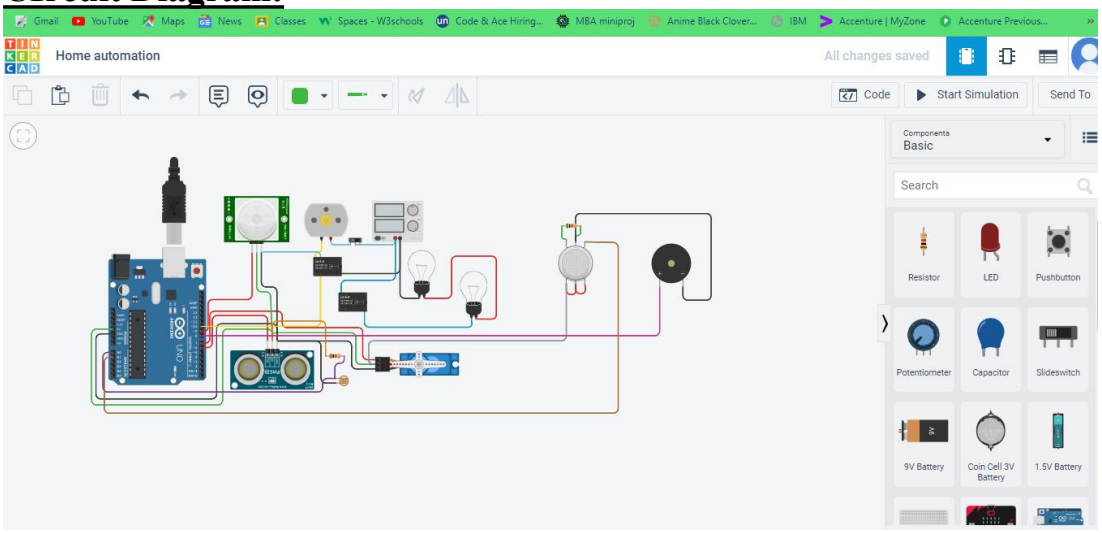
CIrcuit Diagram:



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);
// Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  // Reads the echo pin, and returns the sound wave travel time in microseconds
  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); // Delay a little bit to improve simulation performance
}
```

Output: