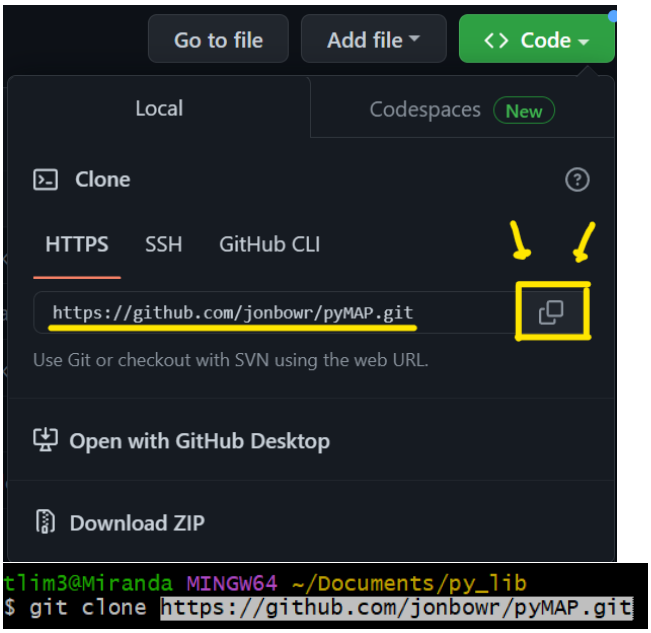
***< MCP Gain Generic.ipynb >* Guide**

- Install **Jupyter Notebook** via **Anaconda** (if you do not already have it).
  - How to install **Anaconda**.
  - How to install **Jupyter Notebook** (in this order).
- Clone **pyMAP** onto the user's local environment.
  - Follow the link here.
  - Copy the link by clicking the "Copy" button (or you can simply download the ZIP file and extract them into your environment.) NOTE: Without cloning you won't be able to push changes.
  - In the user's desired directory, type in the following prompt in the command window.



  - Now **pyMAP** is available in **python**.
- Install the following packages directly from Jupyter Notebook by typing the following command in a cell inside a Jupyter Notebook: ***!{sys.executable} -m pip install <package name>***

```
import sys
```

```
!{sys.executable} -m pip install <package name>
```

  - *numpy*
  - *pandas*
  - *scipy*
  - *matplotlib*
  - *periodictable*
- Now the **MCP_Gain_Generic.ipynb** document is ready to be used. Open the document named **MCP_Gain_Generic.ipynb**. NOTE: It is a good practice to copy and save analysis documents in the same environment as where all the data files are stored, for easier navigation.

- While we have successfully installed the necessary packages, it is important to execute the following command in Jupyter Notebook for **pyMAP** to properly operate: ***sys.path.append*(r'<where pyMAP package is cloned>')**.

```
import sys
sys.path.append(r'C:\Users\tlim3\Documents\py_lib')

import pandas as pd
import pyMAP as pm

%matplotlib notebook
```

- How to run specific test results:
  - Inside the **MCP_Gain_Generic.ipynb** document, in the **Input parameter** cell, specify which test to run.
  - ***dat_nam*** is where you input the desired test name (including the test date), e.g., *['emv1_unhsplat_tof_functional_mcp_gain2_20221206_ILO_RAW_CNT']*. NOTE: It is case-sensitive.
  - ***plt_grps*** contains a list of the variables you wish to display on the plots. Just remove from the list if you want to deselect certain elements, i.g., *'tof_rate[cts/s]':['TOF0', 'TOF1', TOF2']* will only plot *TOF0, TOF1,* and *TOF2*, not *SILVER*.
  - ***use_x*** contains a list of independent variables you wish to plot against to.
  - Example:

```
dat_nam = 'emv1_unhsplat_tof_functional_mcp_gain2_20221206_ILO_RAW_CNT'

plt_grps = {'tof_rate[cts/s]':['TOF0','TOF1','TOF2','TOF3','SILVER'],
            'single_rates [cts/s]':['START_A', 'START_C', 'STOP_B0', 'STOP_B3'],
            'Efficiency':['Eff_A','Eff_B','Eff_C','Eff_TRIP']}

use_x = ['MCP_VSET','MCP_VM']
```

- Follow **MCP_Gain_Generic_notes.ipynb** for more information.