CSEF 2023 Micro:bit Bootcamp

Chulian Zhang
Board of Volunteer, CASPA

About Myself

- Silicon architect @ Microsoft (current)
- Silicon architect @ NVIDIA (2016-2019)
- Volunteer @ CASPA
- I loved
  - Computer architecture, playing with development board (e.g. Raspberry Pi, Micro:bit)
  - Sharing whatever I learn
  - Teaching

CASPA 華美半導體協會
CHINESE AMERICAN SEMICONDUCTOR PROFESSIONAL ASSOCIATION

Micro:bit Intro

- A pocket-sized computer
  - sensors
  - buttons
  - expansion support
  - computing power
  - easy to program and play with
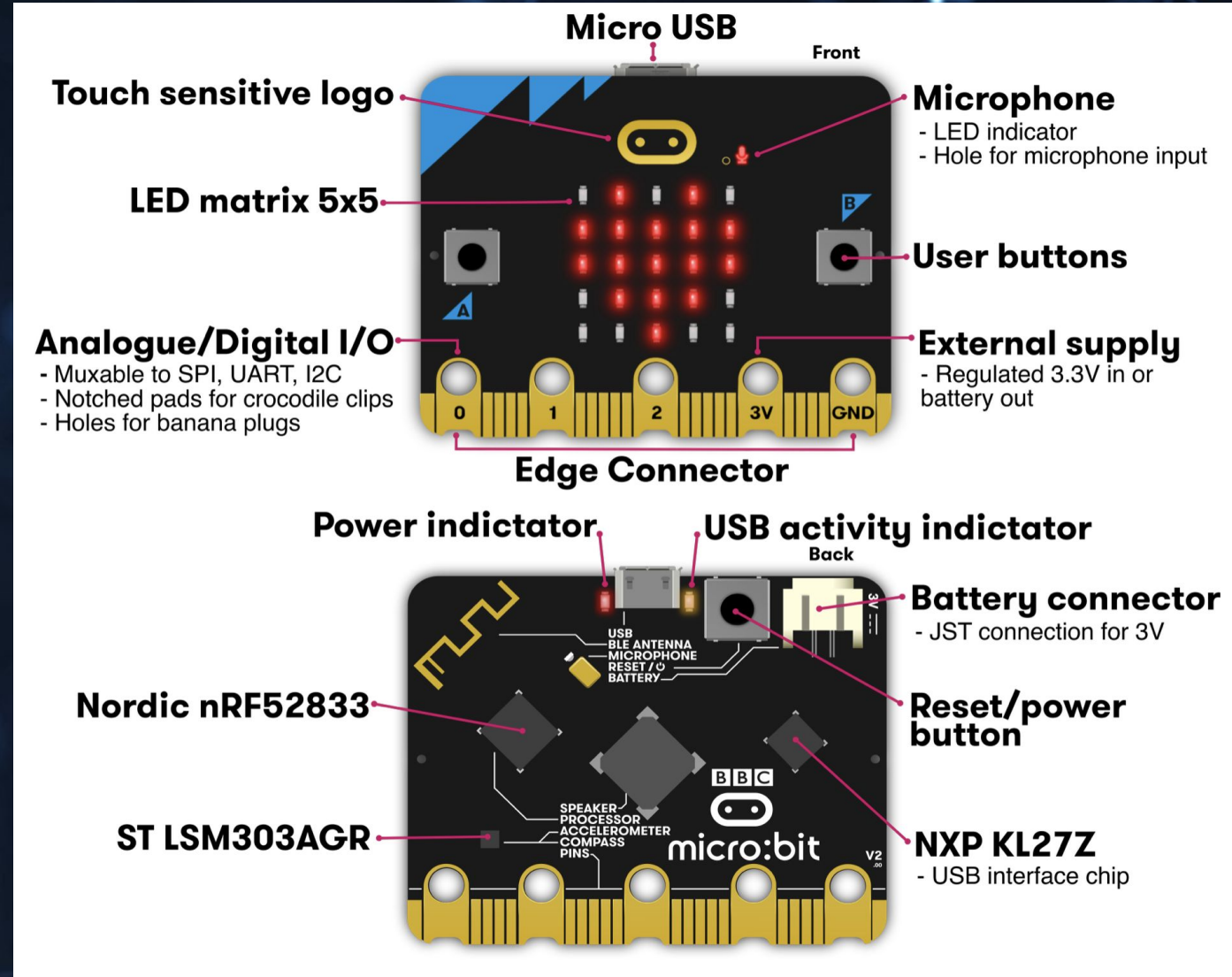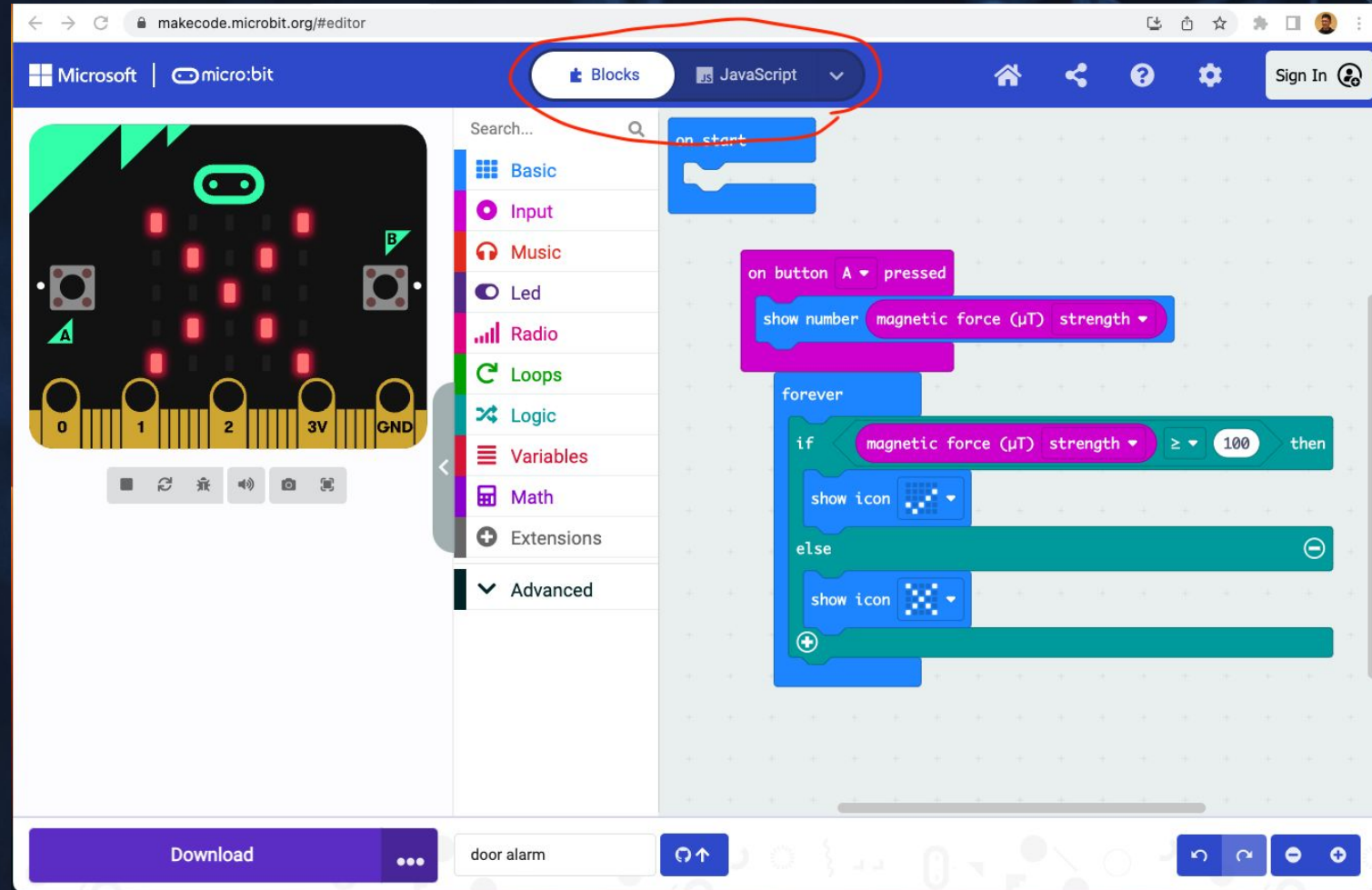
How to use the Micro:bit

- Write Program
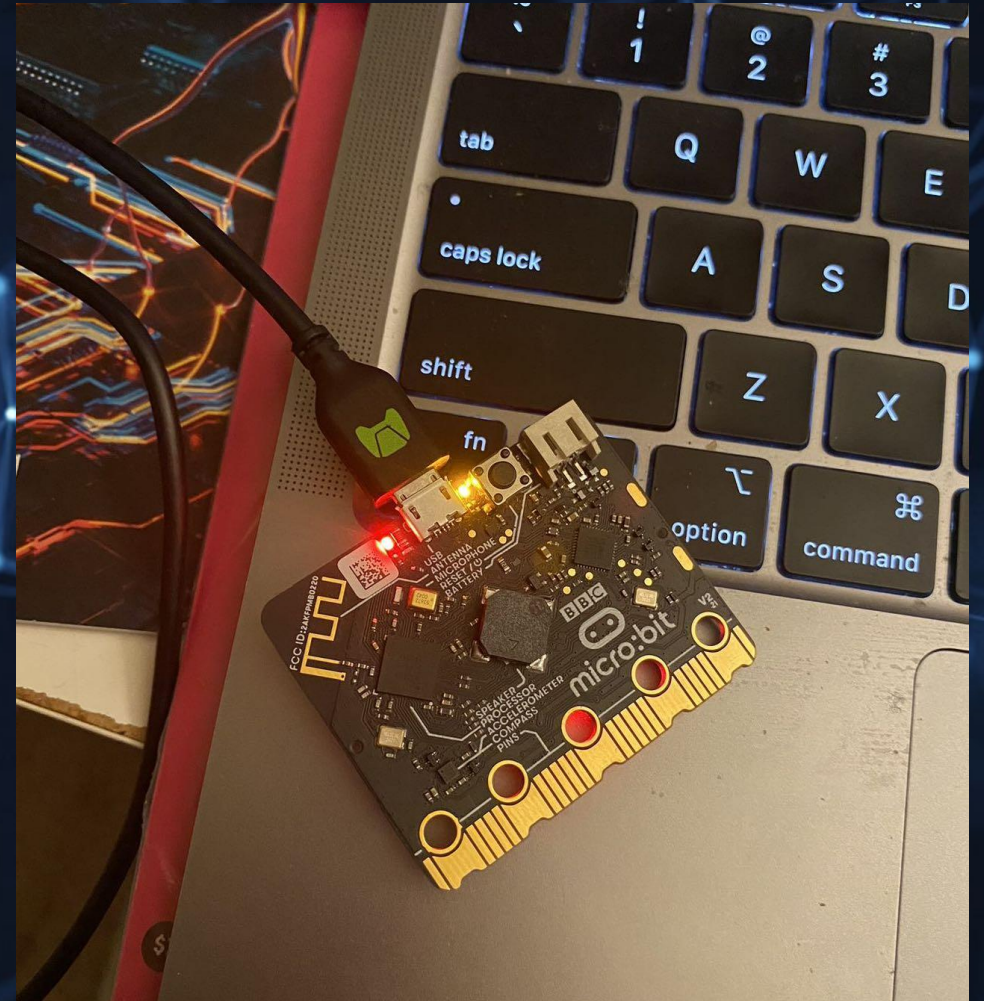- Connect to board
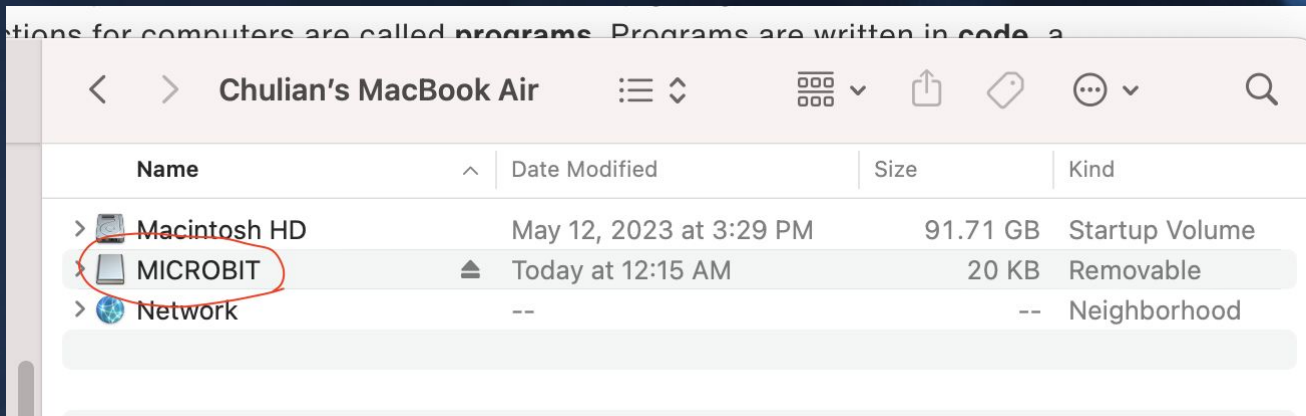- Download & run the program

Write Program

- ## Online website
  - ○ MakeCode block
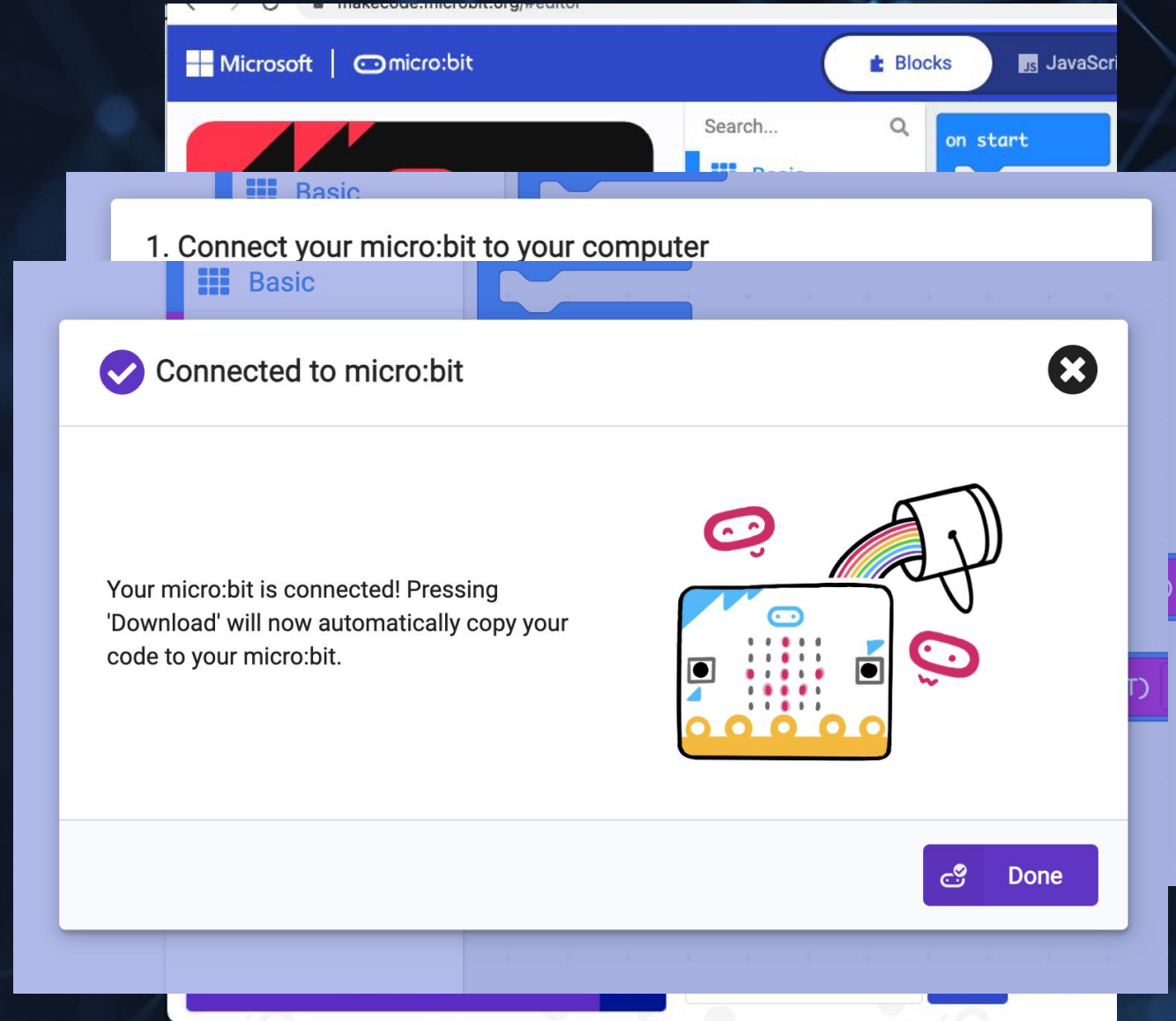 - ○ Python / JavaScript

Connect to Micro:bit Board

- Computer or phone/tablet
- Computer
  - Connect using micro USB cable
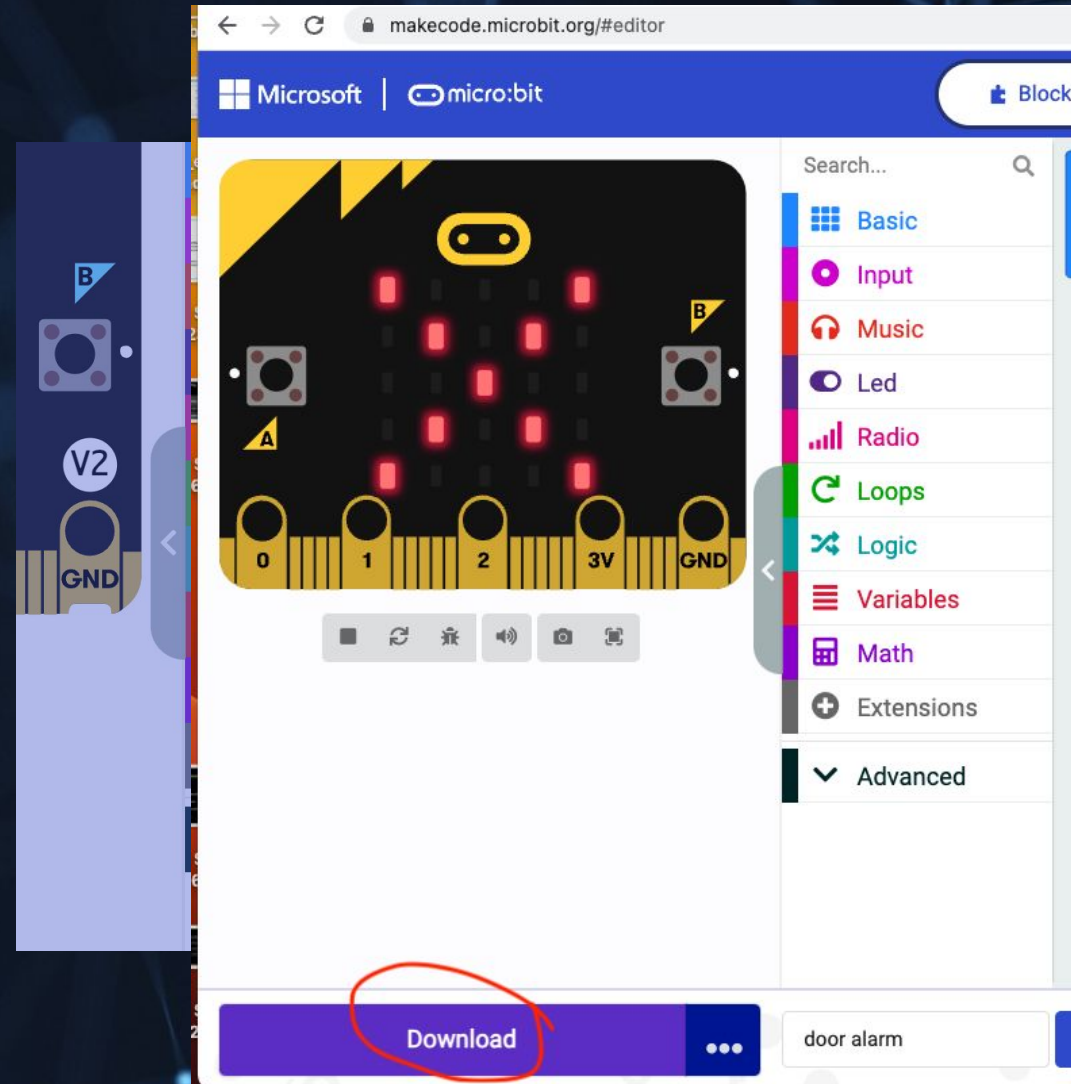 - Show up in "Computer" in Finder

Connect to Micro:bit Board
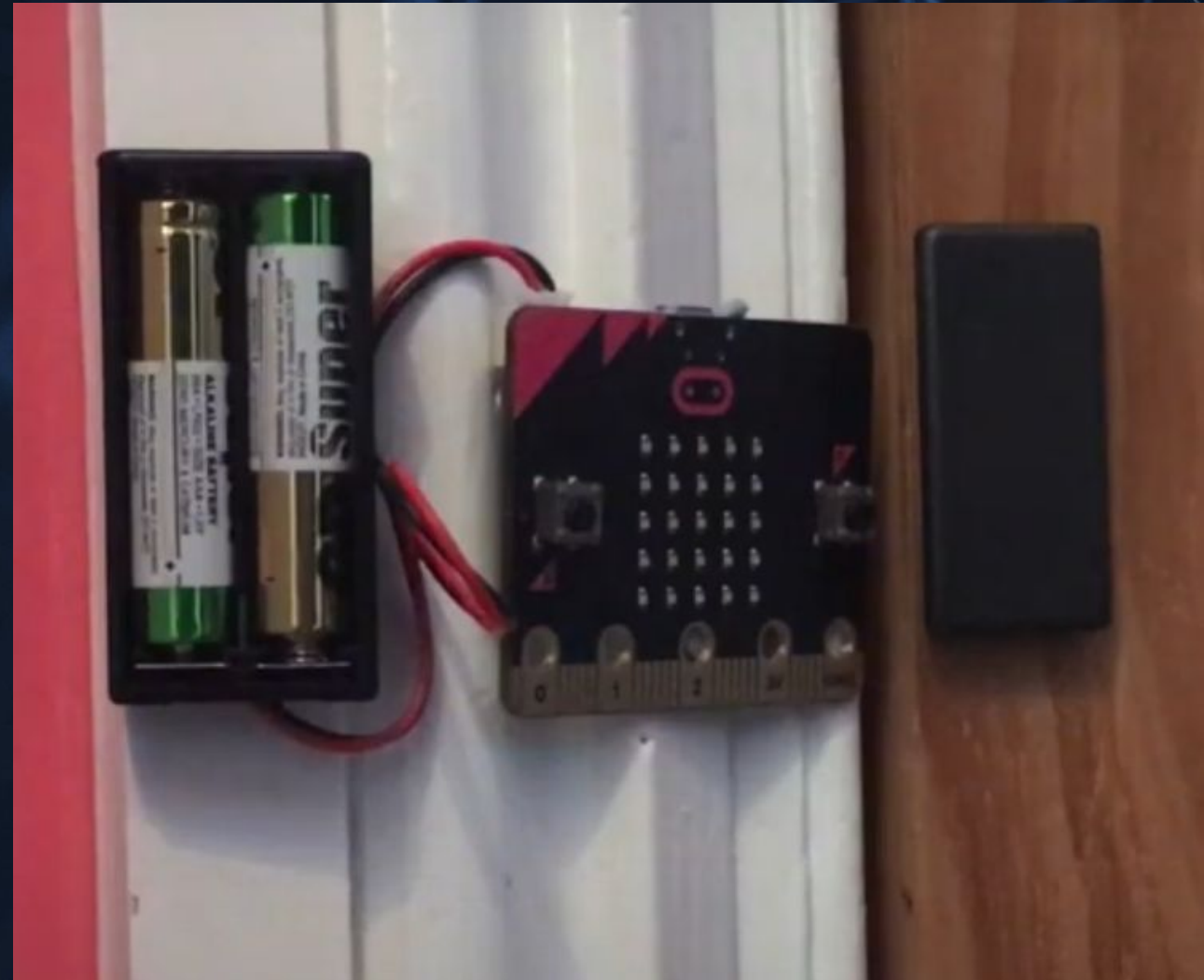
- Connect Device
- Next
- Done

Download & Run

- Download
- Micro:bit runs the program once the download finishes
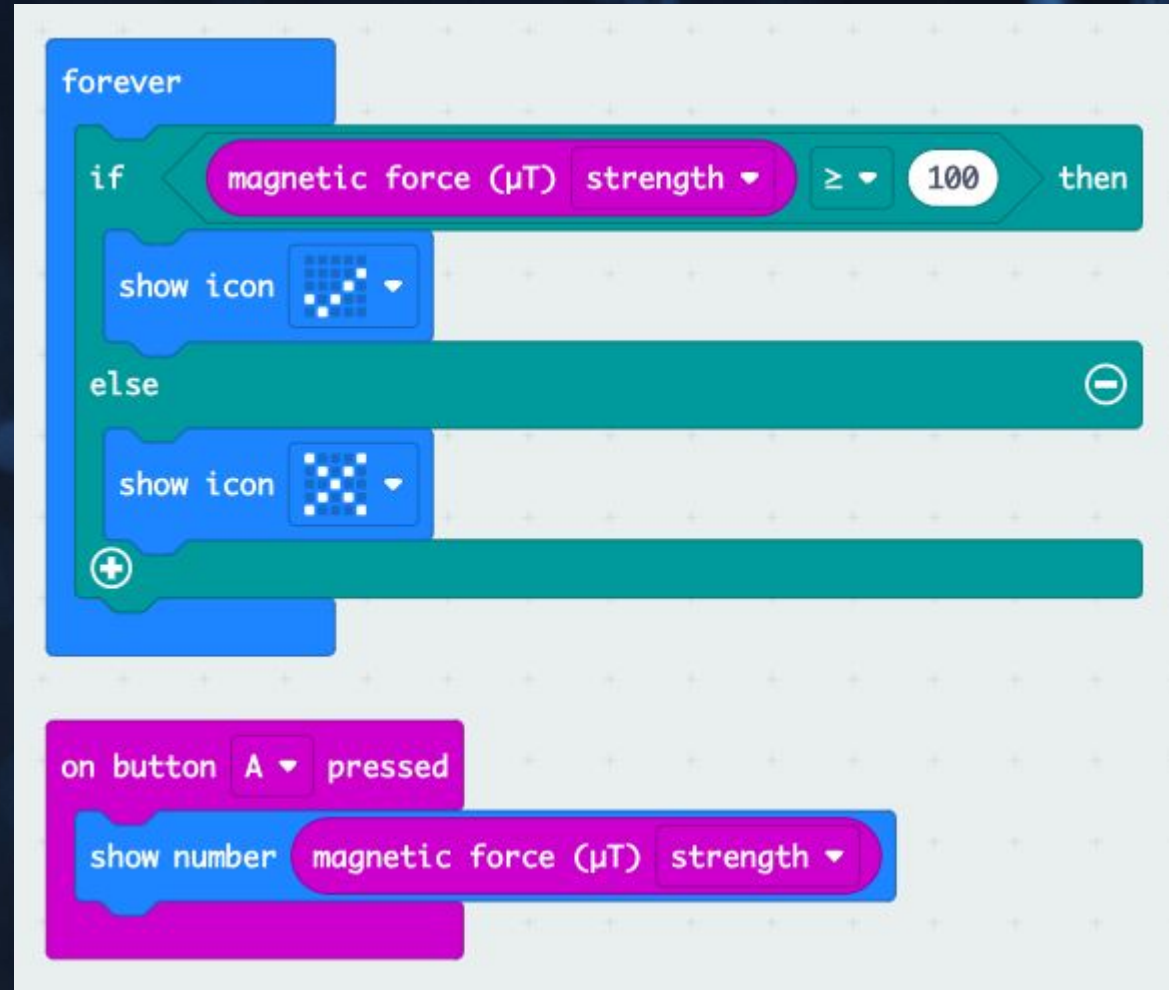
Sample Project 1

- Door alarm
  - Program that can detect the strength of magnetic field
  - https://microbit.org/projects/make-it-code-it/simple-door-alarm/

Sample Project 1

- Door alarm
  - Source code

Sample Project 2 (AI related)

- Mini "Guess the Number" Game Machine
  - A vision sensor with number recognition capability
  - https://microbit.hackster.io/tianli-yu2/mini-guess-the-number-game-machine-with-micro-bit-f384db
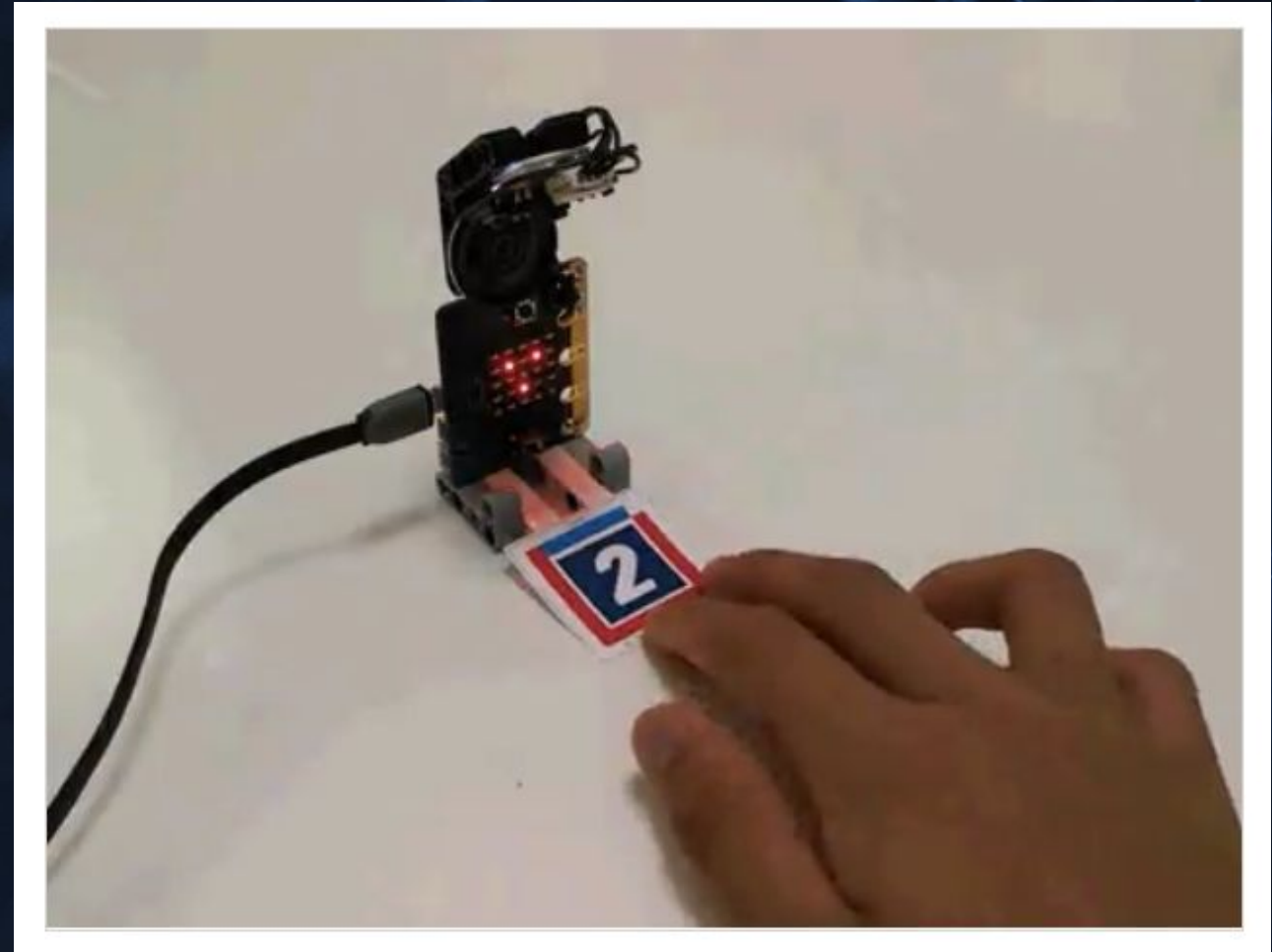
Sample Project 3 (AI related)

- Voice controlled vehicle
  - https://microbit.hackster.io/lillian-brevik/micro-bit-ai-vehicle-3051f5

Micro:bit AI Vehicle
with two servos,
running with voice commands
over Bluetooth

Connect   Disconnect

Label: ...
Confidence: ...
Commands: "go", "down", "stop" "left", "right"