How to import and use HydroAI library with Google Colab

02. 28, 2024

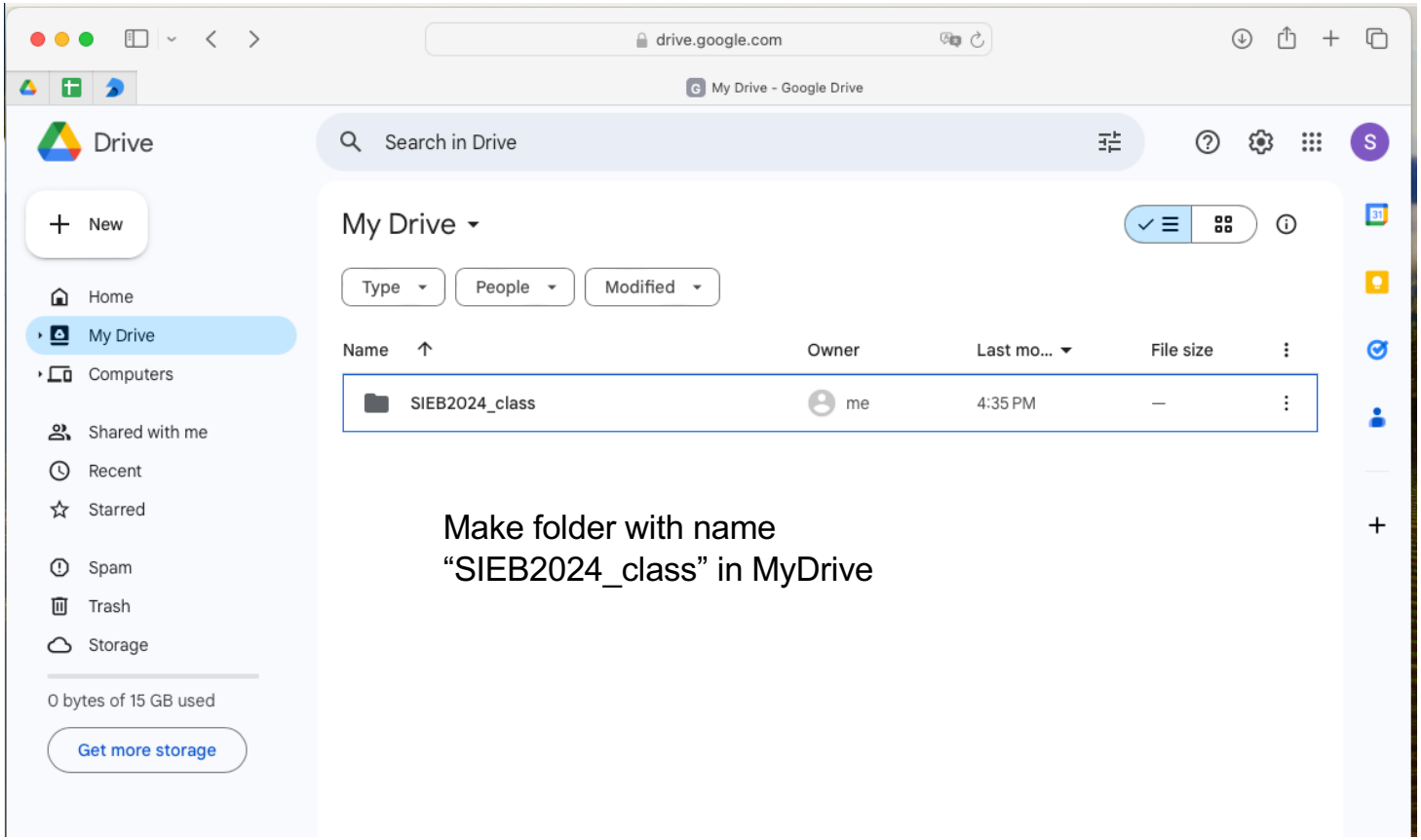
Statistical Inference and Environmental Big Data Analysis class (EN5423-01)

TA: Subin Kim

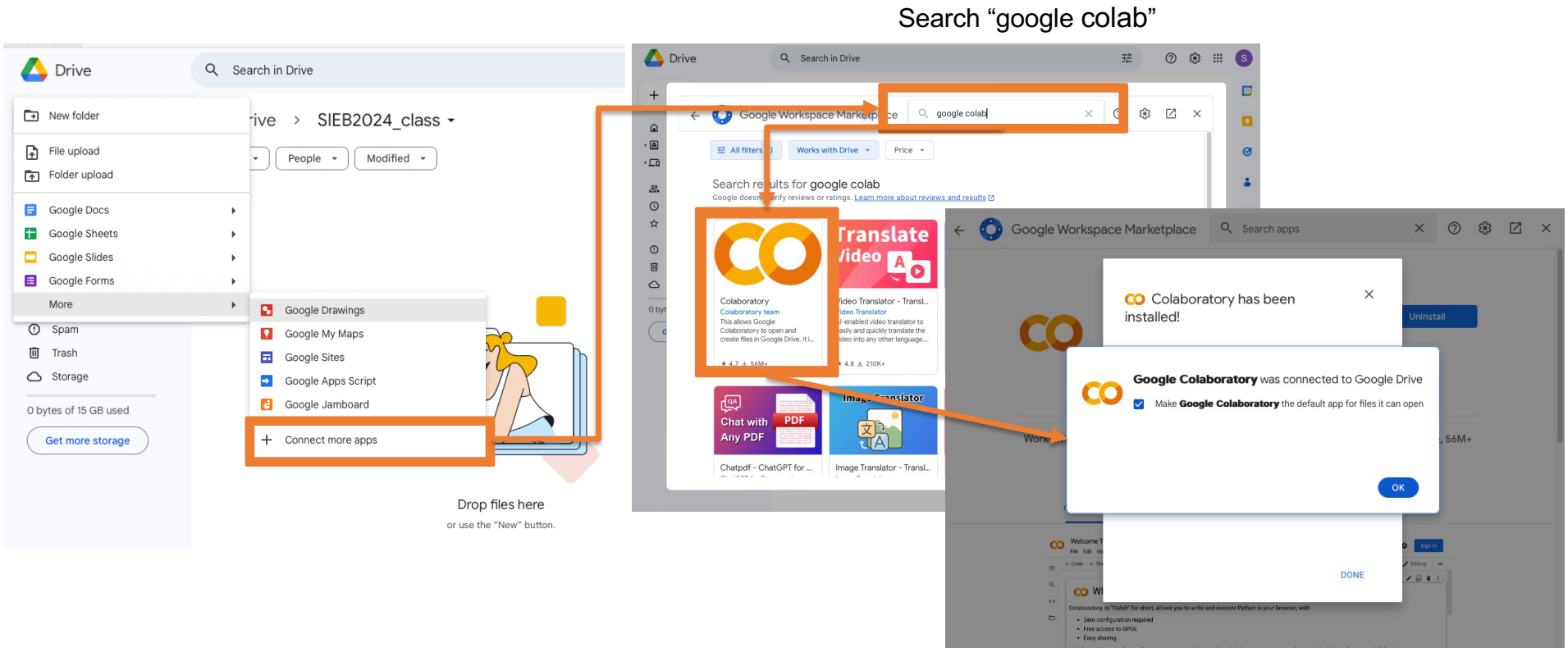
HYDRO AI

GIST | School of Earth Sciences and Environmental Engineering

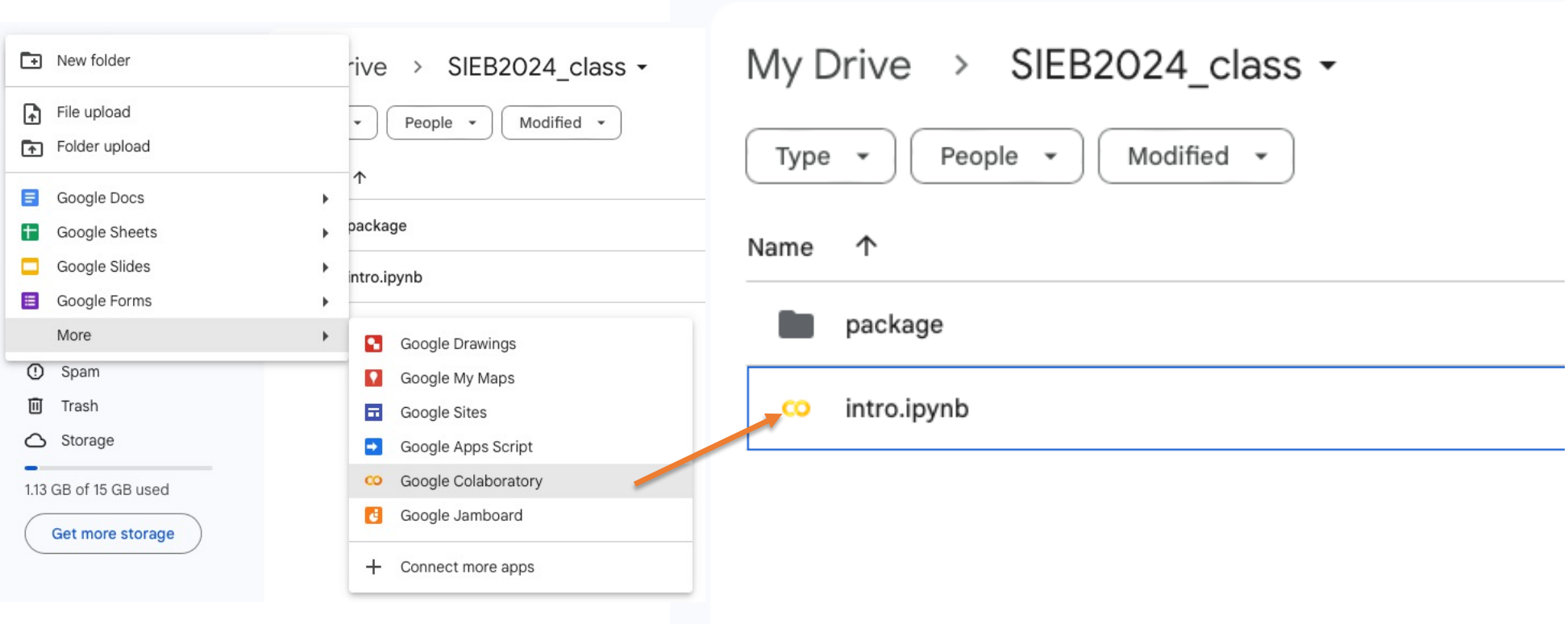
0-1. Prepare Google account to use google drive



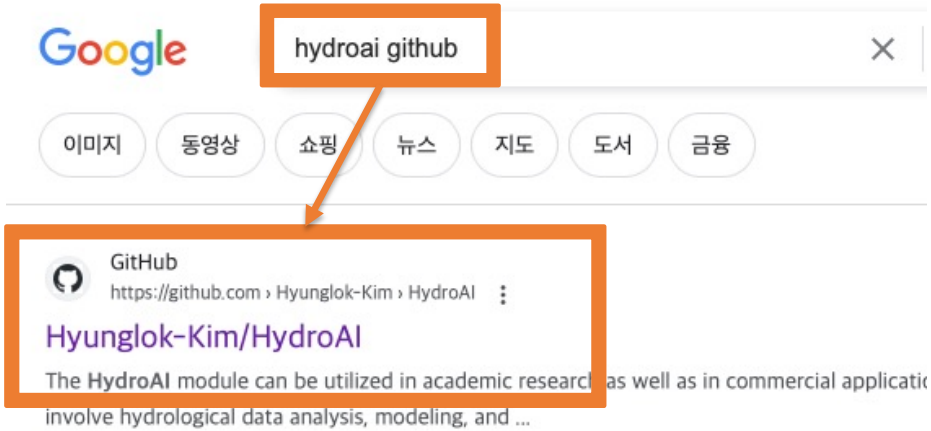
0-2. Add Google Colab app

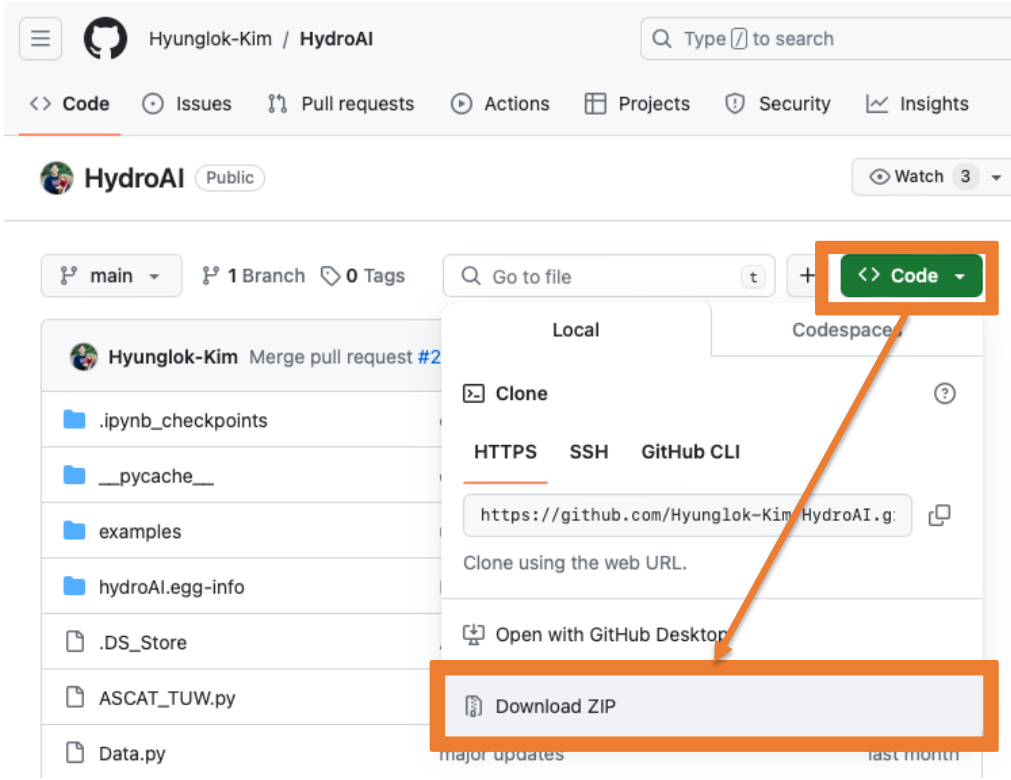


0-3. Make Colab file & package folder in SIEB2024_class

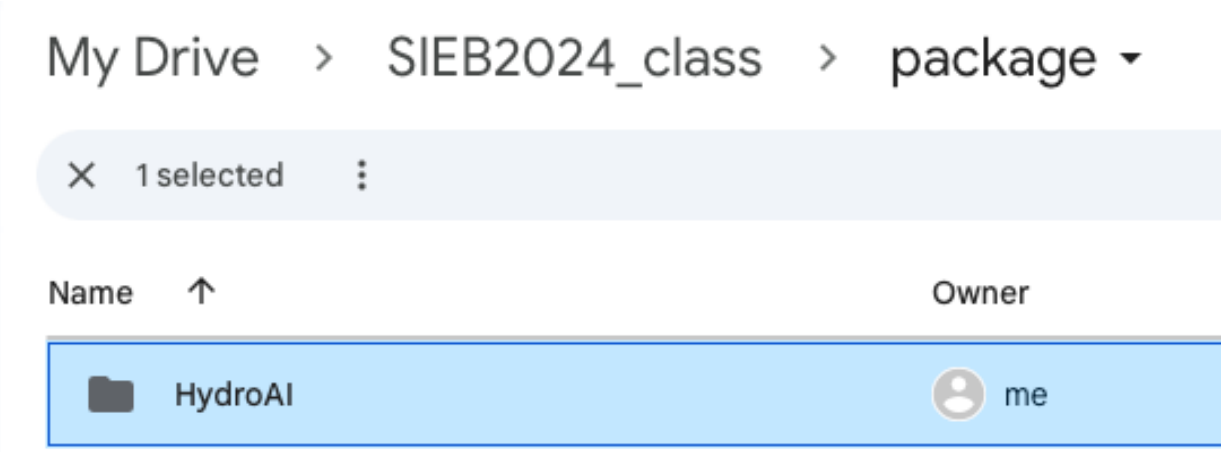


0-4. Download HydroAI library in Github “Hyunglok-Kim/HydroAI”





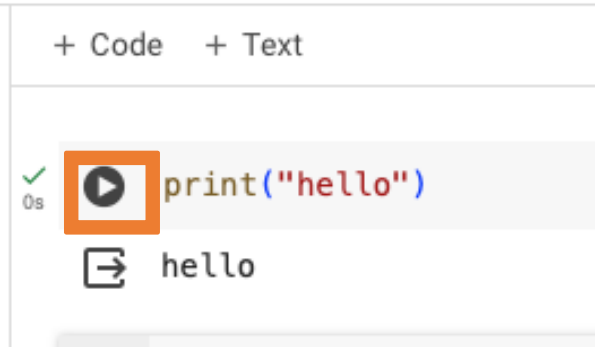
0-5. Add HydroAI library in your package folder



Set folder name “HydroAI”

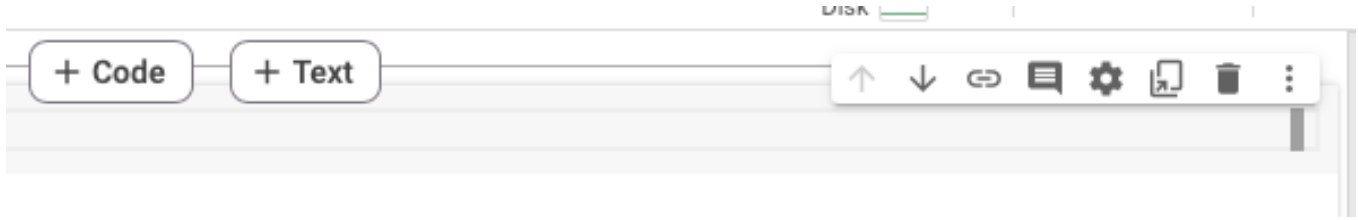
0-6. Run test code with two methods

1. Click play button



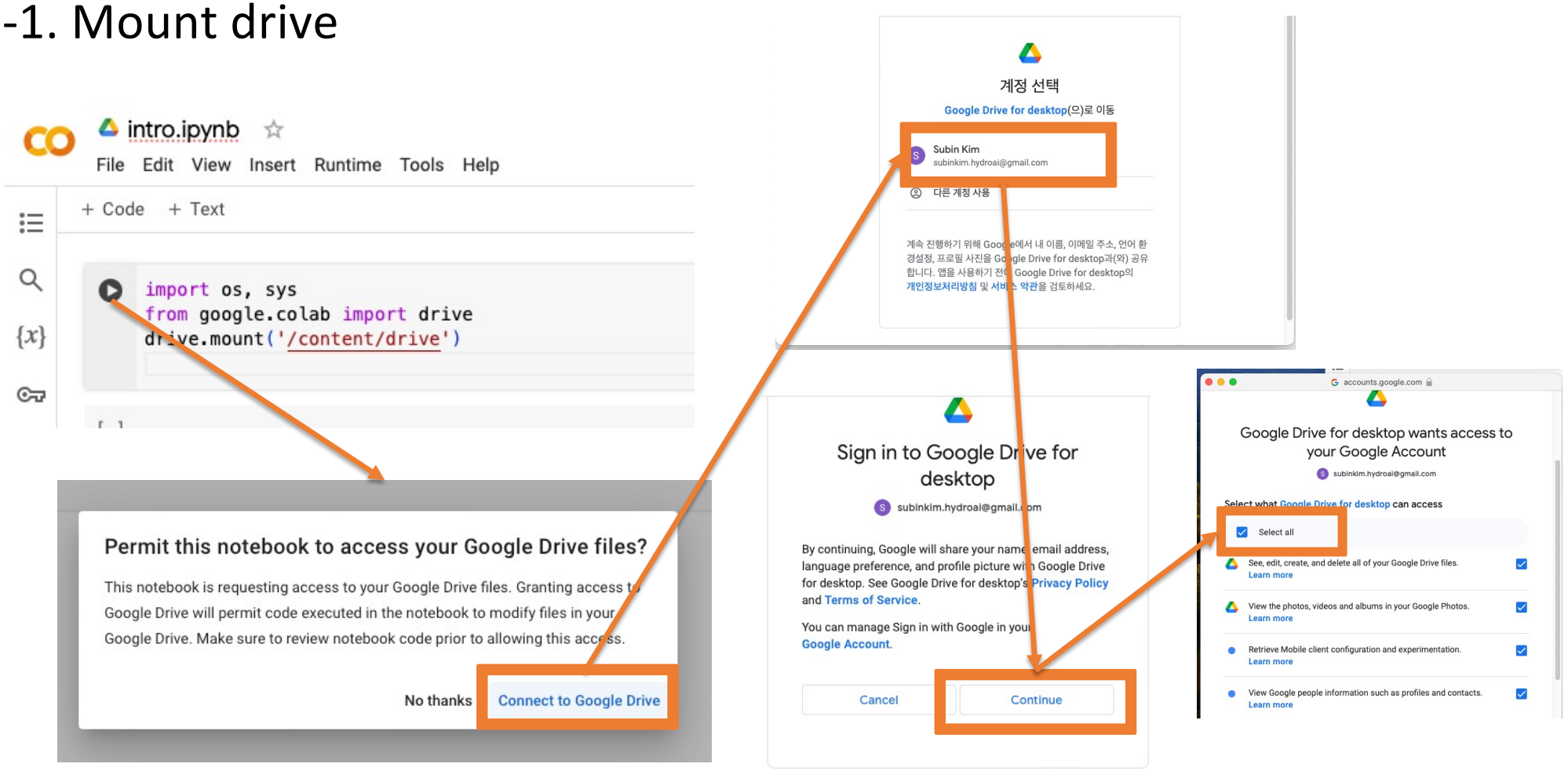
2. [Shift] + [Enter]

Done symbol with number of running this code



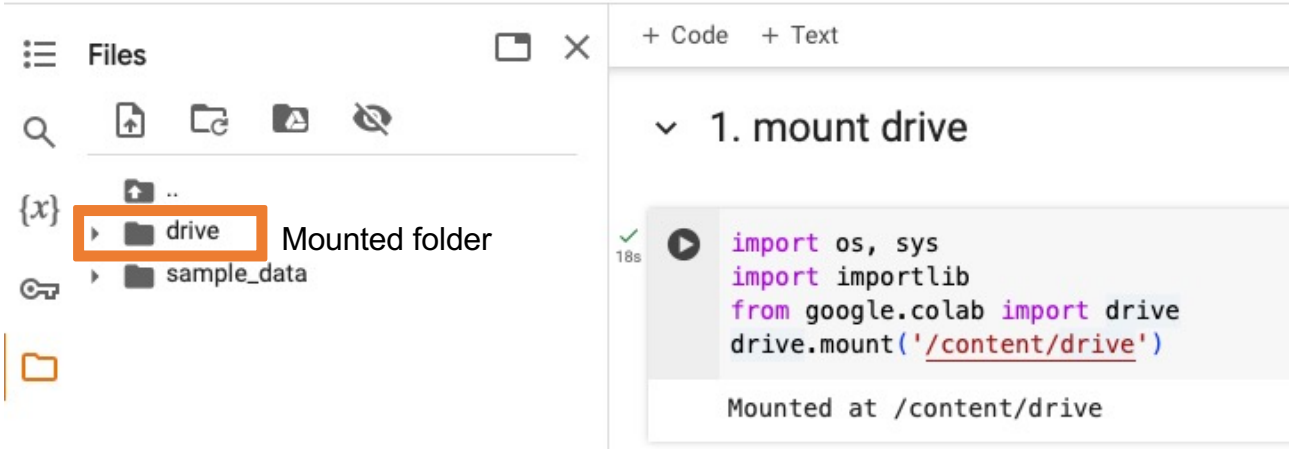
+@)
1. Add code, text
2. Move and delete code cell, etc…

1-1. Mount drive

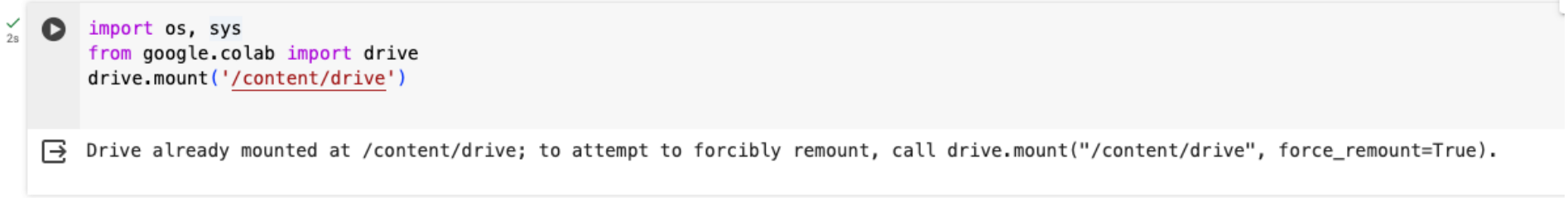


Keep clicking continue button

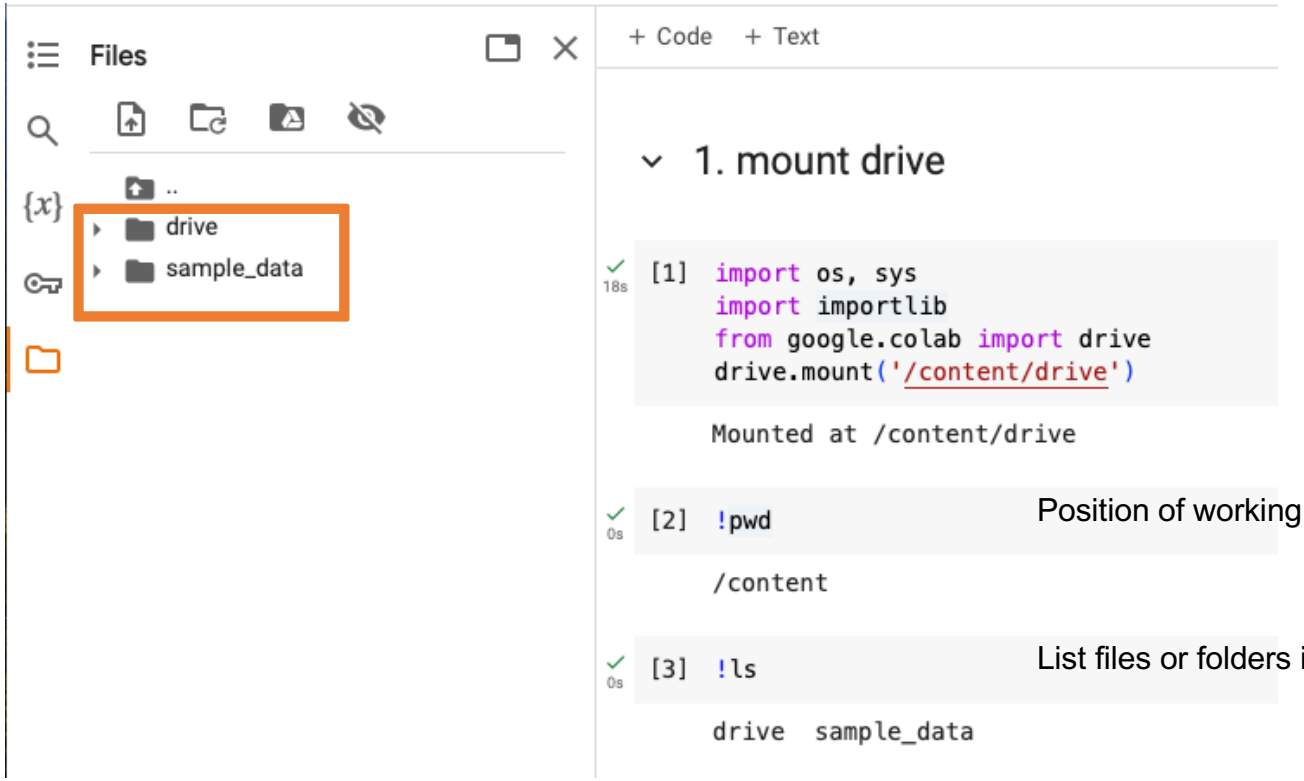
1-2. Check result your mounted drive folder



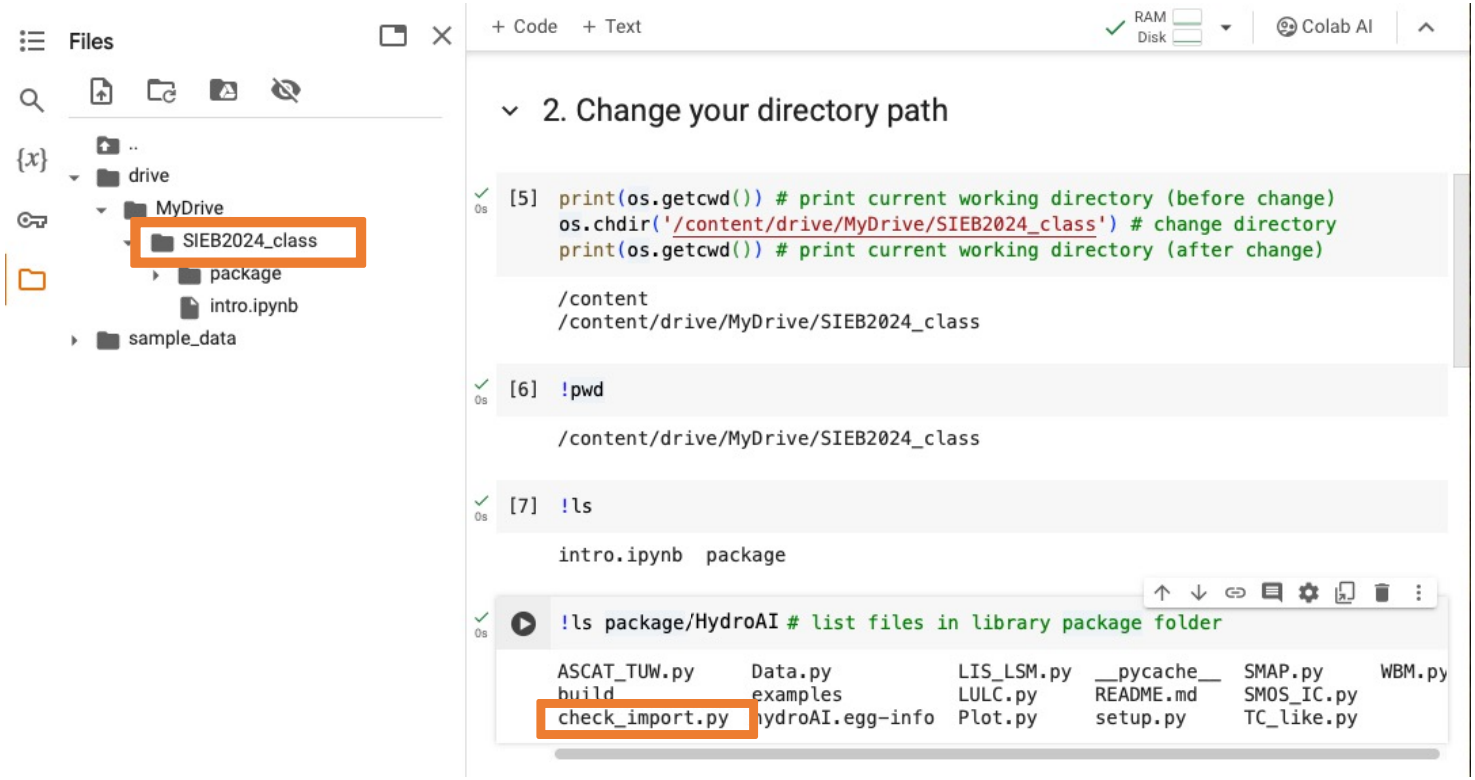
+@) When you run one more time



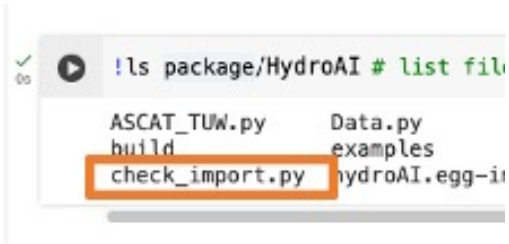
1-3. Check your current directory & folder lists



2. Change your directory path and check your HydroAI files



3. Import HydroAI's check_import library

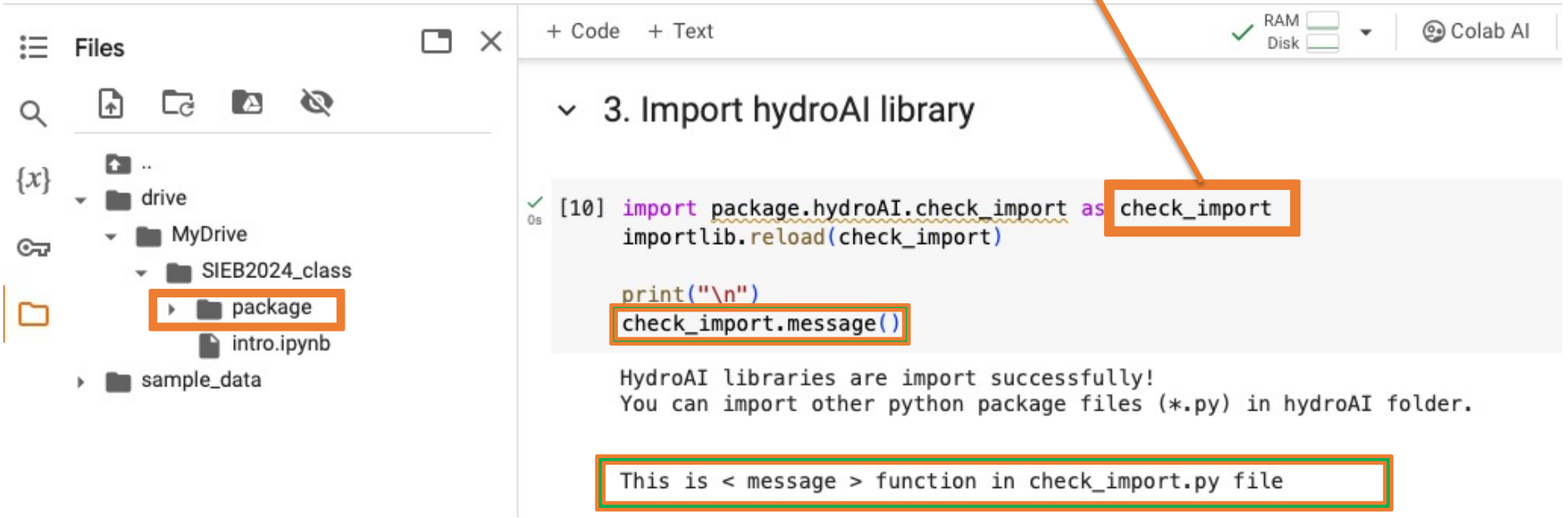


In **check_import.py** file

```
1 print("HydroAI libraries are import successfully!")
2 print("You can import other python package files (*.py) in hydroAI folder.")
3

def message():
    print("This is < message > function in check_import.py file")

8
```



4-1. How to account <ModuleNotFoundError>

```
[11] from package.HydroAI import ASCAT_TUW # you will get < ModuleNotFoundError >

---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
<ipython-input-11-a63ced46e781> in <cell line: 1>()
----> 1 from package.hydroAI import ASCAT_TUW # you will get <
ModuleNotFoundError >

/content/drive/MyDrive/SIEB2024_class/package/hydroAI/ASCAT_TUW.py in
<module>
      2 import os
      3 import h5py
----> 4 import netCDF4
      5
      6 def load_mat_file(mat_file, path):

ModuleNotFoundError: No module named 'netCDF4'

---------------------------------------------------------------------------
NOTE: If your import is failing due to a missing package, you can
manually install dependencies using either !pip or !apt.

To view examples of installing some common dependencies, click the
"Open Examples" button below.
---------------------------------------------------------------------------

OPEN EXAMPLES
```

You need to install required other modules.

4-2. Install modules in package path

```
[16] pkg_path = '/content/drive/MyDrive/SIEB2024_class/package'
     !pip install --target=$pkg_path netCDF4
     !pip install --target=$pkg_path multiprocess
     !pip install --target=$pkg_path cartopy
     !pip install --target=$pkg_path rasterio
     !pip install --target=$pkg_path rioxarray
```

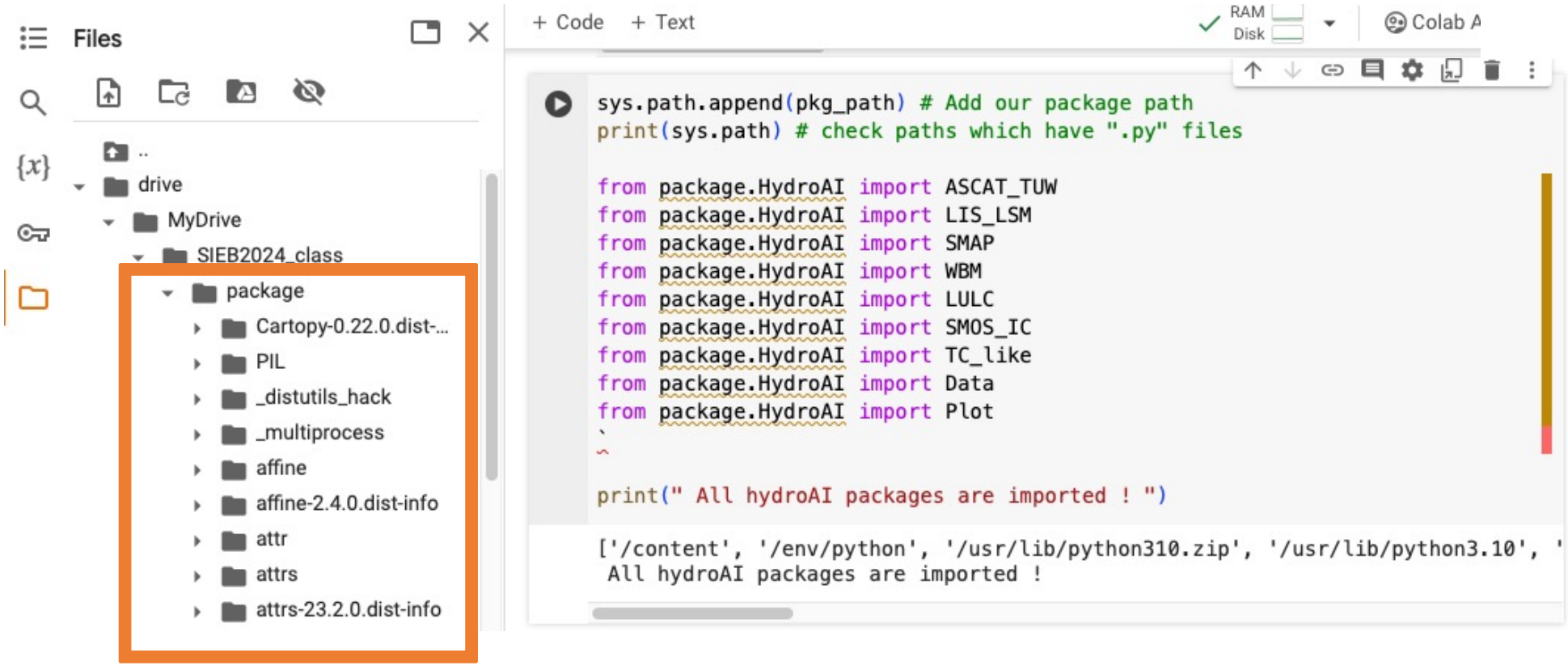
Package path

Install all prerequisite modules with pip
+@) pip: Package Installer of Python

```
Collecting netCDF4
  Using cached netCDF4-1.6.5-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_
Collecting cftime (from netCDF4)
  Using cached cftime-1.6.3-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x
Collecting certifi (from netCDF4)
  Using cached certifi-2024.2.2-py3-none-any.whl (163 kB)
Collecting numpy (from netCDF4)
  Using cached numpy-1.26.4-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x
Installing collected packages: numpy, certifi, cftime, netCDF4
Successfully installed certifi-2024.2.2 cftime-1.6.3 netCDF4-1.6.5 numpy-1.26
```

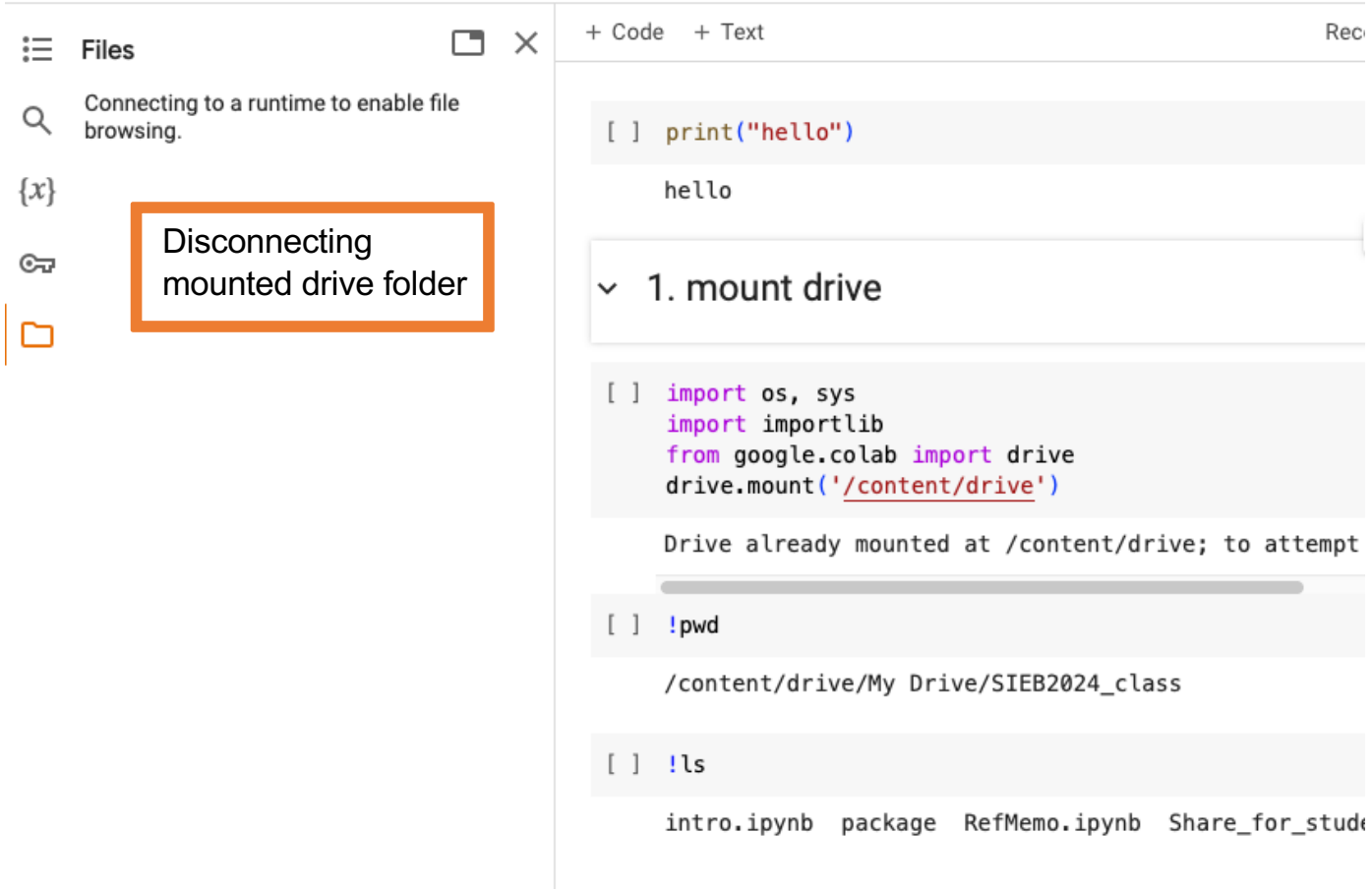
4-3. All HydroAI packages are imported

You need to install packages



With many packages

4-4. When you disconnect & restart your code



You have to do these processes again.
1) mount drive
2) Install modules with pip

So, for the next class, please prepare that you can import HydroAI libraries before the next class begins!

If you have any other questions related these processes, send me an email. (subinkim8774@gm.gist.ac.kr)

Q & A

Thank You!

GIST School of Earth Sciences and Environmental Engineering

HYDRO AI

https://www.hydroai.net