LIRMS Installation and Programming guide!

1. Steps to install Arduino Compiler:

- Please follow the link to download and install the compiler.

  [Download Link](#)

- After download extract the compressed "IntelArduino.zip" file.

- When you check the folder "IntelArduino". You should find the following files.

- Now move the uncompressed "IntelArduino" folder to your Windows "C:" drive.

- **Double click on "arduino" application file shown in the screenshot. This will launch the Arduino IDE.**
- **If prompted for a firewall access by the windows security, Select allow access (Don't worry It is secure!!). Check the screenshot to know how the pop-up looks like**
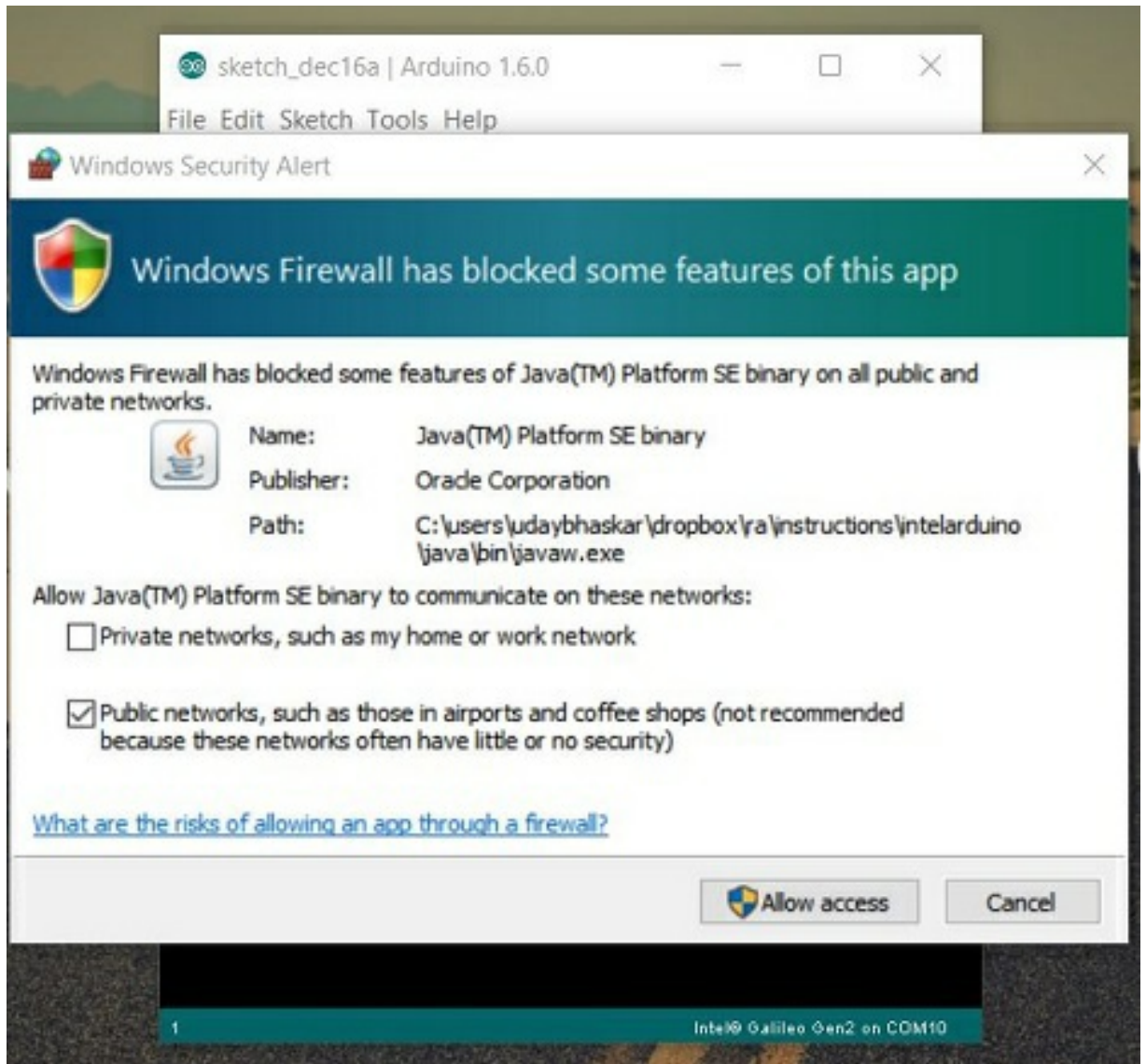
2. Steps to download LIRMS controller software:

- Please download and extract the Dropbox file that I have shared with you in email.

- The uncompressed folder "z_main" should have five files.

3. Steps to program Arduino:

Hardware Connections

- After the first two steps you will have the compiler(IDE) and the LIRMS software ready for installation. This last step is to program the controller board.
- Plug in the Power supply to the controller power socket as shown in the figure below:

- After powering up the controller, you should see at first three "GREEN" LEDs light up. As shown in the figure:

- After few seconds, you should see a fourth "GREEN" LEDs light up. As shown in the figure:

- Now at this point you can go ahead and connect a USB cable to the USB port on the controller board as shown in the figure below. (You need a micro USB cable - most android phones have this cable)
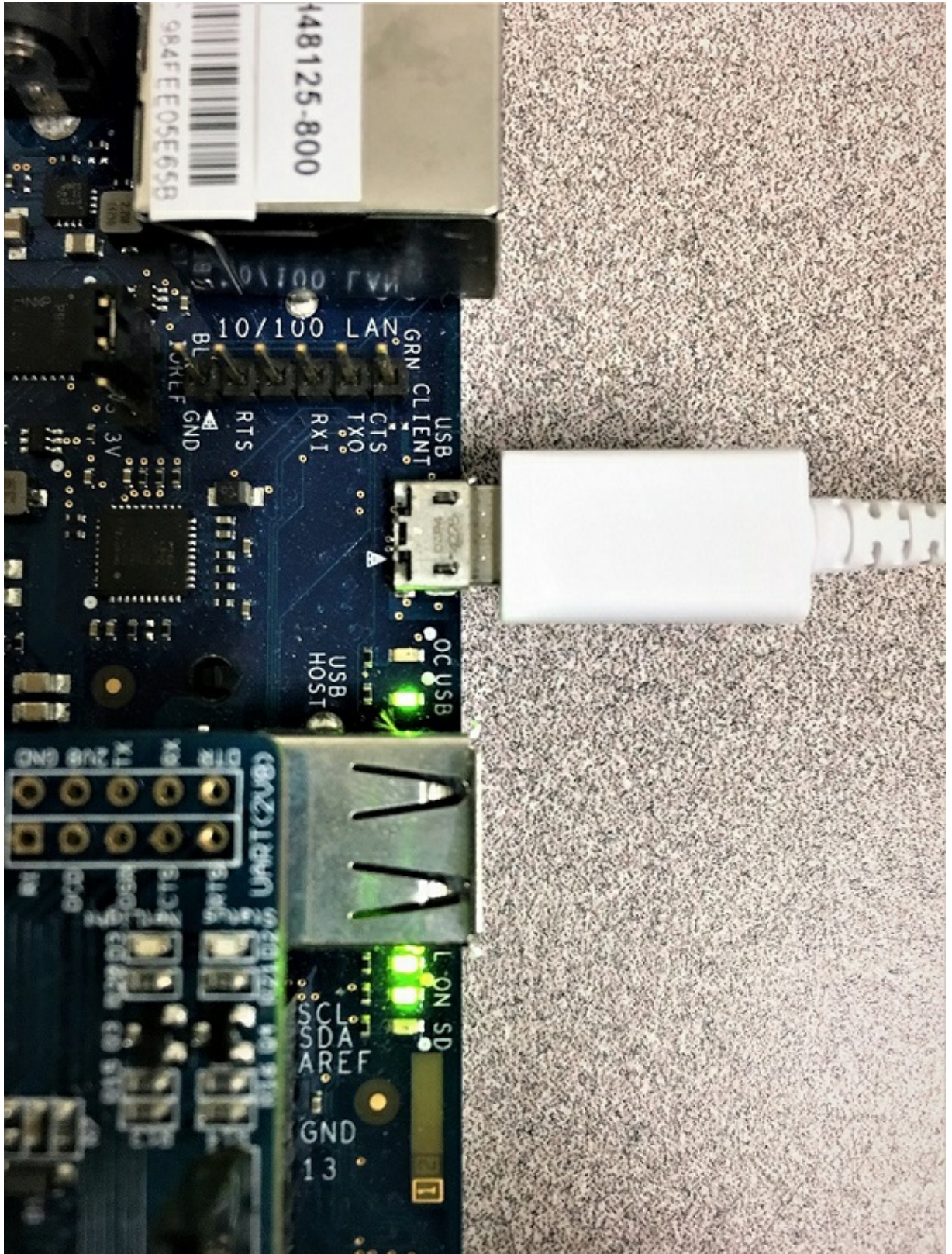
- Now you can connect the other end of the USB cable to your

computer's USB port's as shown in the picture below.
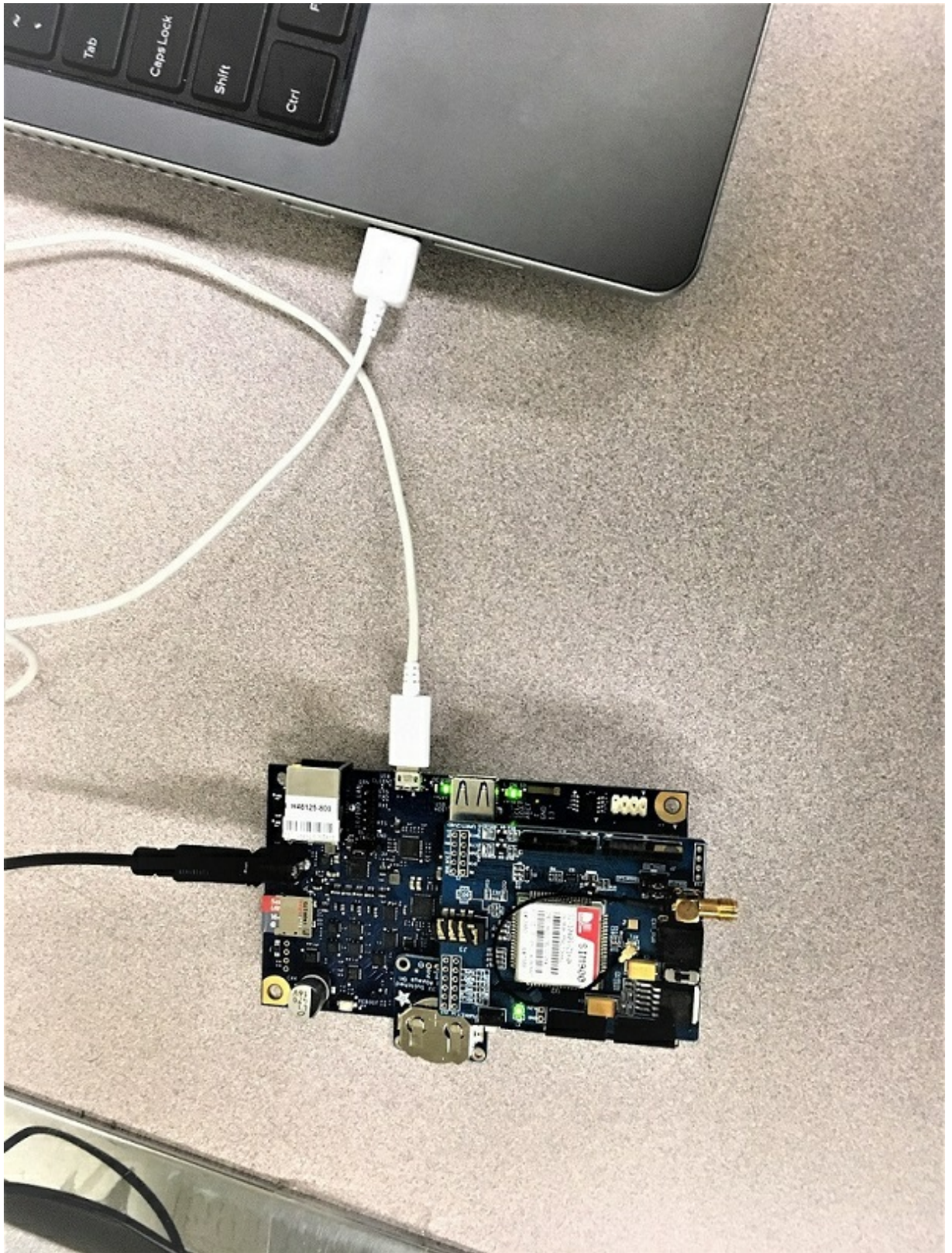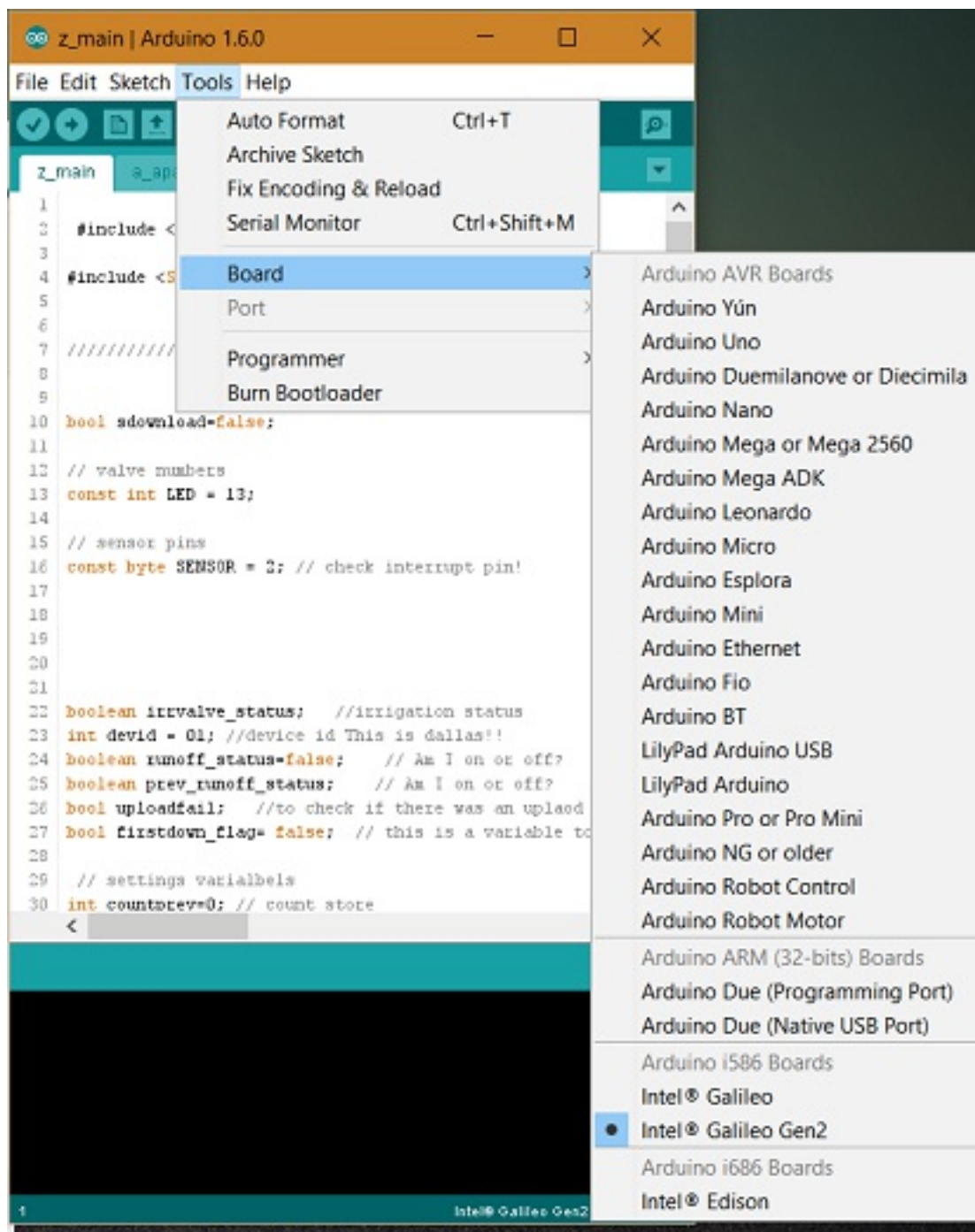

Software

Configuring

- Launch the Arduino IDE and open the "z_main" arduino file. It should look like this:

- Now we have to select our controller board from the "Tools" menu as shown in the screennshot below:

- Now we have to select the "Port" number to which our controller is hookedup to our computer. It would change from computer to computer . As shown in the screenshot below, it was "COM5" for me. You might have a different "COM" port. Select your port.

- And this would be the last settings that you will configure. This is the programmer selection. Follow as shown in the screenshot below and select "ArduinoISP".

Compiling and Uploading

- After all the configurating steps, now click on the "Tick mark" button below the main menu. That will start the compilation process. Wait till you see a "Done Compiling" message on the bottom of your IDE as shown in the screenshot.

```
z_main | Arduino 1.6.0                    —  □  ✕
File Edit Sketch Tools Help

[✓] [→]  [▤] [⬆] [⬇]                              [🔍]

 z_main    a_aparse    a_comm    a_timefunctions

 1
 2  #include <ArduinoJson.h>
 3
 4  #include <String.h>
 5
 6
 7  //////////////////////// Declaring Class and Varialbles.///////
 8
 9
10  bool sdownload=false;
11
12  // valve numbers
13  const int LED = 13;
14
15  // sensor pins
16  const byte SENSOR = 2; // check interrupt pin!
17
18
19
20
21
22  boolean irrvalve_status;    //irrigation status
23  int devid = 01; //device id This is dallas!!
24  boolean runoff_status=false;    // Am I on or off?
25  boolean prev_runoff_status;    // Am I on or off?
26  bool uploadfail;    //to check if there was an uplaod failure
27  bool firstdown_flag= false;  // this is a variable to check
28
29   // settings varialbels
30  int countprev=0; // count store
31  int count;   //count current
32  //const char* deviceid ;

Done compiling.

Sketch uses 95,602 bytes (0%) of program storage space. Maximum
is 10,000,000 bytes.

1                              Intel® Galileo Gen2 on COM10
```
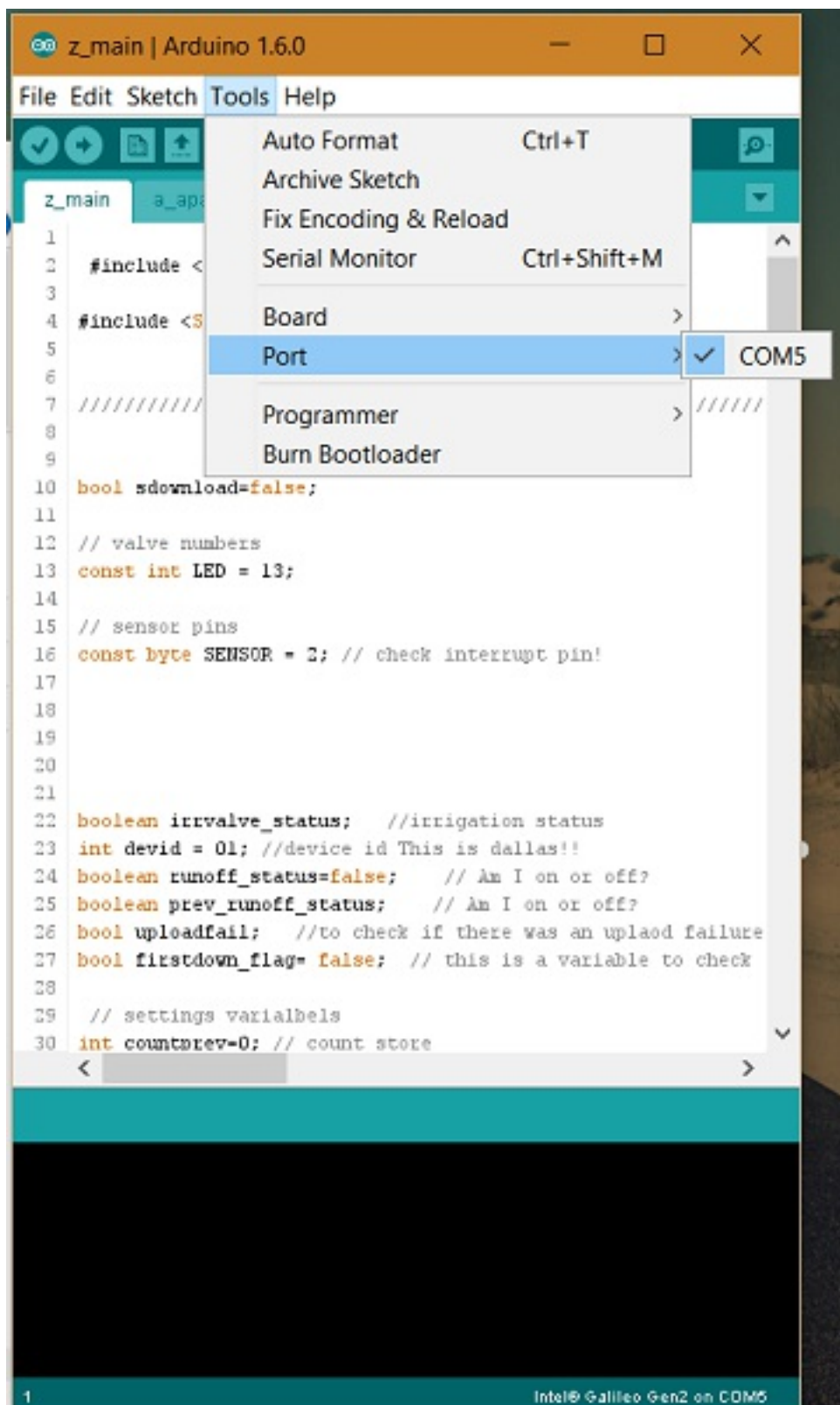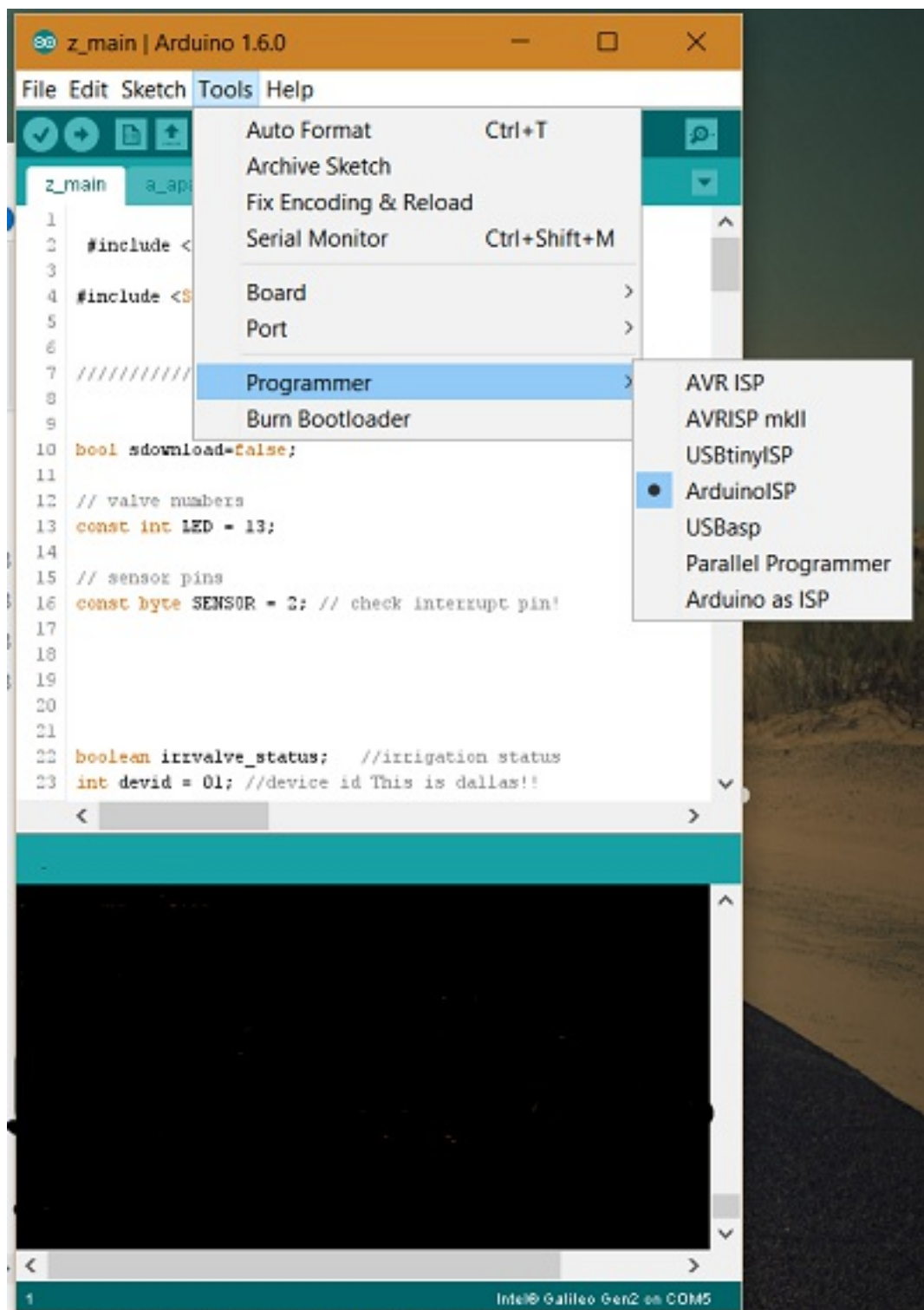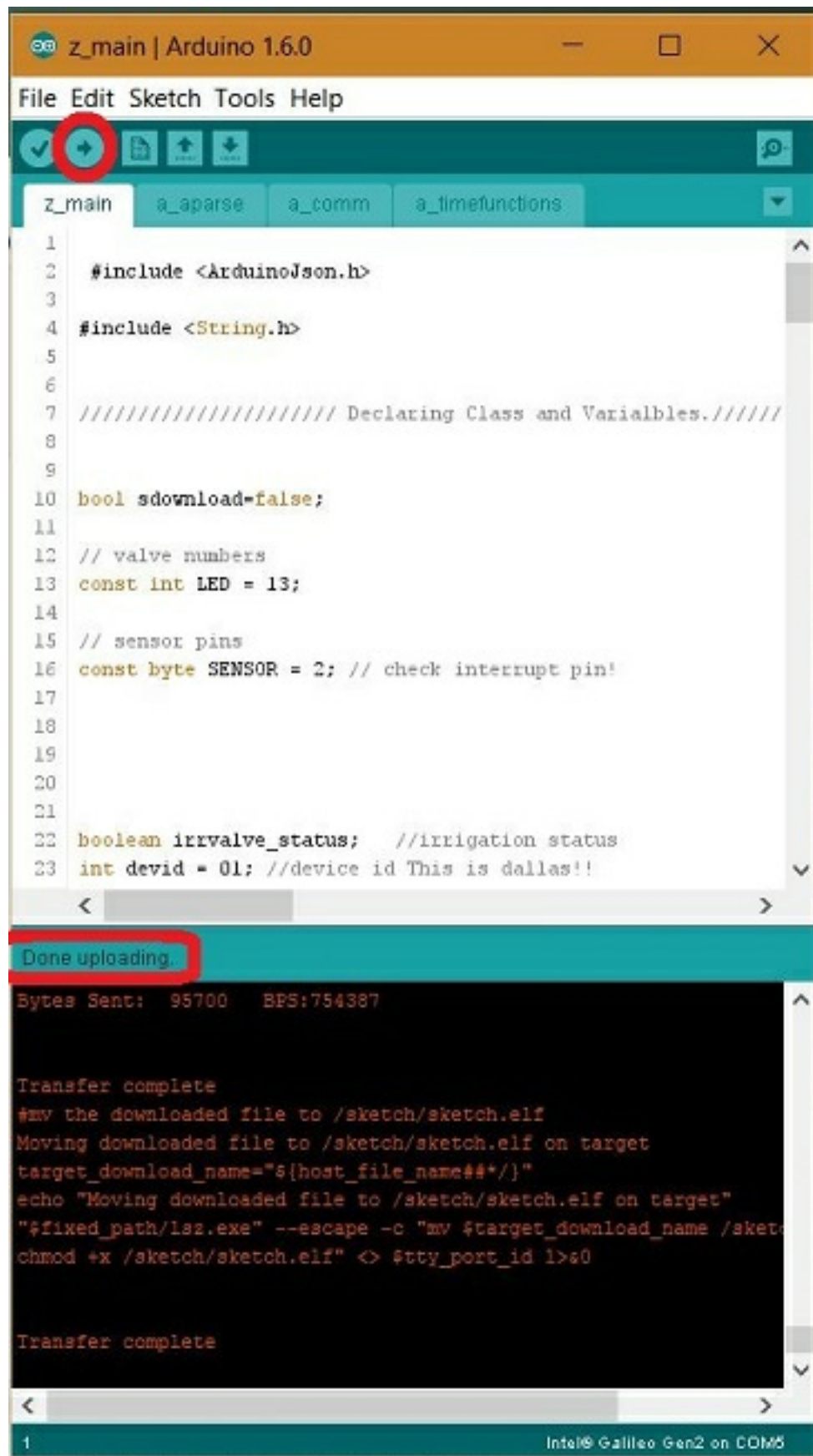
- Once the compilation is done, uploading the program to the controller is left. To upload the program, click on the "Right Arrow" button next to the compilation button. Once the button is pressed wait till you see a "Done Uploading." message as

shown in the screenshot.

The End!