```cpp
//servo library to use .attach() and .write() functions
#include <Servo.h>
//link for musical notes http://www.arduino.cc/en/Tutorial/Tone
#define NOTE_C4  262
#define NOTE_G3  196

Servo servo; //create object servo from Servo library

int pirPin = 7;
int speakerPin = 8; //piezo (speaker)
int servoPin = 9;


bool flag = false;

void setup() {
  pinMode(pirPin, INPUT);
  pinMode(speakerPin, OUTPUT);
  servo.attach(servoPin); //link servo to pin 9 (pinMode did not work)
  servo.write(0);  //set servo to 0 degrees (closed)
  Serial.begin(9600); //outputs activity on serial monitor
}

void loop() {
//When there is motion detected open door and play C note

  int pirValue = digitalRead(pirPin);

  if (pirValue == HIGH) {

    if (!flag) { //to stop sound from looping
      flag = true;
      Serial.println("Motion detected");
      //play a tone on the speaker (Pin, musical note, duration)
      for (int i = 0; i<=90 ; i++)

      {
      servo.write(i);
        delay(20);
        tone(speakerPin, 262, 400);
      }
      servo.write(90); //rotate servo to 90 degrees (open)
      delay(2000); //2 seconds
```

```
    }

    }
//When there is no motion detected close door and play G note
  else {

    if (flag) { //to stop sound from looping
      flag = false;
      Serial.println("No motion detected");

      for (int i = 90; i>=0 ; i--)

      {
      servo.write(i);
        tone(speakerPin, 196, 400);
        delay(20);
      }

    }
  }
}
```