SMART HOME USING ARDUINO UNO

Our project is done with GitHub, Tinkercad Wowki. We explain our idea by this project using Arduino UNO.

INTRODUCTION:

Our project is about smart home that home automation must be work in IOT based automation.

We develop automatic light ON/OFF, Gas/ Smoke detector and temperature based Fan ON/OFF methods.

These ideas are we explored in our project by using Arduino UNO with Tinker cad software.
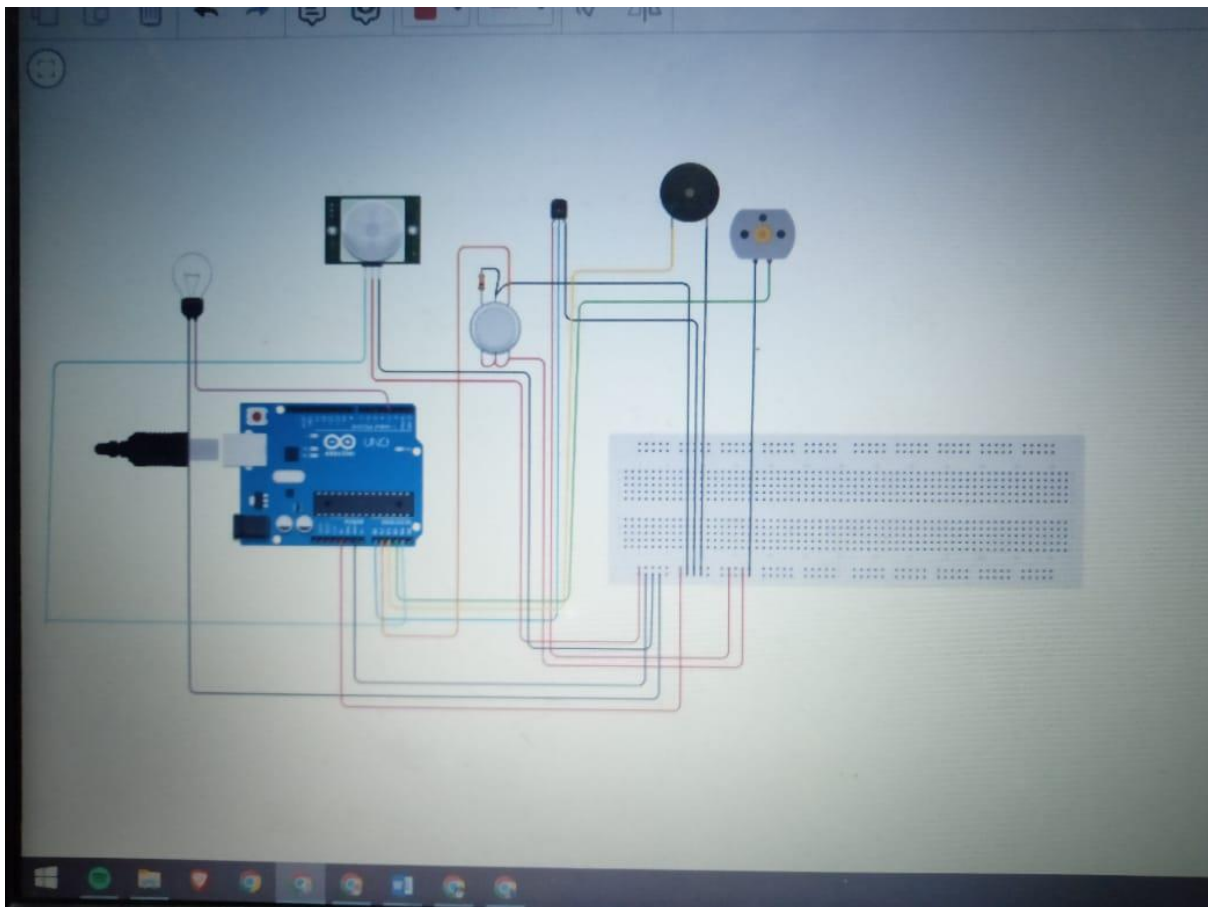
AUTOMATIC BULB GLOW:

In bulb, the +ve charge is connected to the D2 pin and –ve charge is connected to the ground. Pir sensor of the signal pin is connected to the A4 pin of arduino UNO and power is connected to the Vin and ground is connected to the ground. Now, we upload the code in the software.

When the person enter into the room, the bulb will ON then after move out from the room , the bulb will OFF.

The PIR sensor detect the movement of the person and intimate to the bulb ON/OFF.
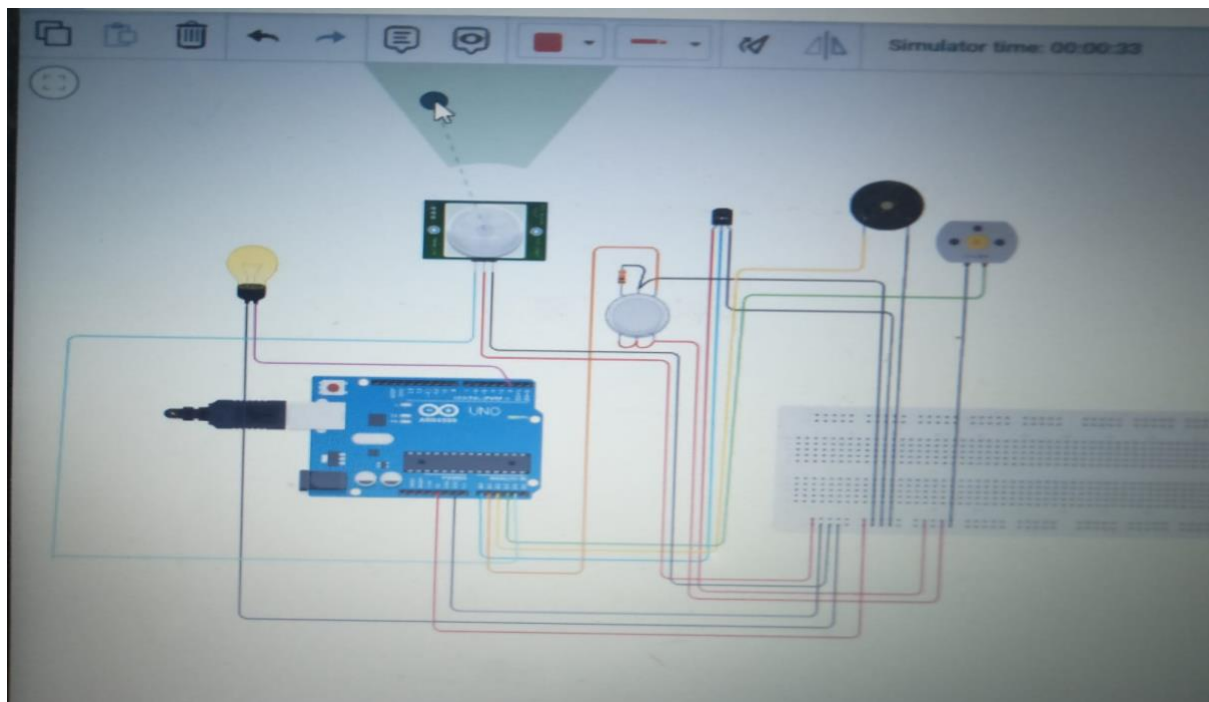
Depends upon the range movement, when the person enter into the room the light will ON.
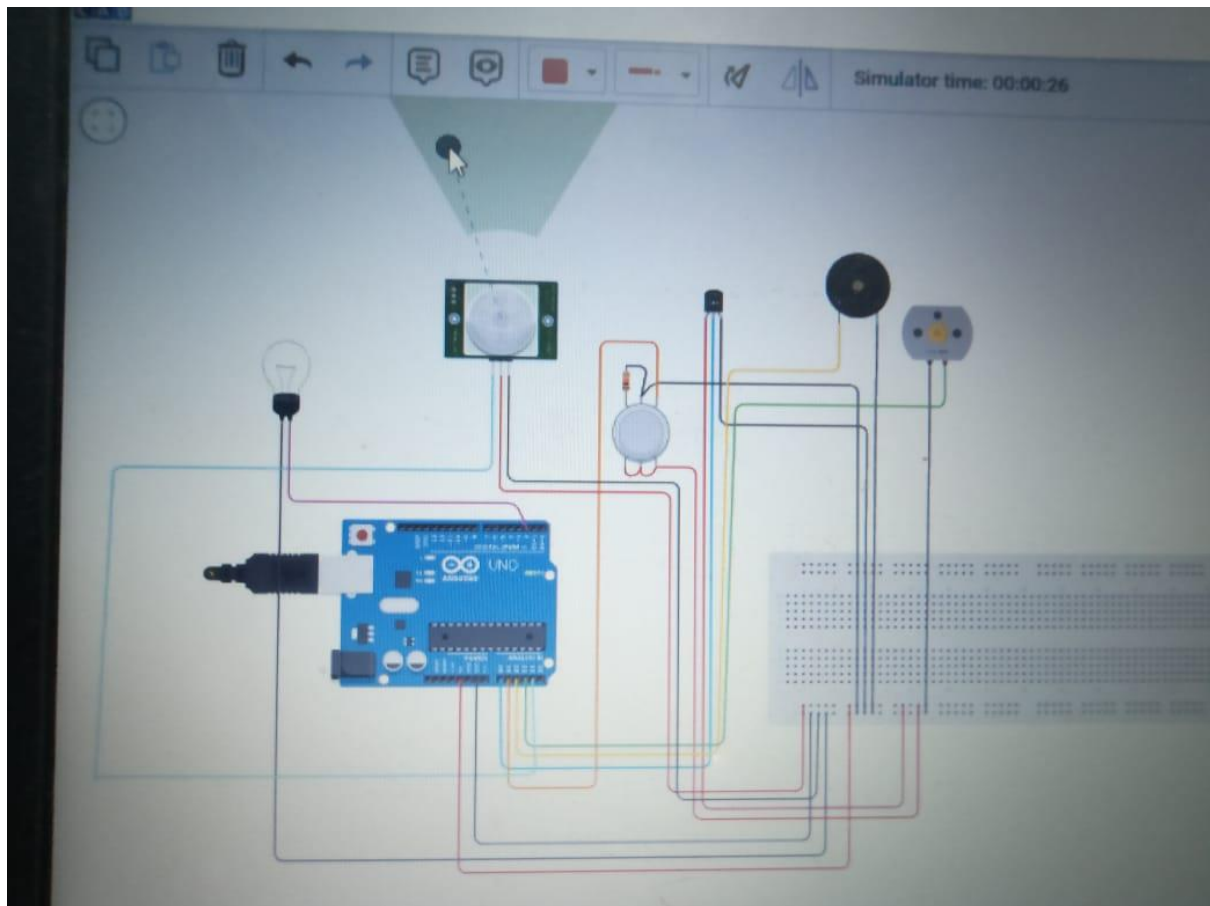
When the PIR Sensor have the higher range, when depends of the range and distance of the person is out from the room and the light should be OFF.

TEMPERATURE BASED FAN:

Depends upon the temperature, the motor will run. When the temperature is high, the motor will start rotating that the Fan runs. When the temperature is low, the motor will stop rotating that the fan automatically OFF.
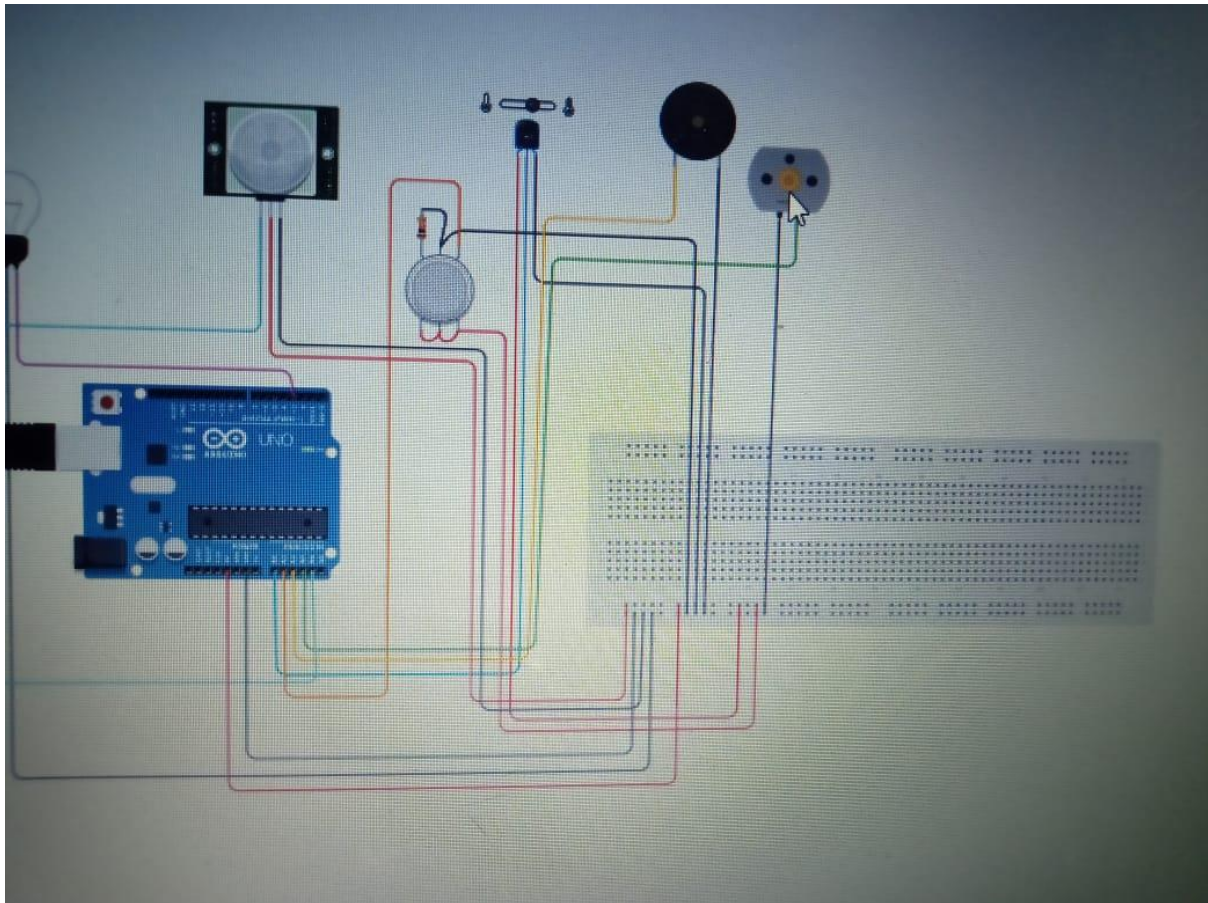
Temperature sensor[TMP36] is detect the temperature and and intimate the motor to run. Power is connected to the Vin, Vout is connected to the Ao pin and groud of the temperature sensor is connected to the ground.

The terminal 1 of the motor is connected to the ground and the terminal 2 of the motor is connected to the A2 pin of the aurdino UNO.

SMOKE/GAS DETECTOR:

The smoke sensor detect the smoke, then it indicate by the buzzer with 2 seconds delay.

The smoke sensor detect the gas/smoke. B1,H2,B2 of smoke sensor is connected to the Vin and H1,A2,terminal 1 of smoke sensor is connected to the ground with resistor.

The positive charge of the buzzer is connected to the A2 pin of the aurdino UNO and the negative charge of the buzzer is connected to the ground.

OVERALL CONNECTION AND CODE:

Simulator time: 00:01:1#

Code | Stop Simulat

PIR Sensor

Name	pir sensor
Target X	-21.91
Target Y	-272.16
Target Y	-186.90

```cpp
1  // C++ code
2  //
3  void setup()
4  {
5    pinMode(A2, OUTPUT);
6    pinMode(A1, INPUT);
7    pinMode(A3, OUTPUT);
8    pinMode(A0, INPUT);
9    pinMode(2, OUTPUT);
10   pinMode(A4, INPUT);
11   Serial.begin(9600);
12 }
13
14 void loop()
15 {
16   int gas=analogRead(A1);
17   int b=map(gas,0,1023,0,255);
18   if(b>50)
19   {
20     analogWrite(A2,b*10);
21     delay(1000);
22     analogWrite(A2,0);
23     delay(10);
24   }
25
26   int temp=analogRead(A0);
27   int c=map(temp,30,126,0,255);
28   analogWrite(A3,c);
29
30   int pir=analogRead(A4);
```

Serial Monitor