



***Globalcode***

# INSTALLING LIBRARIES AND UPDATING THE FIRMWARE



# FILES FOR THIS CLASS

[HTTPS://PORTALALUNO.TOOLSCLOUD.NET/REDMINE/PROJECTS/IOTSURFBOARD/FILES](https://portalaluno.toolscloud.net/redmine/projects/iotsurfboard/files)

- PRESENTATION: IOT\_SURFING\_CLASS\_4\_EN.PDF
- IOT SURFBOARD LIBRARIES FOR ARDUINO: ARDUINO.ZIP



# THE FIRMWARE OF YOUR SURFBOARD



# THE FIRMWARE OF YOUR SURFBOARD

- THIS FIRMWARE HAS A STANDARD COMMUNICATION STRUCTURE FOR WIFI, BLUETOOTH, 2G, 3G AND ZIGBEE!
- ALLOWS YOU TO CREATE THE FIRMWARE EXTENSIONS INSTEAD OF REPLACING IT



# WHY TO UPDATE THE FIRMWARE?

- THE FIRMWARE IS EVOLVING FAST AND BRINGS NEW CAPABILITIES AND FEATURES IN EACH NEW RELEASE. TO GET THE BEST FROM YOUR SURFBOARD IT'S IMPORTANT TO KEEP IT UPDATED!



# WHY TO UPDATE THE FIRMWARE?

- IF YOU UPLOAD YOUR OWN PROGRAM DIRECTLY TO ARDUINO NANO YOU LOOSE THE FIRMWARE AND THE SURFING PROTOCOL, BUT DON'T WORRY IT'S EASY TO RESTORE THE FIRMWARE.



# WHY TO UPDATE THE FIRMWARE?

- WHEN YOU EXTEND THE FIRMWARE BY ADDING YOUR OWN FUNCTIONALITIES / NEW MODES YOU WILL NEED TO UPDATE THE FIRMWARE ON YOUR BOARD



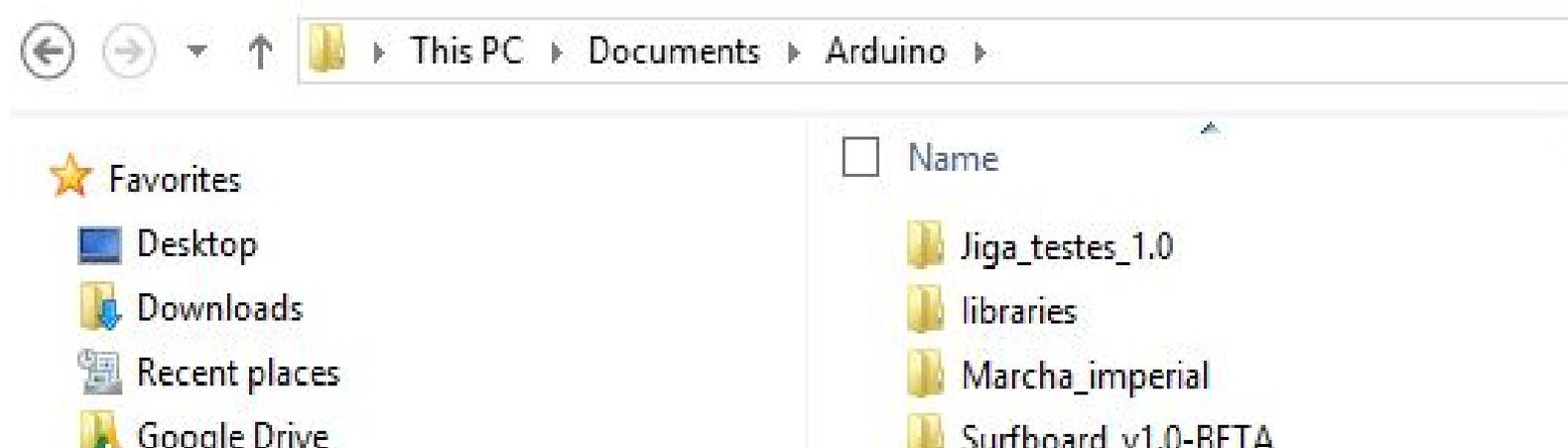
# ARDUINO LIBRARIES

- ❑ THE IOT SURFBOARD FIRMWARE REQUIRES SOME **COMPONENT LIBRARIES** FOR ACCESSING IT'S SENSORS THAT MUST BE INSTALLED
- ❑ WE ALSO NEED THE **IOT SURFBOARD API FOR ARDUINO** (DEVELOPED BY GLOBALCODE) THAT FACILITATES PROGRAMMING YOUR BOARD
- ❑ ALL FILES AND LIBRARIES ARE IN **ARDUINO.ZIP**



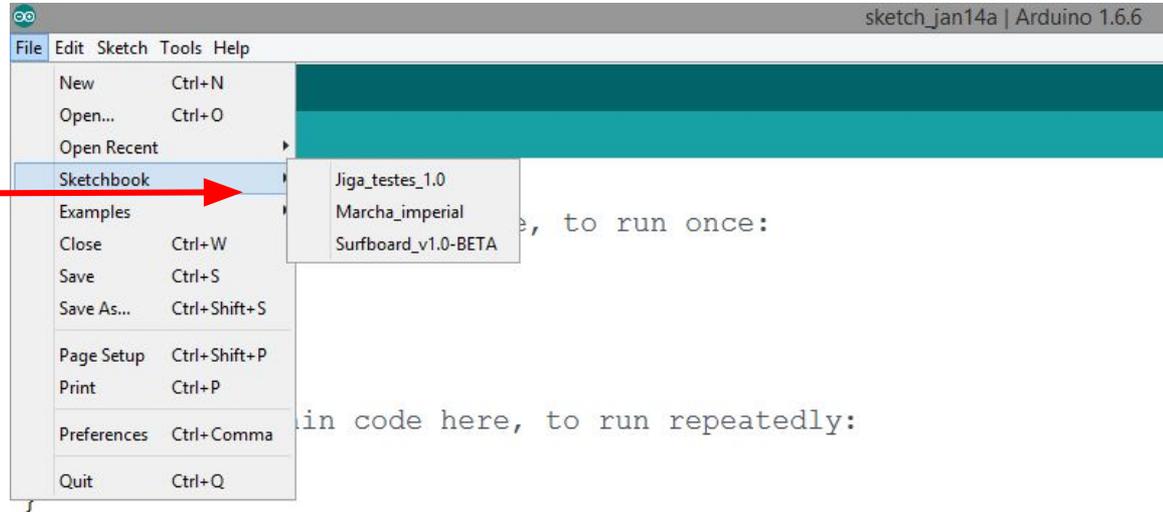
# FIRMWARE AND LIBRARIES INSTALLATION

1. DOWNLOAD **ARDUINO.ZIP** AND UNZIP IN THE **ARDUINO** FOLDER
2. LINUX & MAC USERS: /HOME/<USER>/ARDUINO
3. WINDOWS USERS: UNDER THE **DOCUMENTS** FOLDER



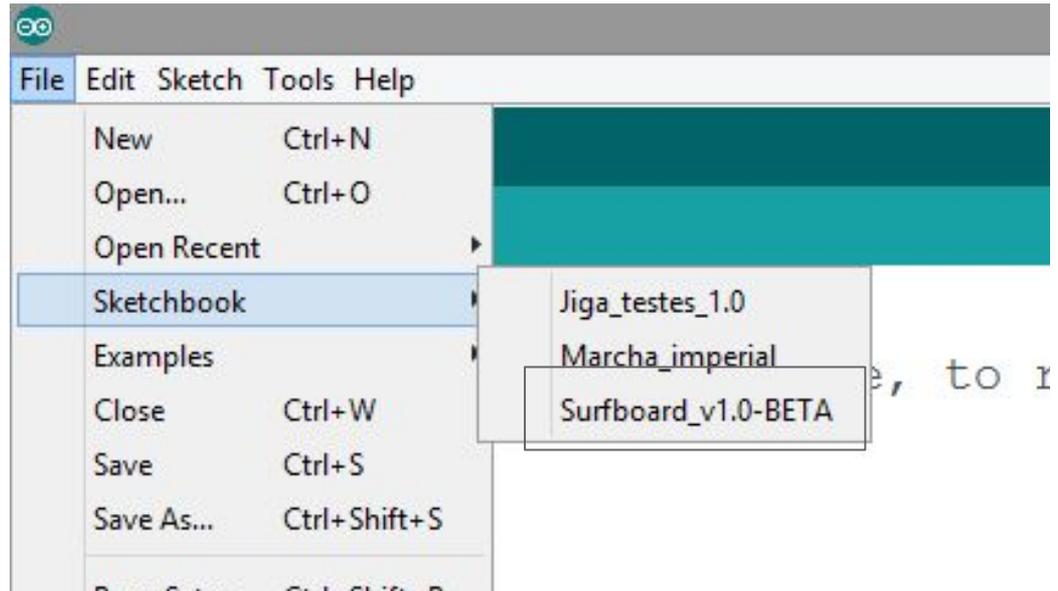
# CHECK THE FILES ON YOUR ARDUINO IDE

- ❑ AFTER UNZIP THE FILES RESTART YOUR ARDUINO IDE
- ❑ YOUR SKETCHBOOK SHOULD LOOK LIKE THIS:



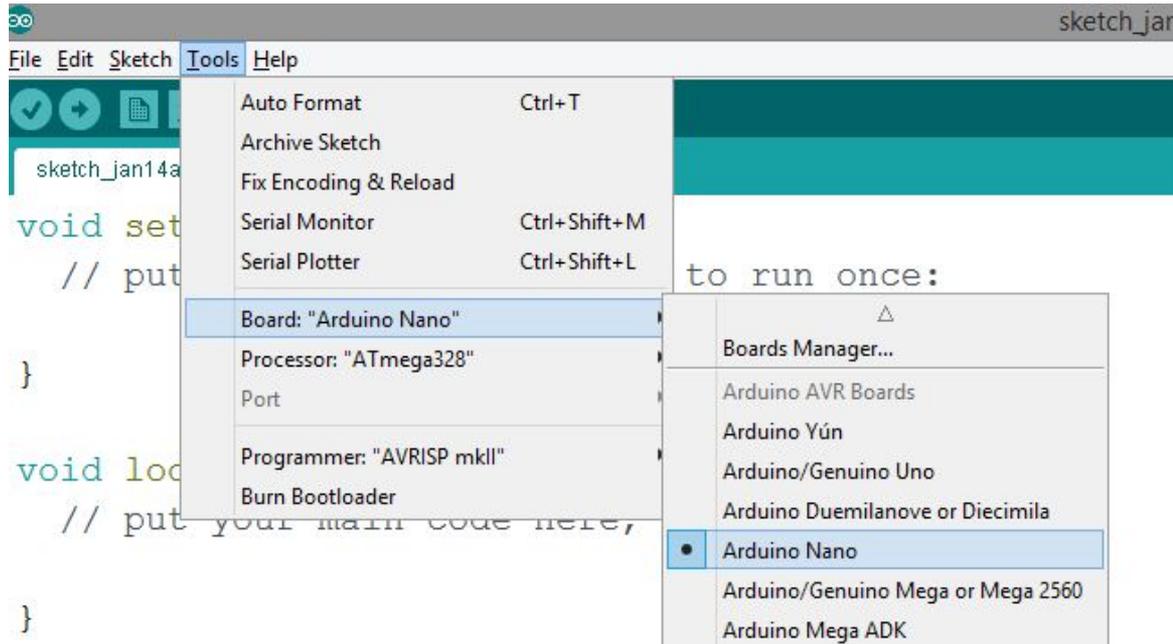
# UPDATING THE FIRMWARE & LIBRARIES

1. OPEN ARDUINO IDE AND GO TO MENU **FILE** → **SKETCHBOOK** AND SELECT **SURFBOARD\_V1.0-BETA**
2. CONNECT YOUR SURFBOARD TO THE COMPUTER VIA USB

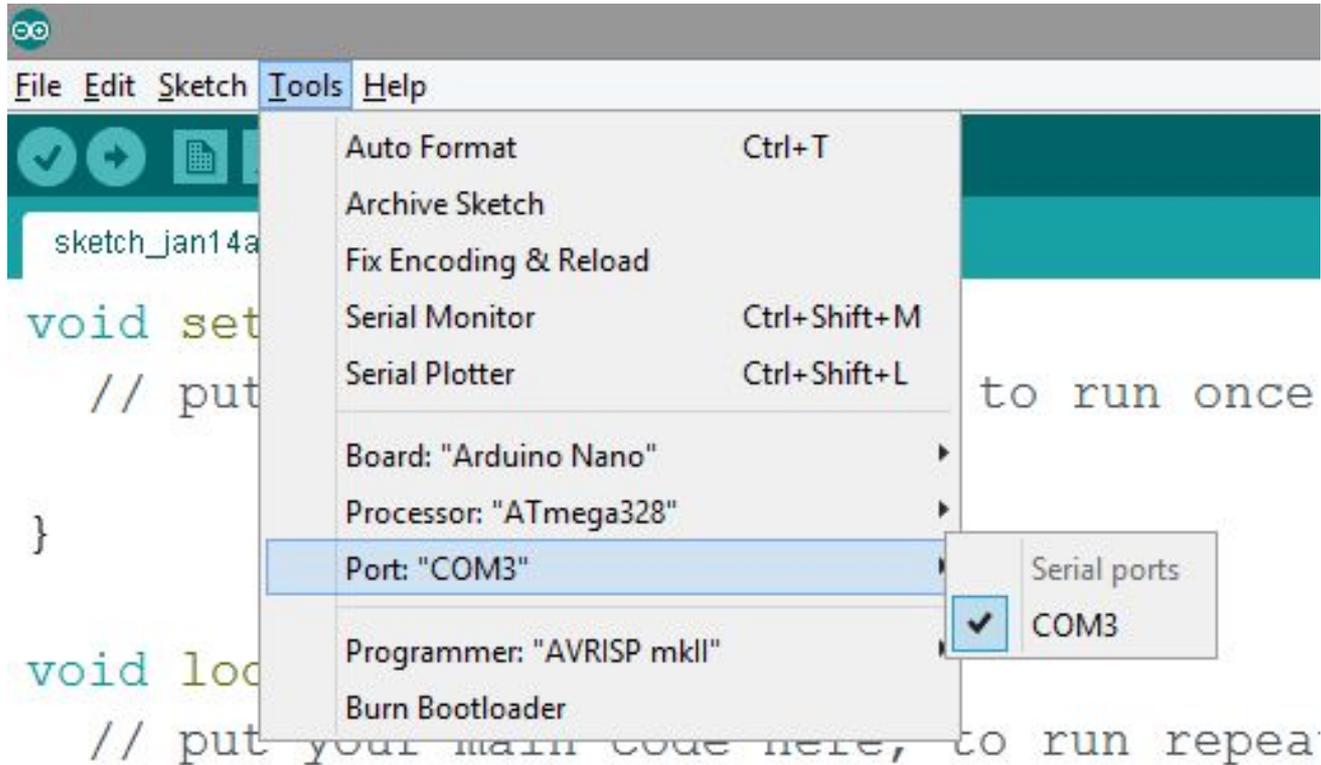


2. CONNECT YOUR BOARD TO THE COMPUTER USING THE USB CABLE

3. ON THE TOOLS MENU -> BOARD AND SELECT ARDUINO NANO



4. ON THE TOOLS MENU GO TO PORT AND SELECT THE PORT (NOT NECESSARILY THE COM3)



5. CLICK THE **UPLOAD** BUTTON ON ARDUINO IDE TO SEND THE NEW FIRMWARE AND ALL LIBRARIES IT NEEDS TO YOUR BOARD



The screenshot shows the Arduino IDE interface. At the top, there is a menu bar with 'File', 'Edit', 'Sketch', 'Tools', and 'Help'. Below the menu bar is a toolbar with several icons: a checkmark, a right-pointing arrow, a grid, an upload icon, and a download icon. The 'Upload' button is highlighted. Below the toolbar is a text box containing the filename 'sketch\_jan14a'. The main area of the IDE is a code editor displaying the following C++ code:

```
void setup() {  
    // put your setup code here, to run once:  
  
}  
|  
void loop() {  
    // put your main code here, to run repeatedly:  
  
}
```

6. OPEN THE SERIAL MONITOR AND TYPE ? AND THEN PRESS ENTER.

THE SURFING PROTOCOL WILL DESCRIBE THE BOARD AND THE **FIRMWARE VERSION**

YOU CAN CHECK IF YOU HAVE SUCCESSFULLY UPDATE THE FIRMWARE



# LIVE DEMOS



# SUMMARY

- ❑ THE IOT SURFBOARD FIRMWARE REQUIRES SOME COMPONENT LIBRARIES AND ALSO IOT SURFBOARD API FOR ARDUINO
- ❑ YOUR LEARNED HOW TO UPDATE THE FIRMWARE
- ❑ THE IOT SURFBOARD FIRMWARE IS EVOLVING FAST AND IT'S IMPORTANT THAT YOU ALWAYS UPDATE IT TO THE LATEST VERSION.



IOT SURFBOARD + ARDUINO = SUCCESS!

