

```
#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;
}
```