GIS 5571 Lab
Week 2

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Driven to Discover℠

Agenda

- Lab Structure Overview
- Accessing Technology
- Submitting Labs & GitHub
- Questions on Lab 0 **(DUE TONIGHT!)**
- Introducing Lab 1
- Work Time

Lab Structure

1. Building Fluency in Spatial Data Science
    a. “Reps”
    b. Focus on ETL operations
    c. Can use this time to focus on things you want clarification/practice on
    d. Repo: *https://github.com/lukezaruba/spatial_data_science_reps*
2. Questions
    a. Course Content
    b. Labs
    c. Etc…
3. Lab Intros
    a. Introducing new lab assignments on days where they are released
4. Work Time

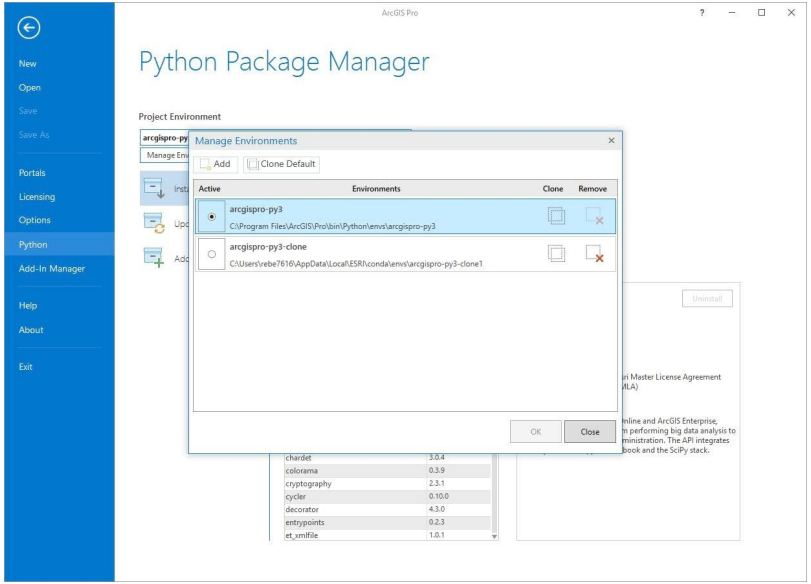
Technology

You should have access to:

- ArcGIS Pro & Online
- GitHub

To use third-party Python packages in ArcGIS Pro (that are not installed already), you need to clone the Conda environment.

You should not *need* to do this, but you may *want* to.



Python Packages

You can get by with only using the following packages:

- ArcPy
- ArcGIS API for Python
- pandas
- NumPy
- Requests
- Standard Library
    - os, json, zipfile, etc…

It may be easiest to avoid using some FOSS packages like:

- GeoPandas
- Folium
- Shapely

But you can definitely use these (in some capacity)!

The focus should be on integrating Esri with FOSS tools

Submitting Labs & GitHub

- Canvas: PDF of Lab Report
  - Just add the link to the GitHub repository where your code is
- Data Flow Diagrams
  - Can be made various ways
  - Personal Recommendations
    - Lucidchart
    - draw.io
- Notebooks
  - .ipynb format is good
  - Can also export as PDF too

Submitting Labs & GitHub (ctd…)

- GitHub Accounts
  - UMN account vs. individual account
- GitHub
  - Think about using a *.gitignore* file in your repo
    - .ipynb_checkpoints
    - .DS_Store
    - Any big data files (Shapefiles, GDBs, etc…)
    - APRX files?
  - Keep your repo organized
    - Use subdirectories
      - notebooks, reports, data, etc…
  - Reminder: Everything in the repo is being posted online!

Lab 0

- Esri Training
- GitHub Setup
- ArcGIS Pro, Notebooks in Pro, Notebooks in AGOL

Questions?

Lab 1

1. Extract data from API
    a. Google Places
    b. MN Geospatial Commons
    c. NDAWN
2. Perform any wrangling/transformations
3. Visualize the data

<u>Deliverables:</u>

- Lab Report
- GitHub Repo with Jupyter Notebook(s)