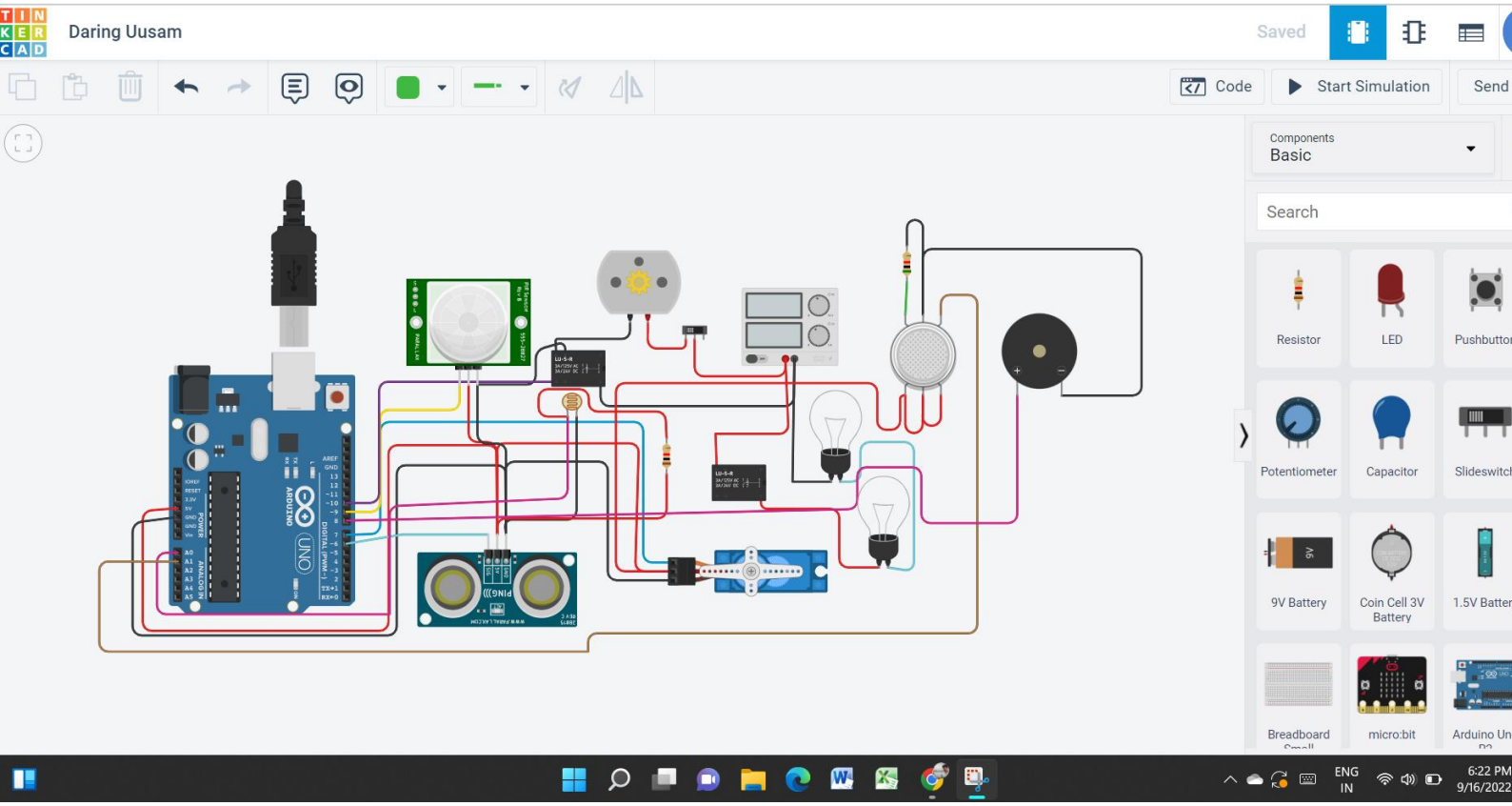


```
#include <Servo.h>

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); // Clear the trigger

 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); //initialize serial communication
  pinMode(A0, INPUT); //LDR
  pinMode(A1,INPUT); //gas sensor
  pinMode(13, OUTPUT); //connected to relay
  servo_7.attach(7, 500, 2500); //servo motor

  pinMode(8,OUTPUT); //signal to piezo buzzer
  pinMode(9, INPUT); //signal to PIR
  pinMode(10, OUTPUT); //signal to npn as switch
  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
//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
}
```