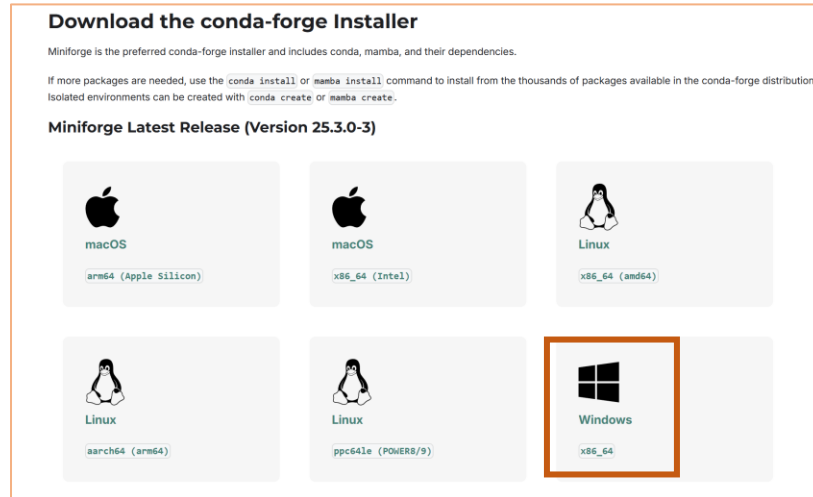


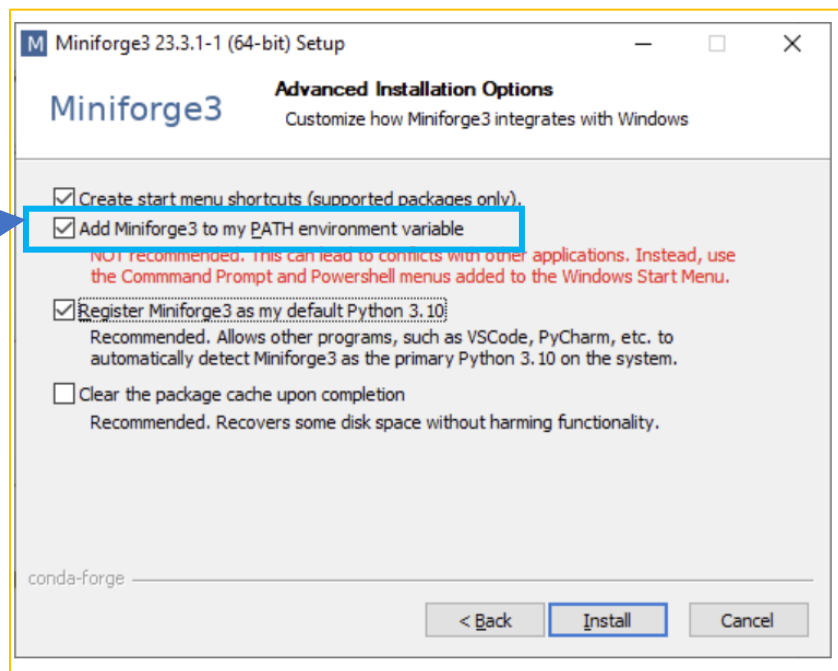
STEPWISE TUTORIAL TO INSTALL ENVIRONMENT FOR PYGIS IN WINDOWS

Step 1: Download miniforge using link below

<https://conda-forge.org/download/>



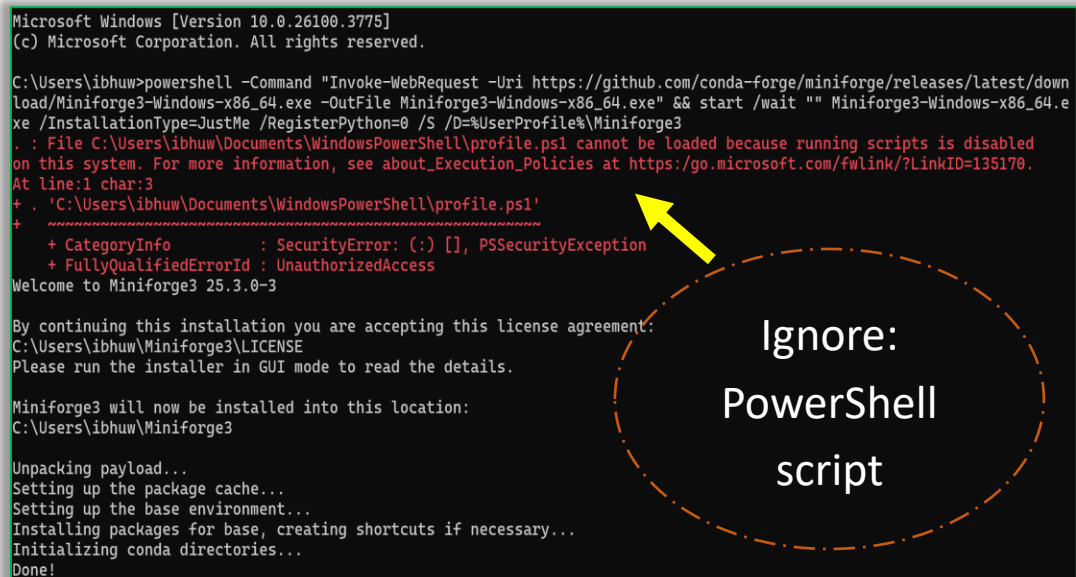
Step 2: Install Miniforge;



OR

Open Command prompt; and run the code below (copy all at once)

```
powershell -Command "Invoke-WebRequest -Uri 'https://github.com/conda-  
forge/miniforge/releases/latest/download/Miniforge3-Windows-x86_64.exe' -OutFile  
'Miniforge3-Windows-x86_64.exe'" && start /wait "" Miniforge3-Windows-x86_64.exe  
/InstallationType=JustMe /RegisterPython=0 /AddToPath=0 /S /D=%UserProfile%\Miniforge3  
&& %UserProfile%\Miniforge3\Scripts\conda.exe init
```



```
Microsoft Windows [Version 10.0.26100.3775]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\ibhuw>powershell -Command "Invoke-WebRequest -Uri https://github.com/conda-  
forge/miniforge/releases/latest/download/Miniforge3-Windows-x86_64.exe -OutFile Miniforge3-Windows-x86_64.exe" && start /wait "" Miniforge3-Windows-x86_64.e  
xe /InstallationType=JustMe /RegisterPython=0 /S /D=%UserProfile%\Miniforge3  
. : File C:\Users\ibhuw\Documents\WindowsPowerShell\profile.ps1 cannot be loaded because running scripts is disabled  
on this system. For more information, see about_Execution_Policies at https://go.microsoft.com/fwlink/?LinkID=135170.  
At line:1 char:3  
+ . 'C:\Users\ibhuw\Documents\WindowsPowerShell\profile.ps1'  
+ ~~~~~  
+ CategoryInfo          : SecurityError: (:) [], PSSecurityException  
+ FullyQualifiedErrorId : UnauthorizedAccess  
  
Welcome to Miniforge3 25.3.0-3  
  
By continuing this installation you are accepting this license agreement:  
C:\Users\ibhuw\Miniforge3\LICENSE  
Please run the installer in GUI mode to read the details.  
  
Miniforge3 will now be installed into this location:  
C:\Users\ibhuw\Miniforge3  
  
Unpacking payload...  
Setting up the package cache...  
Setting up the base environment...  
Installing packages for base, creating shortcuts if necessary...  
Initializing conda directories...  
Done!
```

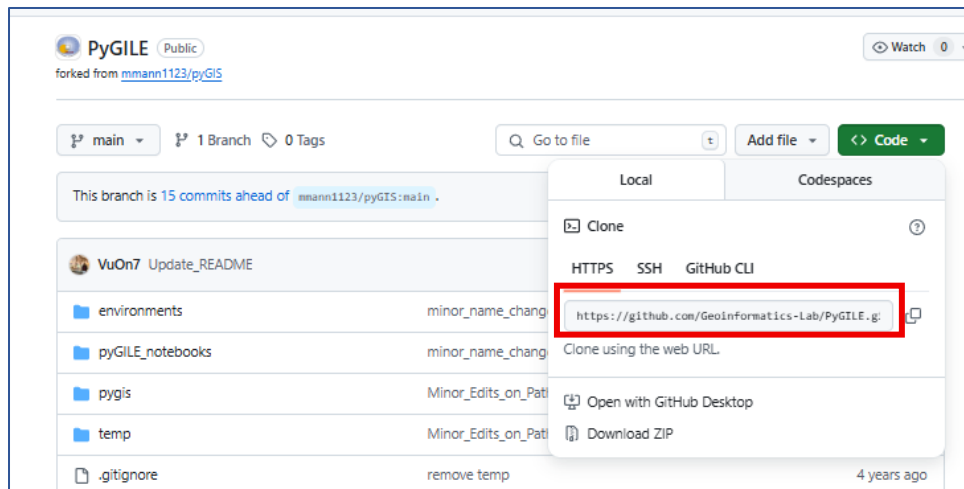
Step 3: Clone the repo or download files from Github; [https://github.com/Geoinformatics-Lab/pyGILE]

Here, for this tutorial, it's saved in the folder below

"C:\Users\ibhuw\Downloads\pyGILE-main.zip"; unzip it;

There will be a text file inside:

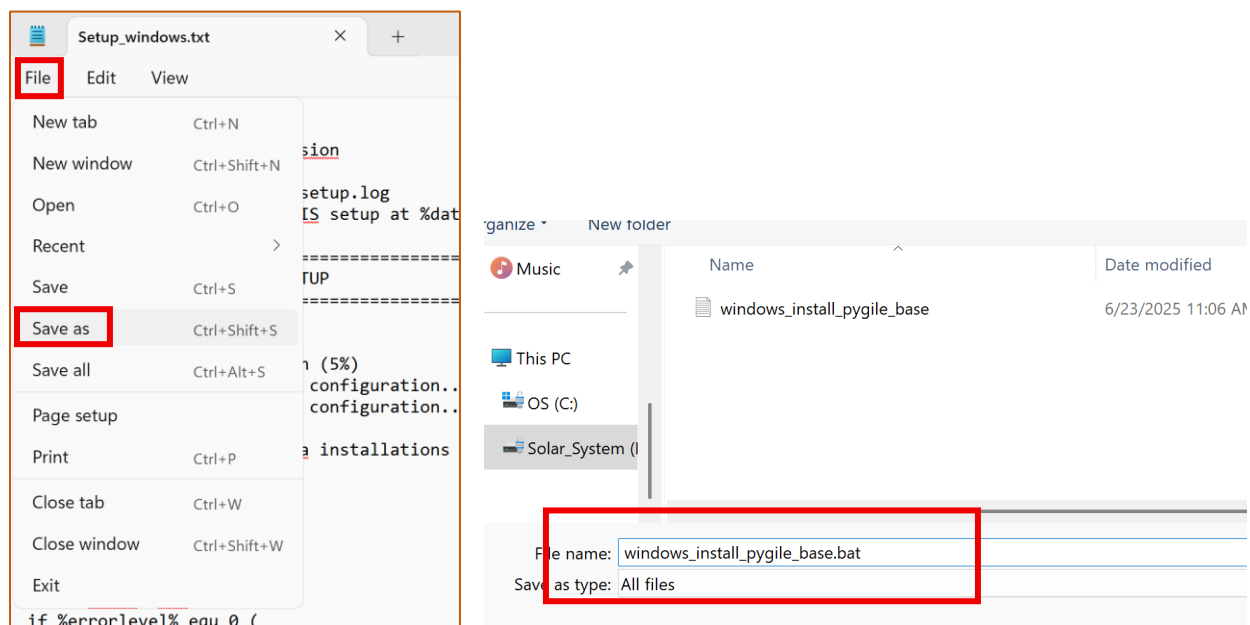
"C:\Users\ibhuw\Downloads\pyGILE-main\setup_files\windows\windows_install_pygile_base.txt"



Step 4: Open the “windows_install_pyGILE_base.txt” and save as “windows_install_pygile_base.bat”; change save file type as “All files”; SAVE IN THE SAME FOLDER where windows_install_pygile_base.txt is present. (CHECK image below)

E.g.

"C:\Users\ibhuw\Downloads\pyGILE-main\environments\windows\windows_install_pygile_base.bat"



Step 5: Now search for “miniforge prompt” from Start in windows; and open “miniforge prompt”; something like this appears (see image below)

```
Miniforge Prompt - C:\Users\i  X + v
C:\Users\ibhuw>mamba activate C:\Users\ibhuw\miniforge3
(base) C:\Users\ibhuw>
```

Step 6: NOTE: `cd` to the directory of containing **“windows_install_pygile_base.bat”** and then type the name of the file;

Here, the files are downloaded in “Downloads” folder; (base) showing or not; installation will not be affected;

```
Miniforge Prompt  X + v
C:\Users\ibhuw>cd Downloads
C:\Users\ibhuw\Downloads>cd C:\Users\ibhuw\Downloads\PyGILE-main\environments\windows
C:\Users\ibhuw\Downloads\PyGILE-main\environments\windows>windows_install_pygile_base.txt
```

Step 7: Check the directory of installation; directory containing “windows_install_pygile_base.bat”; a log file named **“pygile_errors.log” will be created alongside the installation to check for issues.**

Step 8: Install the batch file by typing the name of the file “windows_install_pygile_base.bat”

```
Miniforge Prompt  X + v
C:\Users\ibhuw>cd C:\Users\ibhuw\Downloads\PyGILE-main\environments\windows
C:\Users\ibhuw\Downloads\PyGILE-main\environments\windows>windows_install_pygile_base.bat
```

Check the progress as the installation continues: BE PATIENT AND keep an eye on the log file **“pygile_base_setup.log”** generated on the same folder

"C:\Users\ibhuw\Downloads\pyGILE-main\ environments\windows\pygile_base_setup.log"

```

PYGIS BASE ENVIRONMENT - COMPLETE INSTALLATION
=====
Log file: pygis_base_setup.log

Using mamba for package management

(5%)✔Creating pygis_base environment with Python 3.10...
(10%) Installing core geospatial foundation...
(15%) Installing scientific computing stack...

```

AFTER [SUCCESSFUL INSTALLATION](#); SCREEN SIMILAR TO THIS WILL APPEAR

```

=====
PYGIS BASE ENVIRONMENT INSTALLATION COMPLETE
=====
Setup completed at Fri 06/13/2025 14:38:17.06

NEXT STEPS:
1. mamba activate pygis_base
2. jupyter lab

INSTALLED PACKAGES INCLUDE:
✓ Core GIS: GDAL, PROJ, GEOS, Shapely, PyProj, Fiona, GeoPandas, Rasterio
✓ Scientific: NumPy, Pandas, SciPy, Matplotlib, Seaborn, Scikit-learn
✓ Geospatial: Census, Contextily, EarthPy, GeoPlot, OSMnx, US, PyKrig
✓ Visualization: Folium, MapClassify, Plotly, Bokeh
✓ Data: xarray, netcdf4, h5py, zarr
✓ Web Mapping: geemap, leafmap, ipyleaflet, localtileserver
✓ Remote Sensing: GeoWombat, rio-cogeo, rioxarray, STAC tools
✓ Earth Engine: earthengine-api, geeaddons
✓ Development: Jupyter Lab, ipywidgets
✓ Meta: pygis package with all dependencies

This environment supports the ENTIRE pygis.io curriculum

Press any key to continue . . . |

```

Step 9: After successful installation of the environment “pygile_base”;

before activating the newly created environment, type “conda deactivate”; (base) will be removed now from the front;

then, activate the newly created environment using “**mamba activate pygile_base**” in same miniforge prompt.

After activating the environment, pip install:

“pip install numpy_groupies sklearn_xarray sympy”

A correctly activated environment will have “pygis_base” written at the front (see the green rectangle)

```
(base) C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main\setup_files\windows>conda deactivate
C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main\setup_files\windows>mamba activate pygis_base
(pygis_base) C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main\setup_files\windows>pip install numpy_groupies sklearn_xarray
```

Step 10: ipykernel for Jupyter

Install ipykernel to make your environment available in Jupyter

conda install ipykernel

Register your current environment with Jupyter

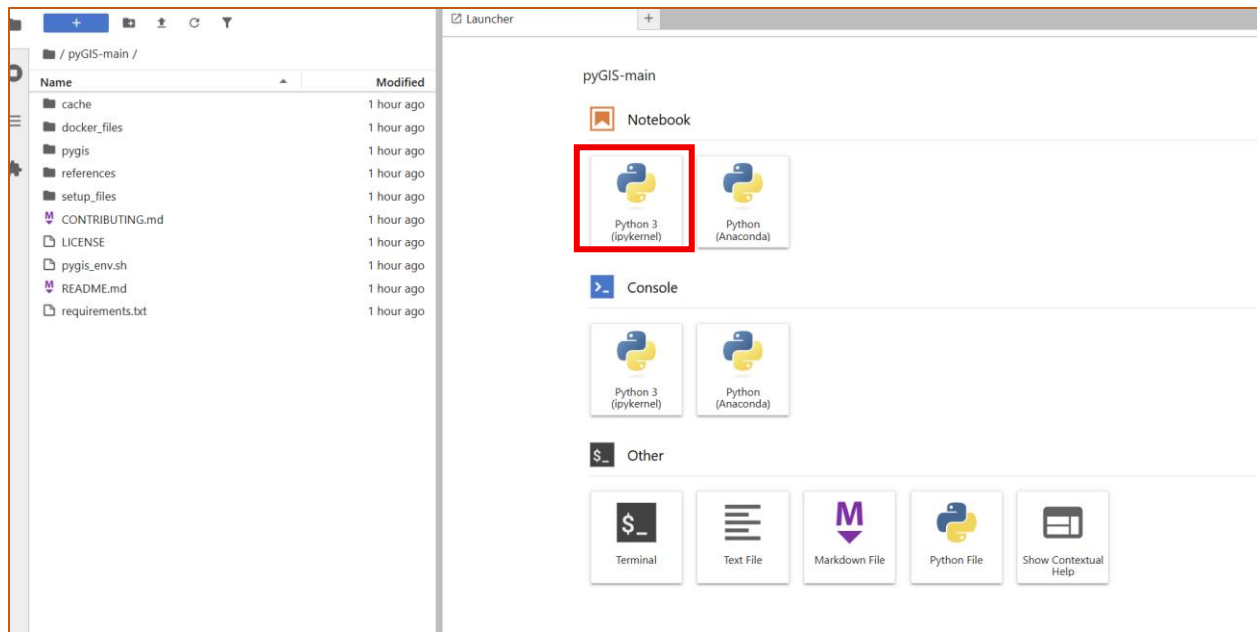
python -m ipykernel install --user --name pygis_base --display-name "Python (pygis_base)"

Step 10: return back to pygis-main (cd..)

```
(pygis_base) C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main\setup_files\windows>cd..
(pygis_base) C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main\setup_files>cd..\..
(pygis_base) C:\Users\ibhuw\Downloads\pyGIS-main>
```

Step 11: Type “jupyter lab”; press enter; (wait 10-15 secs)

Step 12: A launcher window will pop up on your browser; click python3 (ipykernel (pygis_base))



REGULAR USAGE

Open miniforge prompt, first, deactivate conda, then mamba activate pygis_base then cd into the download folder of pyGIS-main; then run jupyter lab

```
(base) C:\Users\ibhuw>conda deactivate
C:\Users\ibhuw>mamba activate pygis_base
(pygis_base) C:\Users\ibhuw>cd C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main
(pygis_base) C:\Users\ibhuw\Downloads\pyGIS-main\pyGIS-main>jupyter lab
[I 2025-06-13 16:38:09.770 ServerApp] jupyter_lsp | extension was successfully linked.
[I 2025-06-13 16:38:09.770 ServerApp] jupyter_server_proxy | extension was successfully linked.
[I 2025-06-13 16:38:09.786 ServerApp] jupyter_server_terminals | extension was successfully linked.
[I 2025-06-13 16:38:09.817 ServerApp] jupyterlab | extension was successfully linked.
[I 2025-06-13 16:38:09.833 ServerApp] notebook | extension was successfully linked.
```

ENJOY_CODING!!

ENJOY_LEARNING!!