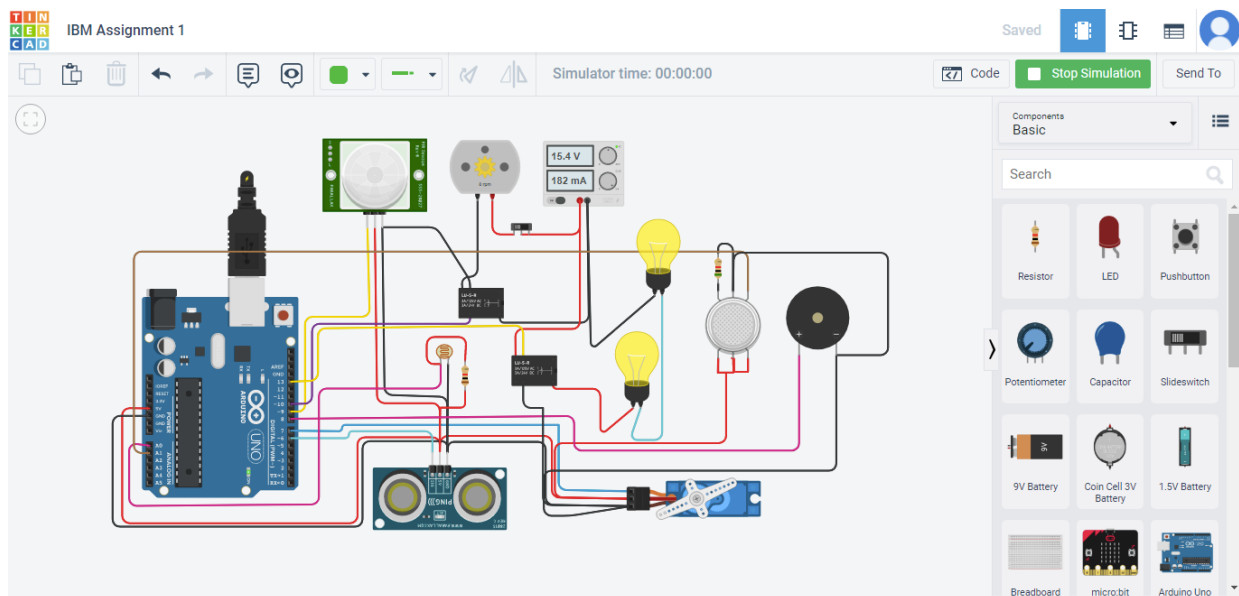


ASSIGNMENT-1

Date	17-09-2022
Team ID	PNT2022TMID10305
Project Name	Smart Farmer – IOT Enabled Smart Farming Application

NAME: SHIVANI S

ASSIGNMENT: Build a smart home in Thinkercad with 2 sensors, an Led, buzzer.



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); // 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()
{
  //-----light intensity control-----//
  //-----
  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);
  }

  //-----
  //----- light & fan control -----//
  //-----
  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(5000);
        digitalWrite(4, LOW); // RED LED OFF
        digitalWrite(3, HIGH); //GREEN LED ON , indicating motion detected
        Serial.print("        || Motion Detected!  ");
    }

//-----
// ----- Gas Sensor -----//
//-----
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);

//-----
//----- servo motor -----//
//-----
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  
}
```