**Home Automation:**

#include<Servo.h>

int us = 6;

int servo = 7;

Servo servo1;

void setup() {

Serial.begin(9600);

servo1.attach(servo);

pinMode(2,INPUT);

pinMode(4,OUTPUT);

pinMode(11,OUTPUT);

pinMode(12,OUTPUT);

pinMode(13,OUTPUT);

pinMode(A0,INPUT);

digitalWrite(2,LOW);

digitalWrite(11,HIGH);

}

void loop() {

long duration, inches, cm;

pinMode(us, OUTPUT);

digitalWrite(us, LOW);

delayMicroseconds(2);

digitalWrite(us, HIGH);

delayMicroseconds(5);

digitalWrite(us, LOW);

pinMode(us, INPUT);

duration = pulseIn(us, HIGH);

inches = microsecondsToInches(duration);

cm = microsecondsToCentimeters(duration);

servo1.write(0);

if(cm < 30)

{

servo1.write(120);

Serial.println("A Person Arrived, Door is Opening......");

delay(2000);

}

else

{

servo1.write(0);

Serial.println("Door is Closed.....");

}

int pir = digitalRead(2);

if(pir == HIGH)

{

digitalWrite(4,HIGH);

delay(3000);

}

else if(pir == LOW)

{

digitalWrite(4,LOW);

}

float value=analogRead(A0);

float temp=(((value/1024)\*5.0199)-0.5)\*100;

Serial.print("temp is ");

Serial.println(temp);

delay(3000);

if(temp > 20)

{

digitalWrite(12,HIGH);

digitalWrite(13,LOW);

}

else

{

digitalWrite(12,LOW);

digitalWrite(13,LOW);

}

}

long microsecondsToInches(long microseconds) {

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds) {

return microseconds / 29 / 2;

}