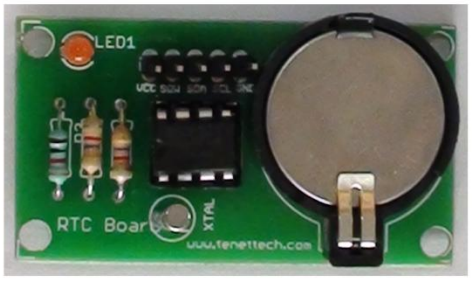
TENET TECHNETRONICS

2014

Interfacing Tenet Technetronics RTC Board with Arduino



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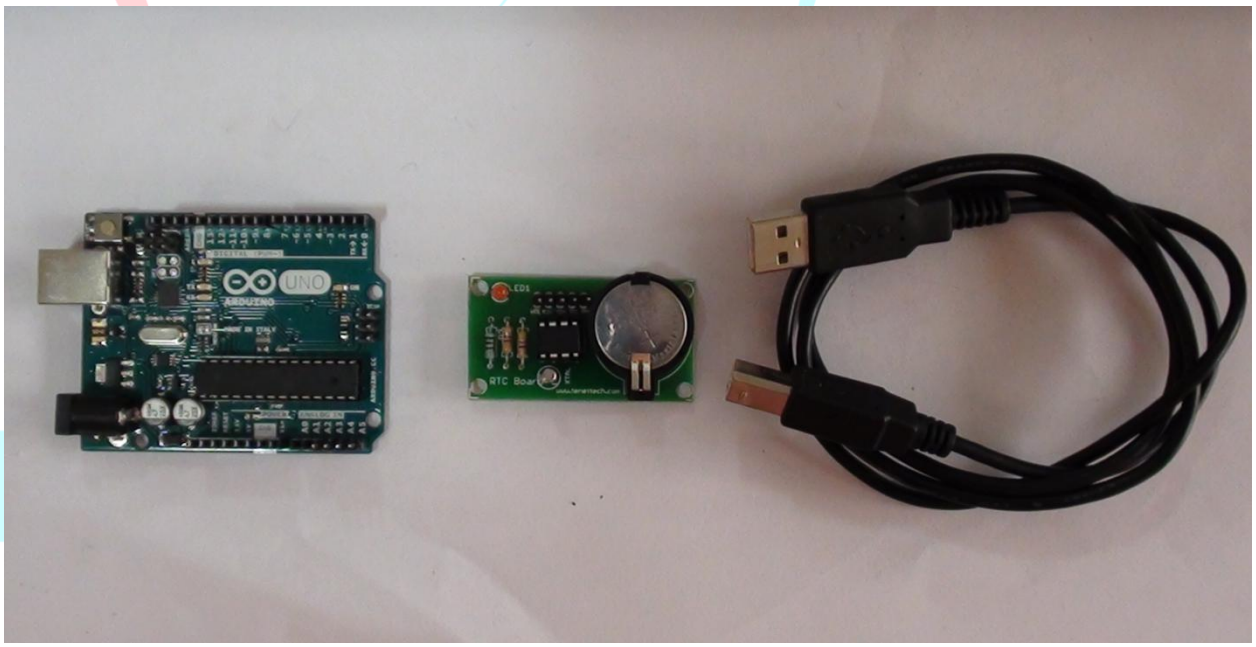
Introduction:

The DS1307 serial real-time clock (RTC) is a low-power, full binary-coded decimal (BCD) clock/calendar and is commonly used IC in embedded system. Address and data are transferred serially through an I²C, bidirectional bus. The clock/calendar provides seconds, minutes, hours, day, date, month, and year information. We have built a small PCB with all the required components around this IC.

Here is a quick demonstrateon how to interface RTC with Arduino and get seconds, minutes, hours, day, date, month, and year information.

Hardware Required:

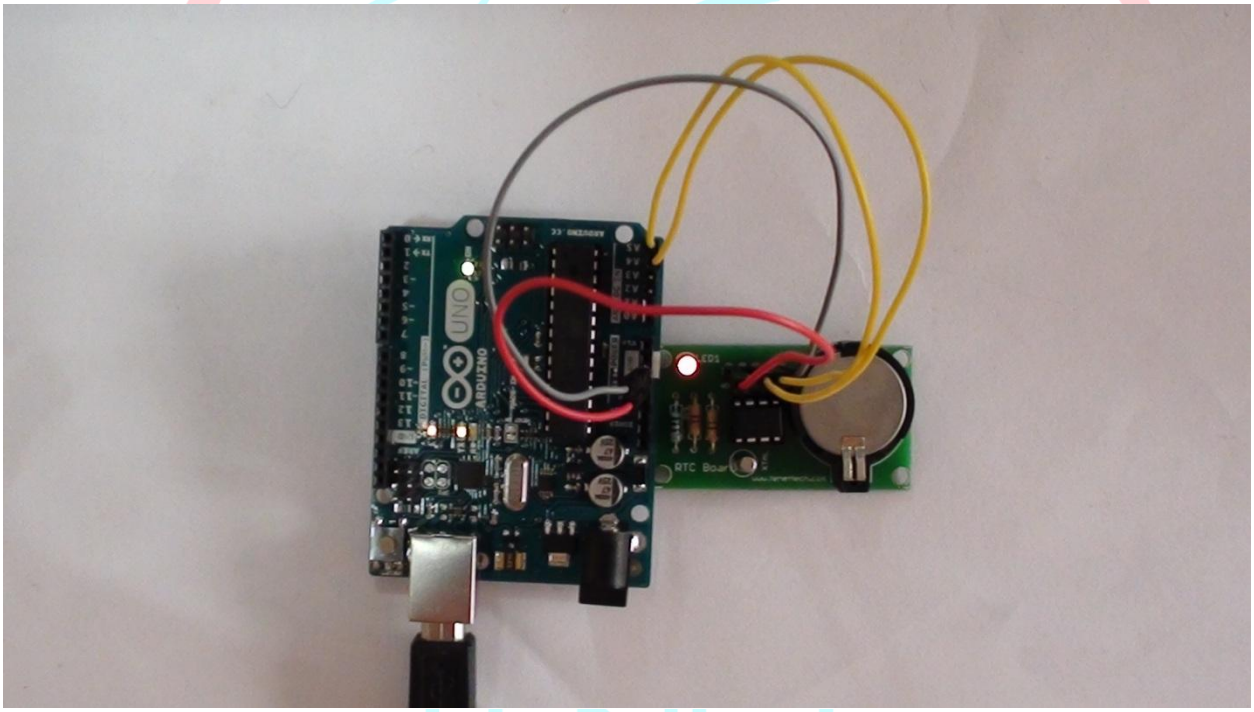
- Arduino Uno
- Arduino Cable
- Tenet Technetronics RTC Board

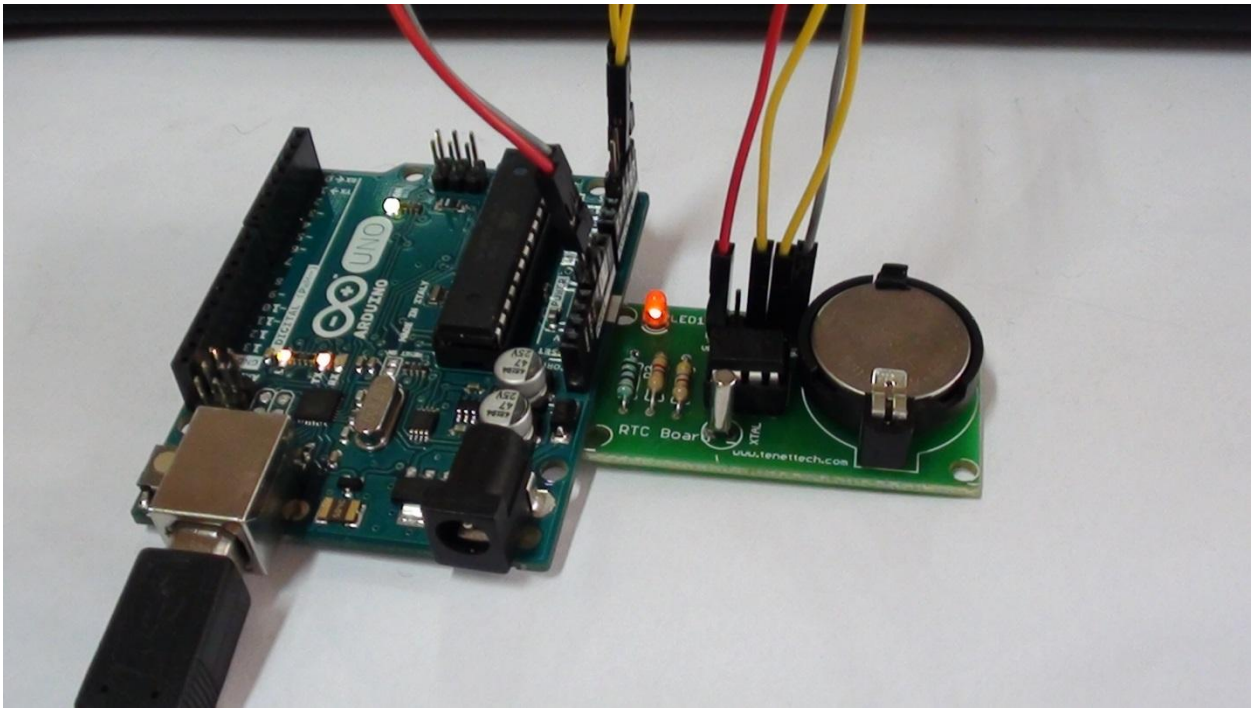


Step 1:

Connect the RTC Board with Arduino using jumper wires as follows.

Arduino Board	RTC Board
5v	VCC
GND	GND
A4	SDA
A5	SCL





SQW is the optional square-wave output you can get from the RTC if you have configured it to do so. Most people don't need or use this pin

Step 2:

Now launch the Arduino IDE, Run the below code.

Note: Make sure that you have RTC library, if do have,download the RTC library RTClibzip file and rename the uncompressed folder RTClib, Then install it in your Arduino directory in a folder called **RTClib**.

Code:

```
// Date and time functions using a DS1307 RTC connected via I2C and Wire lib


#include <Wire.h>

#include "RTClib.h"



RTC_DS1307 rtc;
```

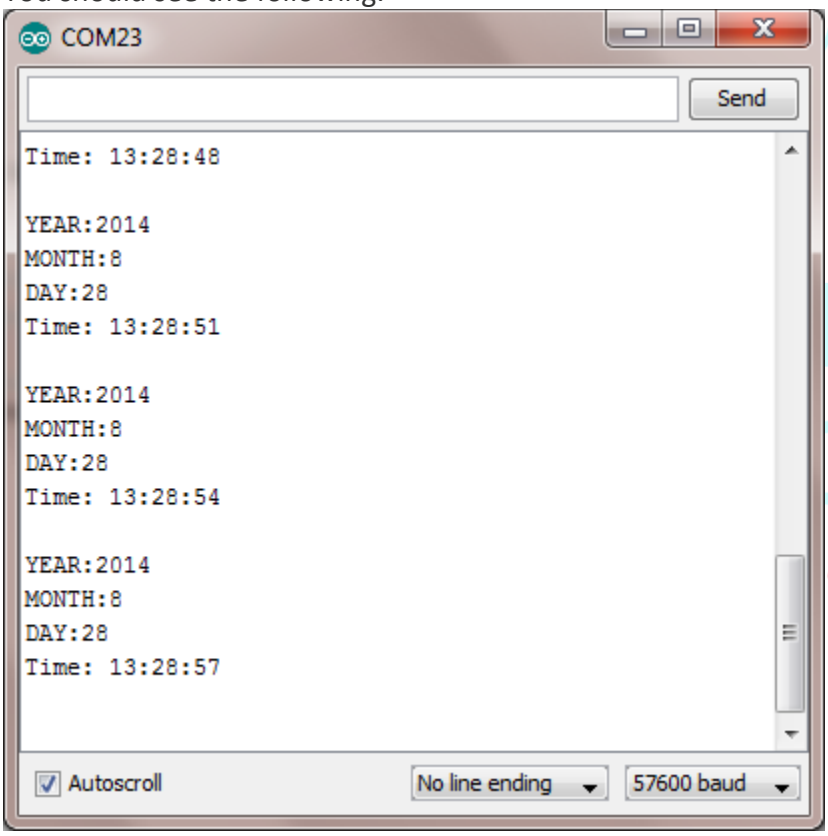
```
void setup () {
Serial.begin(57600);
Wire.begin();
rtc.begin();

if (! rtc.isrunning()) {
Serial.println("RTC is NOT running!");
   // following line sets the RTC to the date & time this sketch was compiled
rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));

 }
}

void loop () {
DateTime now = rtc.now();
Serial.print("YEAR:");
Serial.println(now.year(), DEC);
Serial.print("MONTH:");
Serial.println(now.month(), DEC);
Serial.print("DAY:");
Serial.println(now.day(), DEC);
Serial.print("Time: ");
Serial.print(now.hour(), DEC);
```

```
Serial.print(':');

Serial.print(now.minute(), DEC);

Serial.print(':');

Serial.print(now.second(), DEC);

Serial.println();

Serial.println();

delay(3000);

}
```

(Don't forget to install the DS1307 library before running the code above)

Step 3:

Now run the Serial terminal and make sure the baud rate is set correctly at 57600 bps
You should see the following:



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