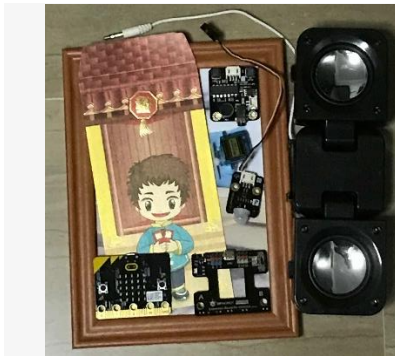Chinese New Year Greeting Display – by Mark Ng

1. micro:bit x 1
2. Gravity expansion board for micro:bit
3. Gravity: Digital PIR (Motion) Sensor For Arduino
4. Gravity: Voice Recorder Module
5. Servo
6. Active speaker
7. Picture of human head and body (I am using an Angpow packet)
8. Picture frame

How it works?

When someone approaches the picture, the human head will turn left and right and a personal greeting will be heard.

The PIR detects human movement and the micro:bit will instruct the servo to turn, and a signal will be sent to the voice recorder to play back the pre-recorded message.

1. Cut out the human image and separate the head and the body.
2. Cut a slot in the photo frame to insert the servo.

3. Add a piece of foam or any material to raise up the body.

4. Connections

Micro:bit Expansion board	Servo
Pin 0 Signal (blue)	White or orange
Pin 0 3.3V (Red)	Red
Pin 0 Gnd (Black)	Black or brown

Micro:bit Expansion board	PIR
Pin 1 Signal (blue)	Green
Pin 1 3.3V (Red)	Red
Pin 1 Gnd (Black)	Black

Micro:bit Expansion board	Voice Recorder
Pin 16 Signal (blue)	Green
Pin 16 3.3V (Red)	Red
Pin 16 Gnd (Black)	Black

Make sure the selector switch on the expansion board is set to 3V.

The active speaker is connected to the voice recorder output SPK2. You can also connect a speaker to SPK1. I find the sound too soft. So I use an active speaker.

5. Press the REC button on the voice recorder module and record your 10 sec message.
6. You can press play to hear your recording.
7. Programming

```
on start
    servo write pin P0 to 95

forever
    set pir to (digital read pin P1)
    if (pir = 1) then
        digital write pin P16 to 1
        servo write pin P0 to 70
        pause (ms) 800
        servo write pin P0 to 120
        pause (ms) 800
        servo write pin P0 to 70
        pause (ms) 800
        servo write pin P0 to 120
        pause (ms) 800
        digital write pin P16 to 0
        servo write pin P0 to 95
        pause (ms) 800
    else
        digital write pin P0 to 0
        digital write pin P16 to 0
```

https://youtu.be/0nAoWB5DNlg