

DSM2 Learning Series: Planning Studies Technical Setup Session

October 26, 2023



DSM2 Planning Training Prerequisites

Windows Computer

- Administrative privileges
- At least 8 GB free on one of your drives

Software Installation

- Model: DSM2
- Python interpreter and package manager: Miniconda or Anaconda
- File/folder comparison tool (optional): WinMerge/similar tool

Basic Skills

- Use file manager (Windows Explorer) to manage files and folders
- Entering commands at the command line
- Editing text files
- Review [Quick Start Training](#)

Overview

- Introduction to Python
- Python packages used for DSM2
- Software installation
 - Miniconda
 - DSM2 example planning studies
- Test Jupyter notebook application

Introduction to Python

- An interpreted programming language
- Used for model pre- and post-processing
- We usually use miniconda for model data applications

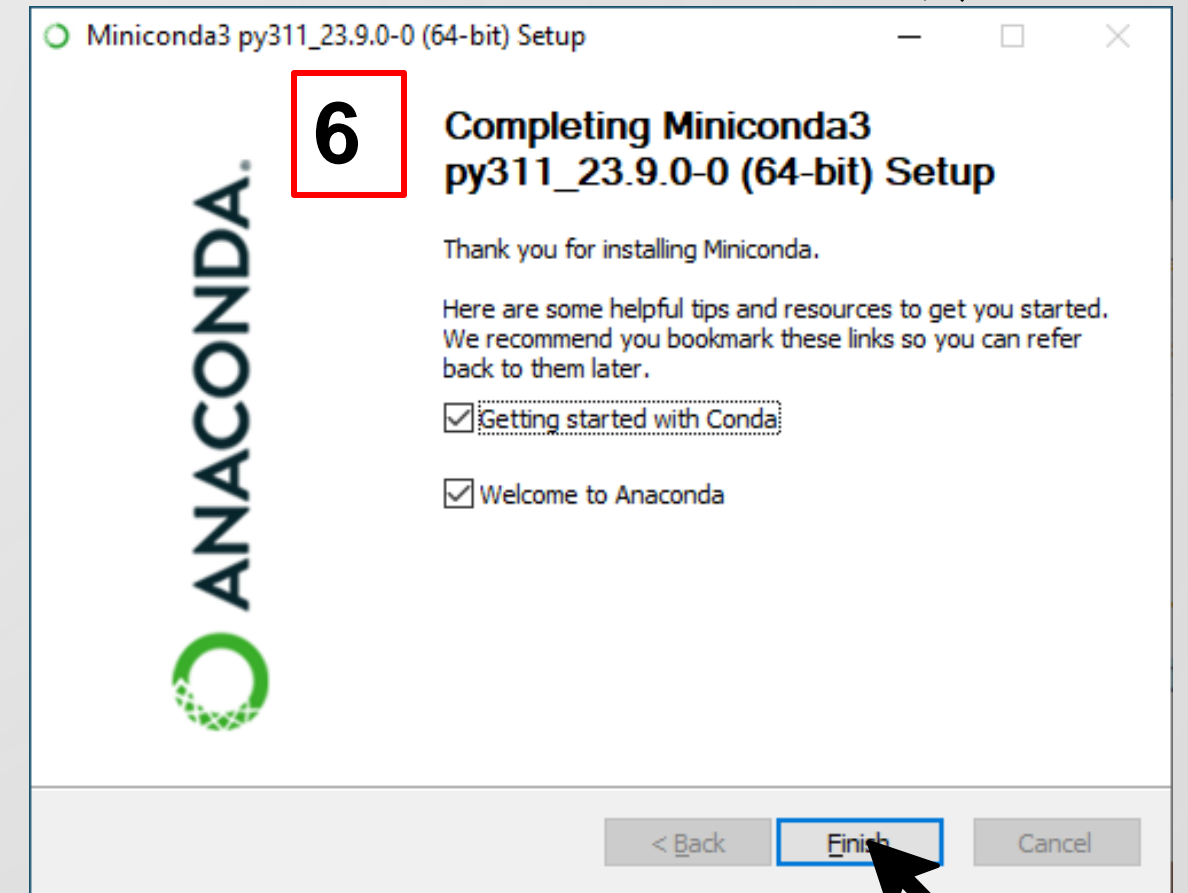
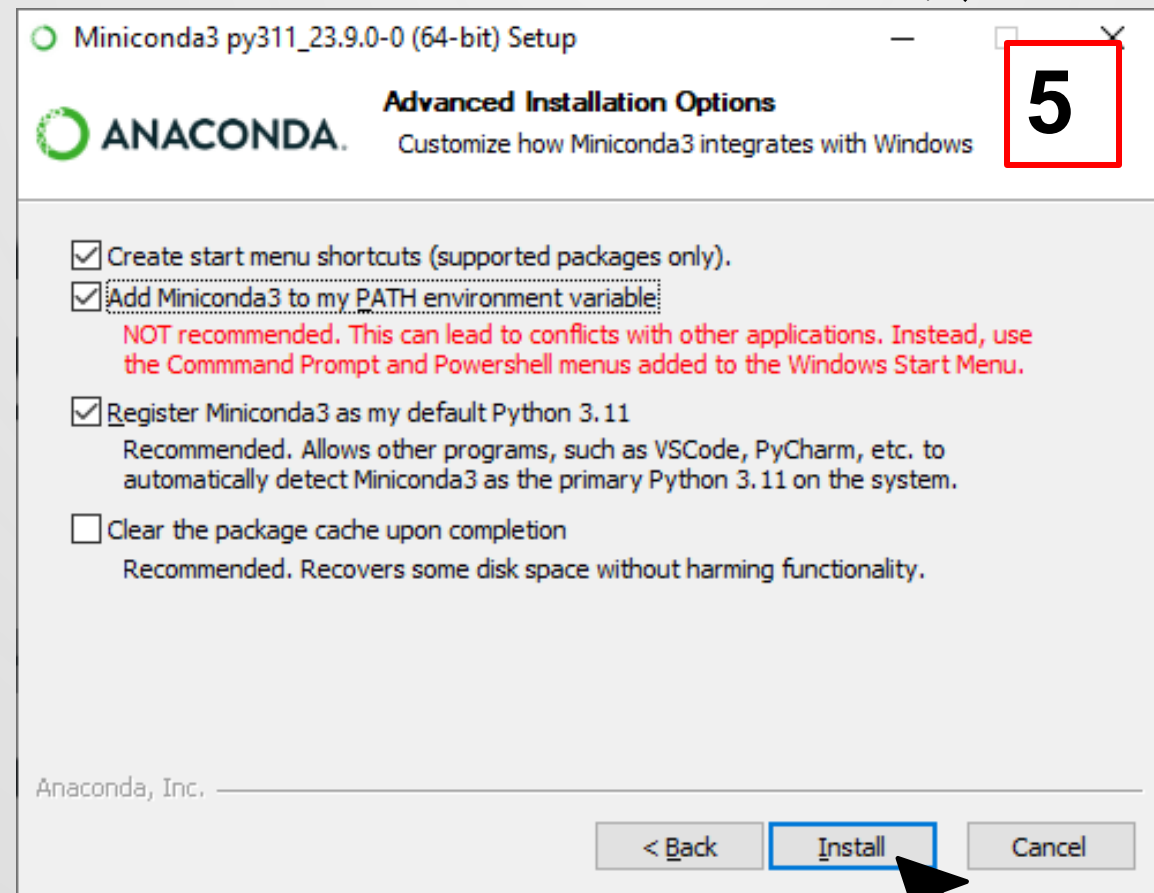
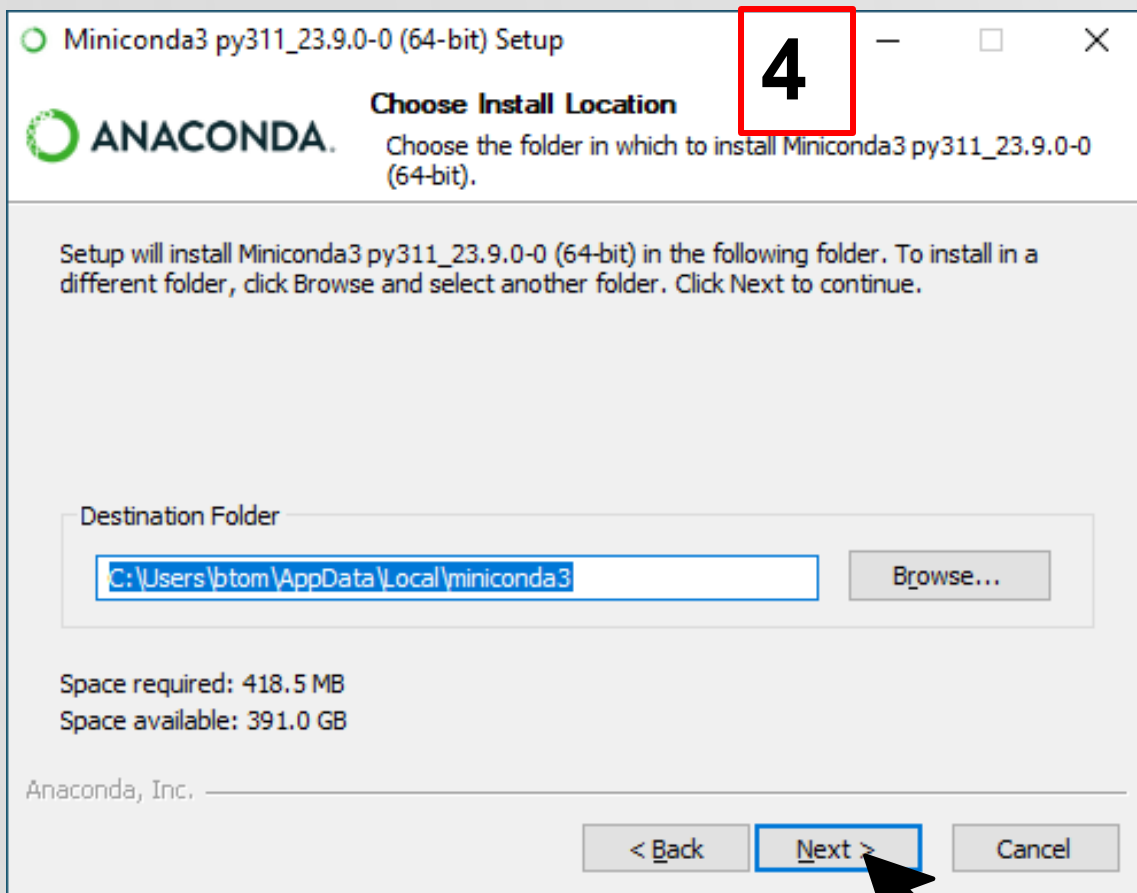
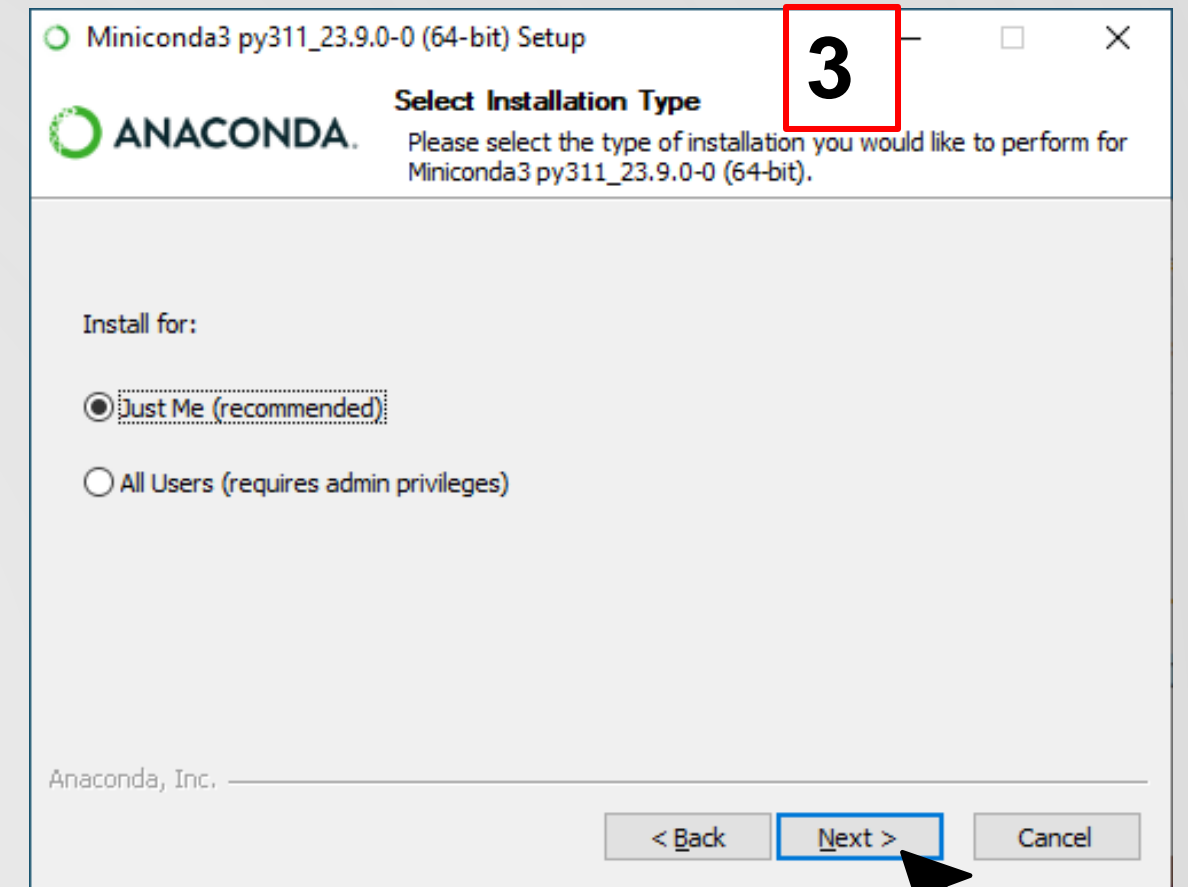
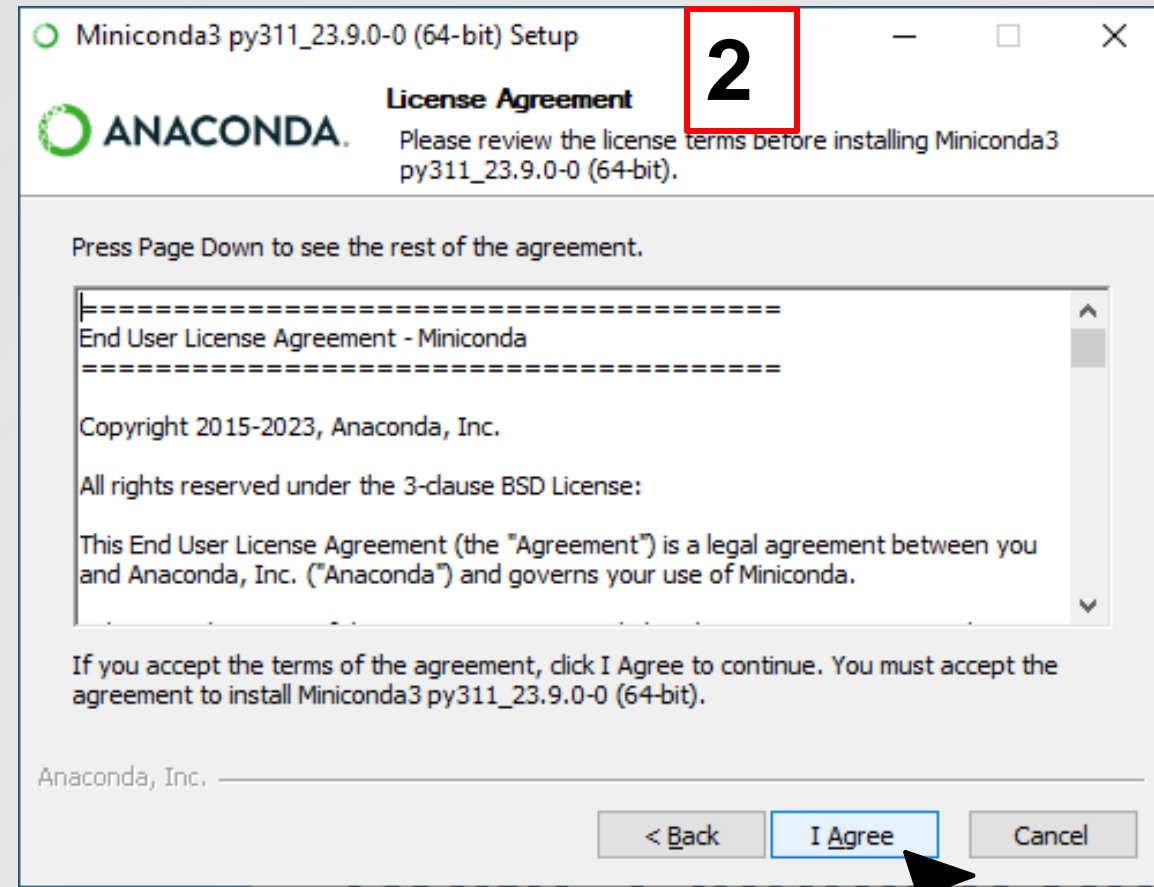
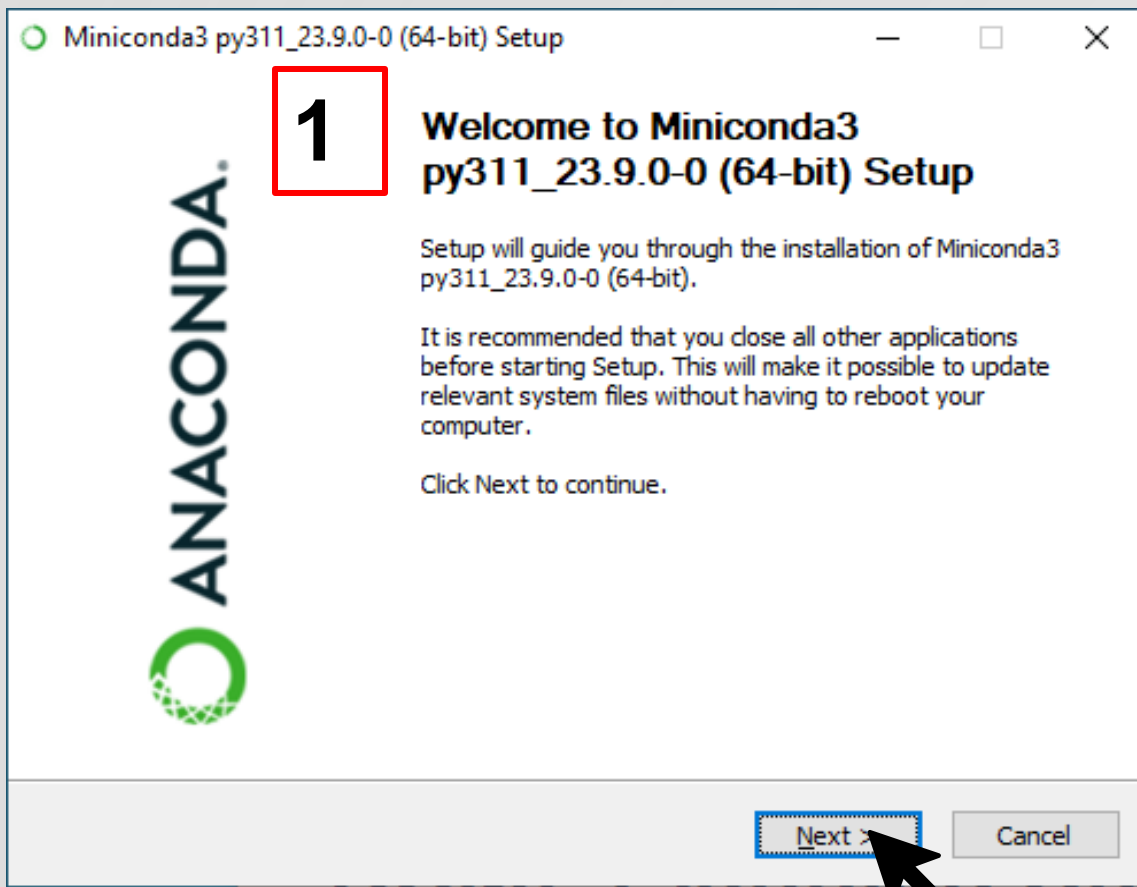
Python and Python packages

- DSM2-vista/Vscript (included with DSM2)
- Python packages
 - pyhecdss: reading/writing HEC-DSS files
 - pydsm: reading and writing DSM2 input/output (.inp, .h5)
 - pydelmod
 - pydelmod is a python package for plotting model data
 - A version of pydelmod is included with the DSM2 planning study setup

Software download links

Software	Link
Miniconda (includes python)	https://docs.conda.io/projects/miniconda/en/latest/
DSM2 planning study folder <ul style="list-style-type: none">Unzip and save to a folder of your choice; c:\ or d:\ is recommended. Saving to OneDrive is <u>not</u> recommended.The file is > 1 GB, so it may take a long time to download and unzip	https://data.cnra.ca.gov/dataset/dsm2-planning-study-training-example-studies

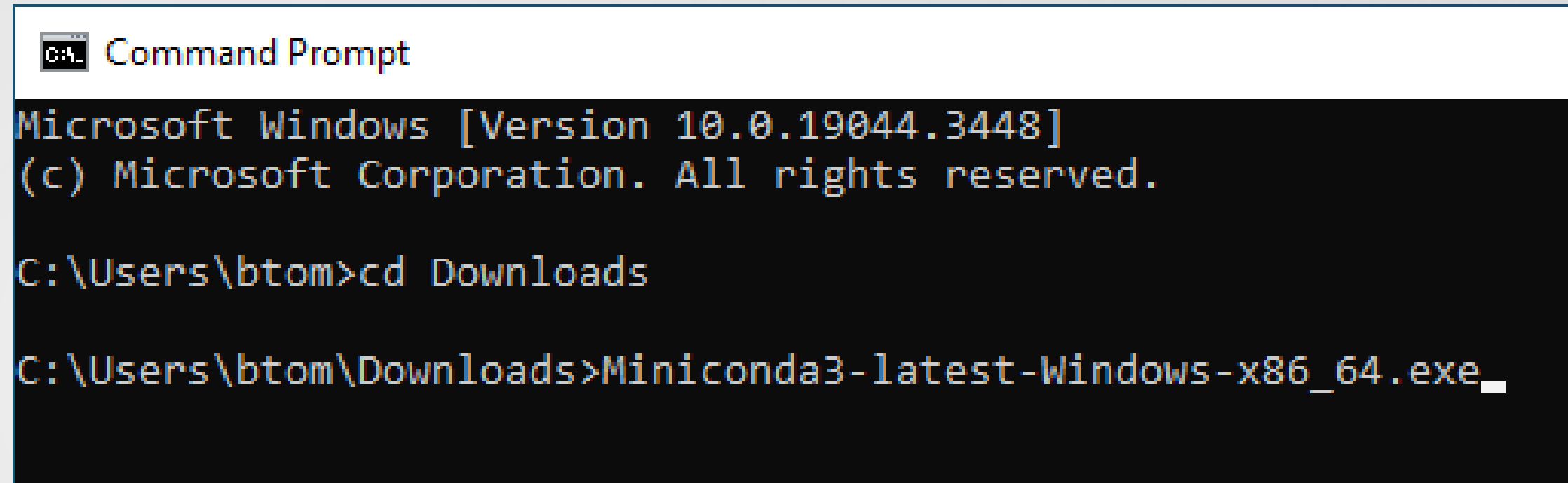
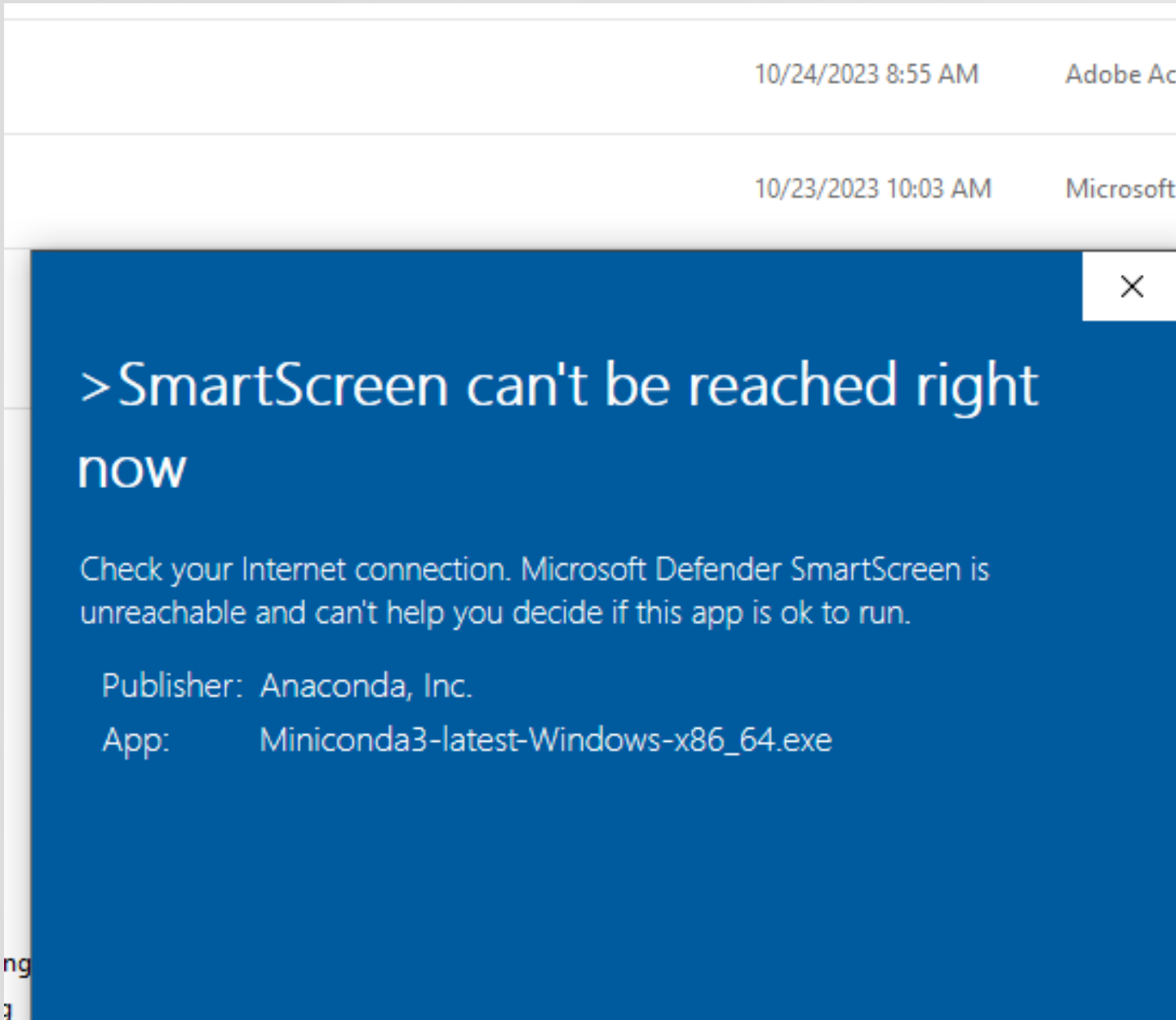
Miniconda installer



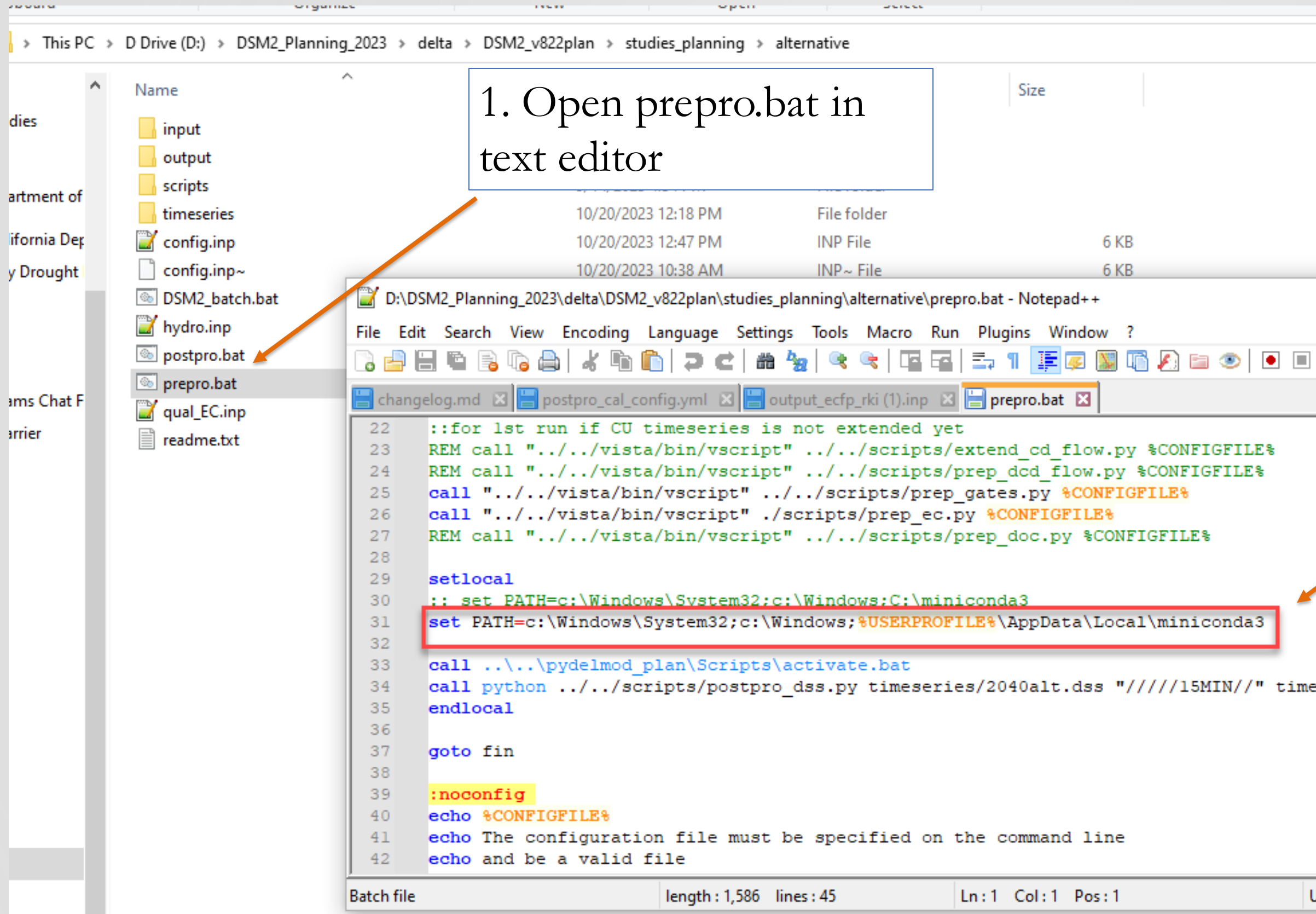
Running Miniconda installer from Command Prompt

If double-clicking the installer doesn't work

Try running it from a command prompt



Edit the prepro.bat file



1. Open prepro.bat in text editor

2. Make sure this line specifies the correct location of your Miniconda installation.

Testing Jupyter notebook

starting Jupyter notebook application

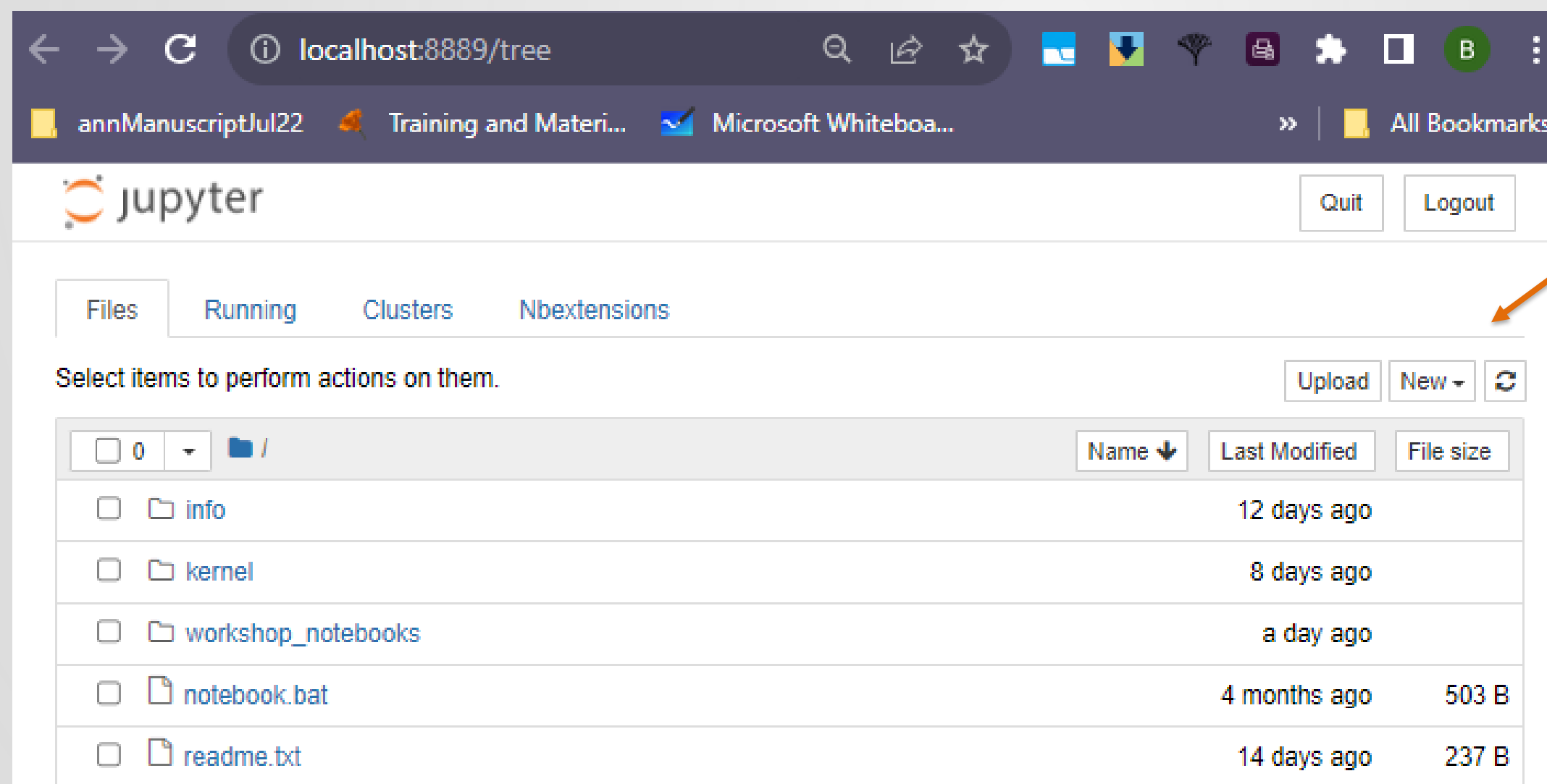
1. Use "notebook.bat" to start jupyter notebook

```
Command Prompt - notebook.bat

D:\DSM2_Planning_2023\delta\DSM2_v822plan\postp>notebook.bat

D:\DSM2_Planning_2023\delta\DSM2_v822plan\postp>set PATH=c:\Wind
```

2. Jupyter notebook opens in web browser



Please raise your hand in Teams when you have Jupyter notebook loaded into your browser

Testing Jupyter notebook

Opening a notebook

1. Click "workshop_notebooks"

2. Open the file
2021_example_bnd.ipynb

 jupyter



Files

Running

Clusters

N

Select items to perform actions on them.

☐ 0   /

☐  info

☐  kernel

☐  workshop_notebooks

☐  notebook.bat

☐  readme.txt

 jupyter

Files

Running

Clusters

Nbe

Select items to perform actions on them.

☐ 0   / workshop_notebooks

 ..

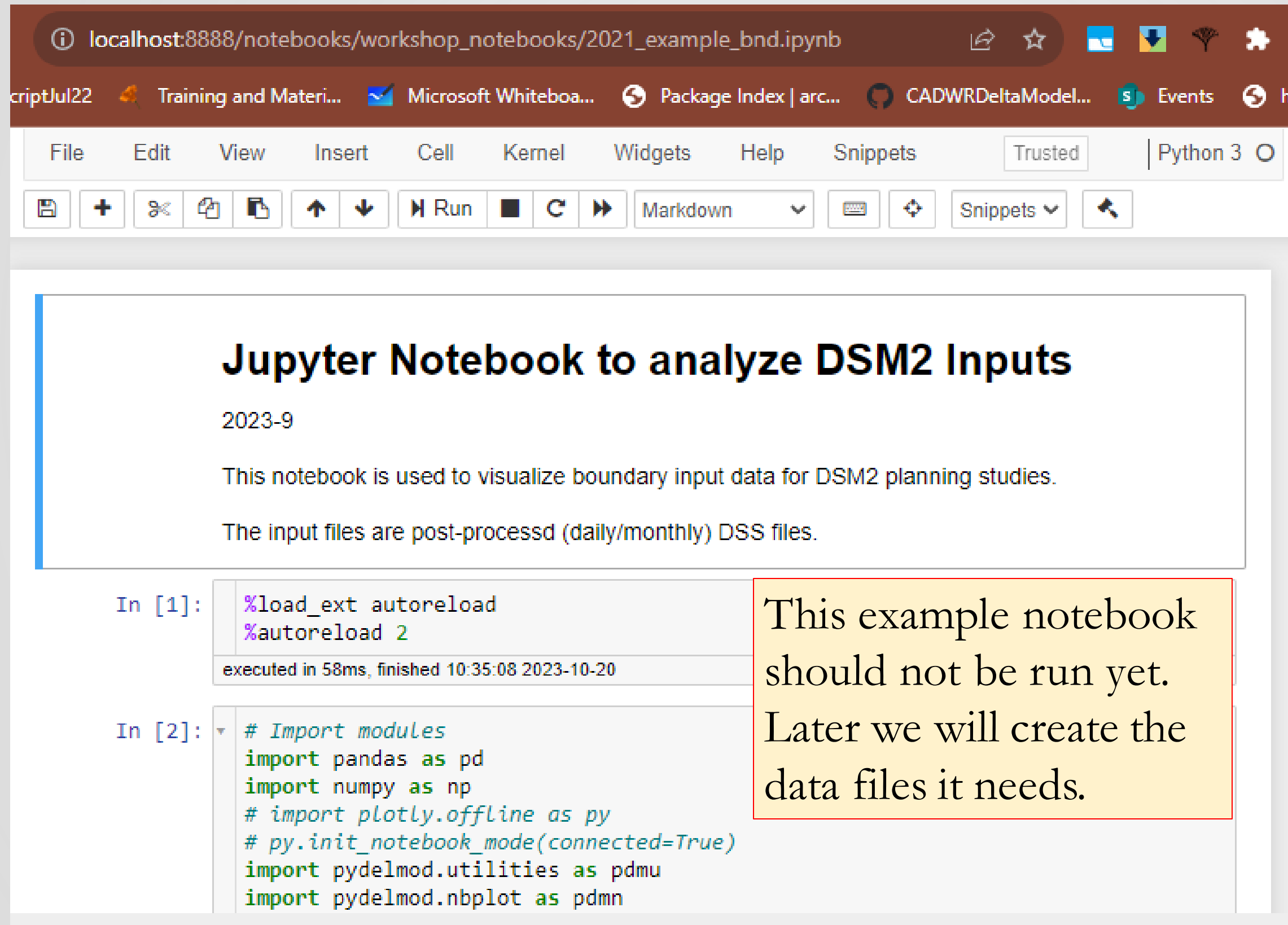
☐  2021_example_bnd.ipynb

☐  2021_example_EC.ipynb

☐  2021_example_EC_stds.ipynb

☐  2021_example_stage.ipynb

Testing Jupyter notebook notebook successfully opened



localhost:8888/notebooks/workshop_notebooks/2021_example_bnd.ipynb

File Edit View Insert Cell Kernel Widgets Help Snippets Trusted Python 3

+

Run

Markdown

Snippets

Jupyter Notebook to analyze DSM2 Inputs

2023-9

This notebook is used to visualize boundary input data for DSM2 planning studies.

The input files are post-processd (daily/monthly) DSS files.

In [1]:

```
%load_ext autoreload
%autoreload 2
```

executed in 58ms, finished 10:35:08 2023-10-20

In [2]:

```
# Import modules
import pandas as pd
import numpy as np
# import plotly.offline as py
# py.init_notebook_mode(connected=True)
import pydelmod.utilities as pdmu
import pydelmod.nbplot as pdmn
```

This example notebook should not be run yet. Later we will create the data files it needs.

Questions?



Brad Tom (Bradley.Tom@water.ca.gov)