Tutorial Video:

Please watch this walkthrough if these steps don't make sense!
https://youtu.be/S4vKIfVu-H0

Aside:

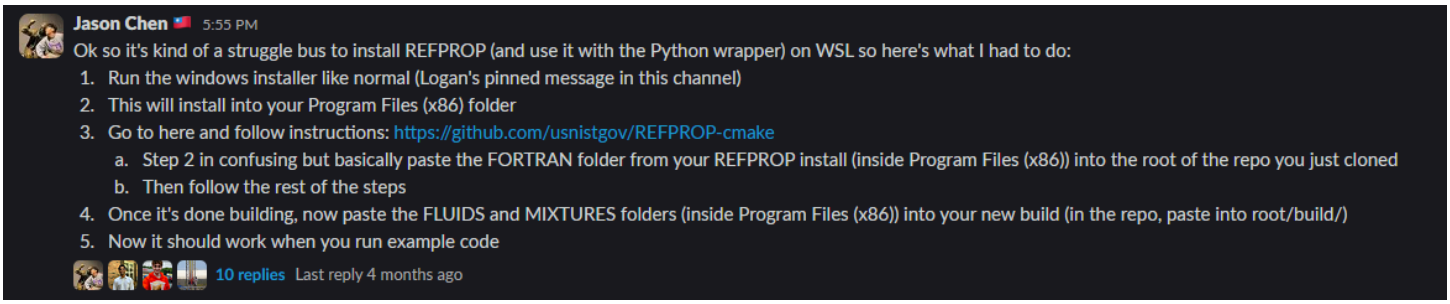
- In the tutorial I mentioned "Windows Subsystem for Linux" (WSL). If you haven't taken 280 and/or don't know what that is, go through these tutorials first to set up WSL on your machine:
- 1) https://eecs280staff.github.io/tutorials/setup_wsl.html
- 2) https://eecs280staff.github.io/tutorials/cli.html
    - And if you aren't familiar with VSCode, do this too (everything up to right before the "Compile and Run" section is relevant to us):
- 3) https://eecs280staff.github.io/tutorials/setup_vscode_wsl.html

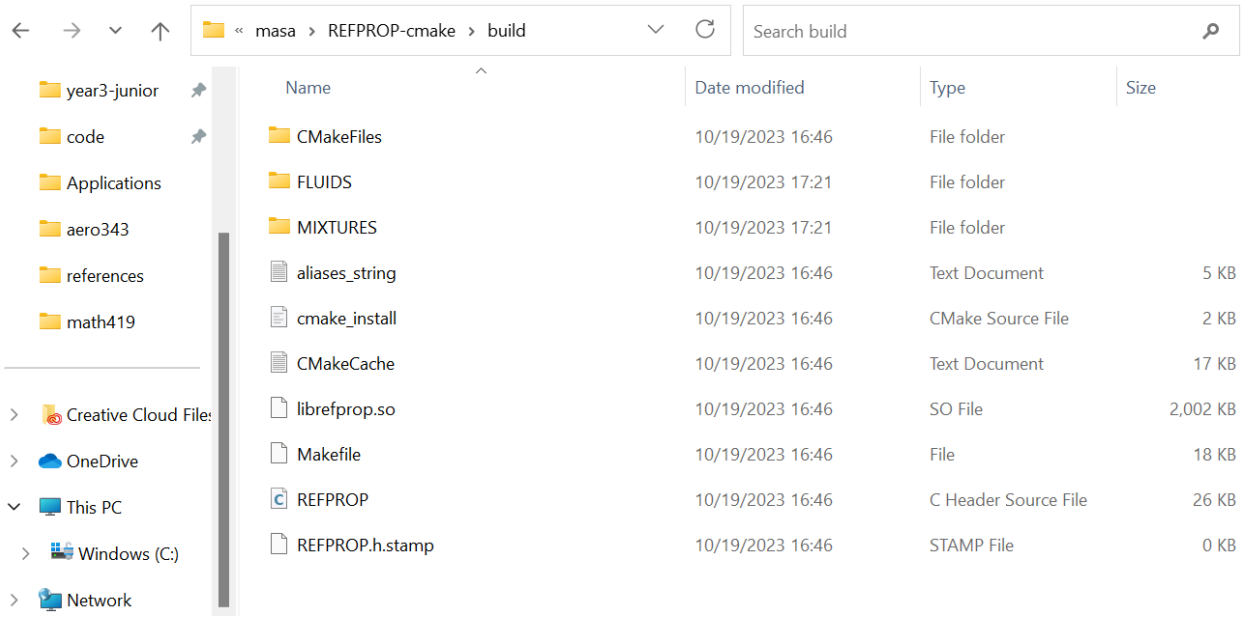
Instructions:

1. Get the license from Logan for the actual REFPROP library

REFPROP is uploaded to the MASA drive here! Also found on the Dropbox here. You'll need a windows personal computer or laptop to install it (running the installer .exe). If you do not have Windows, you can use the pre-compiled version here.

From there, if you want to install on Linux/MacOS, you need to take those files from the windows installation (under the Program Files (x86) folder), and proceed with the instructions on REFPROP-cmake on your Linux/Mac machine.





Finally, go here for the Python library (you just need to pip3 install):
https://github.com/usnistgov/REFPROP-wrappers/tree/master/wrappers/python

Some example code to try:

```
import os, numpy as np
from ctREFPROP.ctREFPROP import REFPROPFunctionLibrary

def NBP():
    RP = REFPROPFunctionLibrary(os.environ['RPPREFIX'])
    RP.SETPATHdll(os.environ['RPPREFIX'])
    print(RP.RPVersion())

    MOLAR_BASE_SI = RP.GETENUMdll(0,"MOLAR BASE SI").iEnum
    p_Pa = 101325
    Q = 0.0
    r = RP.REFPROPdll("Water","PQ","T",MOLAR_BASE_SI,0,0,p_Pa,Q,[1.0])
    print(r.Output[0])

    # r = RP.REFPROPdll("PROPANE","PQ","T",MOLAR_BASE_SI, 0,0,101325, 0, [1.0])
    # print(r.ierr, r.herr, r.Output[0])

if __name__=='__main__':
    # If the RPPREFIX environment variable is not already set by your installer (e.g.,
on windows),
    # then uncomment this line and set the absolute path to the location of your
install of
    # REFPROP
    os.environ['RPPREFIX'] = r'/home/jasonyc/masa/REFPROP-cmake/build'

    # Print the version of REFPROP in use and the NBP
    NBP()
```