

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:

