**API for python and Arduino**

**Arduino:**

We do not want users do any modify to the Arduino code, so we did not design any API for Arduino sketch. Our Arduino sketch will control two ultrasonic sensors, send out signal, calculate the distance in centimeters with the result of sensor reading. If the distance get from the two sensors are distance1 and distance2, the Arduino will format the result as “distance1 distance2” and print it to the Serial.

**Python (interact with Arduino part):**

This part of python code will get the output of Arduino sketch in the format of “distance1 distance2” from the Serial, then the python code will decide if there is a person passed by.

There will be two logic conditions, people come in or out. When people come in, the code will notice the sudden change of distance1 and ignore the change of distance2 for the “Entry” action. When people going out, the code will notice the sudden change of distance2 and ignore the change of distance1 for the “Exit” action.