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### QUESTION:

#### Assignment 1:

Make a Smart Home in Tinkercad, using 2+ sensors, Led in single code and circuit.

CODE:

We have made use of an actuator, here a servo motor.

```
#include<Servo.h>

const int PPin = 7;
int servo_Pin = 8;

Servo servol;

void setup() {
    // initialize serial communication by setting corresponding pins as
    inputs and outputs:
    Serial.begin(9600);
    servol.attach(servo_Pin);
    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(PPin, OUTPUT);
    digitalWrite(PPin, LOW);
    delayMicroseconds(2);
    digitalWrite(PPin, HIGH);
    delayMicroseconds(5);
    digitalWrite(PPin, LOW);

    // The same pin is used to read the signal from the PING))) : a HIGH
    pulse

    // whose duration is the time (in microseconds) from the sending of
    the ping

    // to the reception of its echo off of an object.
    pinMode(PPin, INPUT);
    duration = pulseIn(PPin, HIGH);

    // convert the time into a distance
    inches = microsecondsToInches(duration);
    cm = microsecondsToCentimeters(duration);

    //Serial.print(inches);
    //Serial.print("in, ");
    //Serial.print(cm);
    //Serial.print("cm");
    //Serial.println();
    //delay(100);

    servo1.write(0);

    if(cm < 40)

```

```

{
    servo1.write(90);
    delay(2000);
}
else
{
    servo1.write(0);
}

// PIR with LED starts
int pir = digitalRead(2);

if(pir == HIGH)
{
    digitalWrite(4,HIGH);
    delay(1000);
}
else if(pir == LOW)
{
    digitalWrite(4,LOW);
}

}

long microsecondsToInches(long microseconds) {
    return microseconds / 74 / 2;
}

long microsecondsToCentimeters(long microseconds) {
    return microseconds / 29 / 2;
}

```

## CIRCUIT SCHEMATIC:

