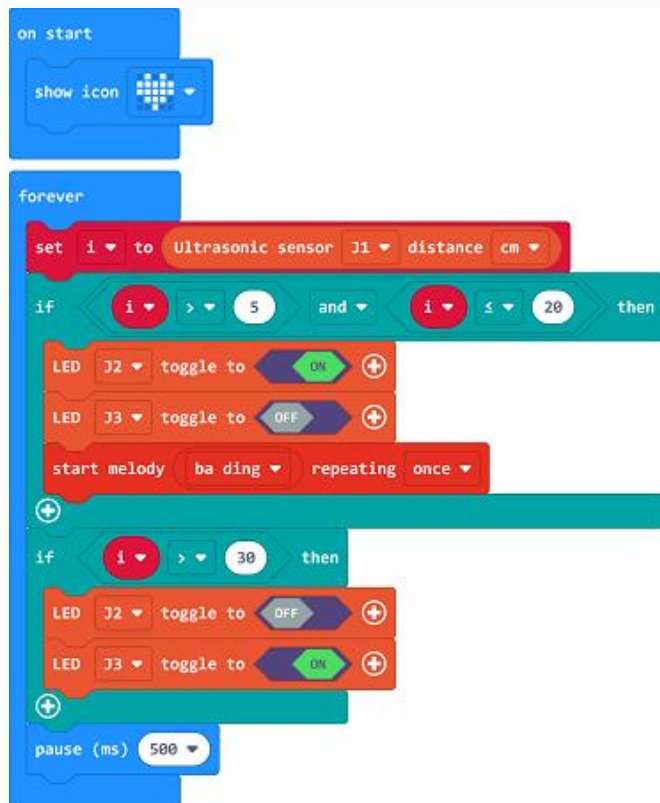
For programming, we need to add a package: click “Extensions” at the bottom of the MakeCode drawer and search with “PlanetX” in the dialogue box to download it.



Notice: If you met a tip indicating that some codebases would be deleted due to incompatibility, you may continue as the tips say or create a new project in the menu.

Step 2

Code as below:



Reference

Link : <https://makecode.microbit.org/2zrE6AKRHbqW>

You may also download it directly below:

Result

While the sonar:bit detects the object, the red LED lights up and the buzzer alarms.

