

CANSAT Guidebook

**Contents**

[Preparation 3](#_Toc156235215)

[Hardware Preparation 3](#_Toc156235216)

[Software Preparation 4](#_Toc156235217)

[Communication Preparation 5](#_Toc156235218)

[Setup 6](#_Toc156235219)

[Mechanical Part 6](#_Toc156235220)

[Programming Part 7](#_Toc156235221)

[Communication Part 8](#_Toc156235222)

[Troubleshoot 9](#_Toc156235223)

[Programming Part 9](#_Toc156235224)

[Communication Part 9](#_Toc156235225)

[Obligation and Caution 10](#_Toc156235226)

[Obligation 10](#_Toc156235227)

[Caution 10](#_Toc156235228)

# Preparation

In this part you can only doing it only one time per PC and you must do this before go to setup part. Before you go to do you must extract the folder.

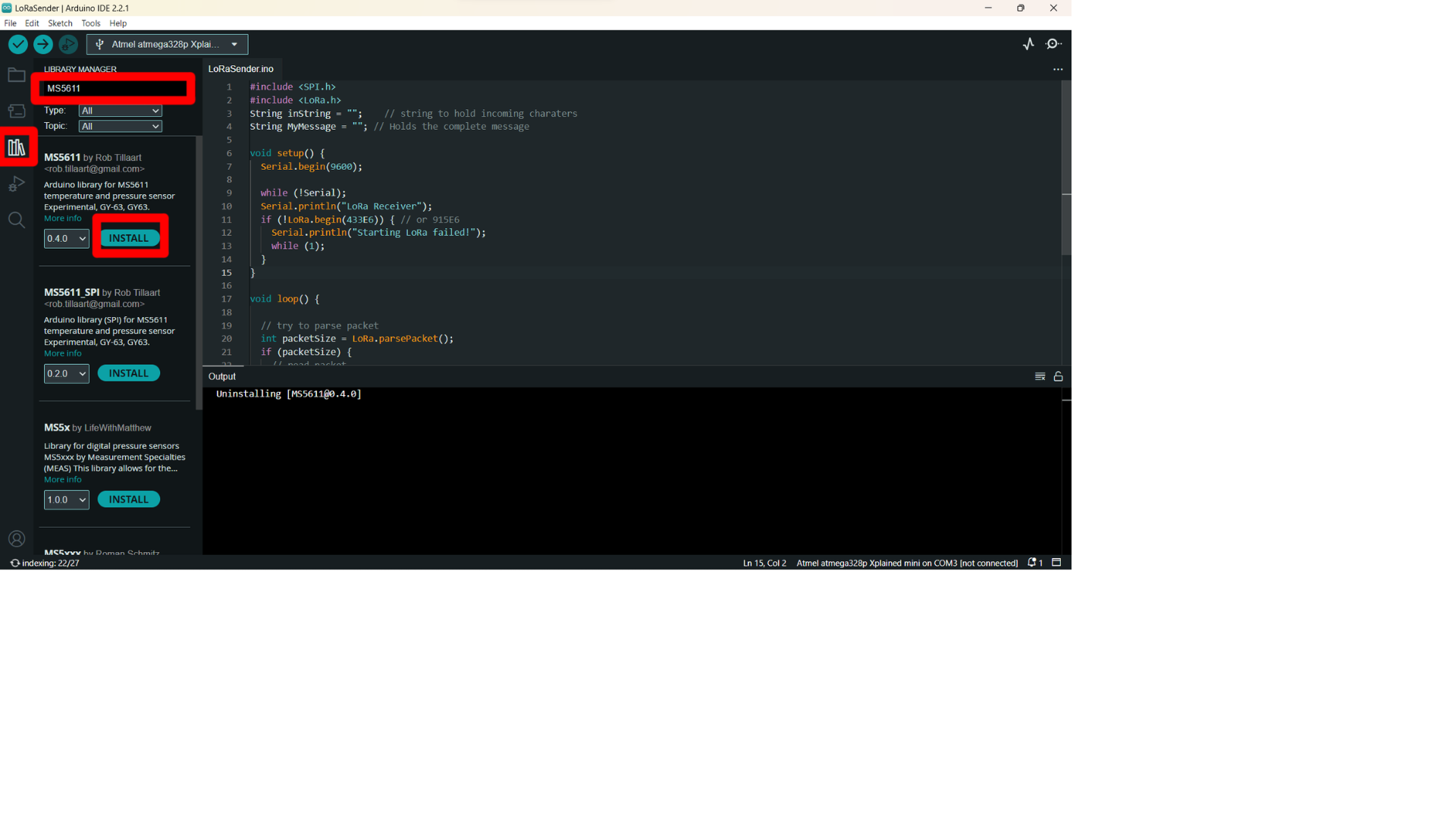
## Hardware Preparation

1. Check and count body part in the package (Number 1-\_\_)
2. Combine Number 1 with Number 2
3. J
4. J
5. J
6. J
7. J
8. J

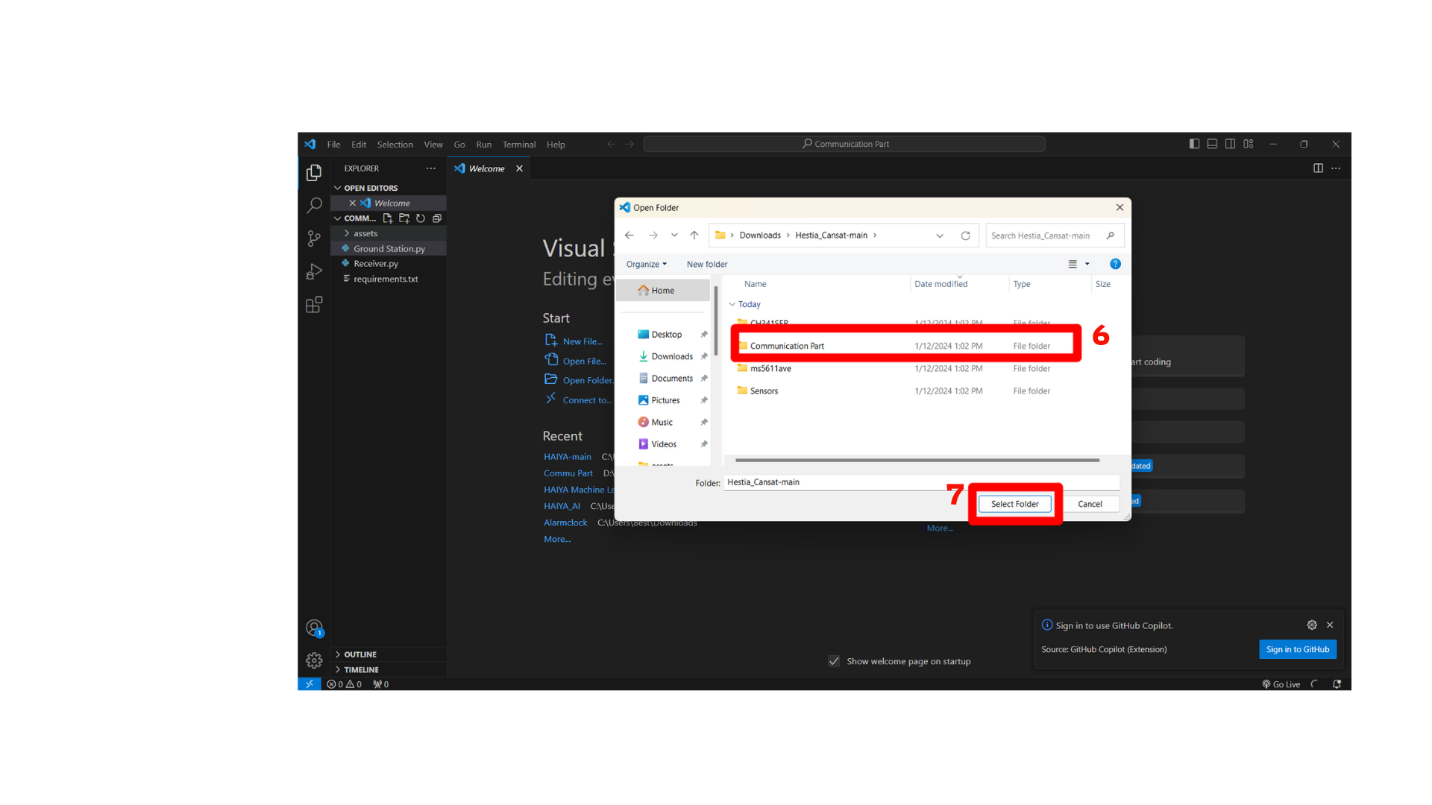
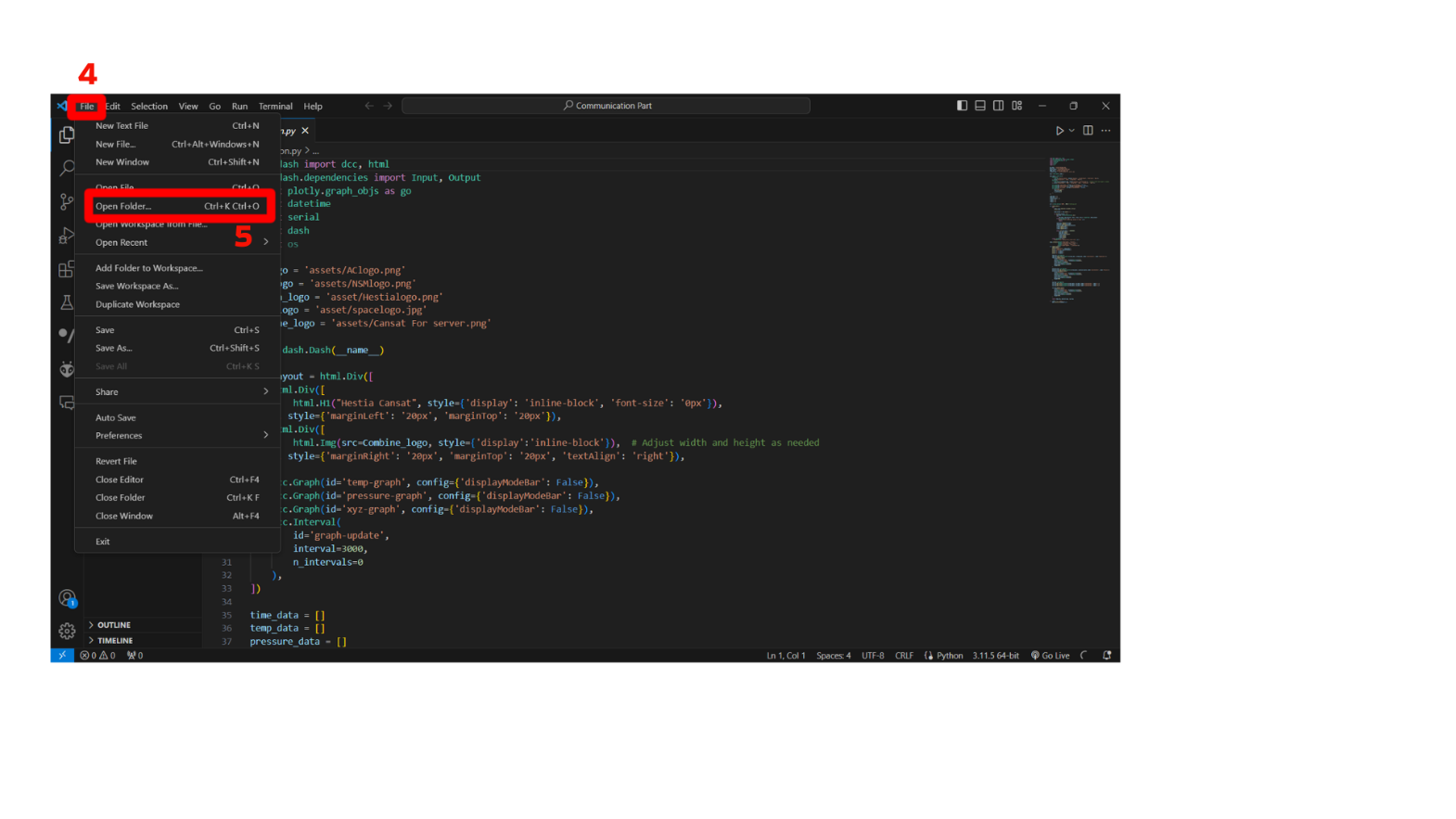
## Software Preparation

1. Install [Arduino IDE](https://www.arduino.cc/en/software)
2. Open Arduino IDE
3. Search and Install libraries by selecting library manager on the left side

* “MS5611 by Rob Tillaart [rob.tillaart@gmail.com](mailto:rob.tillaart@gmail.com) ”
* “MPU6050 by Electronic Cats”
* “Adafruit GFX Library by Adafruit”
* “Adafruit SSD1306 by Adafruit”
* “LoRa by Sandeep Mistry <Sandeep.mistry@gmail.com>”



## Communication Preparation

1. Install [Visual Studio Code](https://code.visualstudio.com/download)
2. Install [Python](https://www.python.org/downloads/)
3. Open Visual Studio Code
4. Click “file” at the left corner
5. Select “open folder” or you can open by use “Ctrl + Shift + O”
6. Navigate file “Communication Part” to the workspace
7. Click “Select”
8. Open the terminal bar in the app
9. Install library by type command “pip install -r requirements.txt”

# Setup

In this part you need to do everytime before start to use it

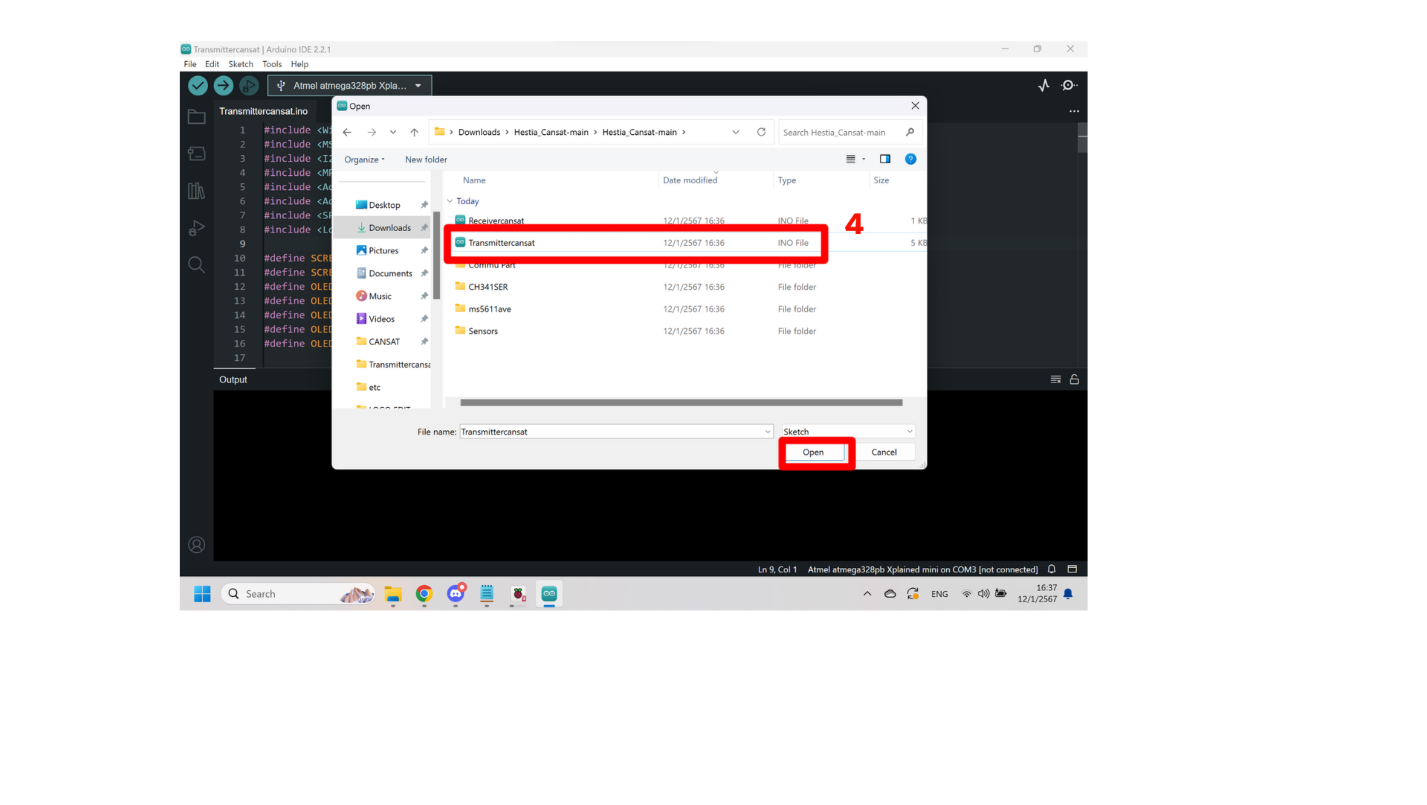
## Mechanical Part

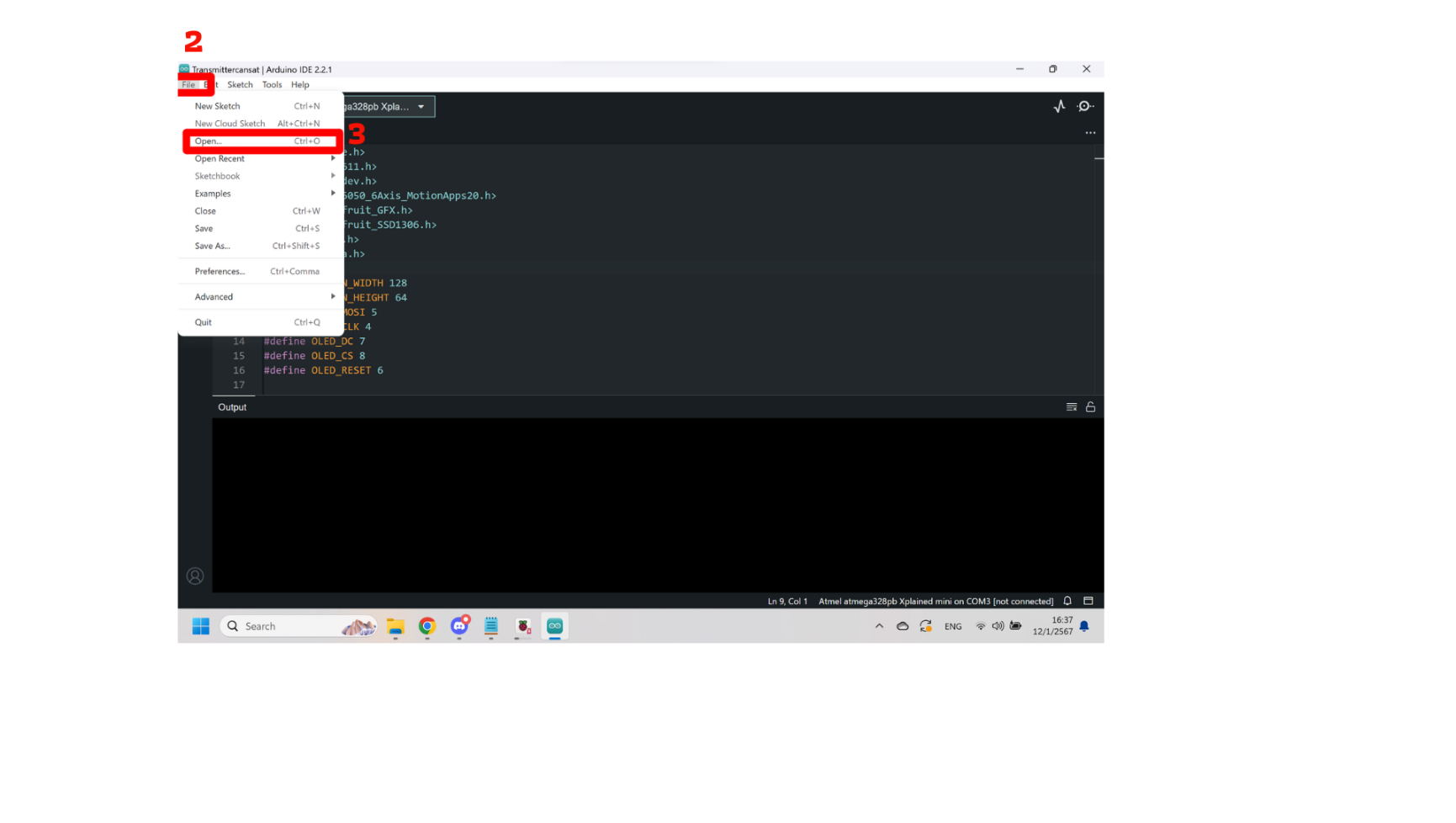
1. How to setup CANSAT
2. Assemble a 1 to 3

## Programming Part

1. Open Arduino IDE
2. Click file at the top left corner
3. Select “open” or Press ctrl + O
4. Select “Transmittercansat.ino”
5. Connect the USB Cable to the board and Computer
6. Select “Atmel atmega328pb Xplained mini” board and port (depends on the computer COM Port)
7. Verify code
8. Upload code

When you upload the code You can connect with powerbank or other power supply



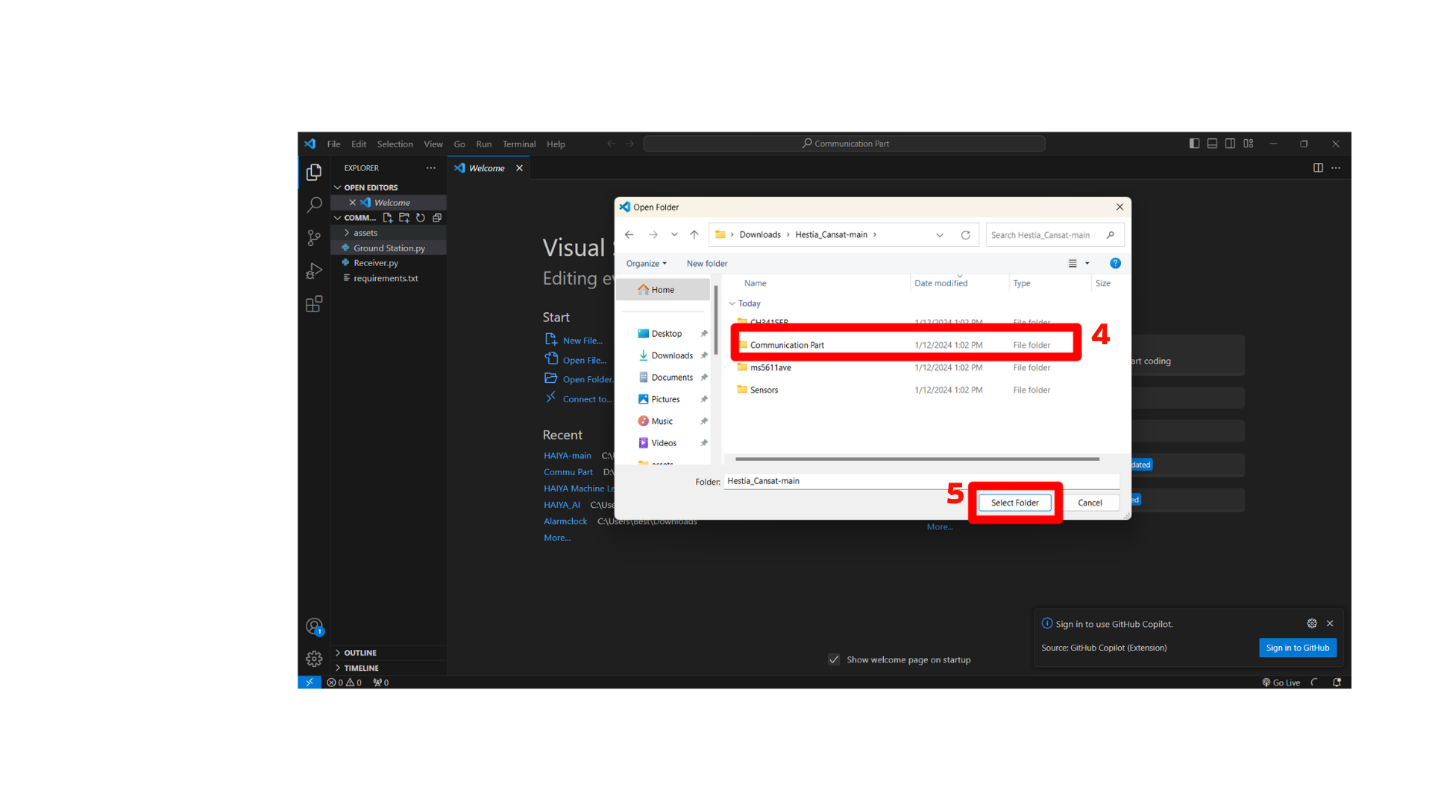
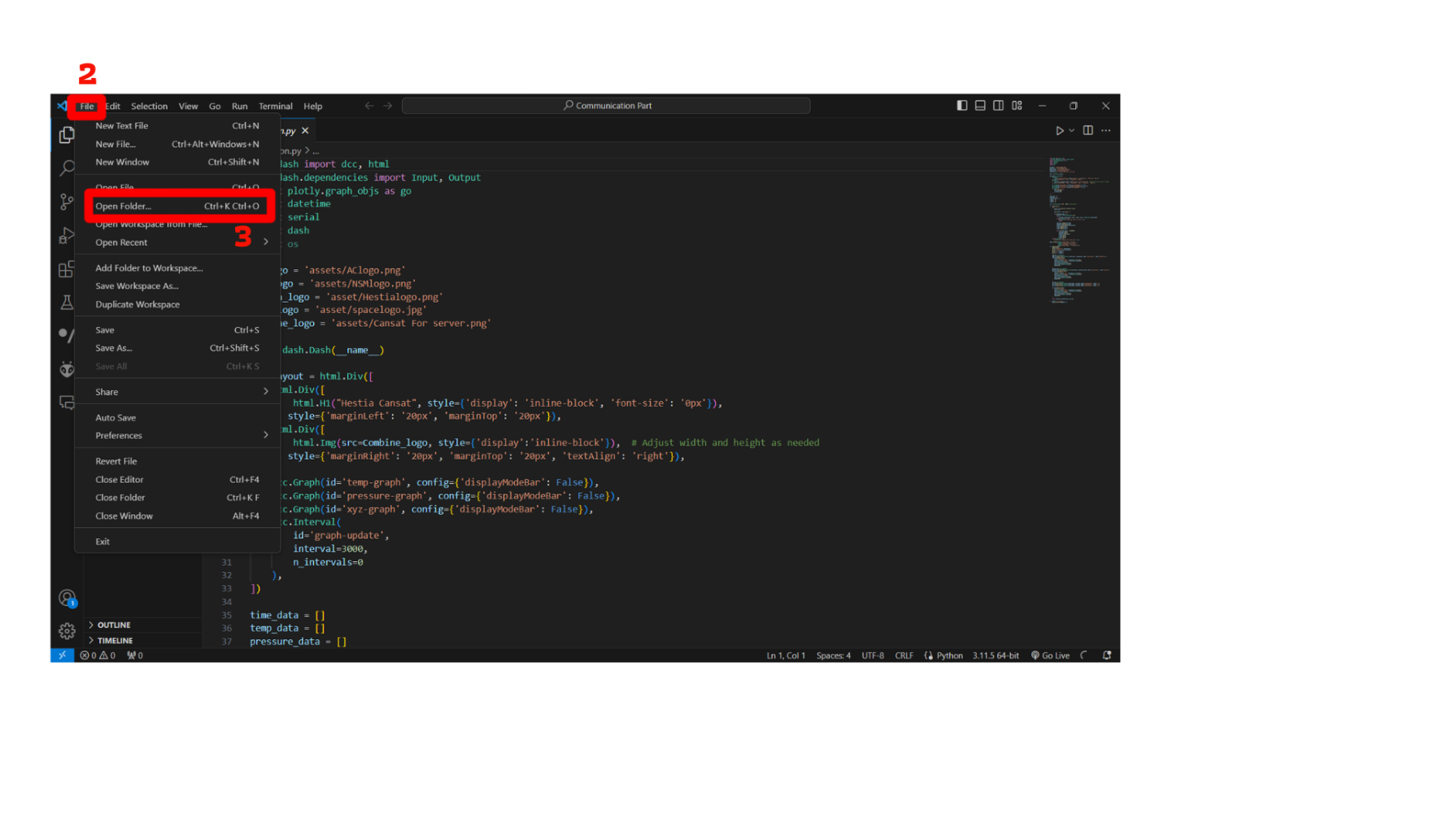




## Communication Part

1. Open the program ”Visual Studio code”
2. Click “file” at the left corner
3. Select “open folder” or you can open by use “Ctrl + Shift + O”
4. Navigate file “Communication Part” to the workspace
5. Click “Select”
6. Select file “Ground Station.py”
7. Open Terminal
8. Find the “Setting port and Baud rate”
9. Edit setting port and baud rate (You can check by open Arduino and check)
10. Run the file
11. Open the link in the terminal
12. Wait for 10 second for calibrate

\*\*Every time you use and want to open it again disconnect and reconnect the receiver\*\*

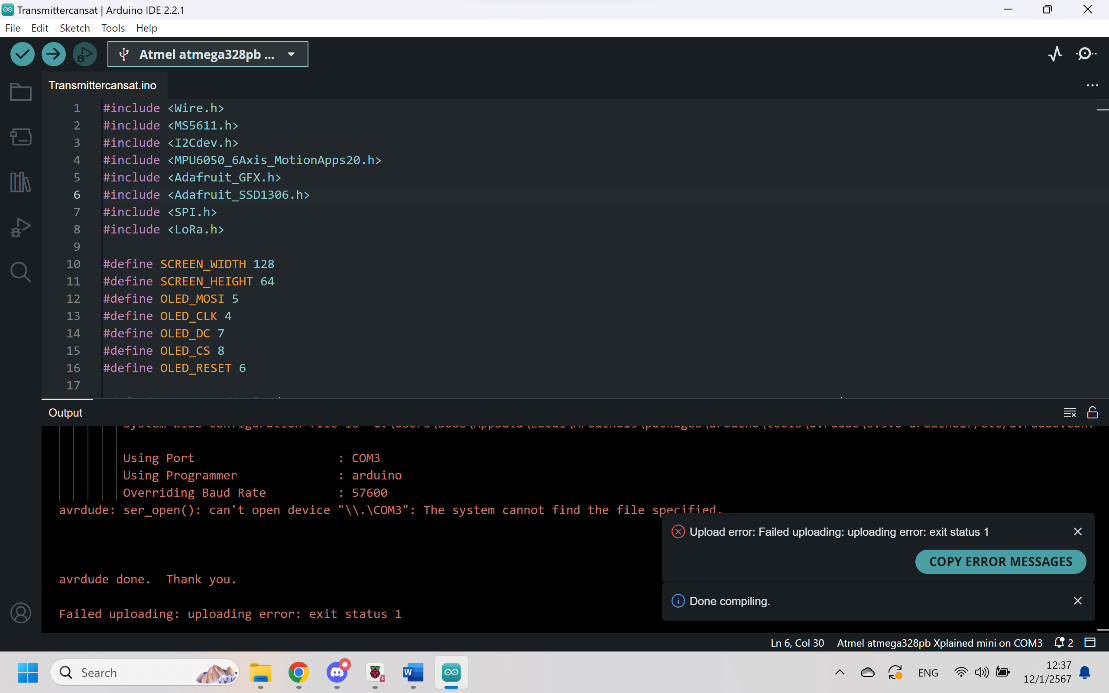
\*\*You need to connect to run the Programming part before run the Communication part\*\*

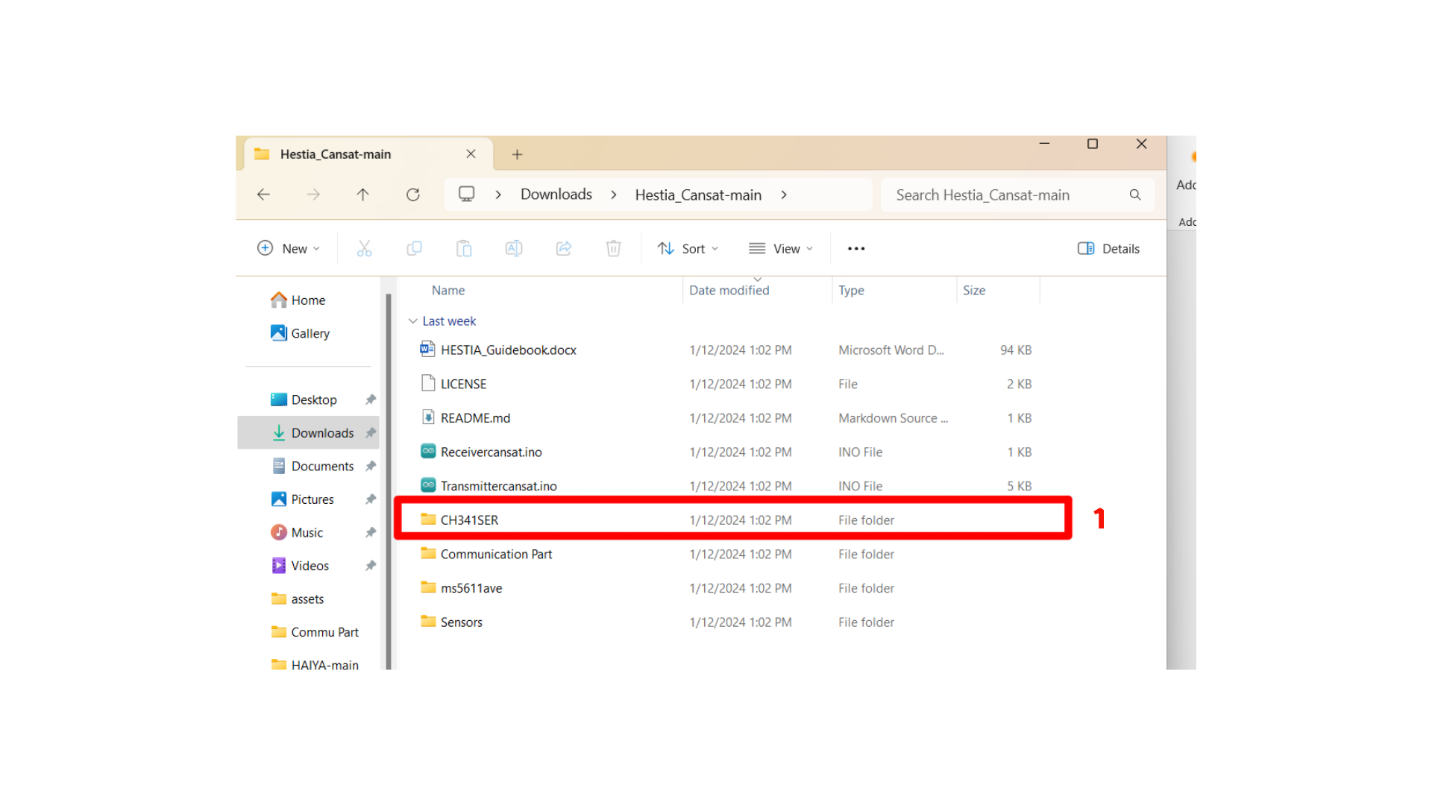
# Troubleshoot

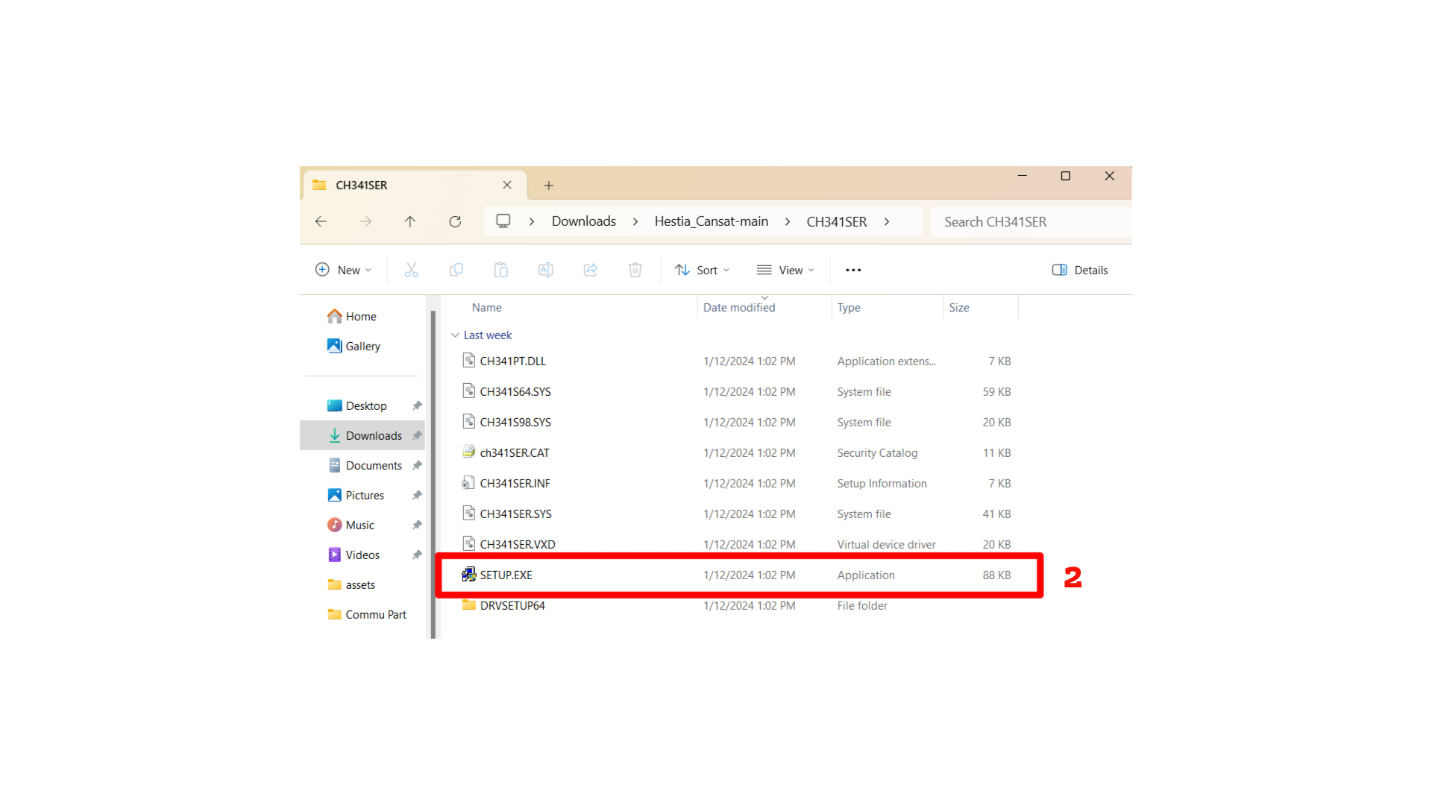
## Programming Part

1. "Upload Error” Reinstall the driver of MCU by

* Select the “CH341SER” folder
* Select and Open “SETUP”
* Select “UNINSTALL”
* Select “INSTALL”
* Pull out the USB Cable
* Connect the USB Cable to the computer again

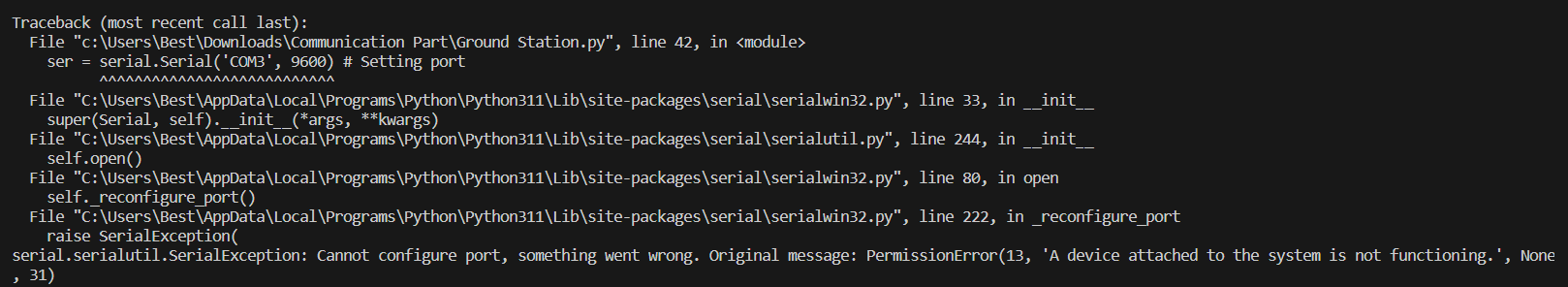






## Communication Part

1. “Permission Error”

* Disconnect receiver port and reconnect it
* If it doesn’t display, Restart your device and setup again.

# Obligation and Caution

## Obligation

* Turn off the switch and unplug when not in use.
* After use, store it in a bag and keep it dry.

## Caution

* If any issues arise beyond what is covered in the manual, please contact and send the item for repair to the service center.
* Do not use steam cleaners or high-pressure water sprayers to clean the equipment, as it may cause electric shock.
* Children under 8 years old should have receive advice from adult before use.
* Do not use make anything that make spark occur.
* Do not touch the circuit with wet or dirty hands.

SPACE AC Institute of Technology

26, 40 Charoenkrung Bangrak Bangkok 10500

Tel : 063-231-7613

Email : [phachara@spaceac.net](mailto:phachara@spaceac.net)

<https://spaceac.net>