Assignment - 01

Home Automation via tinkercad

Assignment Date	10 September 2022
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Maximum Marks	2 Marks

Question 1:

Make a smart home in tinkercad, using two or more sensors, Buzzer in single code and circuit.

Solution:

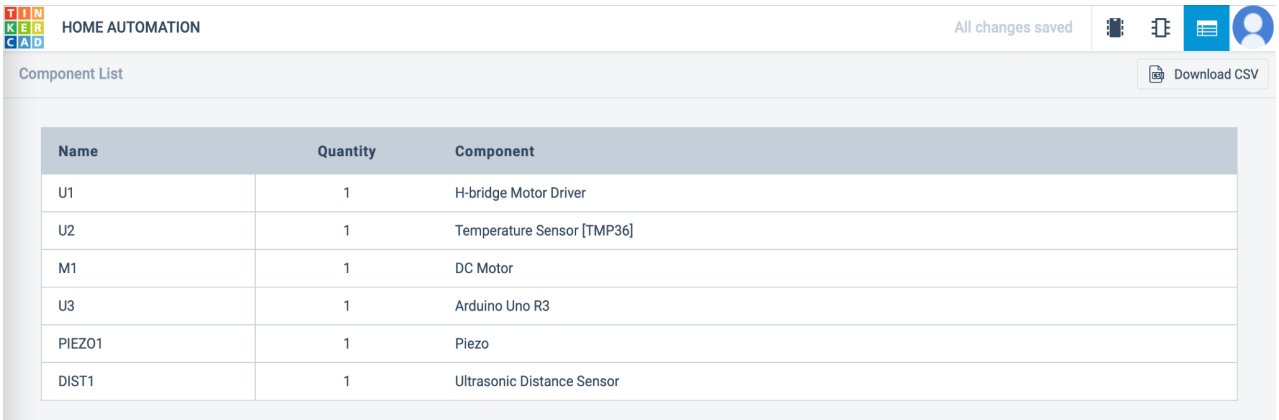
Code:

```
char degree = 176;
int trigger_pin = 2; //ultrasonic trigger pin
int echo_pin = 3;    //ultrasonic echo pin
int buzzer_pin = 10; //buzzer connection pin
int time;
int distance;
int pinTemp = A0; //temperature pin
int motor = 13;  //motor connection pin
int motorspeed = 17550;
void setup()
{
        Serial.begin (9600);
        pinMode (trigger_pin, OUTPUT);//ultrasonic part
        pinMode (echo_pin, INPUT);
        pinMode (buzzer_pin, OUTPUT);
```

```
        pinMode (motor, OUTPUT);//temperature part
        pinMode (pinTemp, INPUT);
        pinMode      (11, OUTPUT);
        pinMode      (9,      OUTPUT);
        digitalWrite(motor, HIGH);
}
void loop()
{
        digitalWrite (trigger_pin, HIGH);  //ultrasonic part start
        delayMicroseconds (10);
        digitalWrite (trigger_pin, LOW);
        time = pulseIn (echo_pin, HIGH);
        distance = (time * 0.034) / 2;
        if (distance <= 10)
                {
                        Serial.println(" Door Open");
                        Serial.print (" Distance = ");
                        Serial.println(distance);
                        digitalWrite(buzzer_pin, HIGH);
                        delay(500);
                }
        else
                {
                        Serial.println(" Door Close ");
                        Serial.print (" Distance= ");
                        Serial.println(distance);
                        digitalWrite (buzzer_pin, LOW);
                        delay (500);
                }  //ultrasonic part ends
        float tmp = analogRead(A0); //motor part
        float voltage = (tmp * 5.0)/1024;
        float milliVolt = voltage * 1000;
        float tmpCel =  (milliVolt-500)/10;
        if(tmpCel > 20)
                {
                        digitalWrite(11, HIGH);
                        digitalWrite(9, LOW);
                        Serial.print(" Temperature: ");
                        Serial.print(tmpCel);
                        Serial.println(degree);
```

```
                Serial.println(" Fan is ON now");
                delay(500);
        }
    else
        {
                digitalWrite(11, LOW);
                digitalWrite(9, LOW);
                Serial.print(" Temperature: ");
                Serial.print(tmpCel);
                Serial.println(degree);
                Serial.println(" Fan is Off now");
                delay(500);
         } //motor part ends
}
```

Tinkercad platform used components screenshot:



Name	Quantity	Component
U1	1	H-bridge Motor Driver
U2	1	Temperature Sensor [TMP36]
M1	1	DC Motor
U3	1	Arduino Uno R3
PIEZO1	1	Piezo
DIST1	1	Ultrasonic Distance Sensor

Tinkercad platform execution screenshot: