

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:

```
const int pingPin = 10;

const int ledUS = 2;

const int light = 7;

const int pir = 4;

#define photoSensor A0

#define buzzer 3

int const PINO_SGAS = A5;

int const ledGas = 8;

int const button = 5;

int const motor =13;


void setup()
{
  pinMode(ledUS, OUTPUT);
  pinMode(light, OUTPUT);
  pinMode(buzzer, OUTPUT);
  pinMode(ledGas, OUTPUT);
  pinMode(motor, OUTPUT);
  pinMode(pir, INPUT);
  pinMode(button, INPUT);
  pinMode(photoSensor, INPUT);
```

```
Serial.begin(9600);  
}  
void loop()  
{  
    long duration, cm;  
    int valLight = analogRead(photoSensor);  
    int valPIR= digitalRead(pir);  
    int valGAS = analogRead(PINO_SGAS);  
    valGAS = map(valGAS, 300, 750, 0, 100);  
    int valBt = digitalRead(button);  
    pinMode(pingPin, OUTPUT);  
    digitalWrite(pingPin, LOW);  
    delayMicroseconds(2);  
    digitalWrite(pingPin, HIGH);  
    delayMicroseconds(5);  
    digitalWrite(pingPin, LOW);  
  
    pinMode(pingPin, INPUT);  
    duration = pulseIn(pingPin, HIGH);  
  
    cm = microsecondsToCentimeters(duration);  
  
    if(cm < 336){  
        digitalWrite(ledUS, HIGH);  
    }else{  
        digitalWrite(ledUS, LOW);  
    }  
    if(valLight < 390){  
        digitalWrite(light, HIGH);  
    }
```

```
}else{
```

```
    digitalWrite(light, LOW);
```

```
}
```

```
if(valPIR == 1){
```

```
    digitalWrite(buzzer,HIGH);
```

```
}else{
```

```
    digitalWrite(buzzer, LOW);
```

```
}
```

```
if(valBt == 1) {
```

```
    digitalWrite(motor, HIGH);
```

```
}else{
```

```
    digitalWrite(motor, LOW);
```

```
}
```

```
if(valGAS >20) {
```

```
    digitalWrite(ledGas, HIGH);
```

```
}else{
```

```
    digitalWrite(ledGas, LOW);
```

```
}
```

```
Serial.print(valPIR);
```

```
Serial.println();
```

```
}
```

```
long microsecondsToCentimeters(long microseconds) {
```

```
    return microseconds / 29 / 2;
```

```
}
```

Circuit Diagram:

