Assignment -1

Python Programming

Assignment Date	9 NOVEMBER 2022
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Maximum Marks	2 Marks

QUESTION:

Make a home automation with tinker cad, add 2-3 sensors. led. buzzers and make a common code and circuit. multiple detections and alarms should be given

CODE:

```
#include<Servo.h>
const int pingPin = 7;

int servoPin = 8;

int const gassensor=A1;

int thresh=600;

int const LDR=A2;

Servo servo1;


void setup() {
  Serial.begin(9600);
  servo1.attach(servoPin);
  pinMode(2,INPUT);
  pinMode(4,OUTPUT);
  pinMode(11,OUTPUT);
  pinMode(12,OUTPUT);
  pinMode(13,OUTPUT);
```

```
  pinMode(A0,INPUT);
  pinMode(A1,INPUT);
  pinMode(A2,INPUT);
  pinMode(8,OUTPUT);
  pinMode(5,OUTPUT);
  digitalWrite(2,LOW);
  digitalWrite(11,HIGH);

}

void loop() {

  long duration, inches, cm;

  pinMode(pingPin, OUTPUT);
  digitalWrite(pingPin, LOW);
  delayMicroseconds(2);
  digitalWrite(pingPin, HIGH);
  delayMicroseconds(5);
  digitalWrite(pingPin, LOW);


  pinMode(pingPin, INPUT);
  duration = pulseIn(pingPin, HIGH);

  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);
}

//Gas sensor
int val=analogRead(gassensor);
Serial.print("Gas sensor value");
Serial.print(val);
if(val>thresh)
  tone(9,800);
delay(300);
noTone(9);

//LIGHT
int val1=analogRead(LDR);
if(val1>500)
{
  digitalWrite(5,LOW);
  Serial.print("BULB ON");
```

```
  Serial.print(val1);
}
else
{
  digitalWrite(5,HIGH);
  Serial.print("BULB OFF");
}

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

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

//temp with fan
float value=analogRead(A0);
float temperature=value*0.48;

Serial.println("temperature");
Serial.println(temperature);

if(temperature > 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;
}
```

HOME AUTOMATION

DIAGRAM OUTPUT: