Installing Ringo for Arduino

Setting up

Installation

To start programming your own things on Ringo phone you're going to need a software called **CircuitBlocks**, which is our program developed specifically for Ringo phone. Alternatively, you can download **Arduino IDE,** which is a program you are already familiar with if you're into IoT**.**

If you already have it installed on your computer, you can skip this step.

Go to the address: **https://www.arduino.cc/en/Main/Software**

Download the installation file according to the OS you own. If you have Windows 8.1 or later, you can also download **Arduino IDE over Microsoft Store**. That version of the software will be considered to be a completely different program than the regular version by your system so keep in mind that your libraries will not be in sync. Other than that, these two versions work the same.

Now when you have installed Arduino we can go to the next step.

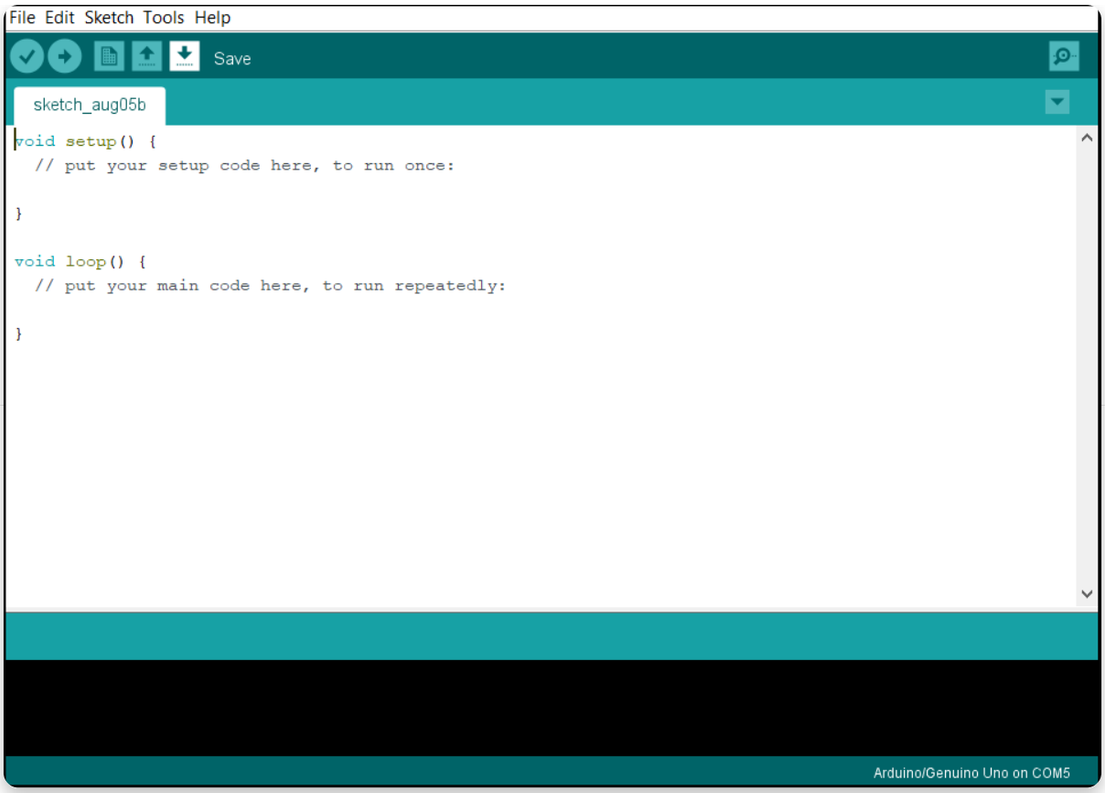
Installing Ringo Add-On in Arduino IDE

These instructions work on every OS since Arduino automatically downloads tools depending on detected system.

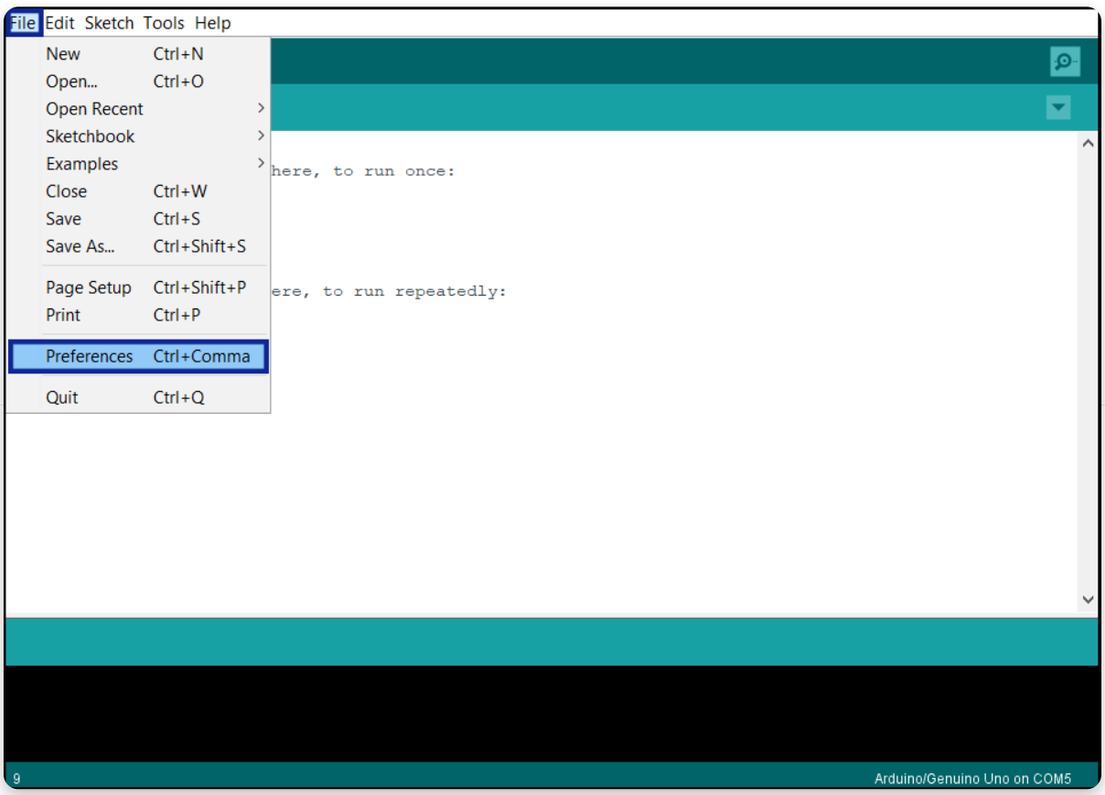
So just follow these steps and you will be fine!

1. Open Arduino IDE

NOTE: If this is your first time meeting Arduino IDE - get familiar, you're going to use it a lot.

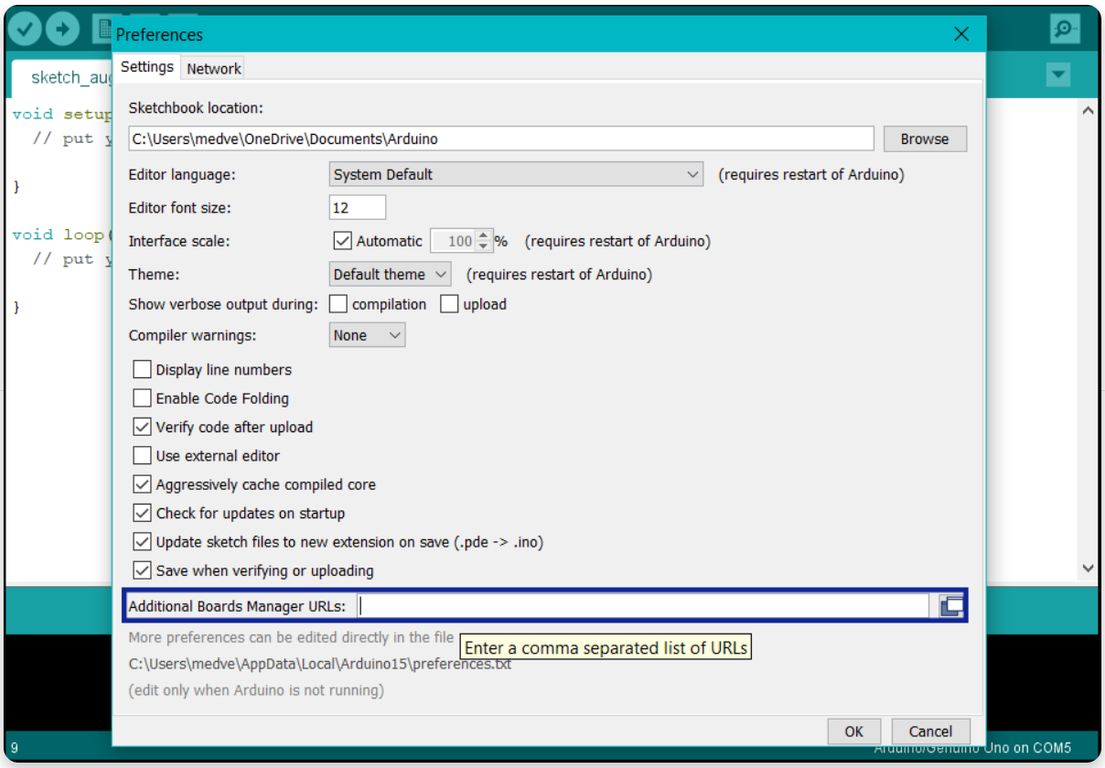


2. Go to File -> Preferences



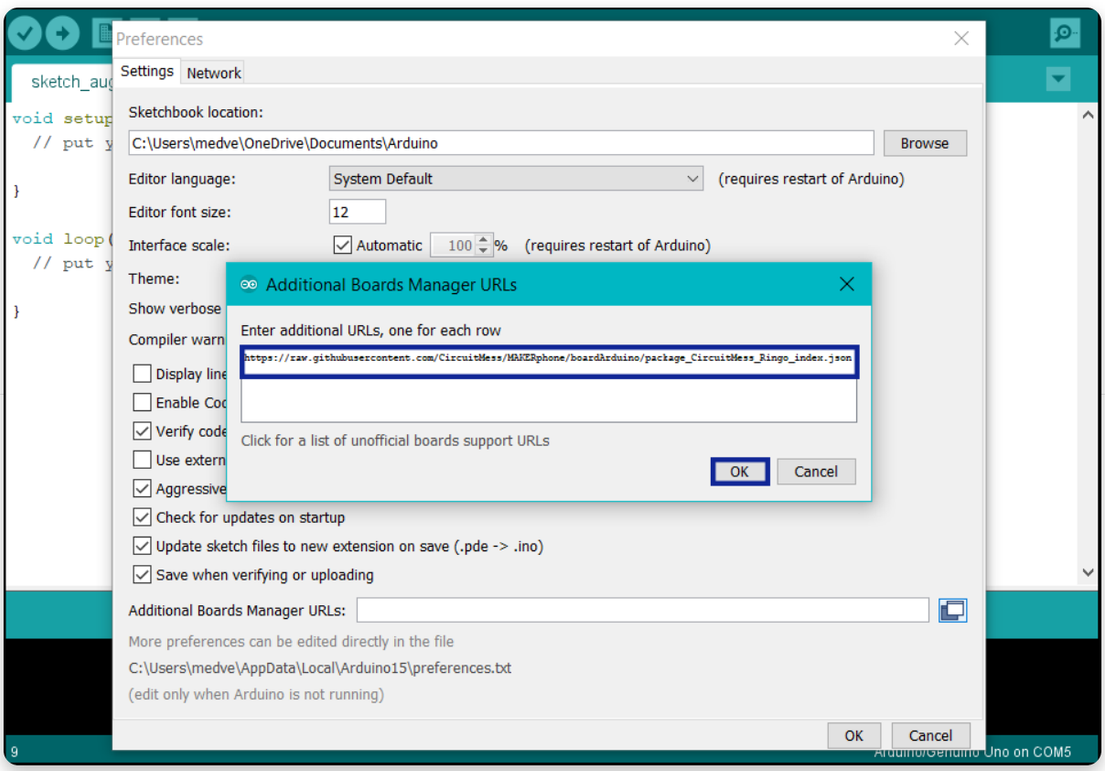
3. Enter the following address in the 'Additional board Manager URLs' :

https://raw.githubusercontent.com/CircuitMess/MAKERphone/boardArduino/package_CircuitMess_Ringo_index.json

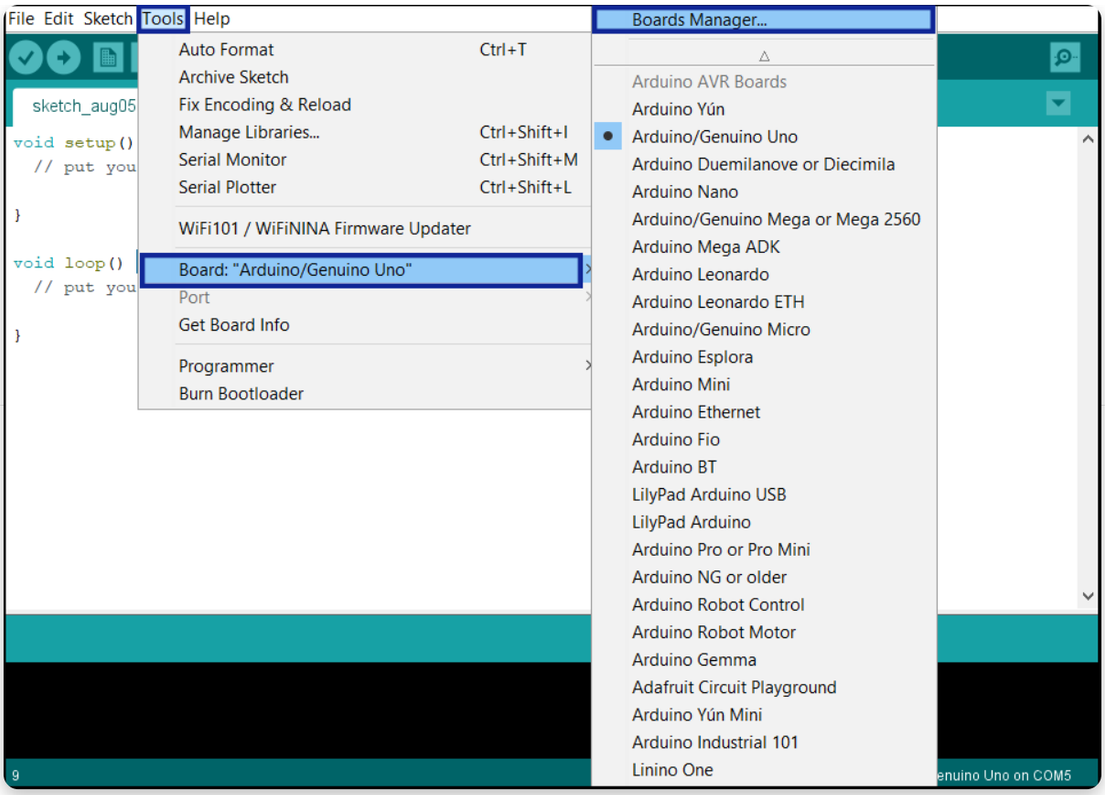


Click **OK**.

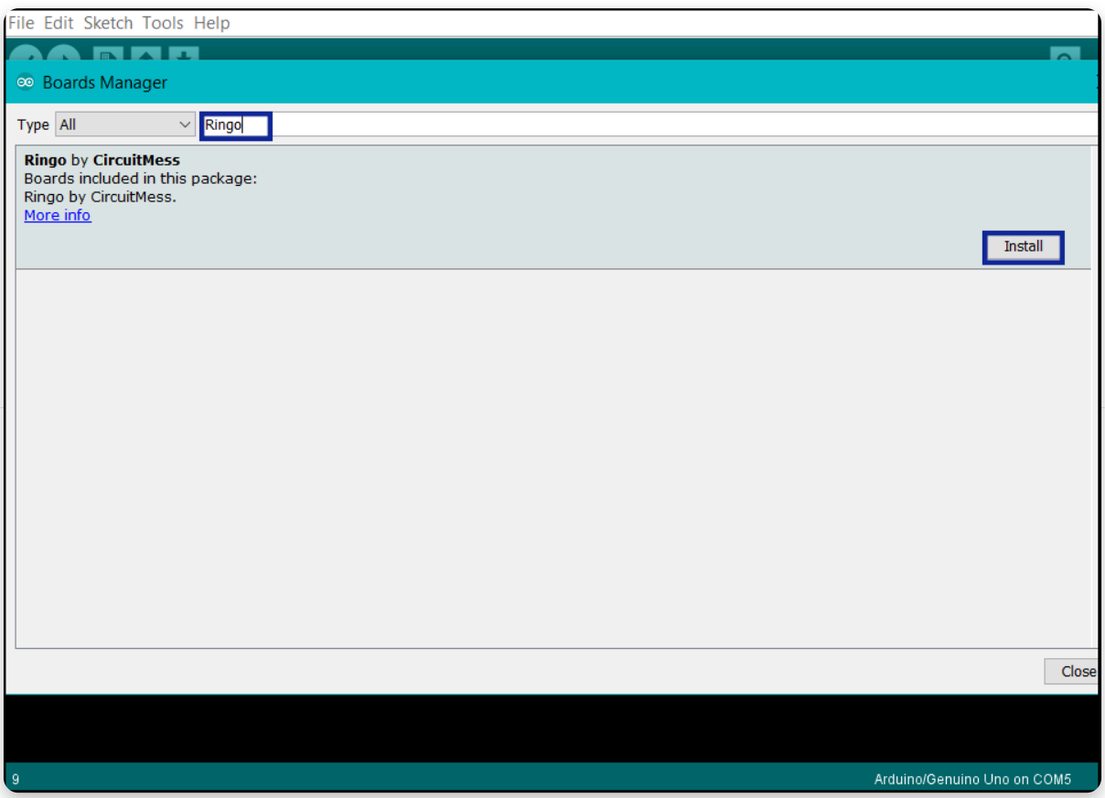
NOTE: You can also click the little window button by the bar and enter it there, then click **OK**.



4. Go to Tools -> Board -> Boards Manager...



5. Type 'Ringo' into the bar on top of the pop-up window

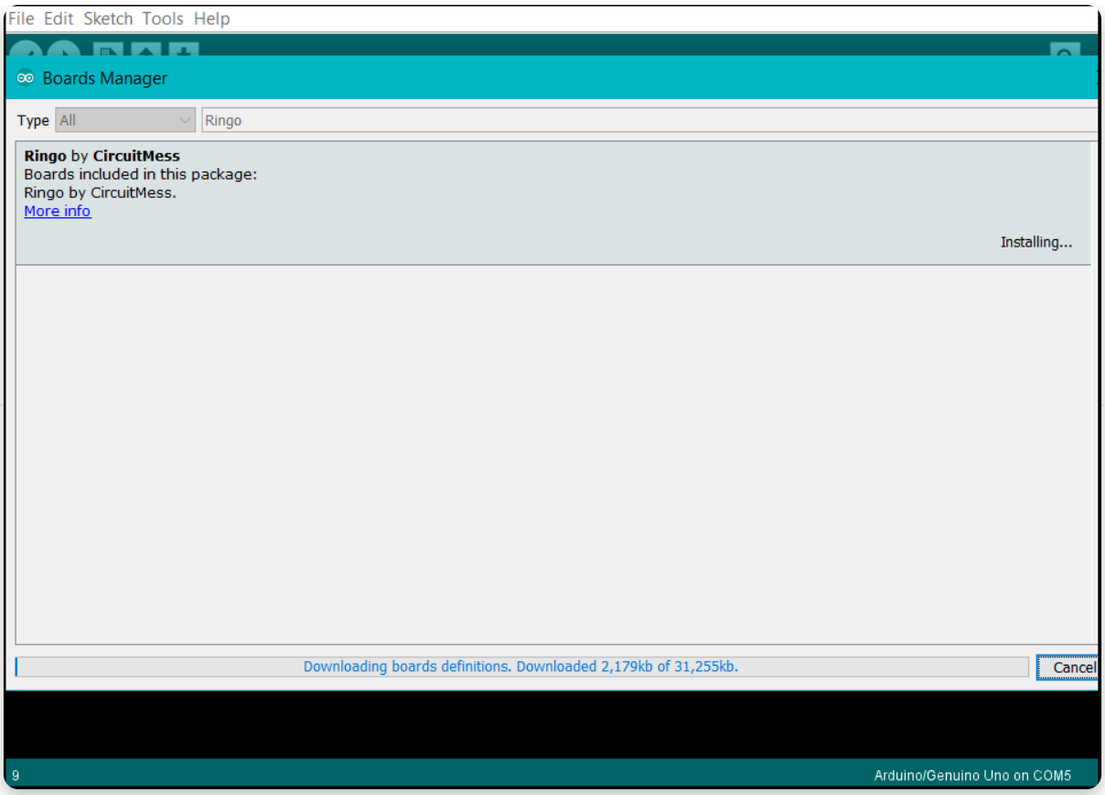


There will be one result found called **'Ringo by CircuitMess'**.

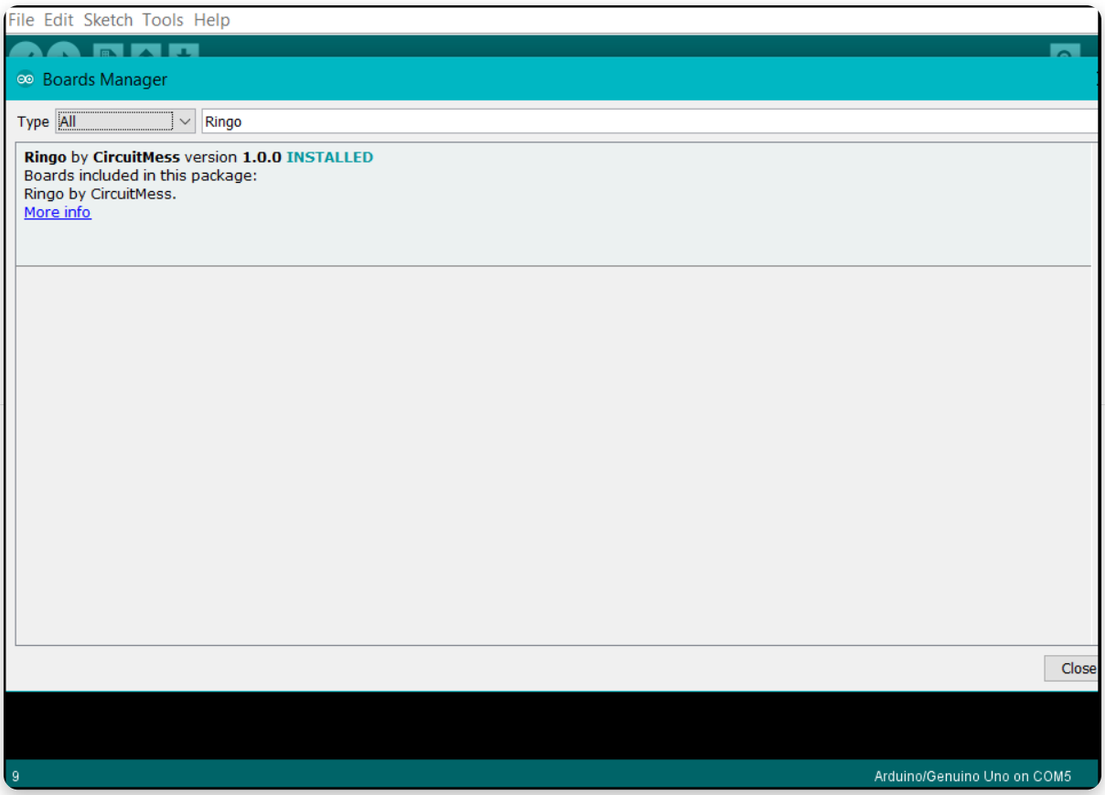
Click on the '**Install**' button.

NOTE: Main board package and a few tools will now download and install on your system.

It all takes up about **200 MB** so the time of download will depend on your internet connection.



6. When it's all finished it will write out 'INSTALLED' next to the version mark



Click on the '**Close**' button and move on.

NOTE: The board file will be updated from time to time so make sure to check the version from time to time.

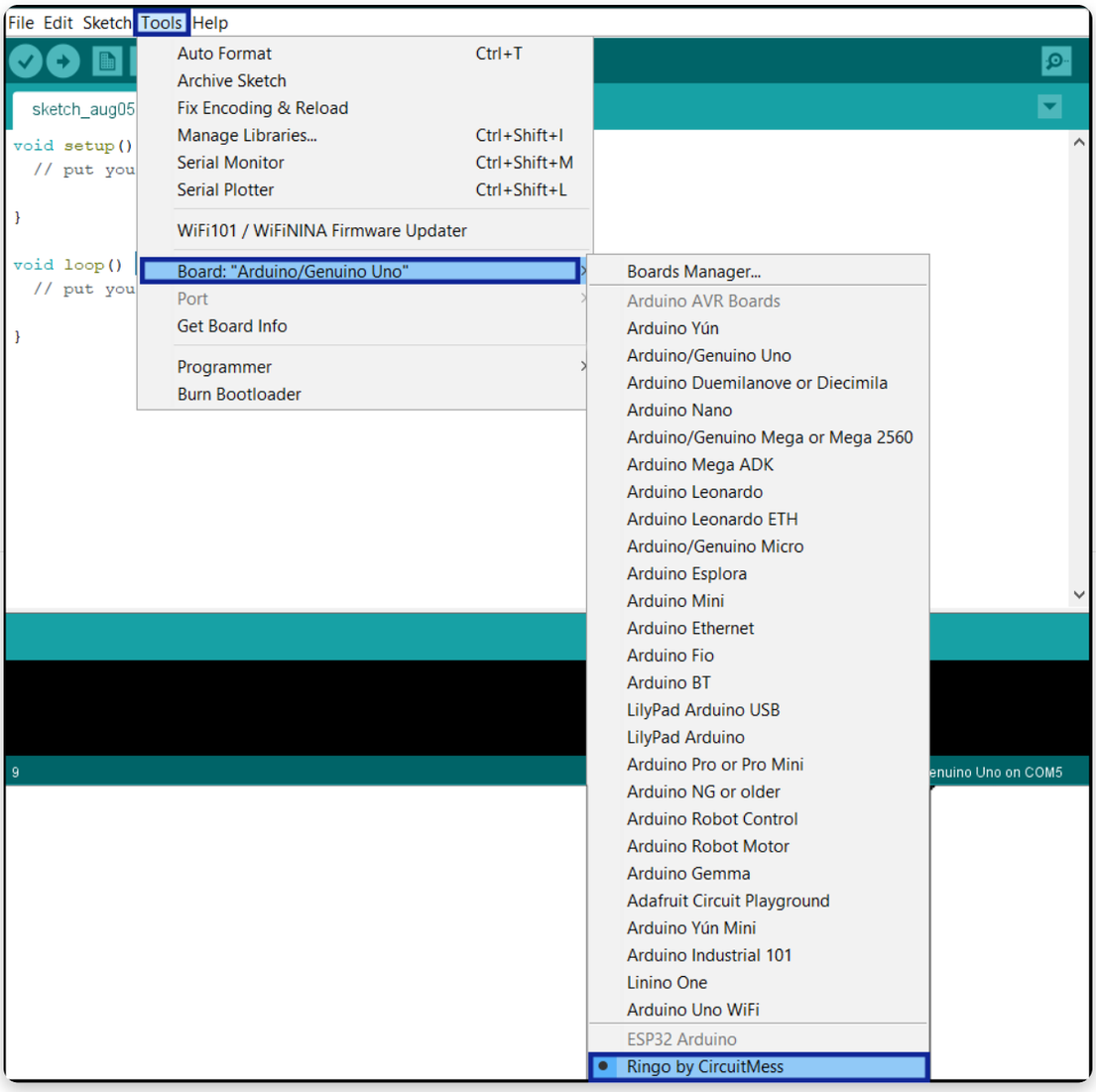
When there is an option '**Update**', please click it in order to stay in touch with the latest firmware.

Creating with Ringo and Arduino

NOTE

Whenever you upload a program it will effectively "erase" the whole Ringo firmware from the phone. If you want to return it, follow step 13! If you don't want to do any work on your phone right now, you can skip these next few steps.

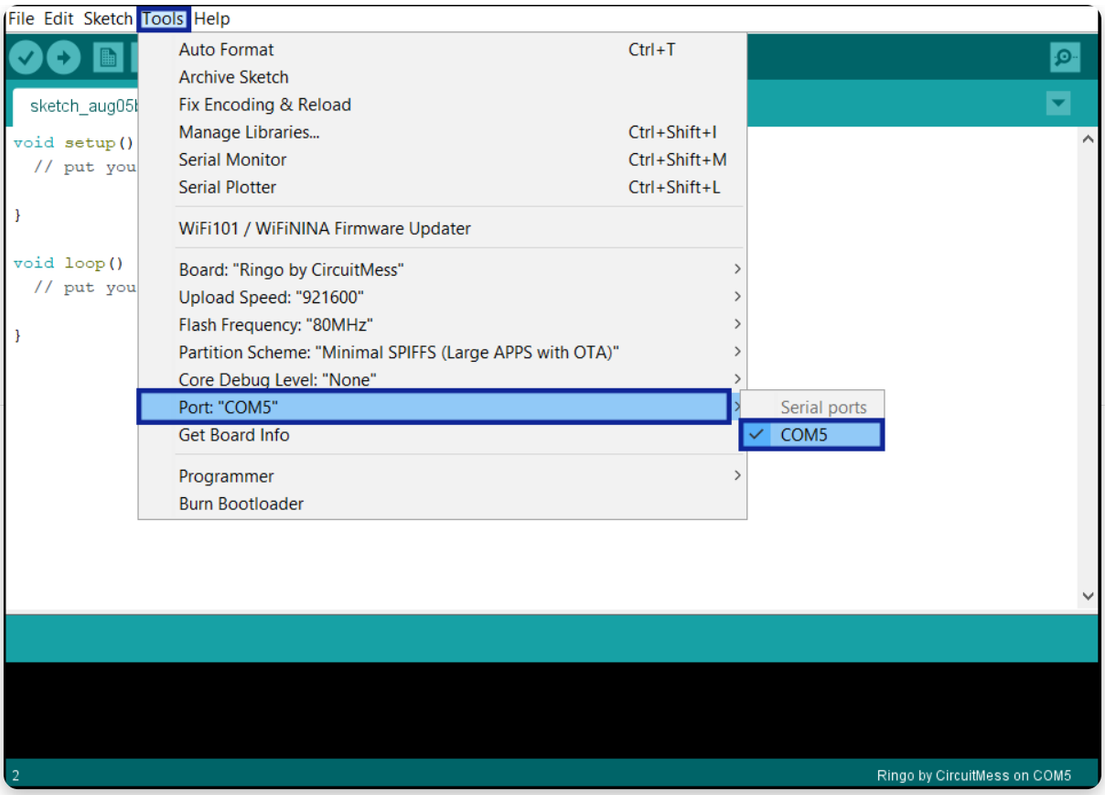
7. Select the installed board



Again go to **Tools -> Board** and in the dropdown menu under category **'ESP32 Arduino'** find **'Ringo by CircuitMess'.**

It should be somewhere at the bottom. Select the board.

8. If you haven't already, connect your Ringo phone to the PC via micro-USB to USB cable



It will connect to one of the **COM** ports.

Go to '**Tools**' and under '**Board**' section select **'Port'** and find the port on which Ringo is connected.

NOTE: If **'Port'** is greyed out it means the phone is not correctly connected.

Change the USB port and/or check your cable.

9. Write your first program

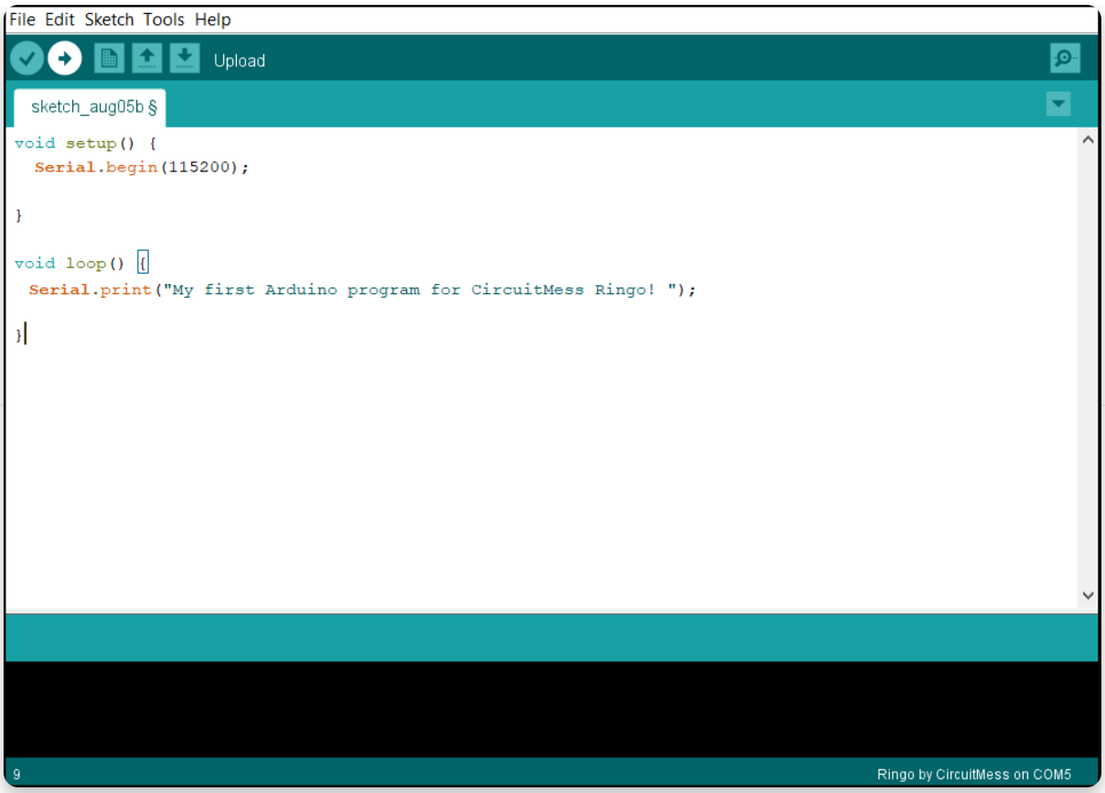
In the **void setup()** section write the following line:

```
1     Serial.begin(115200);
```

Under the **void loop()** section write something like this:

```
1 Serial.print("My first Arduino program for CircuitMess Ringo! ");
```

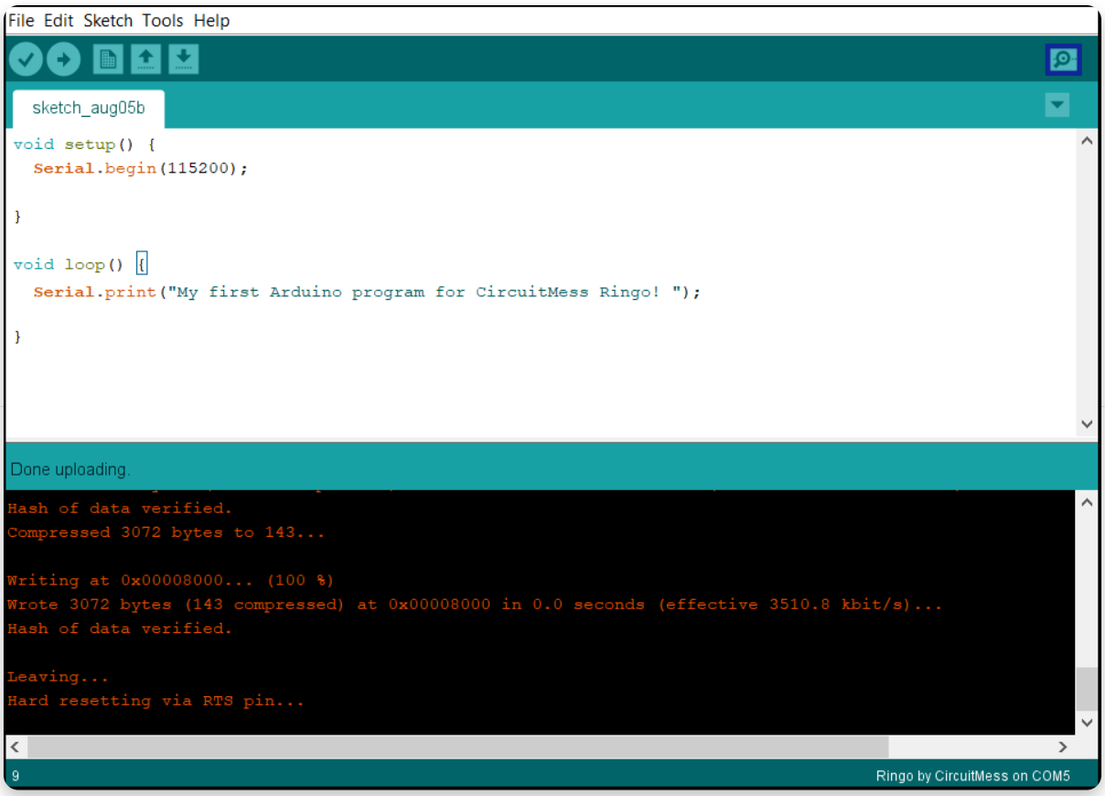
Now click on the little '**Upload**' arrow in the upper left corner.



10. After a few moments, the text should say 'Done uploading'

Now the only thing left to do is to check if everything is working properly.

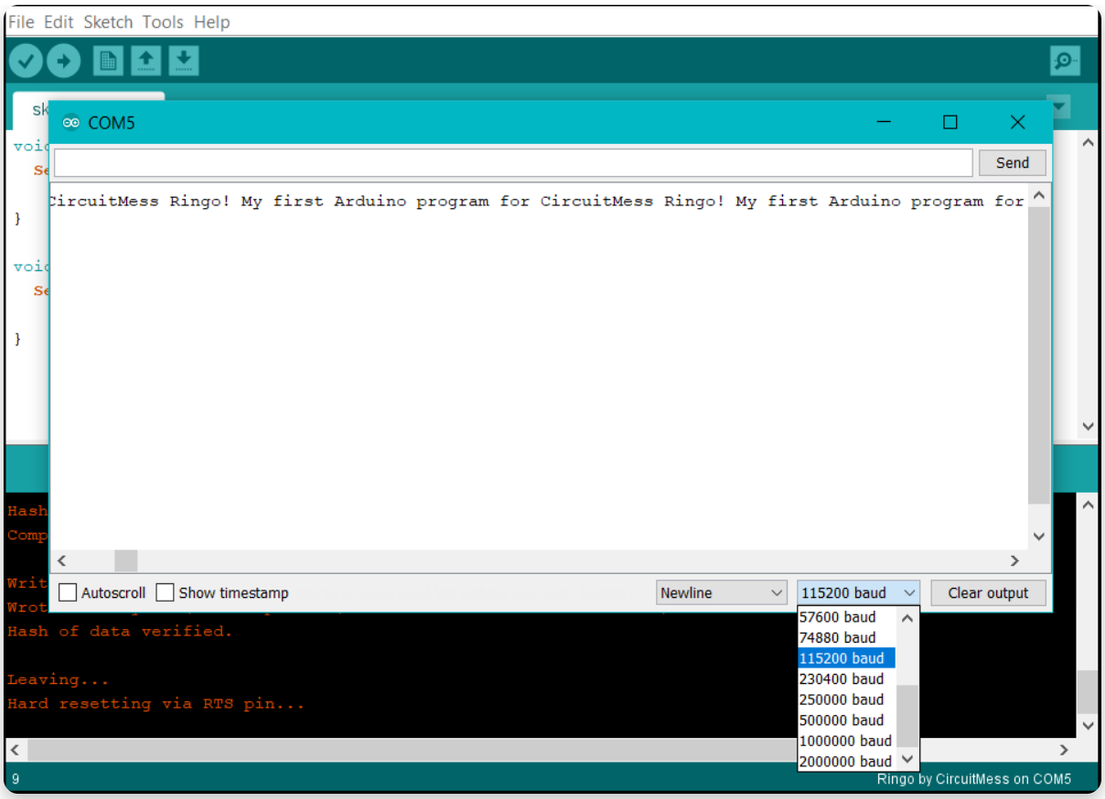
Click the magnifier icon in the upper right corner of the screen.



11. On a newly opened window, from a drop-down menu, select '115200 baud'

That is the speed that the software writes in the **Serial monitor**.

If the text says the line that you wrote in the **print** function, then everything works!

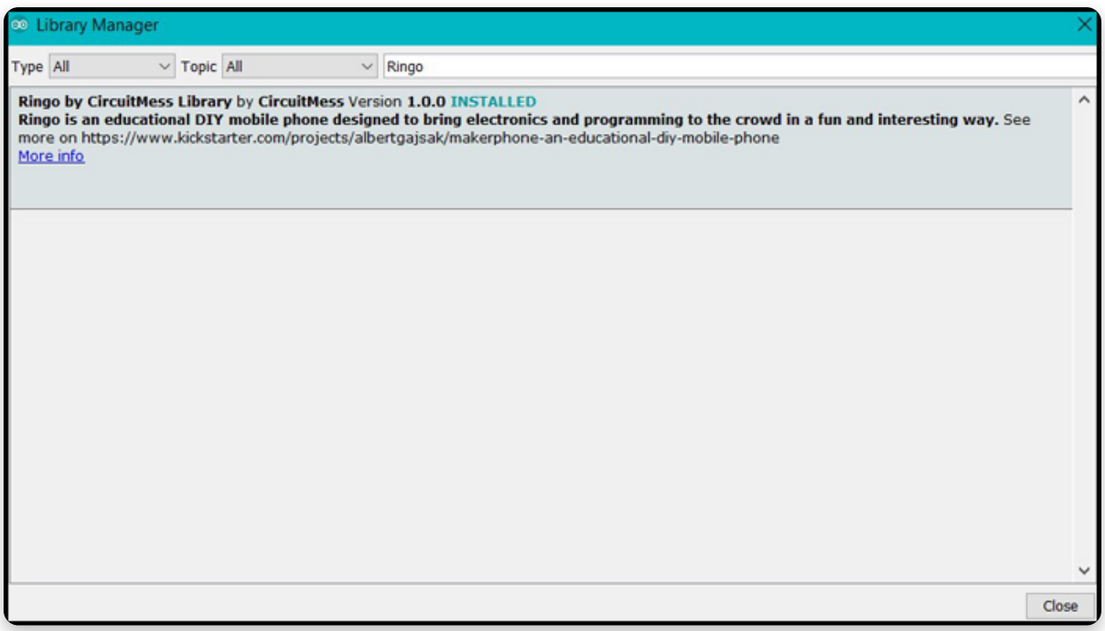


Library and restoring firmware

12. Installing Ringo library

There is also a Ringo library in Arduino Library Manager that allows you to use all the important functions and libraries from the Ringo firmware when writing your own programs. Printing out things on the screen and pressing buttons won't be possible without this one.

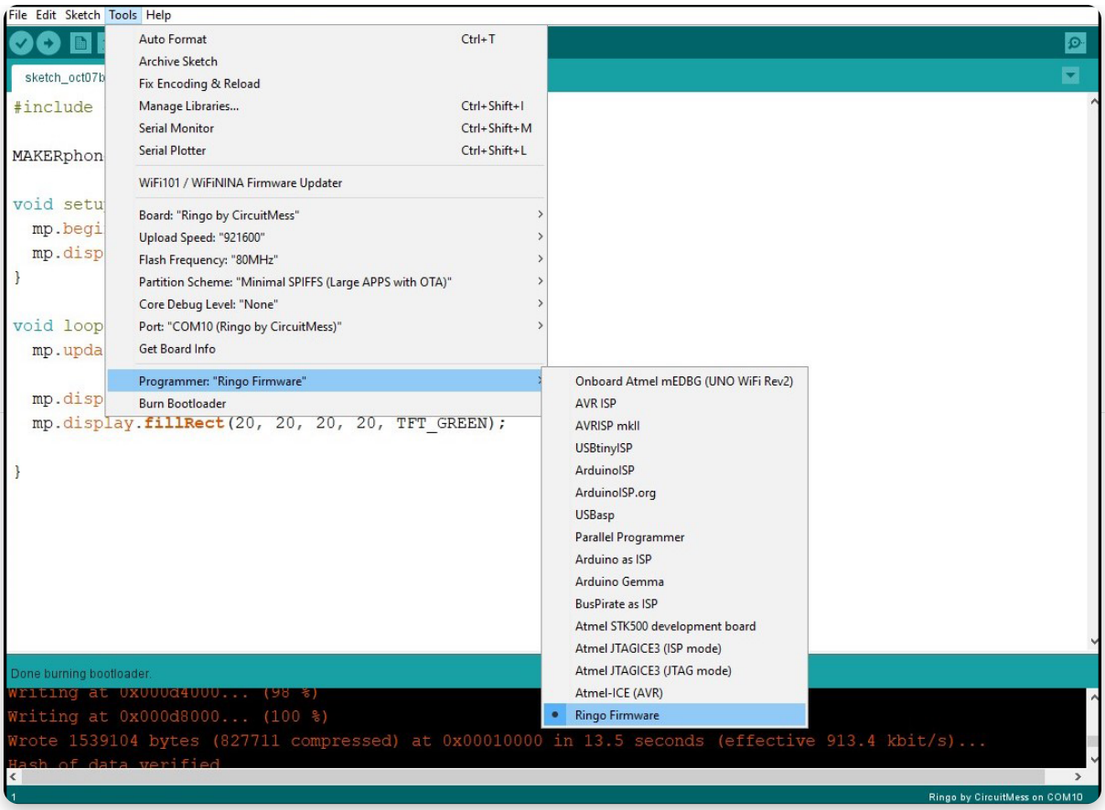
Go to **Sketch-> Include Library -> Manage Libraries....** Enter the keyword **'Ringo'** in the search bar and click the **'Install'** button to download and install the library.



13. Re-uploading the 'Default Ringo software'

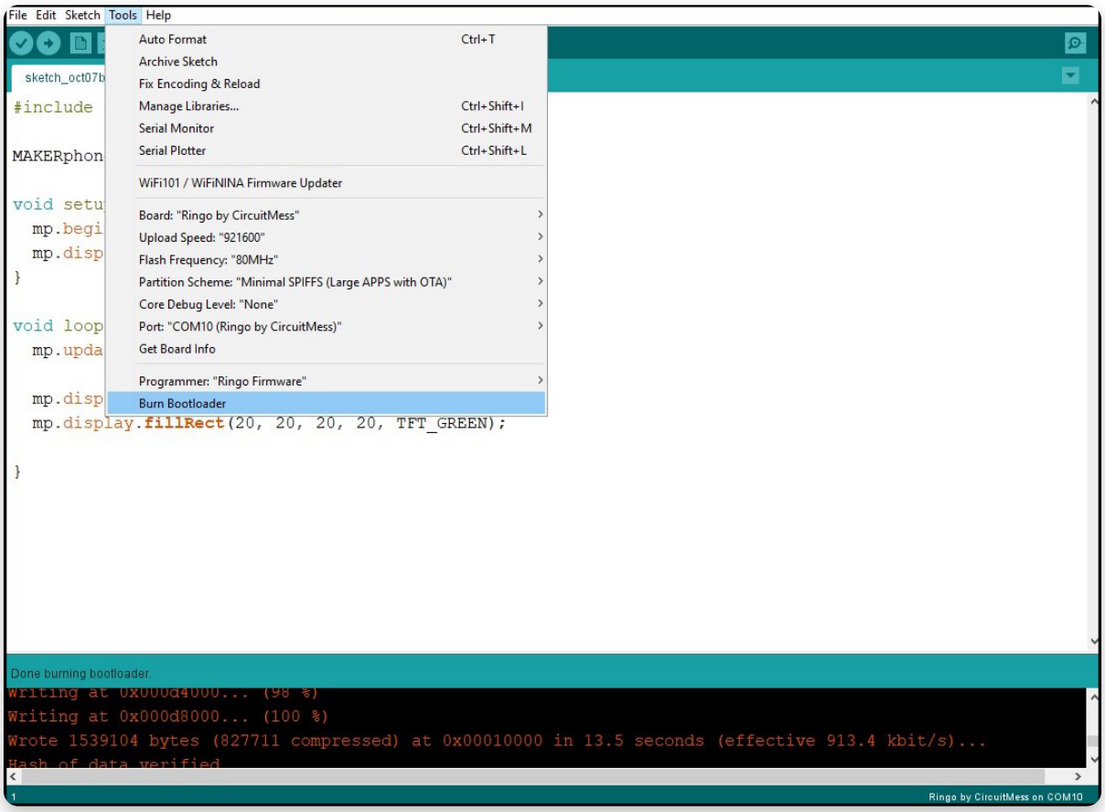
Whenever you want to re-upload **'Default Ringo Software'** you have to go to **Tools -> Programmer** and select

'Ringo Firmware'.



Now go to **Tools** -> **Burn Bootloader** and you will have the latest default firmware on your Ringo as soon as

the upload is finished.



Congrats! You have successfully set up Ringo phone.

Now let's get to business and start creating some cool apps and games!