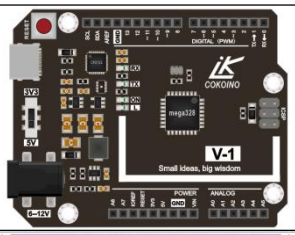
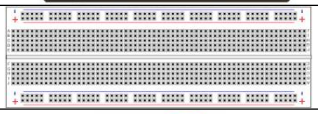
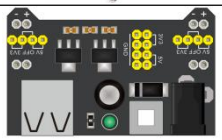
12.Burglar alarm

ABOUT THIS PROJECT：

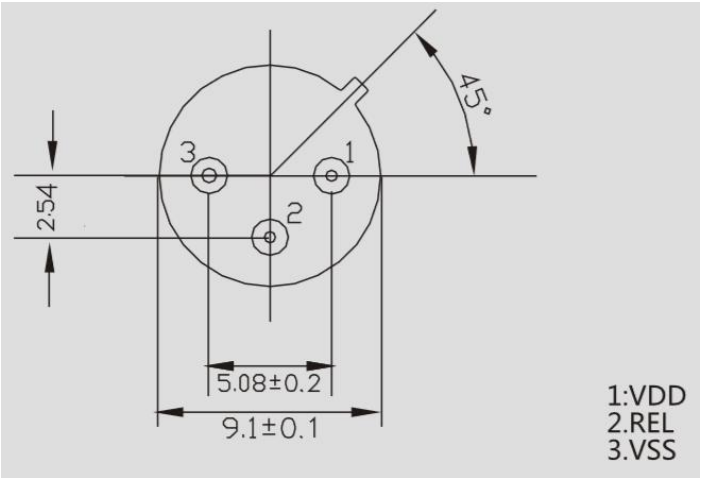
You will learn：

- How to make burglar alarm through buzzer and AM312 sensor.

Things used in this project：

Hardware components	Picture	Quantity
V-1 board		1 PCS
Breadboard		1 PCS
Battery button (you need to buy 9V battery yourself)		1 PCS
Breadboard power module		1 PCS
Male to Male DuPont Cable		12 PCS
Type C USB Cable		1 PCS
SS8050 transistor		1 PCS
IN4148 diode		1 PCS
Active buzzer		1 PCS
Human infrared sensor		1 PCS

1. Introduction to Infrared Sensor AM312

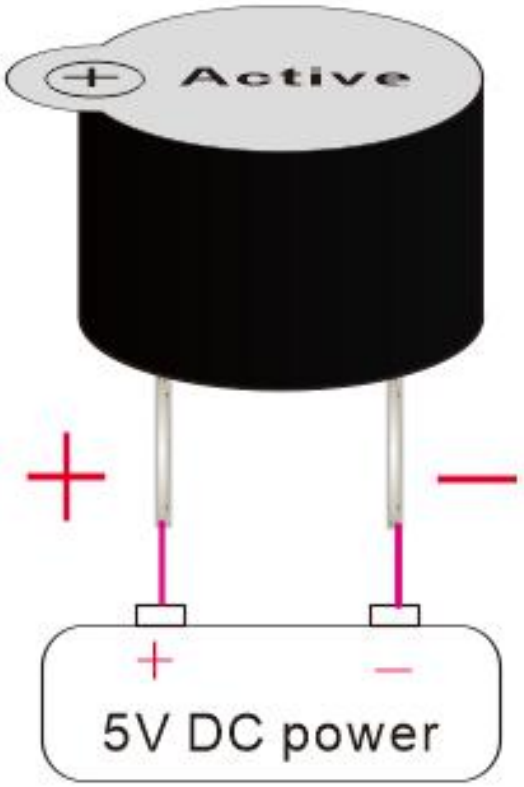


VDD=3.3V REL=signal high and low level output VSS=GND

The PIR Sensor module allows you to sense motion. It is almost always used to detect the motion of a human body within the sensor's range.

2. Learn about active buzzer

Active buzzer is an integrated structure of electronic sounder, using DC voltage power supply, a simple oscillator circuit inside, can be constant DC electricity into a certain frequency of pulse signal, so as to realize the magnetic field alternating, drive the vibration of aluminum sheet.



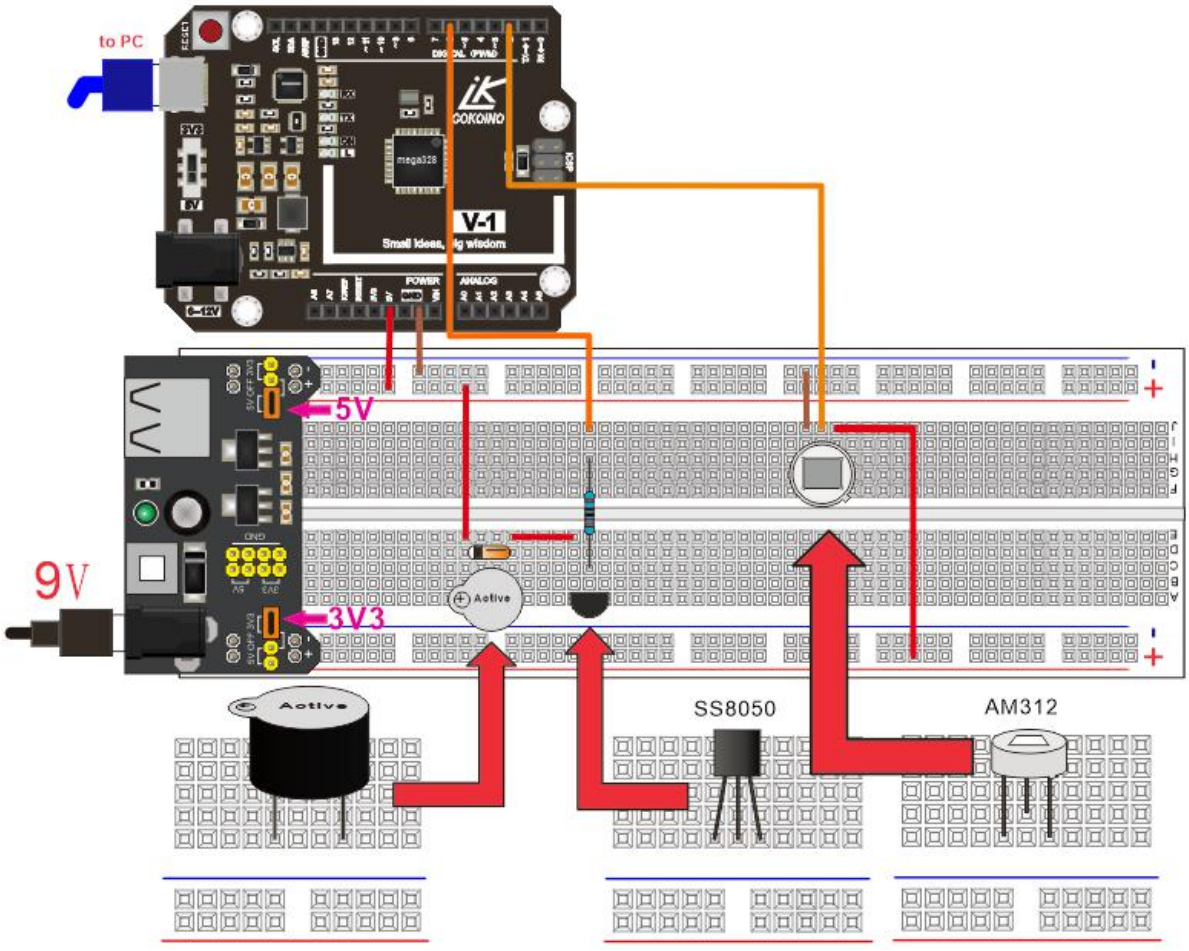
3. Experiment

Read the digital value output by AM312 through the digital port 2 of the V-1 board. When it is detected that someone is walking in the environment, the V-1 board drives the buzzer to sound to remind someone to enter the monitoring range.

3.1 Code

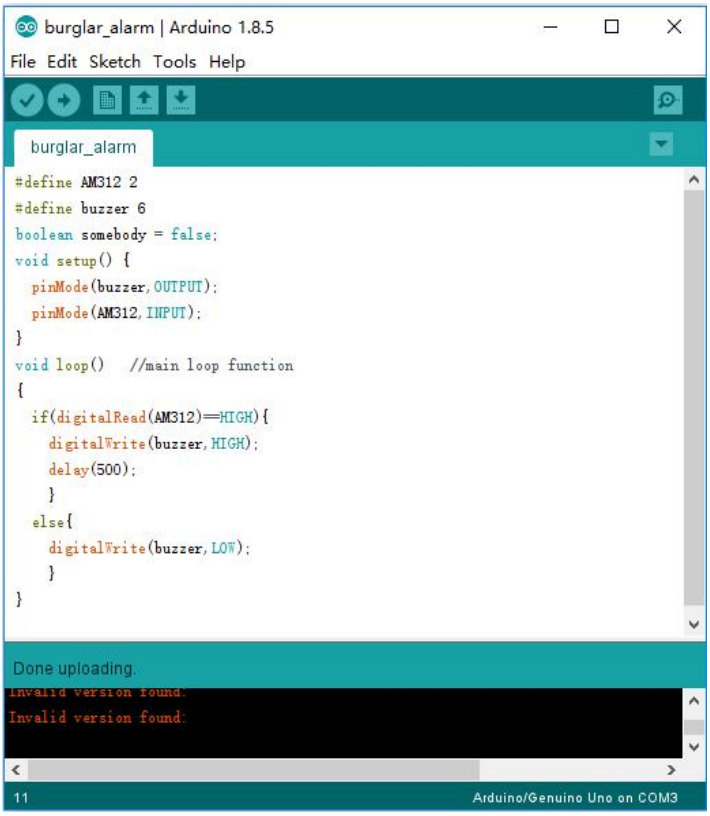
```
#define AM312 2
#define buzzer 6
boolean somebody = false;
void setup() {
   pinMode(buzzer,OUTPUT);
   pinMode(AM312,INPUT);
}
void loop()      //main loop function
{
   if(digitalRead(AM312)==HIGH){
      digitalWrite(buzzer,HIGH);
      delay(500);
      }
   else{
      digitalWrite(buzzer,LOW);
      }
}
```

3.2 Wiring Diagram

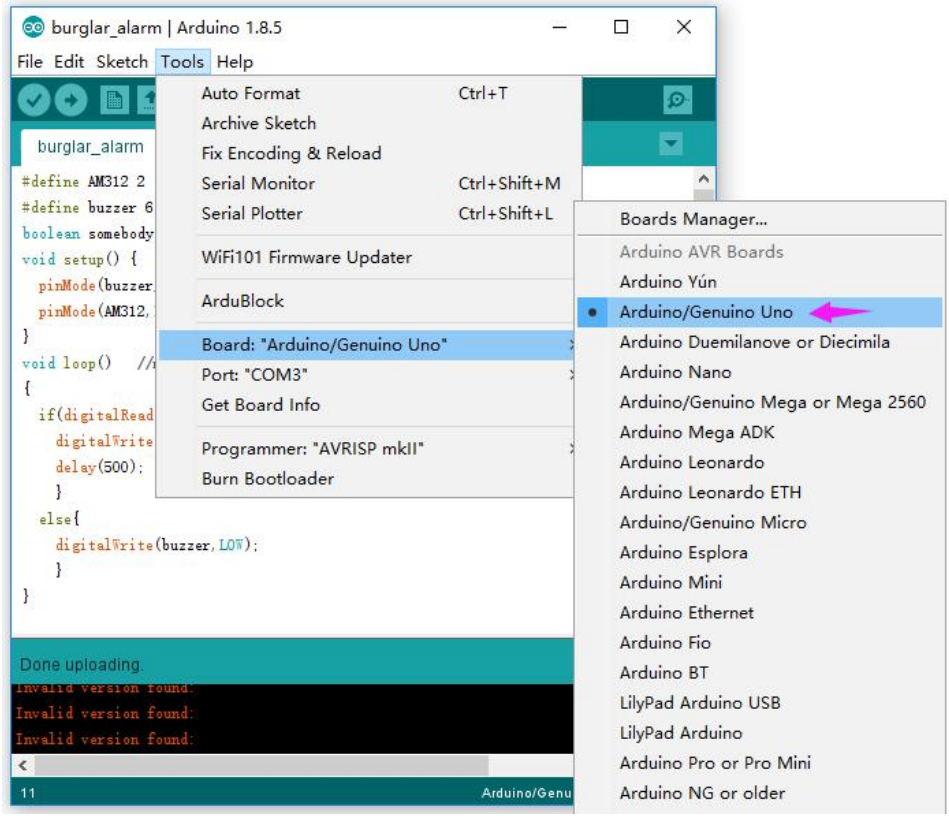


3.3 Steps

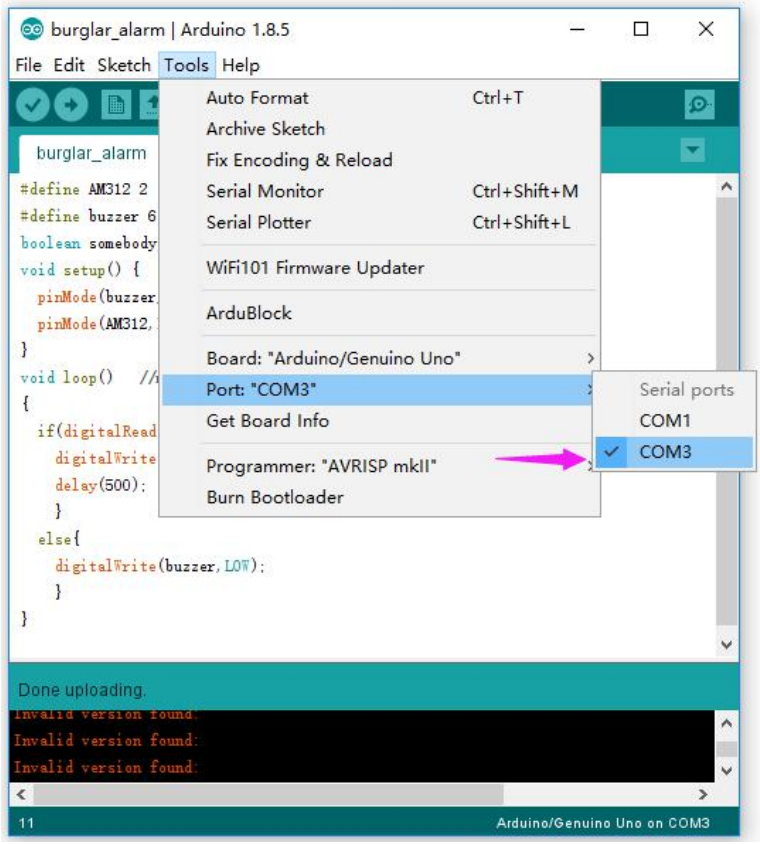
3.3.1 Connect the computer and V-1 board with a USB cable and copy the above sample code to the Arduino IDE as shown below：



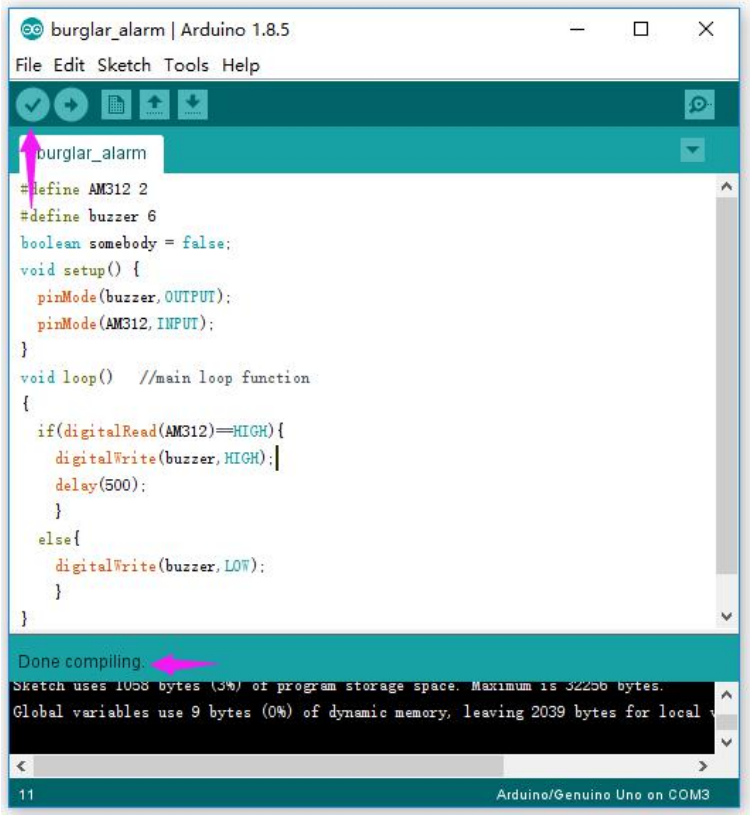
3.3.2 Select board type



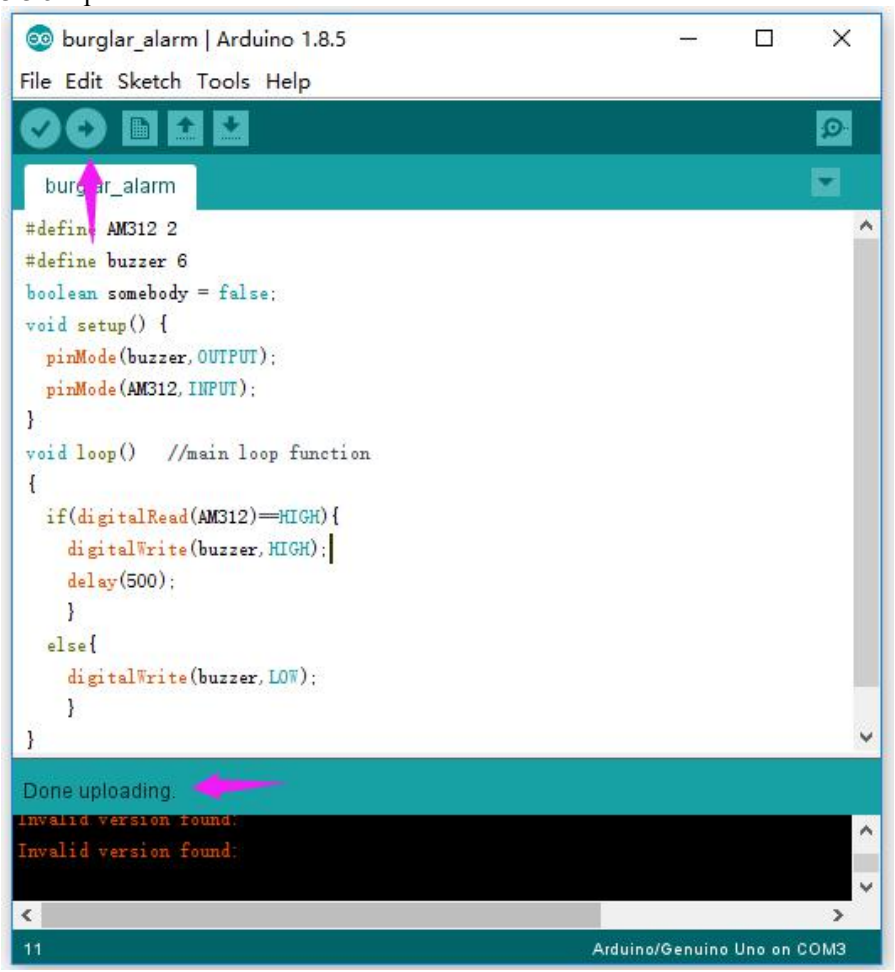
3.3.3 Select port



3.3.4 Compiling



3.3.5 Upload the code



3.3.6 Result

Unplug the USB cable from the V-1 board, connect the power module to the external power supply, and then turn on the switch of the power module on the breadboard.

When someone is moving in the detection environment, the buzzer will be triggered, and when the person is motionless, the buzzer will stop beeping, because AM312 can only detect the signal when the person moves.