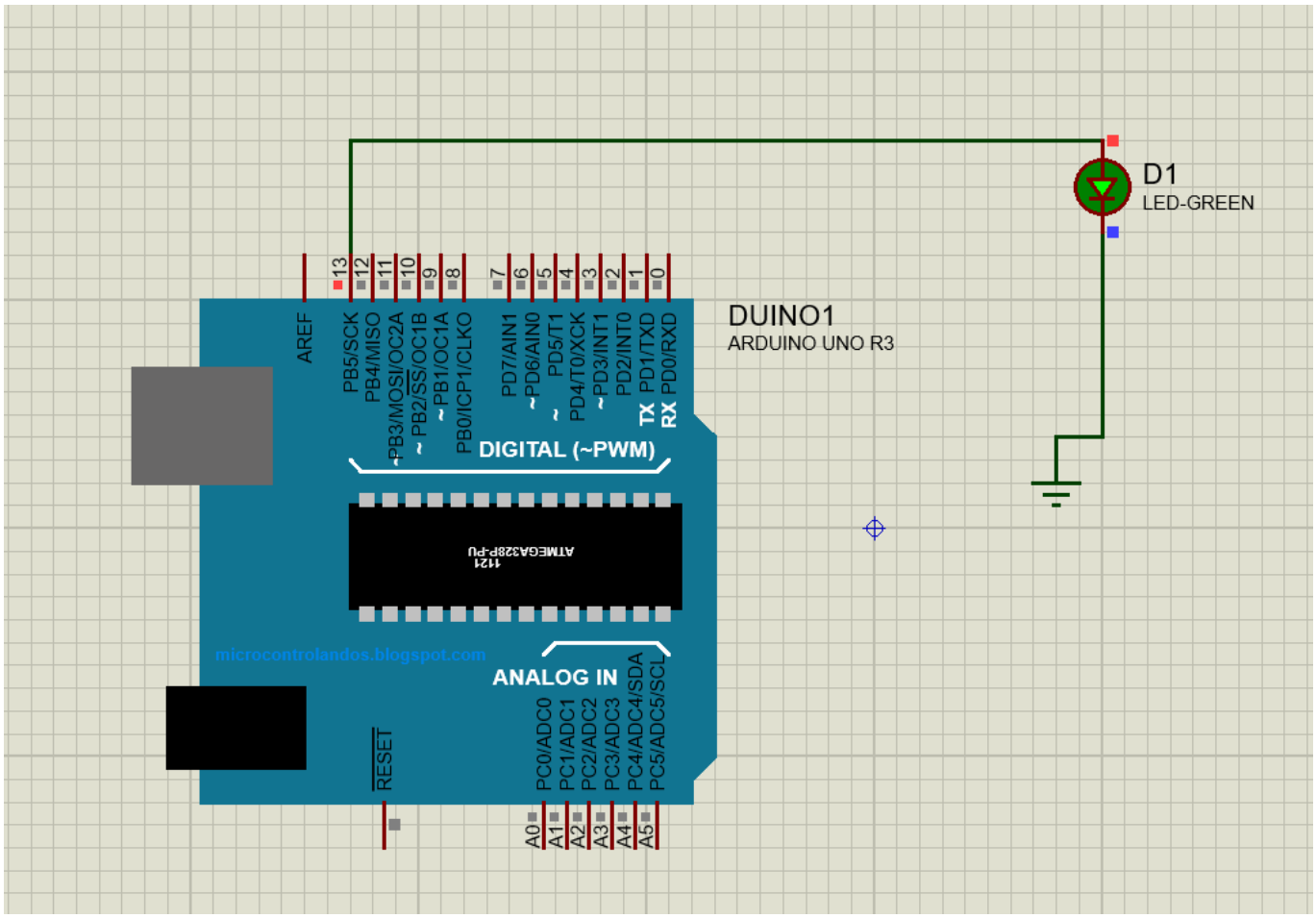
List of Practical's:

WAP for interfacing 01 LED at PIN no 13.

```
void setup() {
  // put your setup code here, to run once:
pinMode(13,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
digitalWrite(13,HIGH);
}
```

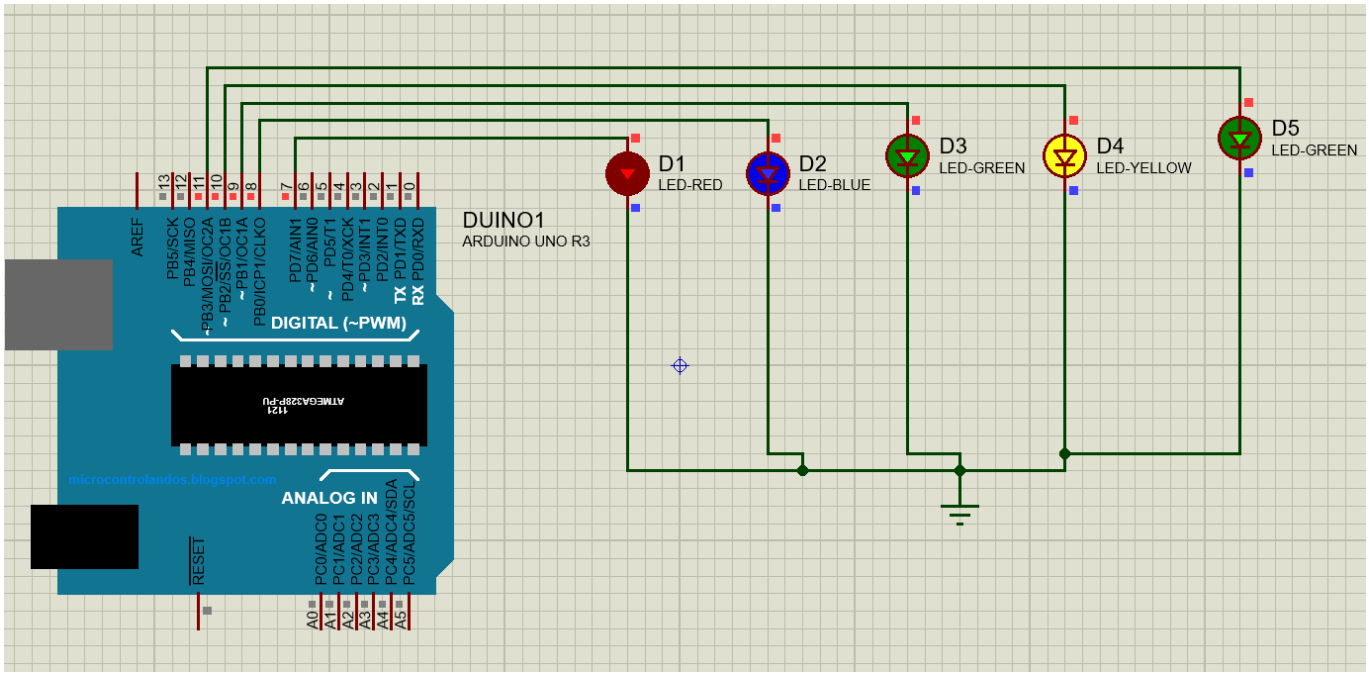
OUTPUT:



WAP for interfacing 05 LEDs at pin no 7, 8, 9, 10 and 11 and make them ON for 05 seconds and OFF for 01 second.

```
void setup() {
  // put your setup code here, to run once:
pinMode(7,OUTPUT);
pinMode(8,OUTPUT);
pinMode(9,OUTPUT);
pinMode(10,OUTPUT);
pinMode(11,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
digitalWrite(7,HIGH);
digitalWrite(8,HIGH);
digitalWrite(9,HIGH);
digitalWrite(10,HIGH);
digitalWrite(11,HIGH);
delay(5000);
digitalWrite(7,LOW);
digitalWrite(8,LOW);
digitalWrite(9,LOW);
digitalWrite(10,LOW);
digitalWrite(11,LOW);
delay(1000);
}
```

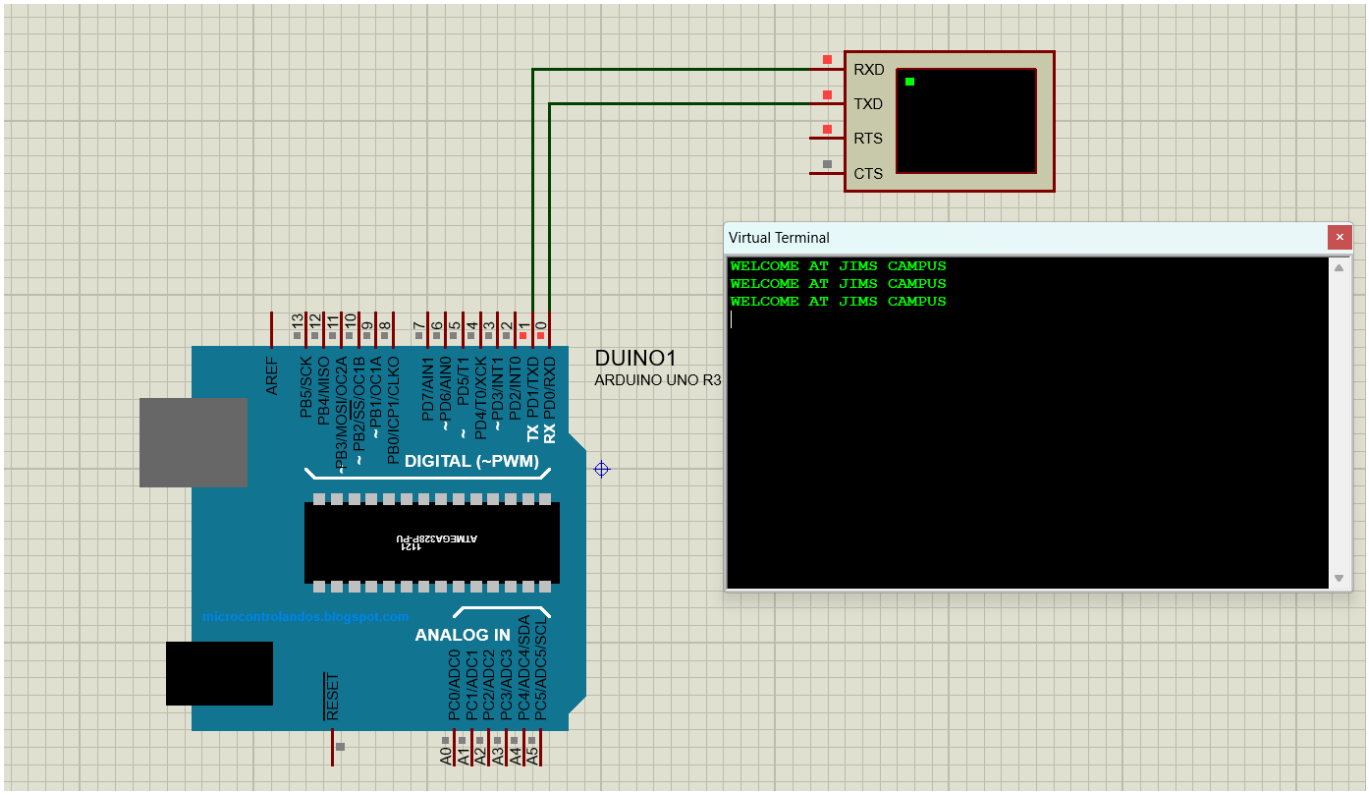
OUTPUT:



WAP for showing DATA “WELCOME AT JIMS CAMPUS” at SERIAL MONITOR with 05 second delay with infinite loop.

```
void setup() {
  // put your setup code here, to run once:
Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
Serial.println("WELCOME AT JIMS CAMPUS");
delay(5000);
}
```

Output:

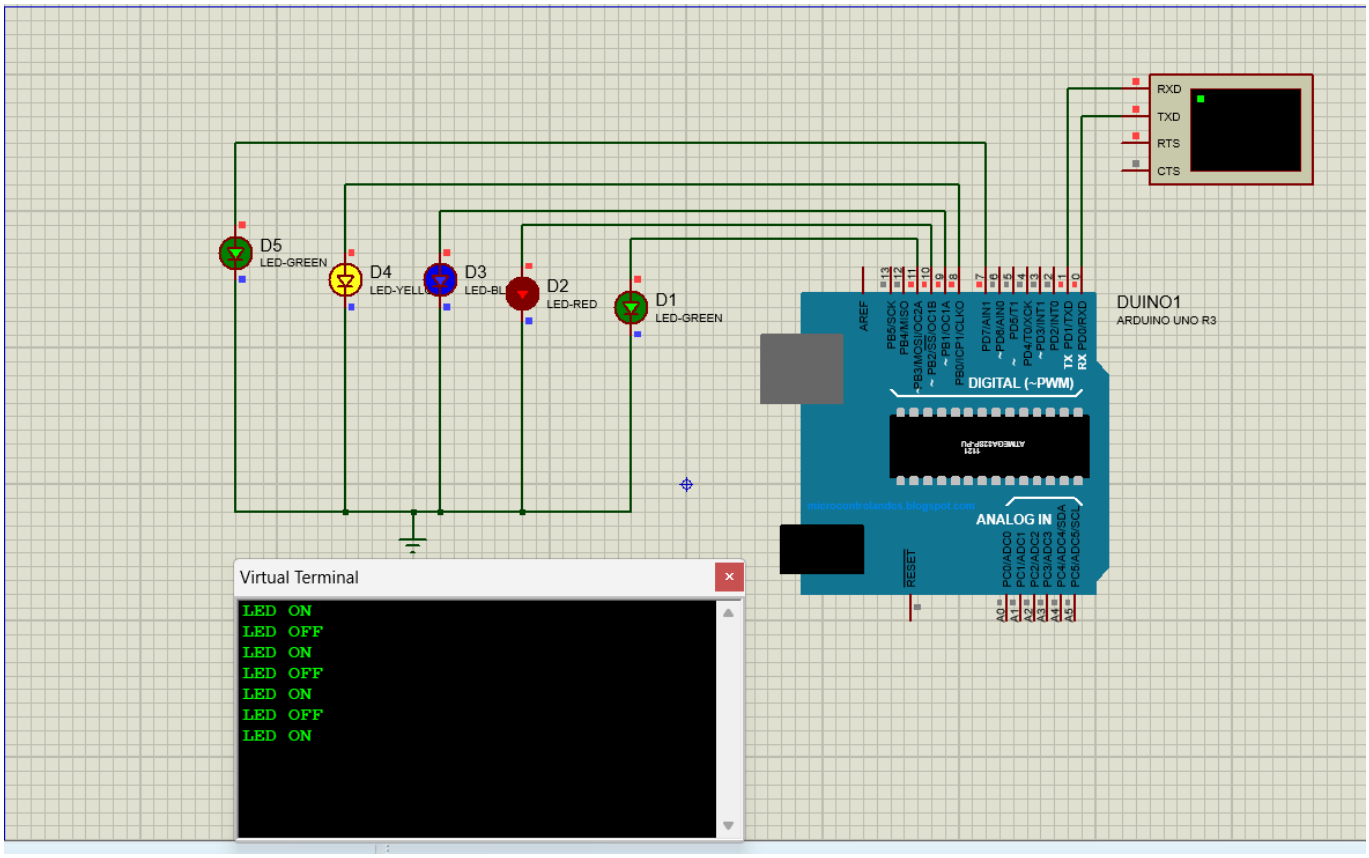


WAP for interfacing 05 LEDs at pin no 7, 8, 9, 10 and 11 and make them ON for 05 seconds with SERIAL MONITOR MESSAGE “LED ON “and OFF for 08 seconds with SERIAL MONITOR MESSAGE “LED OFF “.

```
void setup() {
  // put your setup code here, to run once:
pinMode(7,OUTPUT);
pinMode(8,OUTPUT);
pinMode(9,OUTPUT);
pinMode(10,OUTPUT);
pinMode(11,OUTPUT);
Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
```

```
digitalWrite(7,HIGH);
digitalWrite(8,HIGH);
digitalWrite(9,HIGH);
digitalWrite(10,HIGH);
digitalWrite(11,HIGH);
Serial.println("LED ON");
delay(5000);
digitalWrite(7,LOW);
digitalWrite(8,LOW);
digitalWrite(9,LOW);
digitalWrite(10,LOW);
digitalWrite(11,LOW);
Serial.println("LED OFF");
delay(8000);

}
```

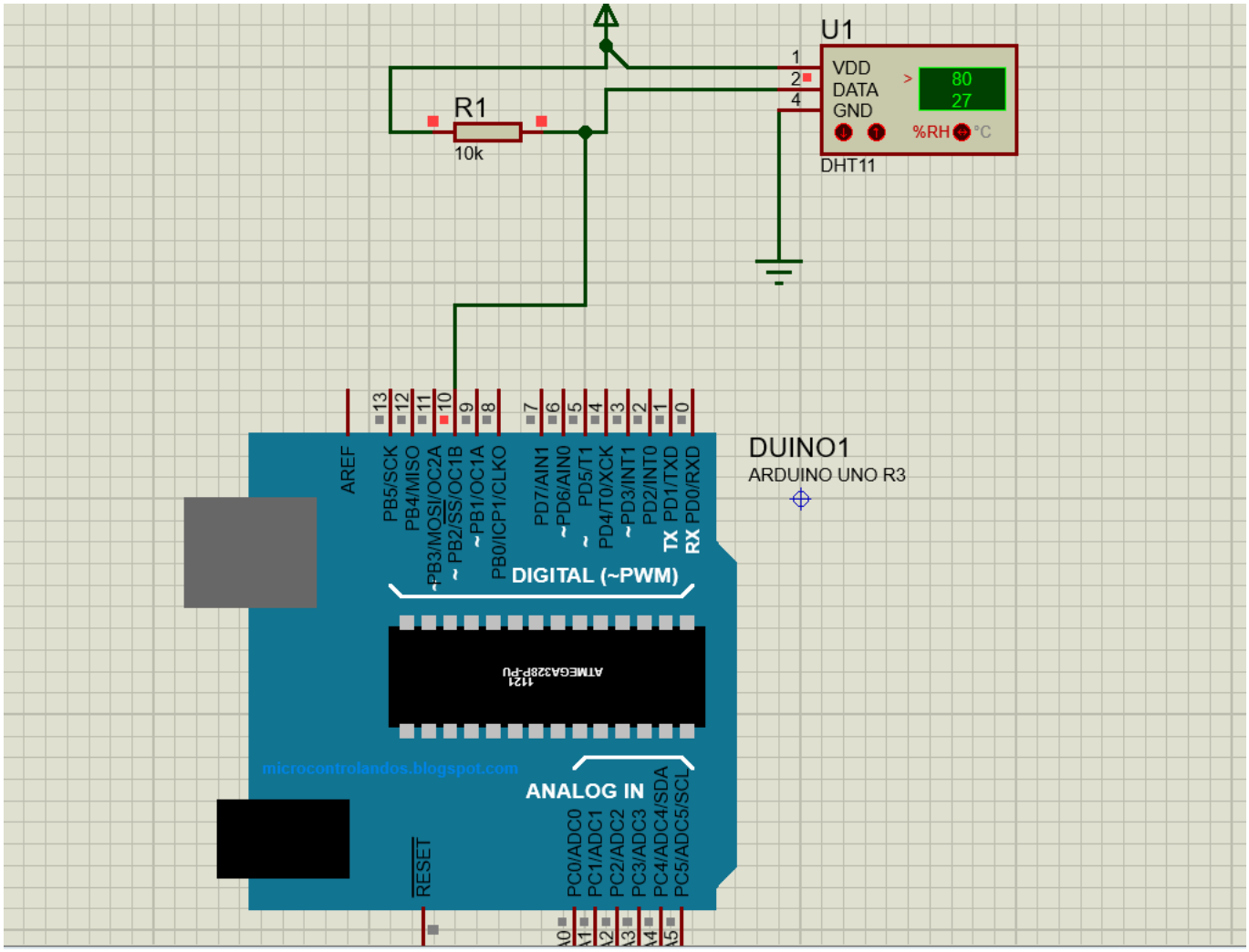
Output:



WAP for interfacing DHT11 with Microcontroller.

```
#include <dht.h>

dht DHT;

#define DHT11_PIN 10

void setup() {



}


void loop() {
  int chk = DHT.read11(DHT11_PIN);


  delay(2000);
}
```

Output:-

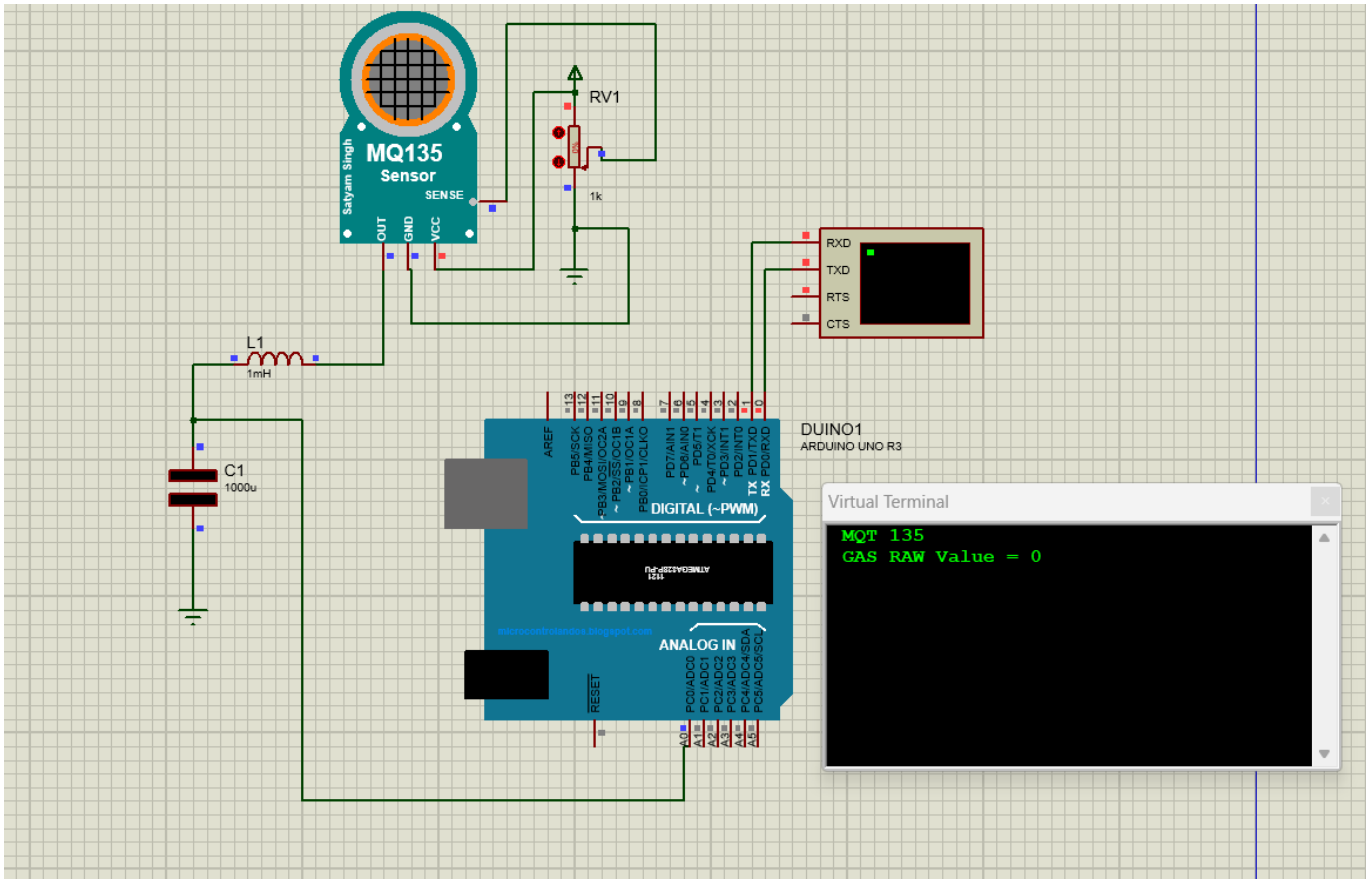


WAP for interfacing MQ135 with Microcontroller.

```
void setup() {
  Serial.begin (9600);
  Serial.println(" MQT 135");

}

void loop() {
  int raw_data=analogRead(A0);
  Serial.print(" GAS RAW Value = ");
```

```
  Serial.println(raw_data);
  delay(4000);
}
```

Output:-

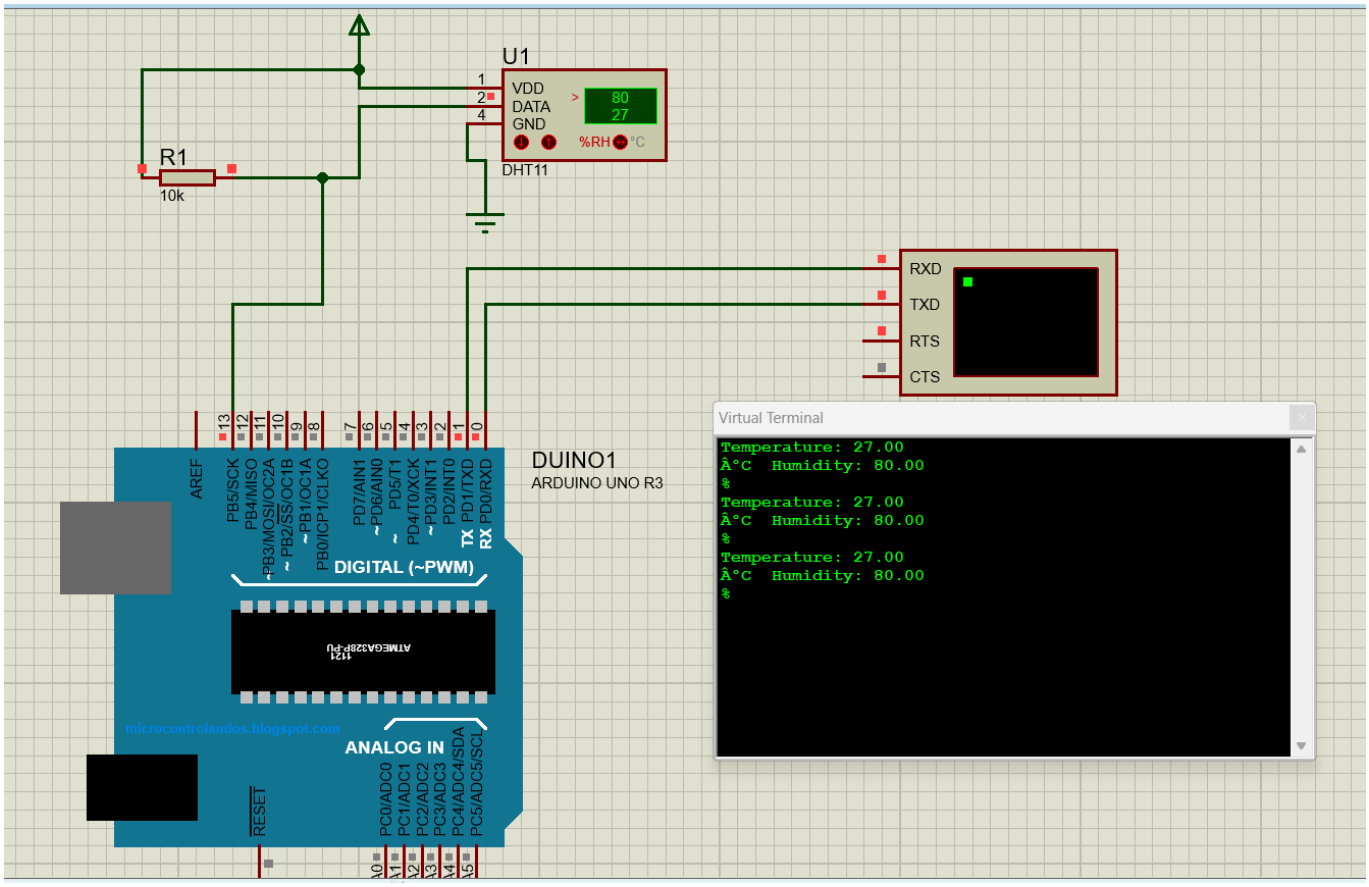


WAP for interfacing DHT11 with LED at PIN NO 13 with SERIAL MONTIOR MESSAGE with Microcontroller.

```
#include <dht.h>
dht DHT;
#define DHT11_PIN 13
void setup() {
  Serial.begin(9600);

}

void loop() {
```

```
  int chk = DHT.read11(DHT11_PIN);
  Serial.print("Temperature: ");
  Serial.println(DHT.temperature);
  Serial.print("°C  Humidity: ");
  Serial.println(DHT.humidity);
  Serial.println("%");
  delay(2000);
}
```

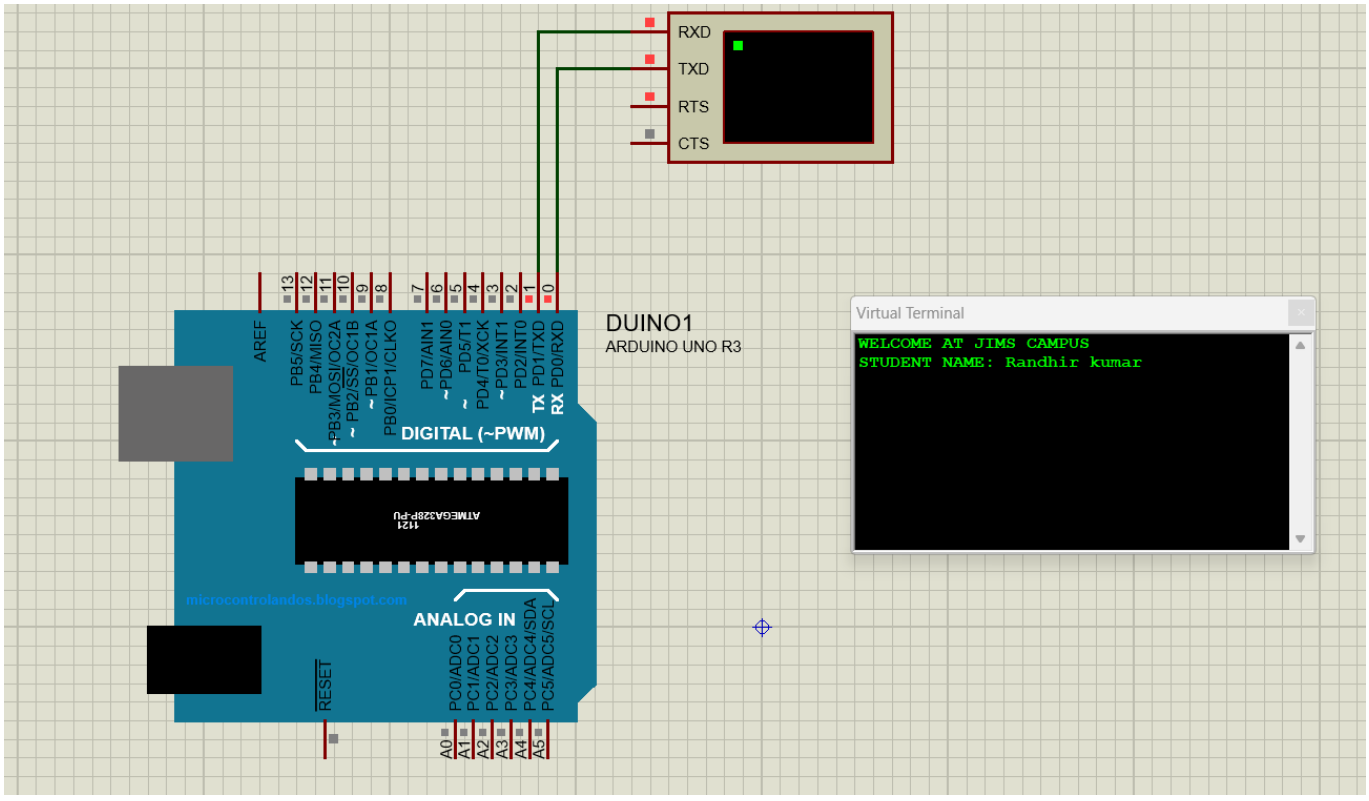
Output:-



WAP for showing DATA “WELCOME AT JIMS CAMPUS” at SERIAL MONITOR in line 1 and showing DATA “STUDENT NAME” at SERIAL MONITOR in line 2 with 05 second delay in each message with one type display only.

```
void setup() {
  // put your setup code here, to run once:
Serial.begin(9600);
}
void loop() {
  // put your main code here, to run repeatedly:
  Serial.println("WELCOME AT JIMS CAMPUS");
  delay(5000);
  Serial.println("STUDENT NAME: Randhir kumar");
  delay(5000);
}
```

Output:

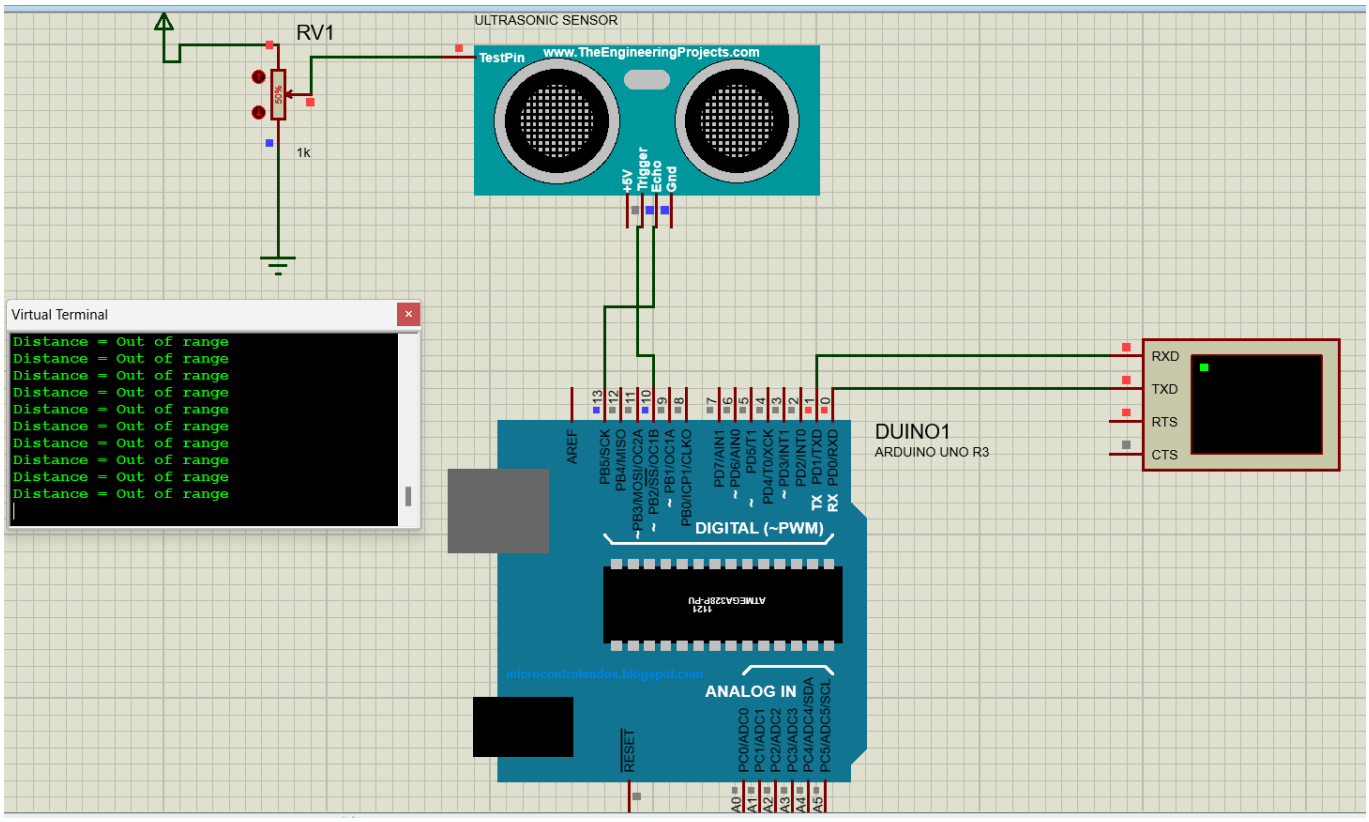


WAP for ultrasonic sensor.

```
#define trigPin 10
#define echoPin 13

void setup() {
  Serial.begin (9600);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
}

void loop() {
  float duration, distance;
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);

  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH);
  distance = (duration / 2) * 0.0344;

  if (distance >= 400 || distance <= 2){
    Serial.print("Distance = ");
    Serial.println("Out of range");
  }
  else {
    Serial.print("Distance = ");
```

```
    Serial.print(distance);
    Serial.println(" cm");
    delay(500);
  }
delay(500);
}
```

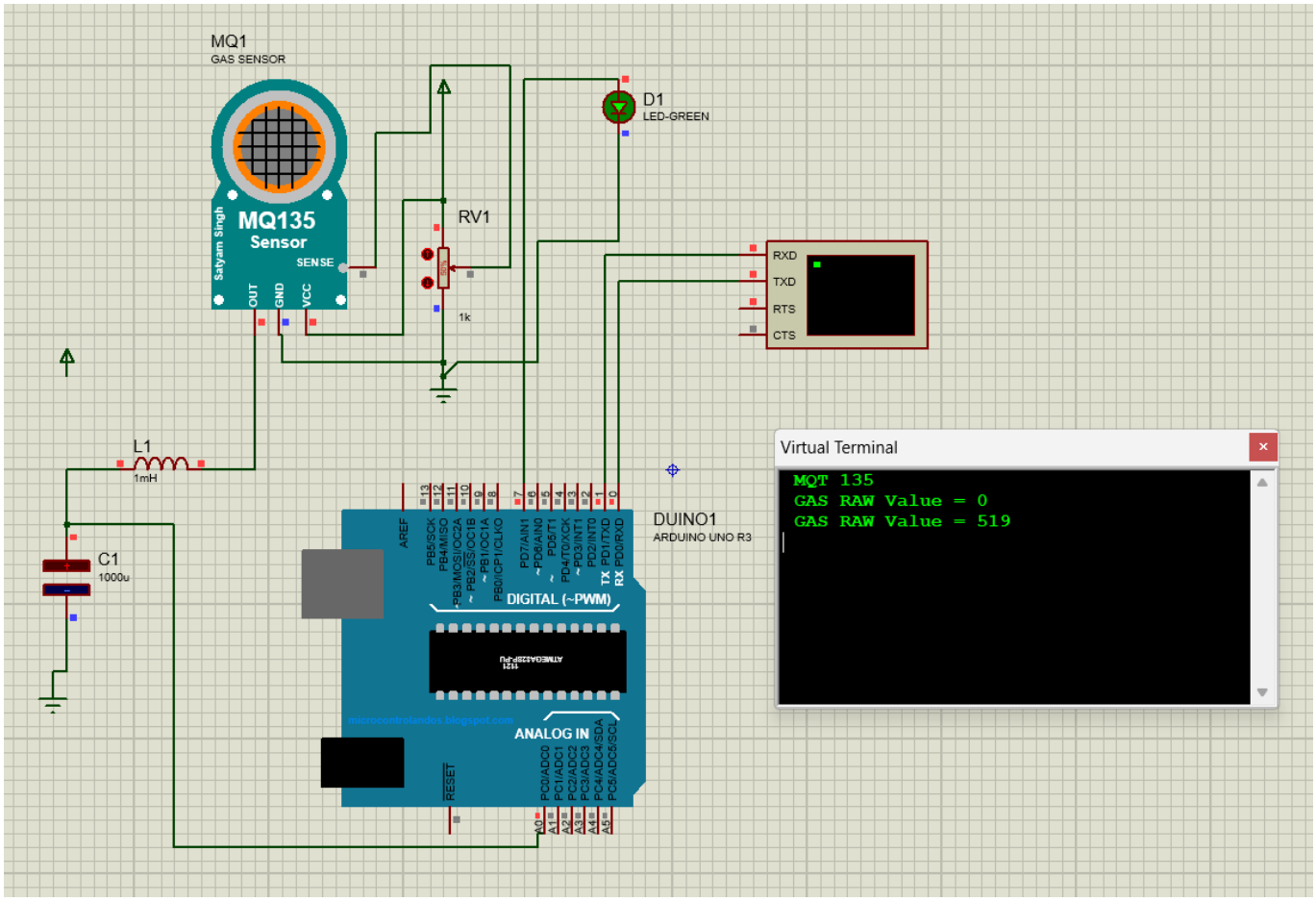
Output:



WAP for interfacing MQ135 with LED at PIN no 07 with SERIAL MONITOR with Microcontroller.

```
void setup() {
  Serial.begin (9600);
  Serial.println(" MQT 135");
  pinMode(7,OUTPUT);
}

void loop() {
  int raw_data=analogRead(A0);
  Serial.print(" GAS RAW Value = ");
  Serial.println(raw_data);
  digitalWrite(7,HIGH);
  delay(4000);
}
```

OUTPUT:


MQ1
GAS SENSOR
MQ135
Sensor
Satyam Singh
SENSE
OUT
GND
VCC
D1
LED-GREEN
RV1
1k
RXD
TXD
RTS
CTS
L1
1mH
C1
1000u
DUINO1
ARDUINO UNO R3
DIGITAL (~PWM)
ANALOG IN
RESET
Virtual Terminal
MQT 135
GAS RAW Value = 0
GAS RAW Value = 519