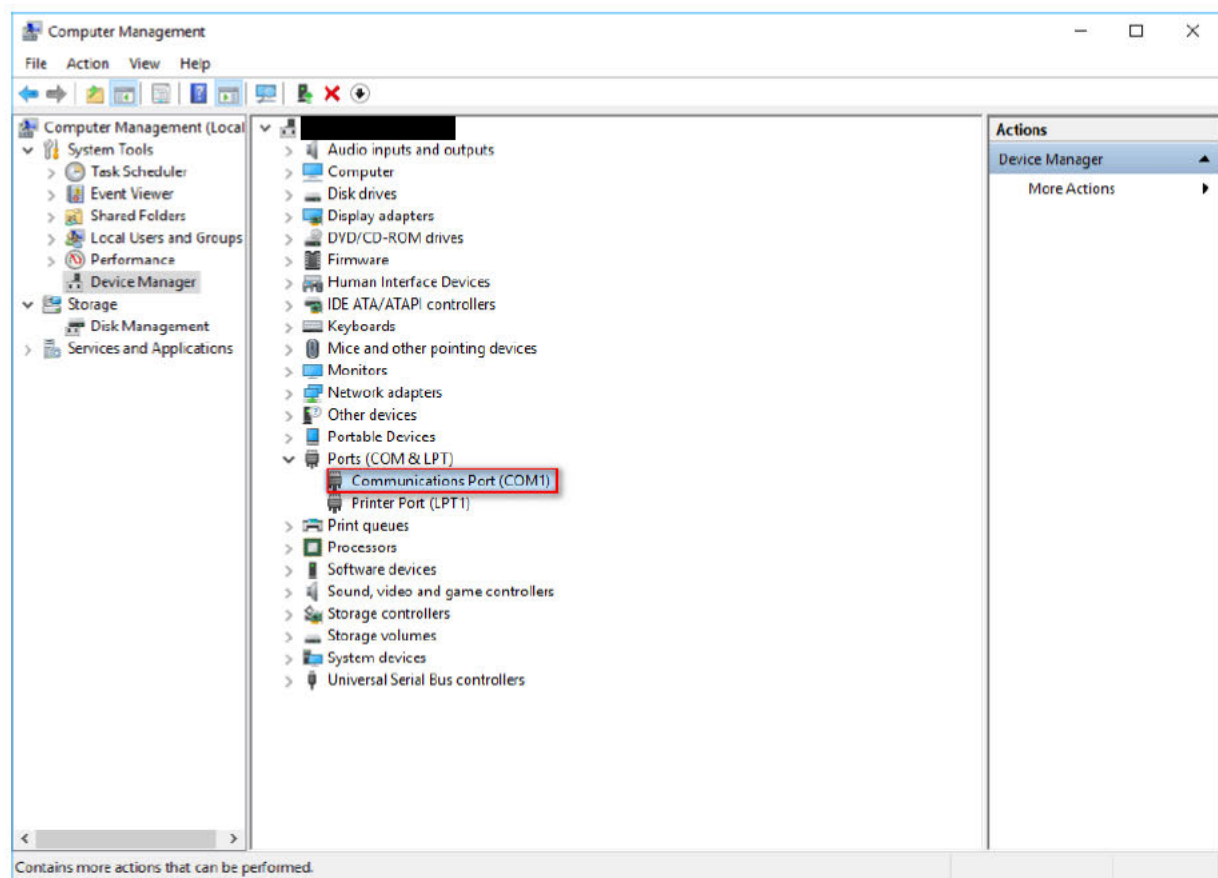
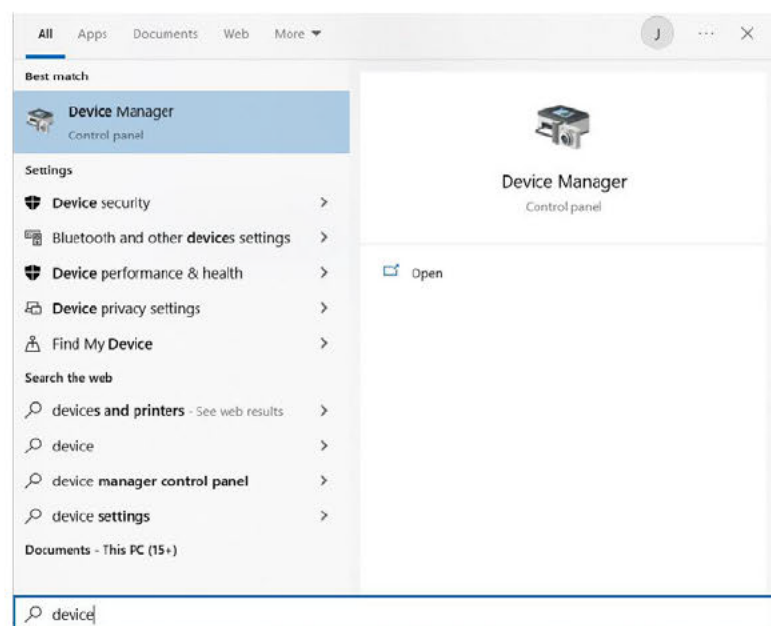


The LilyGo can be connected to one's computer via a MicroUSB cable. When the device is connected, one can find the assigned COM port (Communications Port) in the Device Managers (on a Windows system). This COM port is necessary for communication with the device. See the picture below.



To access the device manager, one must type device manager in the Windows start menu.



# Firmware

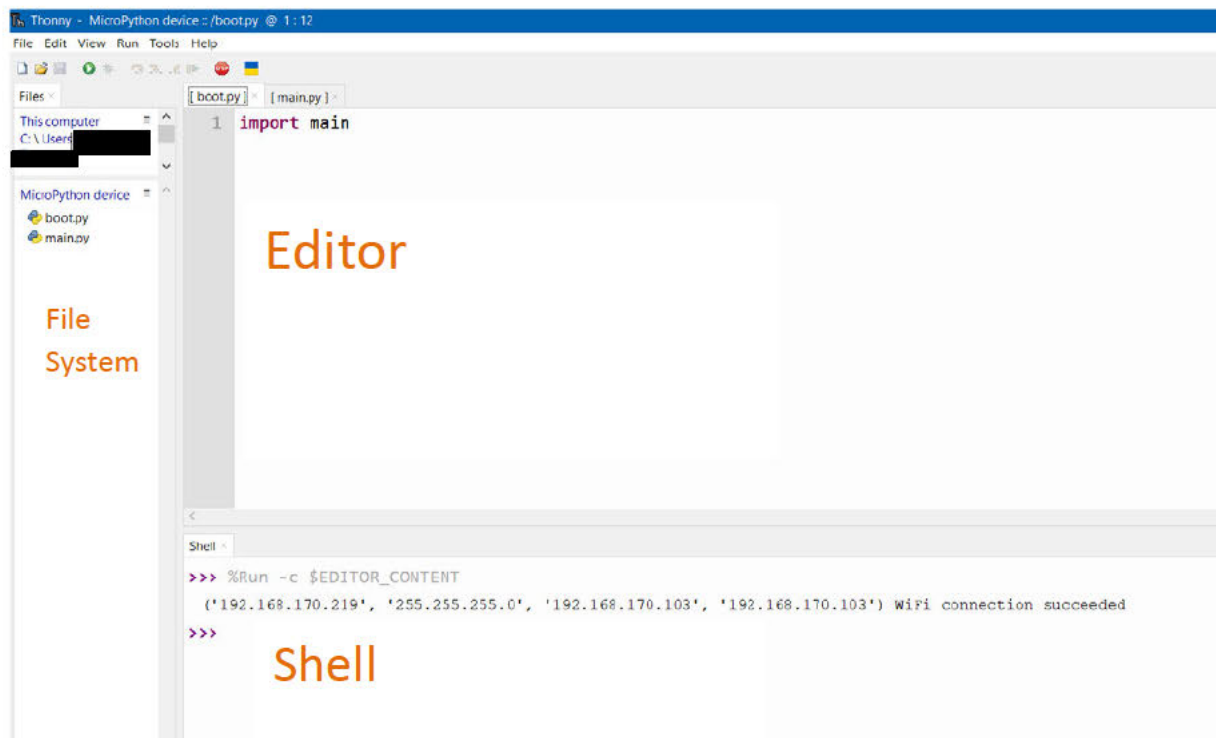
## Thonny

When the device is connected, one is done with the hardware part and can focus on the software part. For the writing of a software program, one needs an IDE, an Integrated development environment. An IDE is a software program that provides a lot of functionalities for writing a software program.

For this SSA, the Thonny IDE is used (one can find the IDE at <https://thonny.org/>).

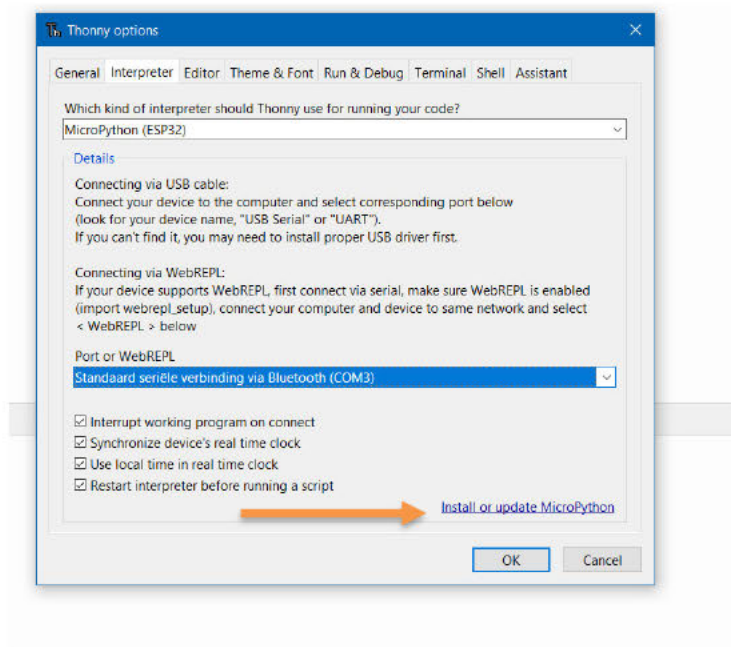
The Thonny IDE is predominantly created for the development of software programs for microcontrollers. The IDE comes with a built-in ESP 32 tool. The tool we need for our LilyGo device.

The IDE offers a File System to store files on the devices, an Editor to edit and saves one's code, and a shell to execute one's code directly. See the picture below.



## Esp32 tool

Under the header Tools -> Options, there is an Interpreter settings menu. This menu is used to select the proper COM port, as discussed above. See the picture below.



To flash (burning software in the device) the ESP 32 microcontroller, the Lillygo, and install the ESP 32 firmware. One can use the ESP 32 firmware installer. First, click on Install or update MicroPython, see the picture above, then select the location of the downloaded firmware; see the picture below. Keep the default settings, and select 'Erase flash before installing.' Finally, press Install.

(One can download the firmware, the ESP 32 bin file, at <https://micropython.org/download/esp32/>).

