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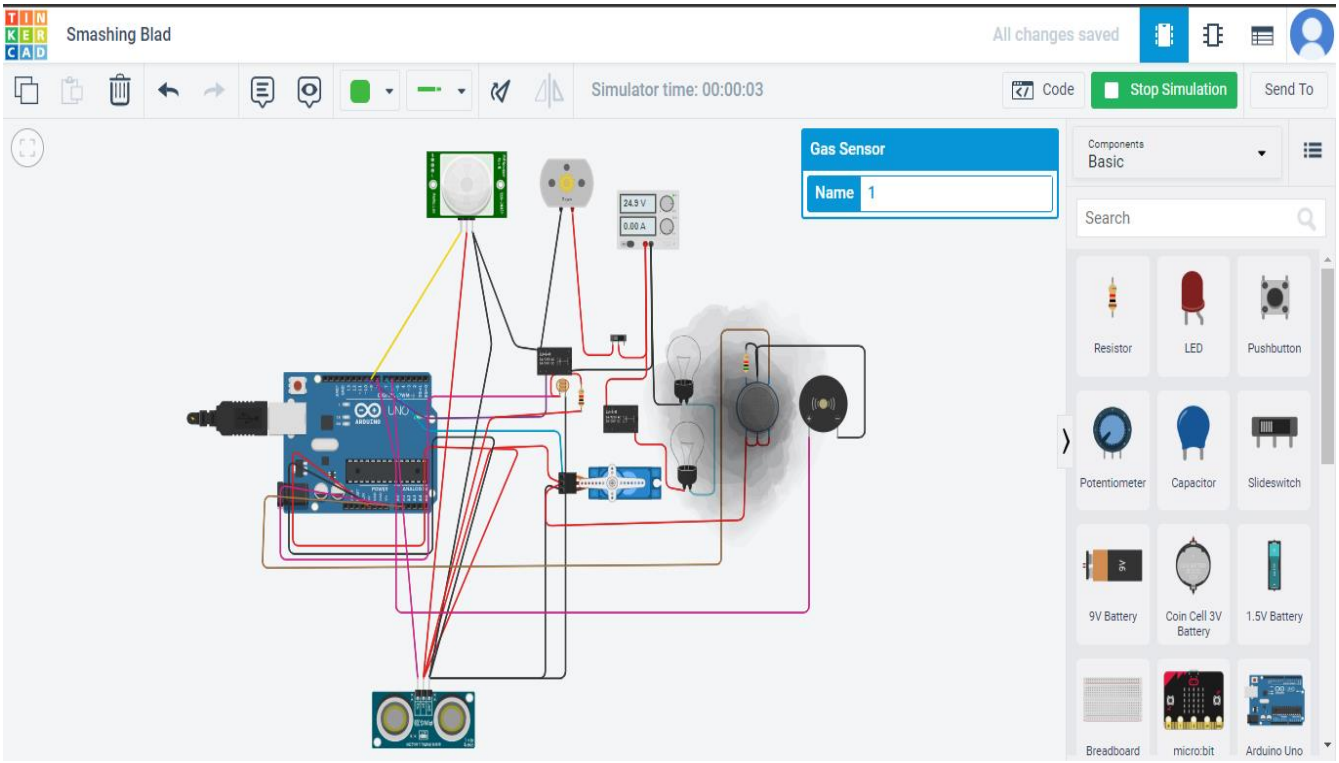
ASSIGNMENT 1



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);
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);

  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);          //Red LED
  pinMode(3, OUTPUT);          //Green LED
```

```
}

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); //npn as switch OFF
        digitalWrite(4, HIGH); // Red LED ON,indicating no motion
        digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("     || NO Motion Detected    " );
        }
```

```
  if (sen2Value == 1)
        {
        digitalWrite(10, HIGH);//npn as switch ON
    delay(3000);
        digitalWrite(4, LOW); // RED LED OFF
        digitalWrite(3, HIGH);//GREEN LED ON , indicating motion detected
     Serial.print("        || Motion Detected!      " );
        }
  delay(300);
int val = analogRead(gas_sensor);      //read sensor value
  Serial.print("|| Gas Sensor Value = ");
  Serial.print(val);                              //Printing in serial monitor
  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);
}
```