EXP: 7

Date: **Measure the humidity and moisture value of the environment**

AIM:

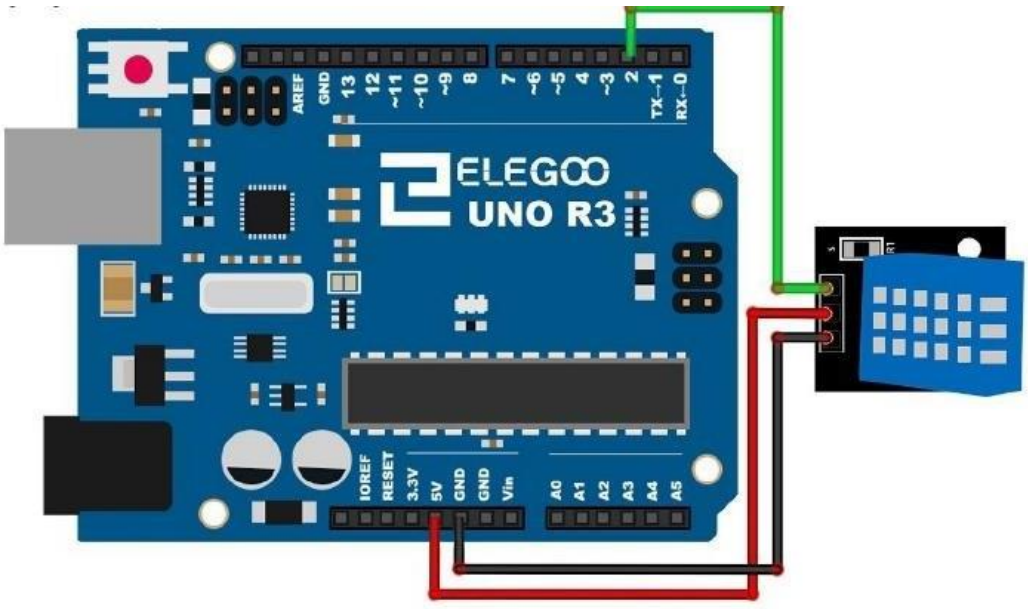
The aim of this experiment is to develop a system that can measure the humidity and moisture value of the environment using Arduino Uno. The system control the sensor and to display the humidity and moisture values.

Algorithm:

The algorithm for the system is as follows:

1. The humidity and moisture sensor will be used to measure the humidity and moisture levels in the environment.
2. The program will read the data from the sensor and display it on the screen.
3. The user will be able to see the humidity and moisture levels and take action accordingly.
4. Connect the humidity and moisture sensor to the Arduino.
5. Write the program.
6. Run the program.

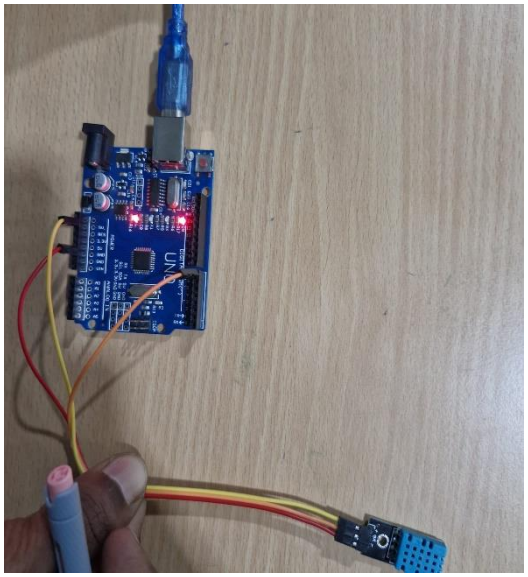
Circuit Diagram:

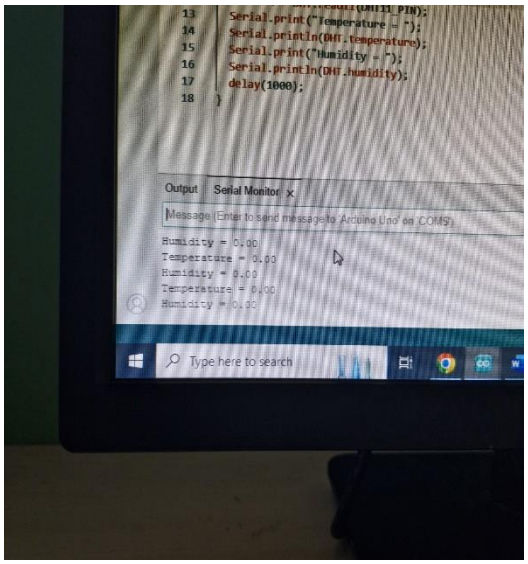


Program:

```
#include <dht.h>
dht DHT;
#define DHT11_PIN 7

void setup() {
Serial.begin(9600);
}

void loop() {
int chk = DHT.read11(DHT11_PIN);
Serial.print("Temperature = ");
Serial.println(DHT.temperature);
Serial.print("Humidity = ");
Serial.println(DHT.humidity);
delay(1000);
}
```

Output:





Result:

Thus, the humidity and moisture level has been successfully measured.

EXP : 8

Date: **Control a LED using a relay switch**

AIM:

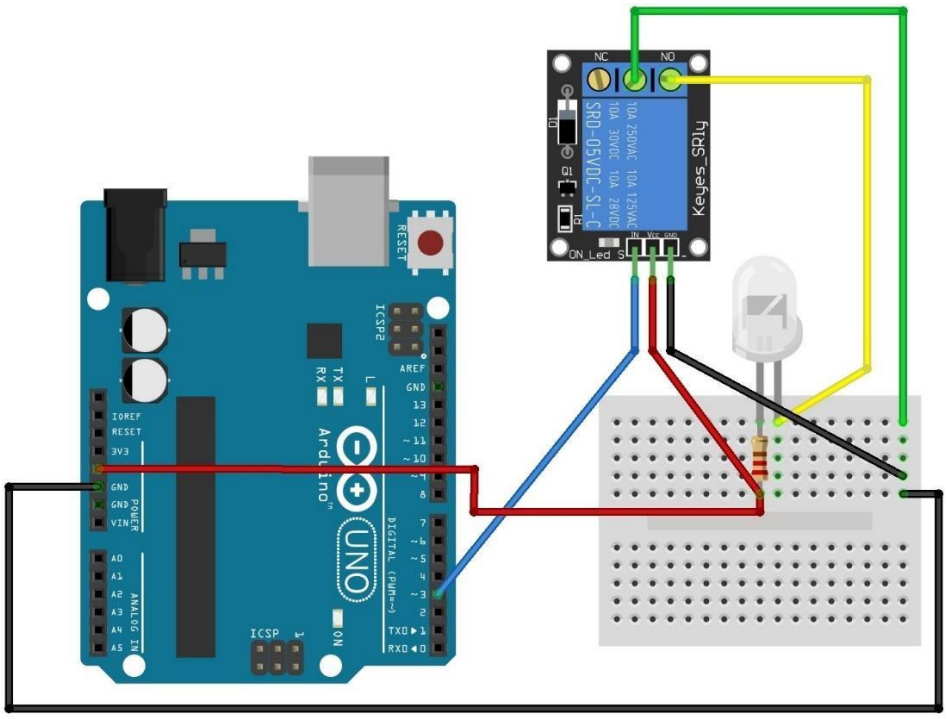
The aim of this experiment is to develop a system that can control a LED using a relay switch using Arduino Uno. The system controls the relay switch and to turn the LED on and off.

Algorithm:

The algorithm for the system is as follows:

1. The relay switch will be used to control the flow of current to the LED.
2. The program will send a signal to the relay switch to turn the LED on or off.
3. The LED will turn on or off depending on the signal from the program.
4. Connect the relay switch to the Arduino.
5. Write the program.
6. Run the program.

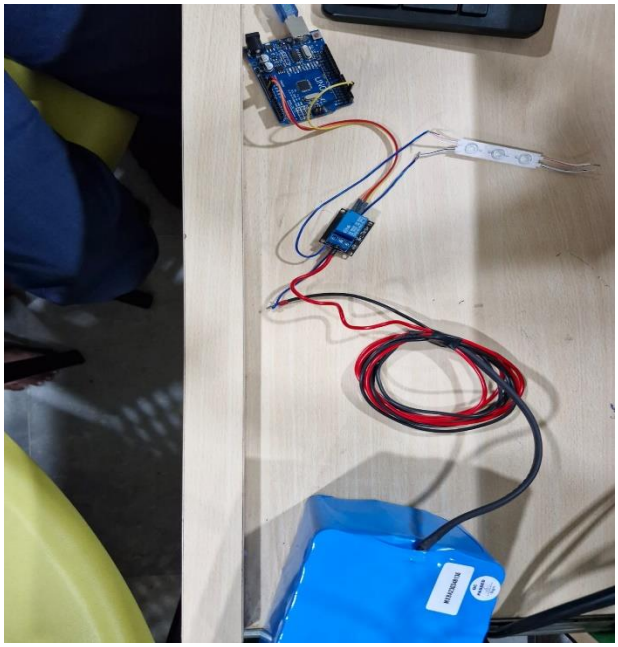
Circuit Diagram

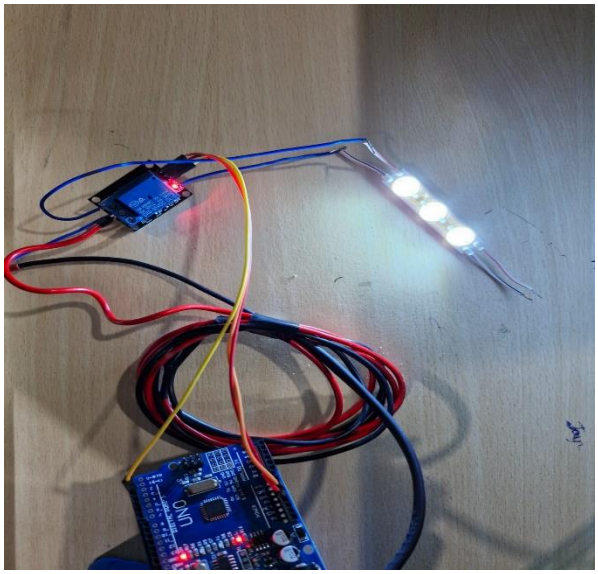


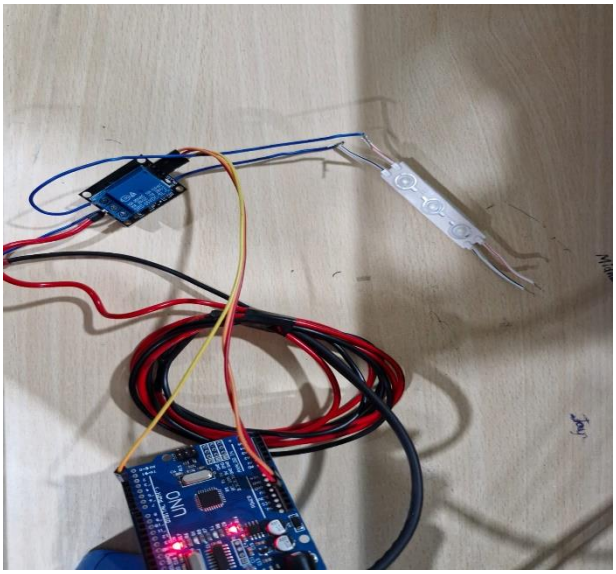
Program:

```
#define RELAY_PIN 2 // Relay control pin connected to digital pin 2

void setup() {

pinMode(RELAY_PIN, OUTPUT);
}


void  loop() {

digitalWrite(RELAY_PIN, HIGH);
delay(10000);
digitalWrite(RELAY_PIN, LOW);
delay(10000);
}
```

Output:







Result:

Thus, the LED has been successfully controlled using relay switch.

EXP: 9

Date: **Identify the Rain using the Rain Sensor**

AIM:

The aim of this experiment is to develop a system that can identify the rain fall using Arduino Uno. The system control the sensor and to display the rain fall information.

Algorithm:

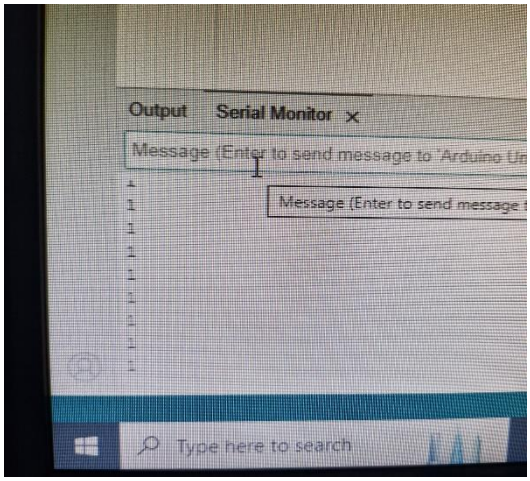
The algorithm for the system is as follows:

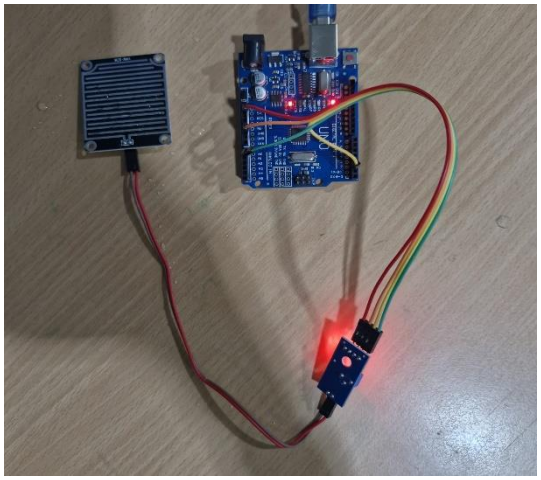
1. The rain sensor will be used to identify the rainfall in the environment.
2. The program will read the data from the sensor and display it on the screen.
3. The user will be able to see the rainfall and take action accordingly.
4. Connect the rain sensor to the Arduino.
5. Write the program.
6. Run the program.

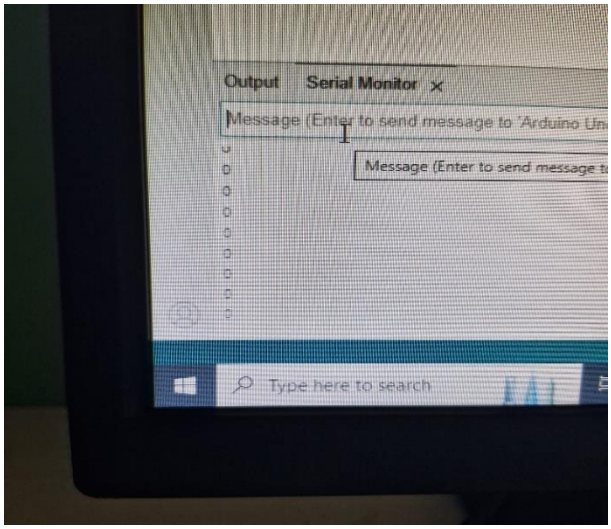
Program:

```
 Int Sensorpin = 2;
void setup() {
// put your setup code here, to run once:
pinMode(Sensorpin, INPUT);
Serial.begin(9600);
}

void loop() {
// put your main code here, to run repeatedly:
int sensorData = digitalRead(Sensorpin);
delay(1000);
}
```

Output:







Result:

Thus, the rainfall has been successfully identified.