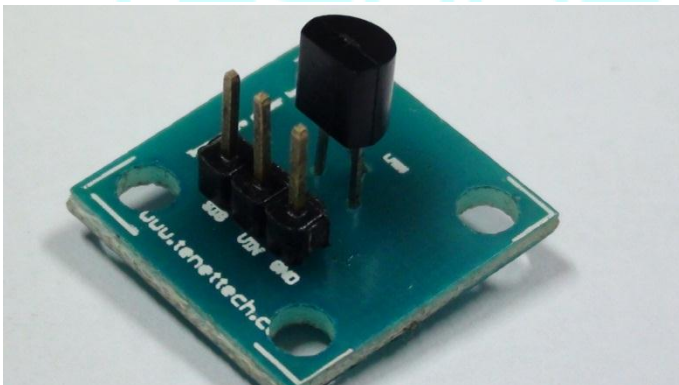




# 2016

## Application Note on Interfacing Arduino with LM35



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Reviewer:

Version1.0

# Interfacing Arduino UNO with LM35

## Introduction

In this application note we will be discussing on interfacing LM35 with Arduino UNO to measure the temperature.

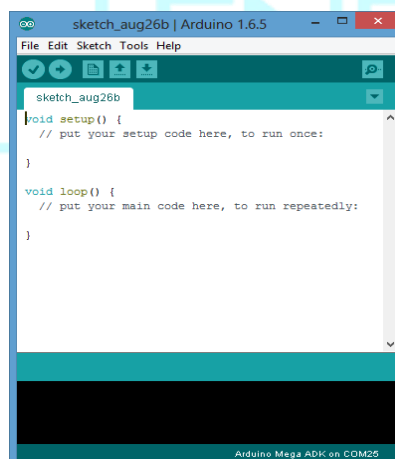
Arduino UNO: [Arduino](#) is an open-source prototyping platform based on easy-to-use hardware and software. [Arduino boards](#) are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. All this is defined by a set of instructions programmed through [the Arduino Software \(IDE\)](#).

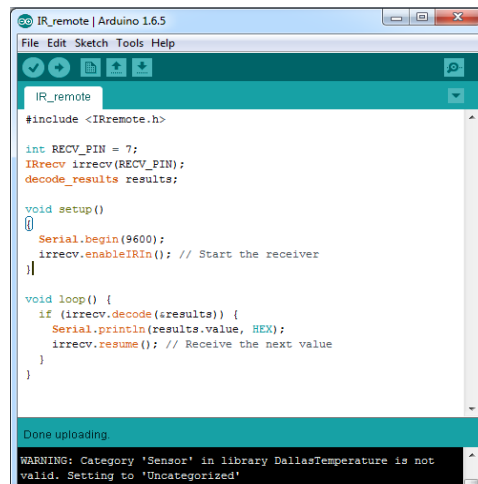
**LM35:** The LM35 series are precision integrated-circuit temperature devices with an output voltage linearly proportional to the Centigrade temperature. The LM35 device has an advantage over linear temperature sensors calibrated in Kelvin, as the user is not required to subtract a large constant voltage from the output to obtain convenient Centigrade scaling.

### Step1. The Materials required are:

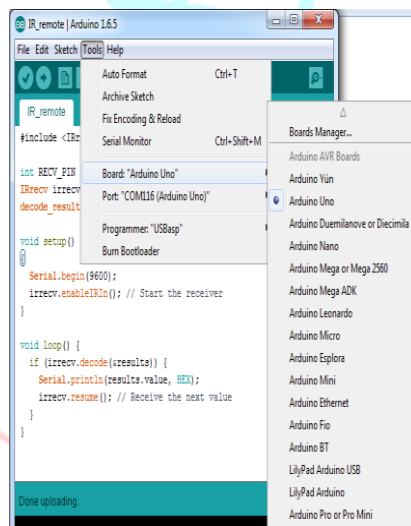
- [Arduino UNO](#)
- LM35 Breakout
- Male to male Jumpers

1. Open Arduino sketch on your PC or Laptop to start the programming.

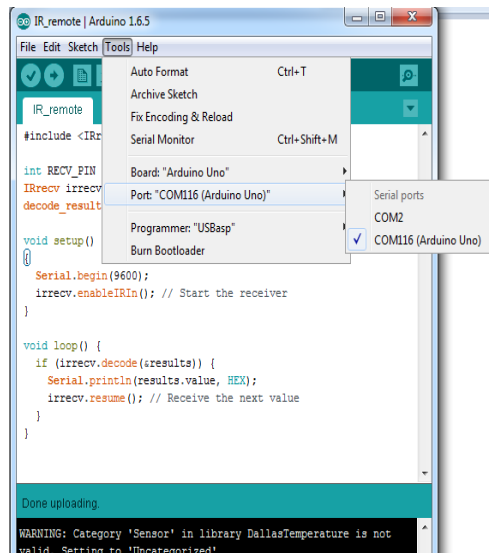




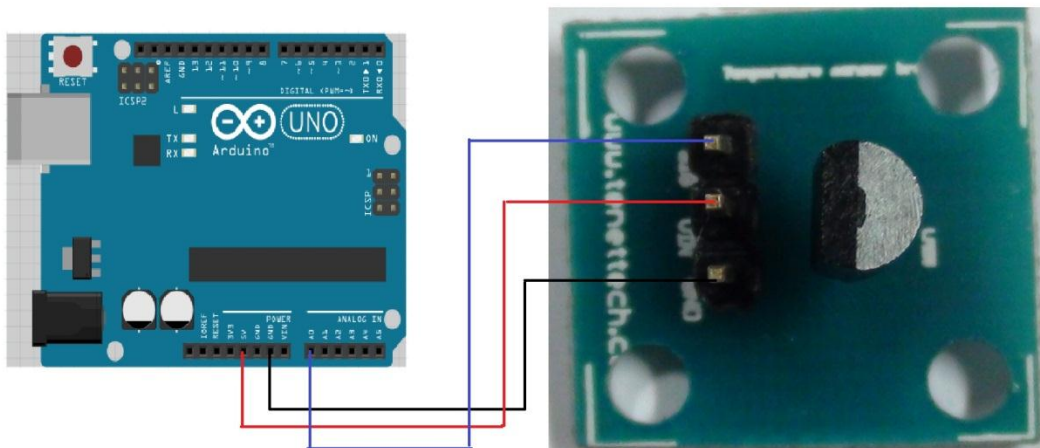
- Type the program for the LED to turn on for 1 sec and turn off 1 sec.
- Click on verify and check for any errors in the program. If no errors are present select the Arduino UNO in IDE. Go to tools> Board> Select Arduino UNO.



- Select port of programming by Tools> Port> Select the port for programming



- Now Upload the program to the arduino



**CODE:**

```
int cel;
```

```
void setup() {
```

```
  pinMode(A0, INPUT);
```

```
  Serial.begin(9600);
```

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```
}
```

```
void loop() {
```

```
    int val = analogRead(A0);    //reading analog input from LM35
```

```
    float mv = (val/ 1024.0)*5000; //1024 refers to your ADC value of ur microcontroller
```

```
    float celcius = mv/10;    // for every 10mv 0.1degree rise of temperature
```

```
    float farh = celcius*1.8 + 32; //converting celsius to fahrenheit
```

```
    Serial.print("Temperature:");
```

```
    //Serial.print("/t");
```

```
    Serial.print(celcius);
```

```
    Serial.print("/t");
```

```
    Serial.print("Fahrenheit:");
```

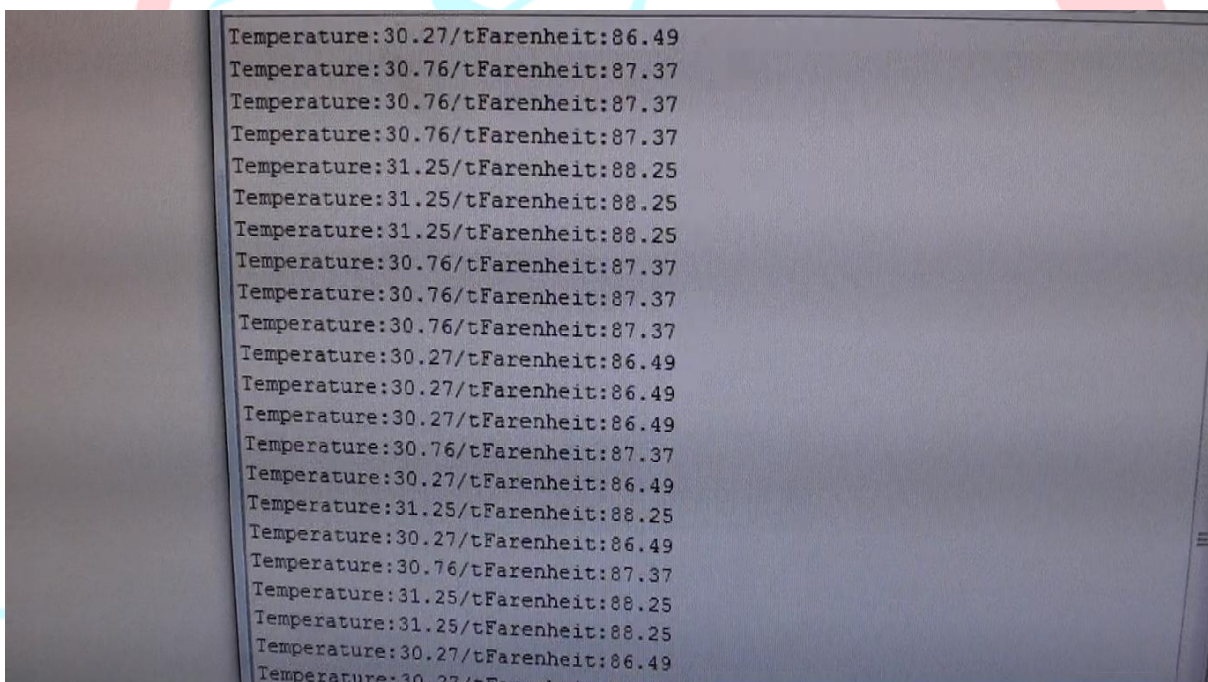
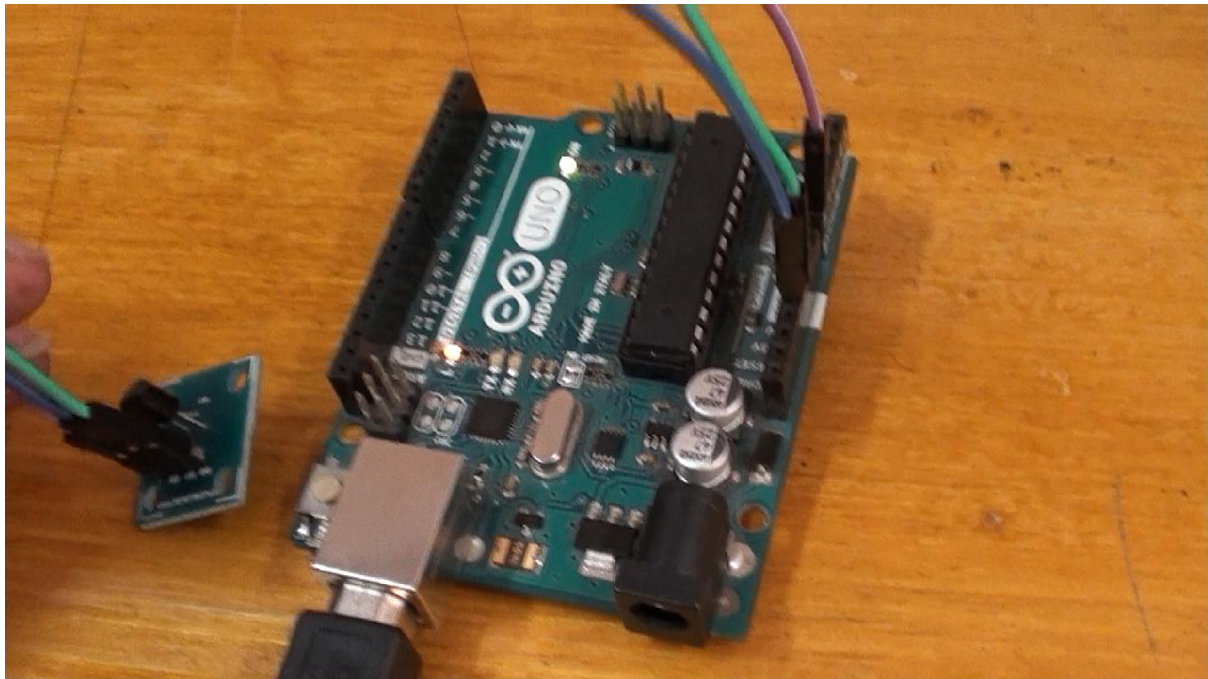
```
    //Serial.print("/t");
```

```
    Serial.print(farh);
```

```
    Serial.println();
```

```
    delay(1000);
```

```
} OUTPUT:
```



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2.



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