

```
#include <Servo.h>
```

```
int sensor_state = 0;
```

```
int distance = 0;
```

```
long readUltrasonicDistance(int triggerPin, int echoPin)
```

```
{
```

```
    pinMode(triggerPin, OUTPUT); // Clear the trigger
```

```
    digitalWrite(triggerPin, LOW);
```

```
    delayMicroseconds(2);
```

```
    // Sets the trigger pin to HIGH state for 10 microseconds
```

```
    digitalWrite(triggerPin, HIGH);
```

```
    delayMicroseconds(10);
```

```
    digitalWrite(triggerPin, LOW);
```

```
    pinMode(echoPin, INPUT);
```

```
    // Reads the echo pin, and returns the sound wave travel time in microseconds
```

```
    return pulseIn(echoPin, HIGH);
```

```
}
```

```
Servo servo_3;
```

```
void setup()
```

```
{
```

```
    pinMode(2, INPUT);
```

```
    servo_3.attach(3, 500, 2500);
```

```
    pinMode(7, OUTPUT);
```

```

pinMode(A2, INPUT);
}

void loop()
{
    distance = 0.01723 * readUltrasonicDistance(5, 4);
    sensor_state = digitalRead(2);
    servo_3.write(0);
    // if sensor_data is high, rotate servo motor, else
    // close it.
    if (sensor_state == HIGH) {
        servo_3.write(45);
        servo_3.write(0);
        delay(4000); // Wait for 4000 millisecond(s)
        servo_3.write(0);
        tone(7, 123, 1000); // play tone 35 (B2 = 123 Hz)
    }
    if (distance <= 100) {
        servo_3.write(80);
        tone(7, 123, 1000); // play tone 35 (B2 = 123 Hz)
        delay(4000); // Wait for 4000 millisecond(s)
        servo_3.write(0);
    } else {
        servo_3.write(0);
    }
    if (analogRead(A2) > 350) {
        servo_3.write(90);
        tone(7, 220, 10000); // play tone 45 (A3 = 220 Hz)
        servo_3.write(0);
    }
}

```

}

}