Assignment -1

Home Automation

Assignment Date	13 September 2022
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Maximum Marks	2 Marks

Question 1:

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

Code:

```
#include <Servo.h>


int output1Value = 0; int
sen1Value = 0; int sen2Value
= 0; int const gas_sensor =
A1; int const
LDR = A0; int limit = 400;


long readUltrasonicDistance(int triggerPin, int echoPin)
{
  pinMode(triggerPin, OUTPUT);
digitalWrite(triggerPin, LOW);   delayMicroseconds(2);


  digitalWrite(triggerPin, HIGH);
delayMicroseconds(10);   digitalWrite(triggerPin,
LOW);   pinMode(echoPin, INPUT);   return
pulseIn(echoPin, HIGH);
```

```
}

Servo servo_7;

void setup()
{
   Serial.begin(9600);
  pinMode(A0, INPUT);
  pinMode(A1,INPUT);
  pinMode(13, OUTPUT);
  servo_7.attach(7, 500, 2500);

  pinMode(8,OUTPUT);
pinMode(9, INPUT);    pinMode(10,
OUTPUT);    pinMode(4, OUTPUT);

  pinMode(3, OUTPUT);

}

void loop()
{
    int val1 = analogRead(LDR);
  if (val1 > 500)
            {
            digitalWrite(13, LOW);
    Serial.print("Bulb ON = ");     Serial.print(val1);
            }
```

```
 else
          {
          digitalWrite(13, HIGH);
   Serial.print("Bulb OFF = ");
  Serial.print(val1);
          }

 sen2Value = digitalRead(9);   if
(sen2Value == 0)
          {
          digitalWrite(10, LOW);
          digitalWrite(4, HIGH);
          digitalWrite(3, LOW);
  Serial.print("|| NO Motion Detected" );
          }

 if (sen2Value == 1)
          {
          digitalWrite(10, HIGH);
  delay(3000);
          digitalWrite(4, LOW);
          digitalWrite(3, HIGH);
   Serial.print("|| Motion Detected!" );
          }
 delay(300);

int val = analogRead(gas_sensor);        Serial.print("|| Gas Sensor Value = ");
 Serial.print(val);
```

```
//val = map(val, 300, 750, 0, 100);
 if (val > limit)
          {
          tone(8, 650);
          }
          delay(300);
          noTone(8);
 sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

 if (sen1Value < 100)
          {
          servo_7.write(90);

  Serial.print("|| Door Open!  ; Distance = ");
   Serial.print(sen1Value);
  Serial.print("\n");

          }
 else
          {
          servo_7.write(0);
   Serial.print("|| Door Closed! ; Distance =  ");
   Serial.print(sen1Value);
   Serial.print("\n");
 }
 delay(10);
```

Circuit Diagram: