**SMART HOME AUTOMATION USING TINKERCAD**

**Required Components:**

* Arduino Uno R3
* Photoresistor
* 1 kΩ Resistor
* Red LED
* PIR Sensor
* Relay SPDT
* Power Supply
* Light bulb
* Temperature Sensor [TMP36]
* Piezo(buzzer)
* Gas Sensor
* DC Motor
* NPN Transistor (BJT)
* 220 Ω Resistor
* Diode
* Ultrasonic Distance Sensor
* Green LED
* Blue LED

**Working Model:**

The Brightness of the LED is adjusted according to the Ambient Light intensity of the room. This is achieved using LDR sensor whose resistance is dependent on light intensity.

Motion of Human is detected using PIR Motion Sensor and if a Human Presence is detected, Bulb in the room is turned ON; else the Bulb is turned OFF.

The Ambient temperature of the room is detected using TMP36 and accordingly, the speed of the fan is controlled. The RPM of the motor is proportional to the temperature. Here the fan is considered as a DC motor.

The gas Sensor is used to sense the gas and give an alert signal via buzzer.

The Ultra Sonic Sensor is used to monitor the level of the water in the tank. When the level of the water is between 0 and 150, the Green LED is turned ON. If the level of the water is between 150 and 250, the Blue LED is turned ON. When the water level is above 250, the Red LED is turned ON.

**Simulation Link**: https://www.tinkercad.com/things/lIpyWrfzhQZ-assignment-1-smart-home/editel