



Arduino Digital Clock & Thermometer (+3D Printer files)

by [Ardumotive_com](#) on December 4, 2016

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Intro: Arduino Digital Clock & Thermometer (+3D Printer files)

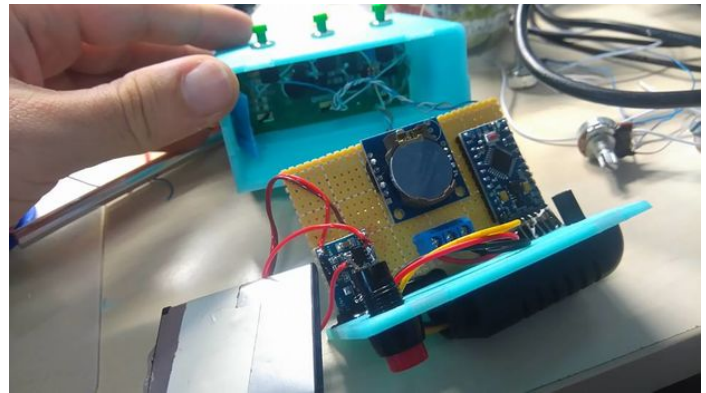
In this "how to" guide i will show you how to make your own digital clock-thermometer with the Arduino Pro mini board. (yes, you can use any other Arduino board) .

You will be able to change the current date and time with Set-Up-Down buttons. The "down" button can also be used to turn on/off the screen backlight. The time and date values are stored in memory of the RTC.

The Temperature and humidity values updated every 5 seconds. We will use the DHT-21 sensor, but you can also use the DHT-11 and DHT-22 versions (you will need to make some changes in the code below).

Visit this page for further updates: <http://www.ardumotive.com/digitalclockther-en.html>

Watch the presentation video below.



Step 1: What you will need - Hardware

For this project you will need:

- Arduino Pro Mini (5v version)
- I2C LCD 16x2
- DHT-21
- RTC DS1307 (module with cell battery)
- 3 push buttons
- 1 on/off button

If you want you can use a rechargeable battery and a charging circuit as I did. (I used an old 950mAh mobile phone battery)

Or you can simply use one DC jack and one 5V power adapter to power it up!

Step 2: The circuit

The circuit is really simple.

The i2c lcd and RTC module must be connected to the Arduino SDA and SCL pins. If you are using the Arduino uno or Arduino Pro Mini (or another board based in atMega328p micro controller), use the I2C interface at A4 (SDA) and A5(SCL) pins.

I2C LCD 16x2:

- Vcc to power source (max 5V!)
- GND to GND
- SDA to pin A4
- SCL to pin A5

RTC DS1307 module:

- Vcc to power source (max 5V!)
- GND to GND

<http://www.instructables.com/id/Arduino-Digital-Clock-Thermometer-3D-Printer-Files/>

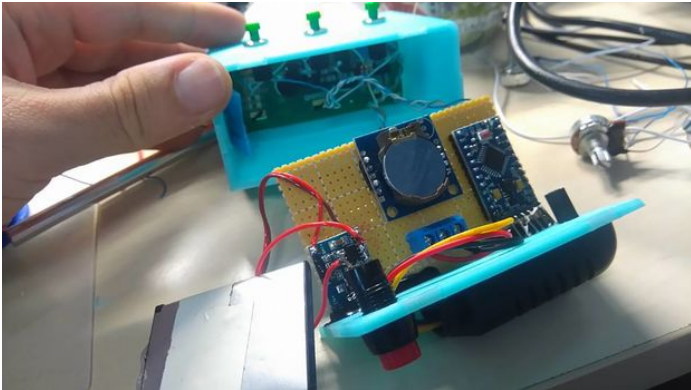
- SDA to pin A4
- SCL to pin A5

DHT-21:

- Red cable to power source (max 5V!)
- Black cable to GND
- Yellow cable to pin 5

Push buttons:

- Set button to pin 8
- Up button to pin 9
- Down button to pin 10
- The second pin of all buttons must be connected to ground (GND)



Step 3: The code

Download the code from here and open it with Arduino IDE. Inside you will also find all necessary libraries.

If have any difficulties with the i2c LCD complete this tutorial.

File Downloads

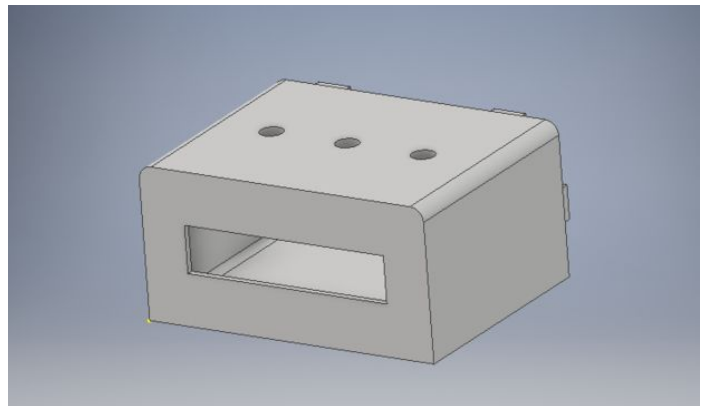
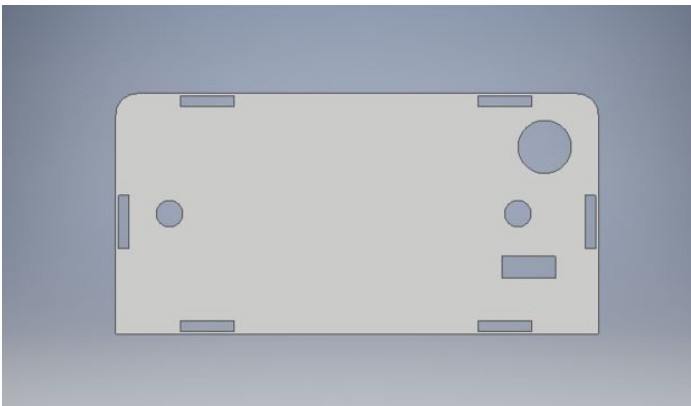


Clock_and_Thermometer_I2CLCD_DHT21.zip (6 MB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'Clock_and_Thermometer_I2CLCD_DHT21.zip']

Step 4: 3D printing files

Here you will find the ipl and stl files of our box. You are free to make any changes you want. I made the 3d sketches with Autodesk Inventor 2017. This is my second 3d sketch, don't expect to be perfect :P



File Downloads



3DPrintedBox.zip (358 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to '3DPrintedBox.zip']

Step 5: Well done!

Great news! You have successfully complete this guide and now you have your own Arduino digital clock/thermometer!

I hope you liked this, let me know in the comments!



Related Instructables



Seven Segment Display Thermometer - Arduino Based
by Ardumotive_com



Arduino IOT: Temperature and Humidity (with ESP8266 WiFi)
by Ardumotive_com



Build yourself a clock and thermometer
by arick



Arduino Digital Thermometer (with DS18B20)
by Ardumotive_com



Arduino Powered 3-zone thermostat
by hbomb9000



Weekend project clock date thermometer and humidity with Arduino mega
by arick

Comments

2 comments

[Add Comment](#)



Iqbal Samin says:

Very nice! How about adding alarm functions to it?

Dec 5, 2016. 12:26 AM [REPLY](#)



Ardumotive_com says:

I will make an update, I will add a buzzer and some lines of code.

Dec 5, 2016. 1:32 AM [REPLY](#)