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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 servo1;


void setup() {

  // initialize serial communication by setting corresponding pins as
inputs and outputs:

  Serial.begin(9600);

  servo1.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: