

Assignment -1

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Objective:

Build a smart home in Tinkercard with 2 sensors ,a Led and buzzer .

Code:

```
#include <Servo.h>
```

```
int output1Value = 0;
```

```
int sen1Value = 0;
```

```
int sen2Value = 0;
```

```
int constgas_sensor = A1;
```

```
int const LDR = A0;
```

```
int limit = 400;
```

```
long readUltrasonicDistance(int triggerPin, int echoPin)
```

```
{
```

```
pinMode(triggerPin, OUTPUT); // Clear the trigger
```

```
digitalWrite(triggerPin, LOW);
```

```
delayMicroseconds(2);
```

```
// Sets the trigger pin to HIGH state for 10 microseconds
digitalWrite(triggerPin, HIGH);
delayMicroseconds(10);
digitalWrite(triggerPin, LOW);
pinMode(echoPin, INPUT);
    // Reads the echo pin, and returns the sound wave travel time in microseconds
    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()
```

```
{
```

```

    //-----light intensity control-----//
//-----
    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);
    }

//-----
    //----- light & fan control -----//
//-----

    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(5000);
        digitalWrite(4, LOW);
        digitalWrite(3, HIGH);
Serial.print("    || Motion Detected!    ");
    }

//-----
    // ----- Gas Sensor -----//
//-----

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);

//-----
    //----- servo motor -----//
//-----

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);
}

```

