Assignment -1

Assignment Date	15 September 2022
Student Name	Mr. M. Karunanithi
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Maximum Marks	2 Marks

Question:

Make a Home automation in Tinkercad with sensors (Minimum 3)?

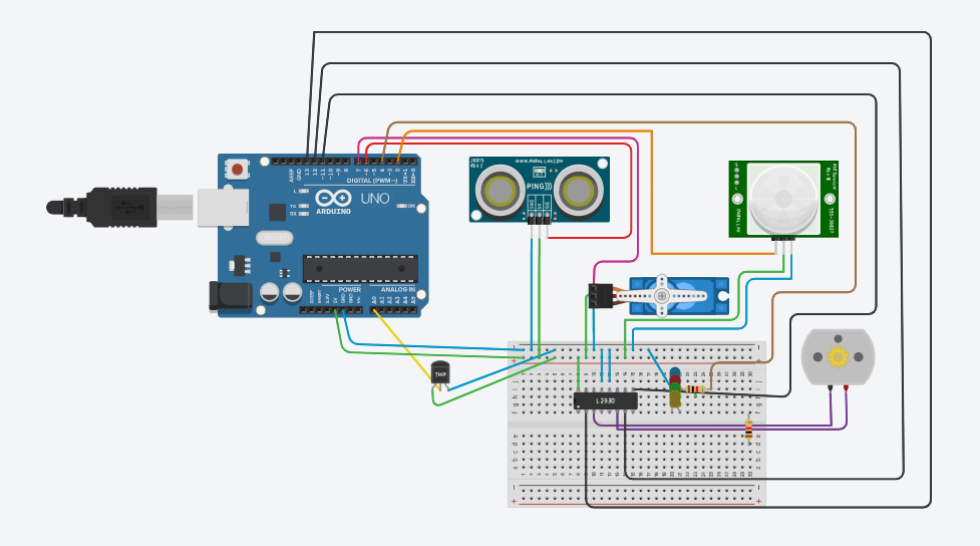
Code(C++) :

```
#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;
}
```

Circuit Diagram:



LINK: https://www.tinkercad.com/things/aKCZXp2H0pS-home-automation-by-fantastic-four/editel?sharecode=BAATbe2zFpAaG5eY948-R4Q3S8TpMYqNLp5O_rQzVCo