Internet of Things Lab

Digital Assignment 1

NAME: SREENIVASAN S
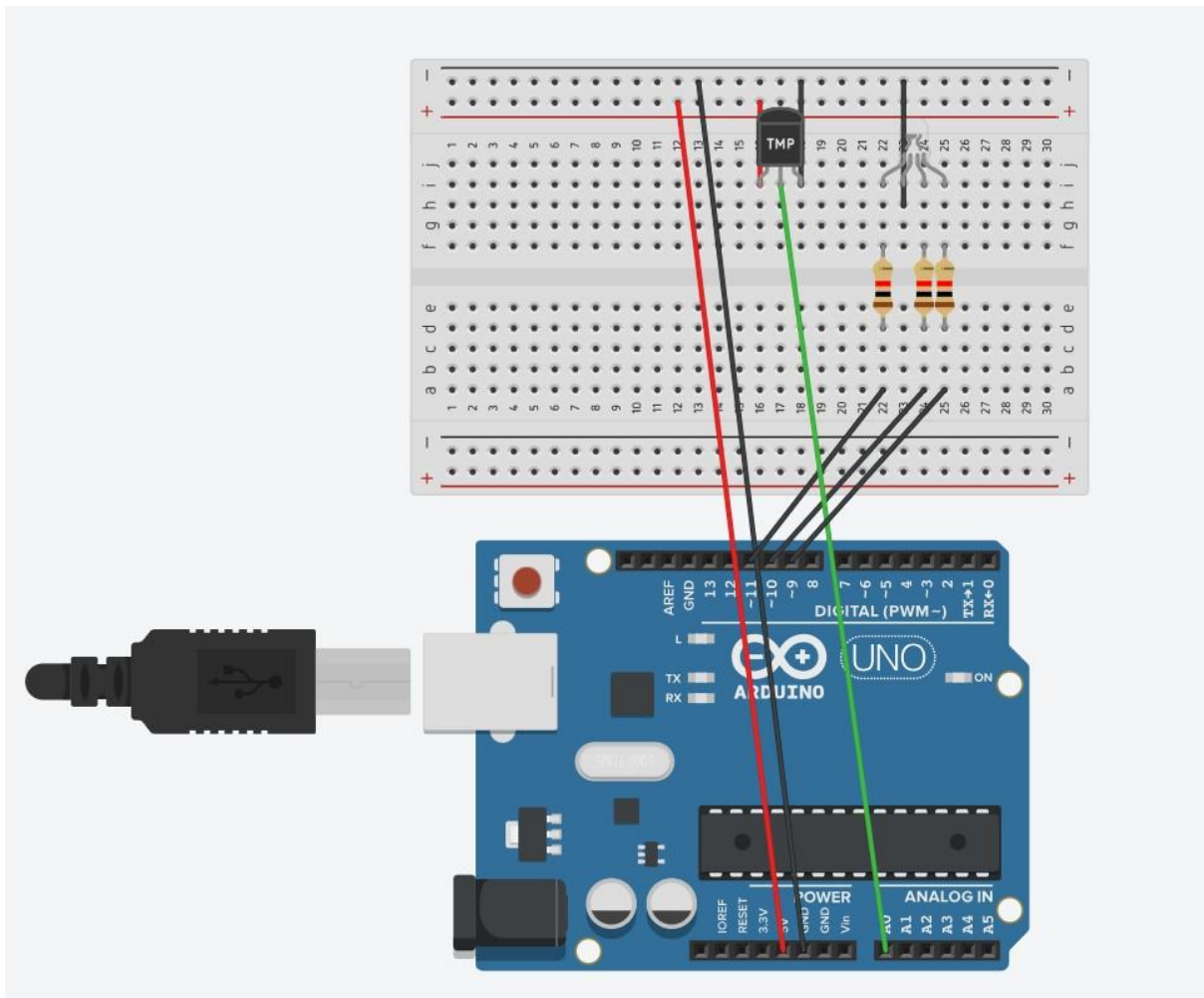
REG NO: 21BEC0256

Experiment 1:

Aim:

To construct a circuit in tinker Cad to detect the temperature and humidity using Arduino and temperature sensor.
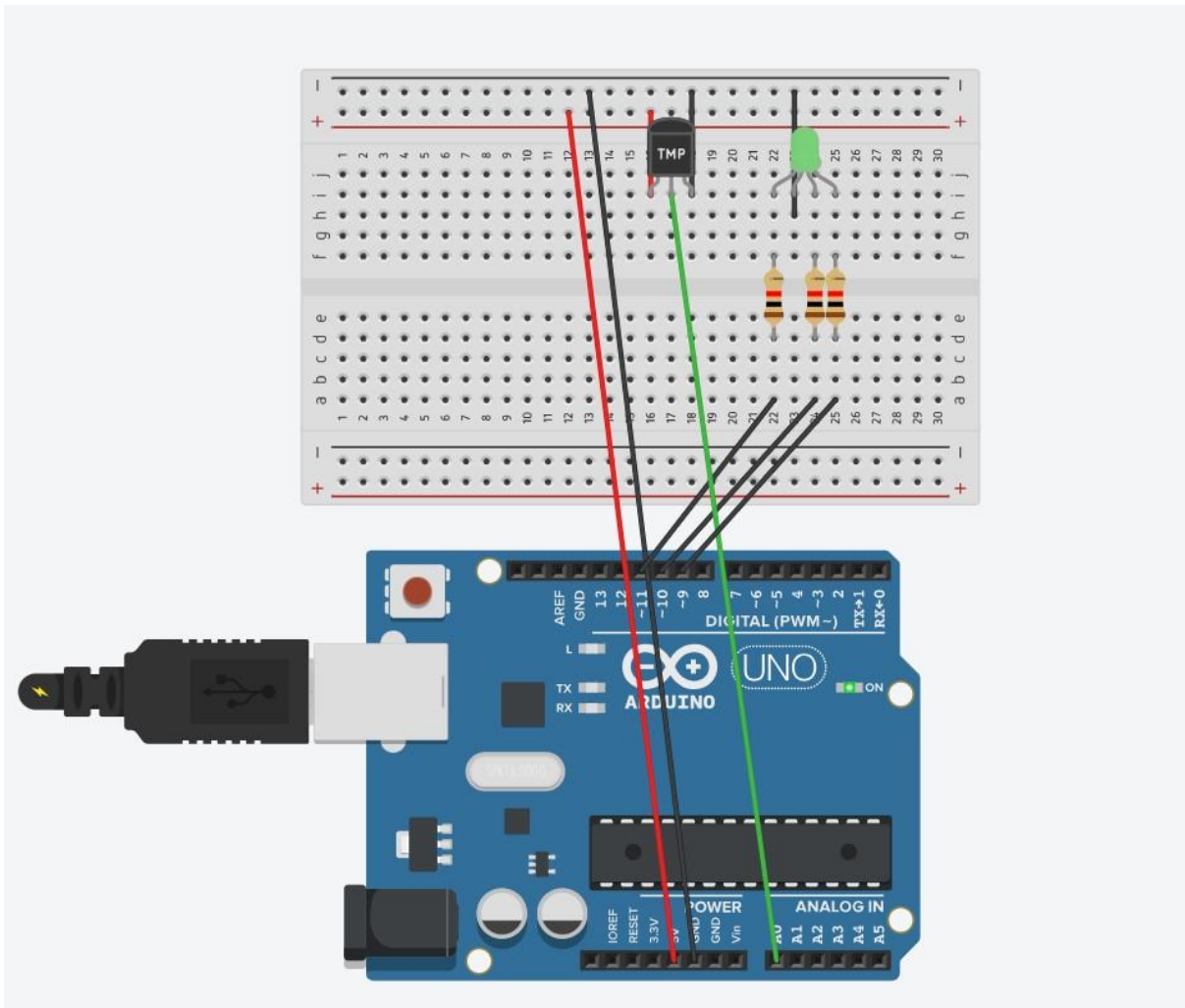
Circuit:

Code:

```
int temperature = 0;
 void setup()
{
 pinMode(A0, INPUT);
pinMode(11, OUTPUT);
pinMode(9, OUTPUT);
pinMode(10, OUTPUT);
 Serial.begin(9600);
}
void loop() {   temperature = (-40 + 0.488155 *
(analogRead(A0) - 20));   if (temperature < 36) {
analogWrite(11, 255);    analogWrite(9, 0);
analogWrite(10, 0);
 }   if (temperature ==
36) {    analogWrite(11,
51);    analogWrite(9,
51);    analogWrite(10,
51);
 }   if (temperature >
36) {
analogWrite(11, 0);
analogWrite(9, 102);
analogWrite(10, 0);
 }
 Serial.println("fever");   delay(10); // Delay a little bit to improve
simulation performance
}
```
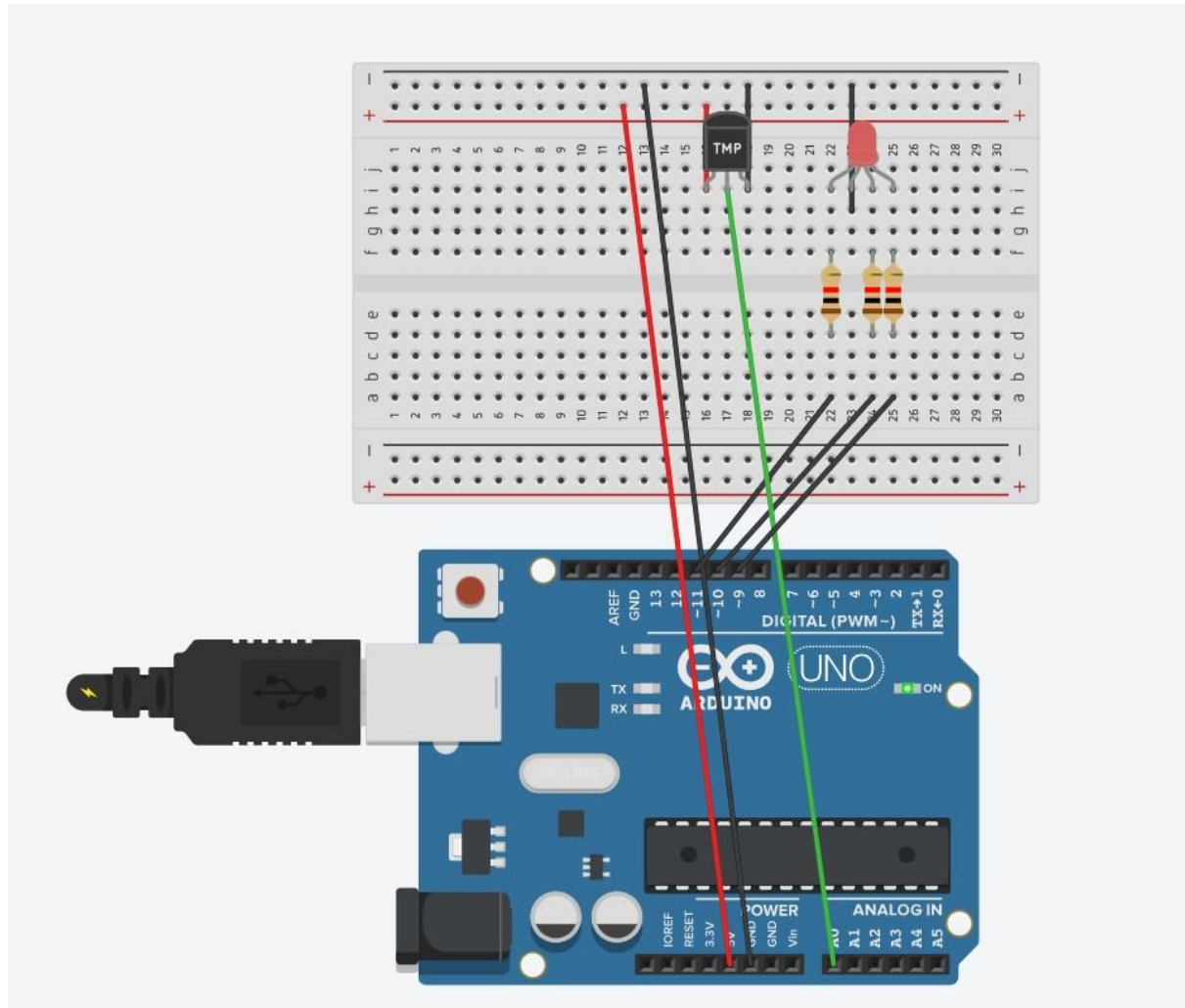
Output:

Result and Inference:

The circuit was constructed and run. The results were observed in the serial window of TinkerCad where we were able to observe the temperature in degree.
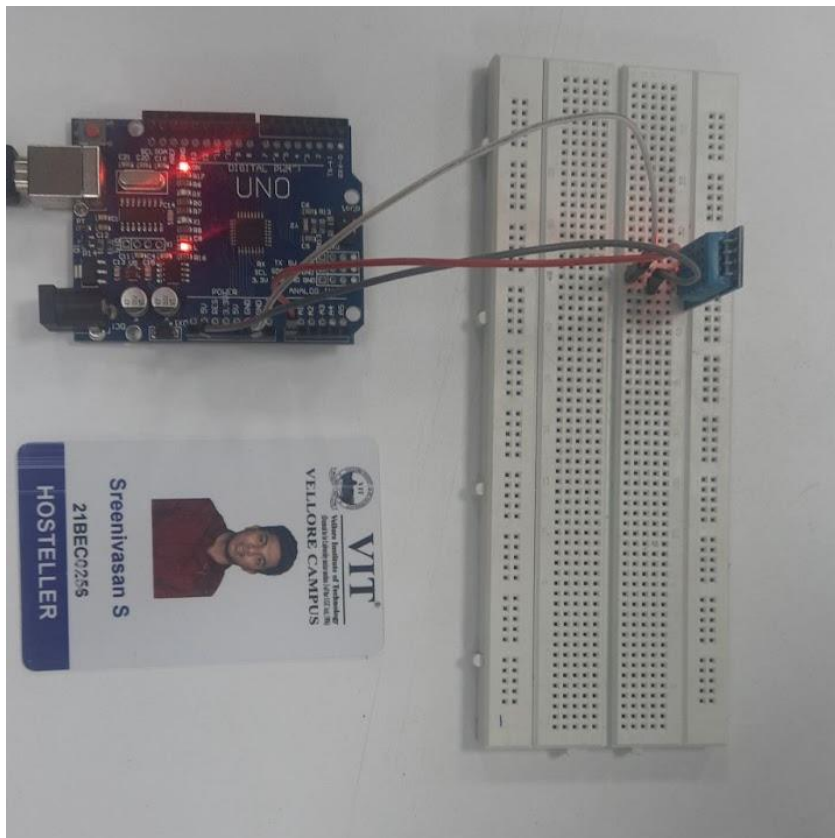
Experiment 2:

Aim:

To construct a circuit to detect the temperature and humidity using Arduino and DHT11 sensor.

Components Required:

Name	Quantity
Arduino Uno	1
Bread board	1
DHT11	1
USB Cable	1
Jumper wire	3

Circuit:

Code:

```
// 21BEC0256 SREENIVASAN S

#include<SimpleDHT.h>
int pinDHT11=A0;
SimpleDHT11 dht11(pinDHT11);

void setup() {
  Serial.print("temperature and humidity Data");
  Serial.begin(9600);
}

void loop() {   byte
temperature=0;   byte
humidity = 0;
  int err = SimpleDHTErrSuccess;

  if((err = dht11.read(&temperature, &humidity, NULL)) !=
SimpleDHTErrSuccess){
    Serial.print("read DHT11 failed, err=");
    Serial.print(SimpleDHTErrCode(err));
    Serial.print(",");
    Serial.println(SimpleDHTErrDuration(err));
delay(1000);     return ;
  }
  Serial.print((int)temperature);
  Serial.print(" *C, ");
  Serial.print((int)humidity);
  Serial.print(" H");
delay(1500);
}
```
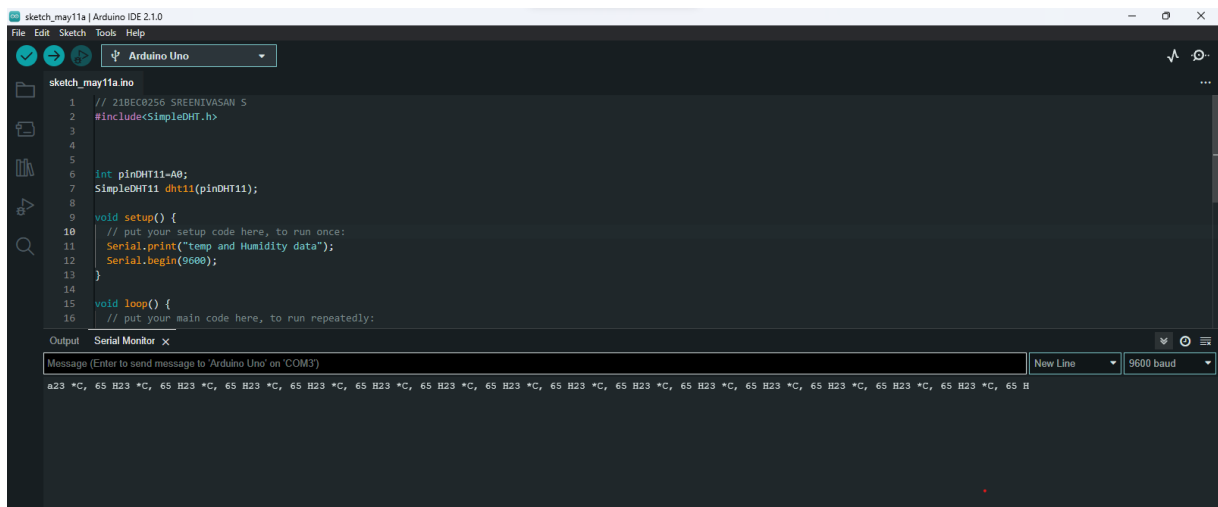
Output:

Result and Inference:

The circuit was built and tested. The results were visible in the serial window of the Arduino IDE, where we could see the humidity in percentage and the temperature in degrees Celsius.