lesson

18

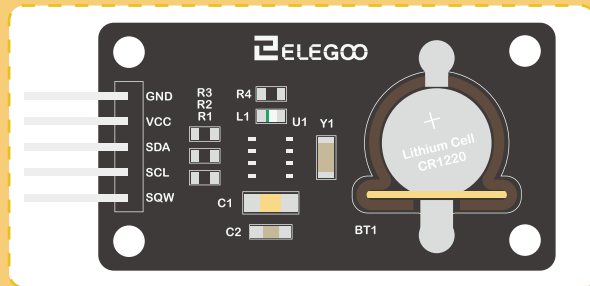## Real Time Clock Module

Overview

In this lesson, you will learn how to use the RTC module, The DS1307 real-time clock is a low-power chip. Address and data are transferred serially through an I2C, which can be used unless being connected to UNO with only three data cables. DS1307 provides seconds, minutes, hours, day, date, month, and year information. Timekeeping operation continues while the part operates from the backup supply.
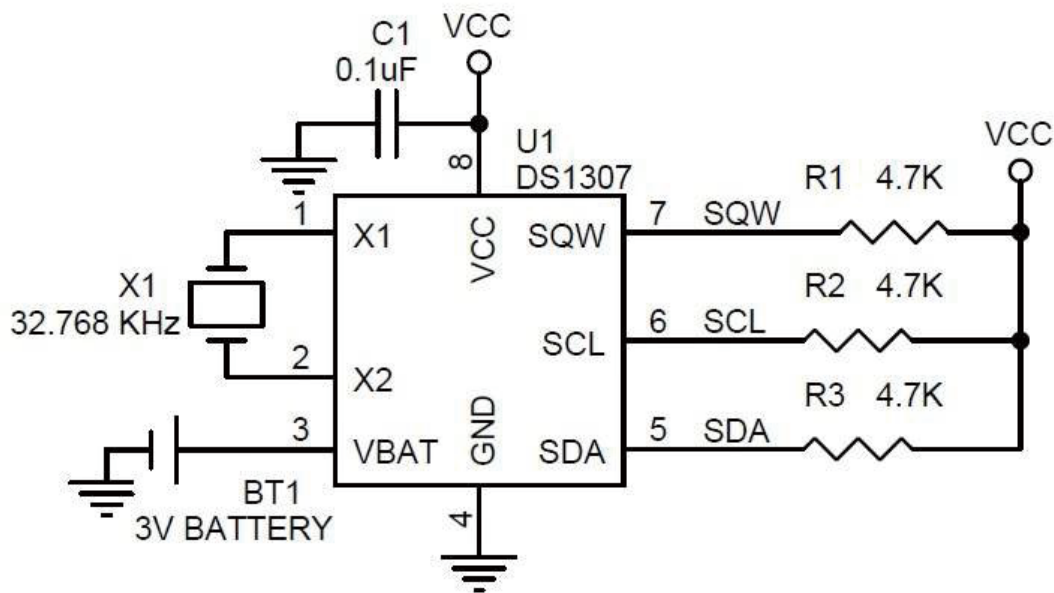
■ Component Required:

(1) x Elegoo Uno R3

(1) x DS1307 RTC module

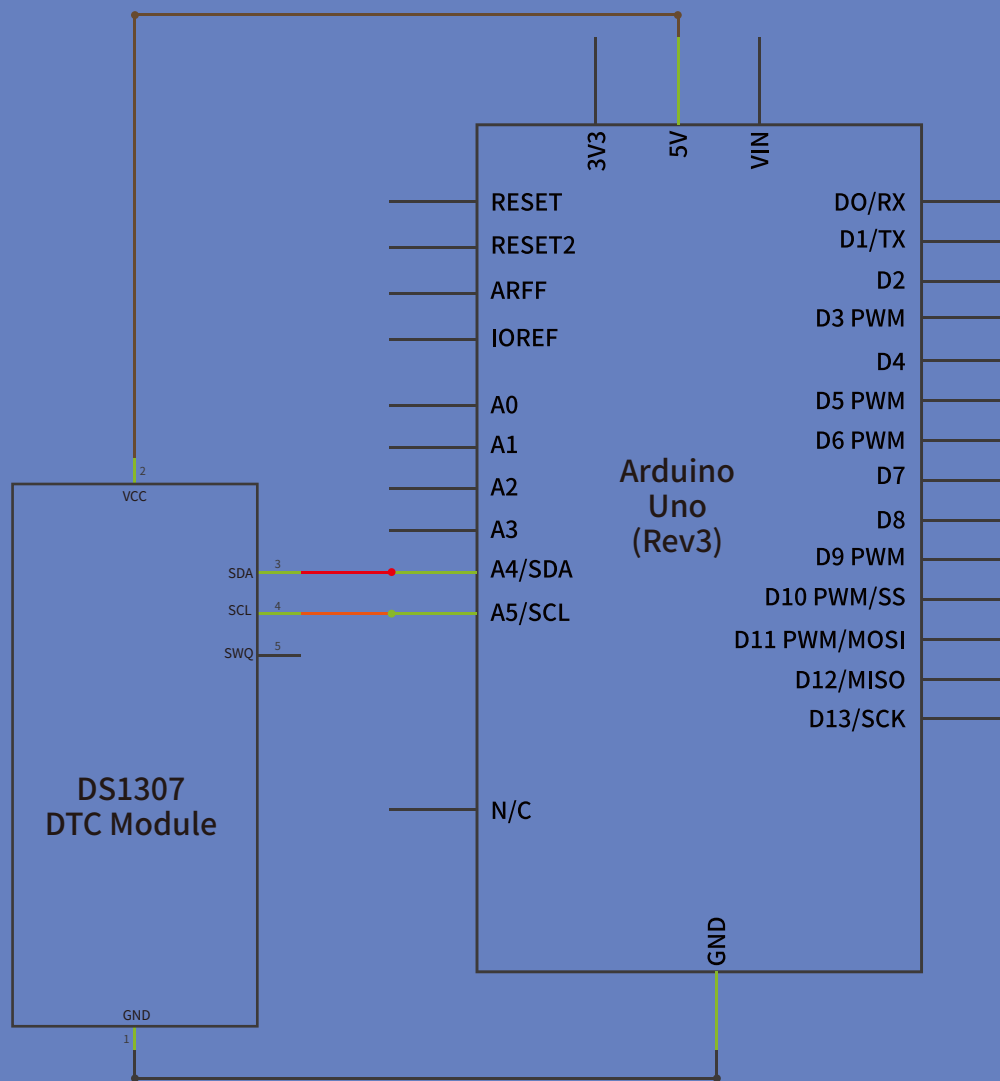(4) x F-M wires (Female to Male DuPont wires)
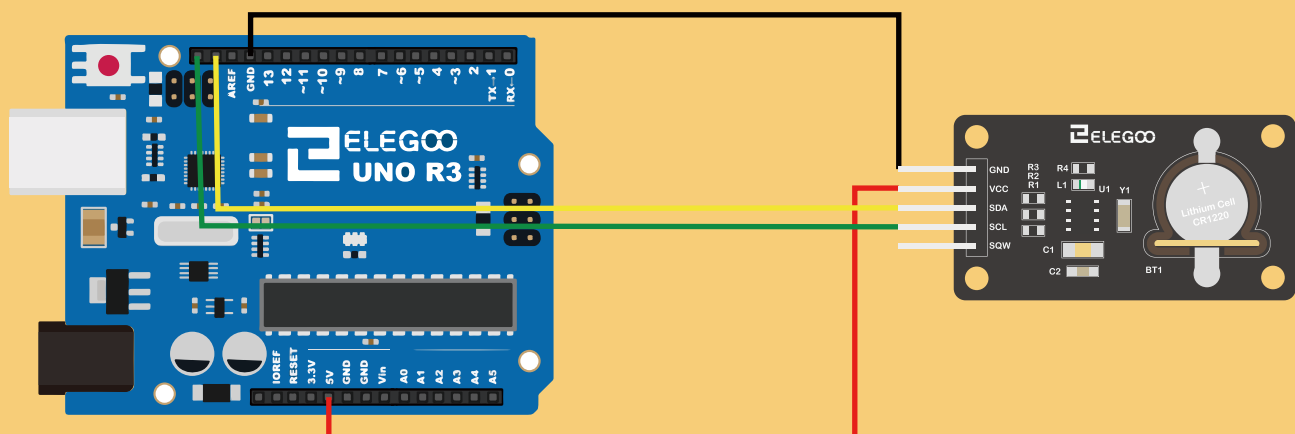
Component Introduction

DS1307

NOTICE: If you receive the old version shown on the left, please don't worry, its function and names of pins are the same as the new version. You could follow the wiring diagrams and sketch in the tutorial to make it work.

Connection Schematic

DS1307 DTC Module

Arduino Uno (Rev3)

Set up according to the following image.
Ignore the 32K and SQW pins; you will not need them. Plug the SCL pin into your UNO R3 board SCL port, and the SDA pin into the SDA port. The VCC pin plugs into the 5V port, and the GND plugs into the GND port.
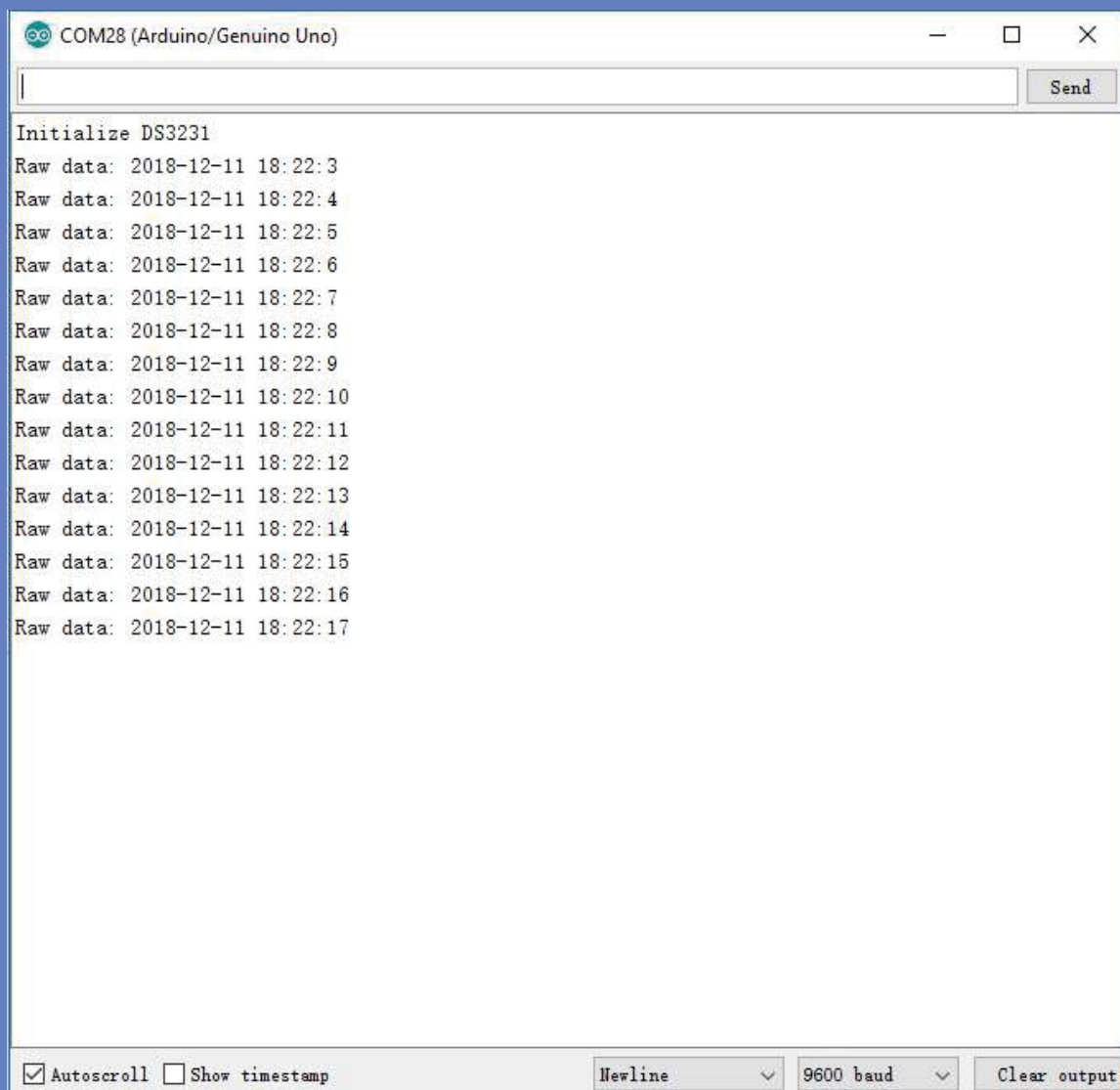
Wiring diagram

Code

- After wiring, please open program in the code folder- **DS1307_Example** and click UPLOAD to upload the program. See Lesson 5 in part 1 for details about program uploading if there are any errors.

- Before you can run this, make sure that you have installed the **< DS1307 >** library or re-install it, if necessary. Otherwise, your code won't work.

- For details about loading the library file, see Lesson 5 in part 1.

Code

- Open the monitor then you can see that the module can read the time as below:

  Click the Serial Monitor button to turn on the serial monitor. The basics about the serial monitor are introduced in details in part 2 Lesson 4.

```
COM28 (Arduino/Genuino Uno)                          —    □    ×

|                                                          Send

Initialize DS3231
Raw data:  2018-12-11  18:22:3
Raw data:  2018-12-11  18:22:4
Raw data:  2018-12-11  18:22:5
Raw data:  2018-12-11  18:22:6
Raw data:  2018-12-11  18:22:7
Raw data:  2018-12-11  18:22:8
Raw data:  2018-12-11  18:22:9
Raw data:  2018-12-11  18:22:10
Raw data:  2018-12-11  18:22:11
Raw data:  2018-12-11  18:22:12
Raw data:  2018-12-11  18:22:13
Raw data:  2018-12-11  18:22:14
Raw data:  2018-12-11  18:22:15
Raw data:  2018-12-11  18:22:16
Raw data:  2018-12-11  18:22:17




☑ Autoscroll  ☐ Show timestamp        Newline    ∨   9600 baud   ∨   Clear output
```