Projects

GIS 5103
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What is a "Project"?

- Conduct an empirical analysis
- Implement an algorithm or method
- Add functionality to an existing package
- Add a tool to ArcGIS
- Automate an activity
- Port an R function to Python
- Replicate an academic paper
- Others?

A "Python" Project

- This is a Python project (not just a project)
- The majority of your work should be done in Python
  - Data prep
  - Analysis
- If you're tempted to use ArcGIS… convert your clicks into ArcPy or Python API for ArcGIS code
  - Also consider GeoPandas, Shapely, PySAL, etc.
- If you're tempted to use Excel… convert your clicks into Pandas code

Project Schedule

- Proposal
  - 50 Points
  - Due 31 October (3:00 pm)
- Presentation
  - 100 Points
  - 9 December (7:30 am)
- Materials
  - 500 Points
  - Due 12 December (3:00 pm)

Proposal

- Summary of the project
- Goal of the project
- Packages you expect to use
- Your current experience with the topic
    - Is this part of your dissertation/thesis/capstone?
    - Is it related to a project at your job?
    - What related work have you done or are doing?

Proposal Logistics

- Less than 500 words
- Submit a PDF file
- Email to bdjohnson@fsu.edu

Project Presentation

- Lightning talks
- 5 - 10 minutes
- Highlights of your project results
- During the final exam period (9 December)
- Rubric to be released later

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Project Materials

- Python code
  - Code must be documented
- Paper
  - Motivation for the project
  - Description of the code's functionality
  - Results of the project
  - 1500 - 2000 words

Code Reuse Guidelines

- This is <u>your</u> Python project
- Use the resources available on the Internet; do not start from scratch
- You can use other people's code as long as there is attribution
  - In your code, put links to the parts you borrowed or that provided inspiration
  - Even if you modify their code, you still need to cite the person
- This is <u>not</u> your sibling's/significant other's/roommate's project
  - Of course, you may ask for help when you get stuck, but "help" does not mean they write your code

Code Attribution

- Other people's code:
  - If you started from someone else's python script or notebook, give a clear disclaimer (i.e., a couple of sentences) at the top of the file (or script) about what is yours and what is theirs
  - For individual lines or blocks of code, you can typically just add a comment like: Based the code at http://stackoverflow.com/questions/57624982/some-great-thing
- Help from a person:
  - "Based on conversations with my roommate Jane Smith"
  - "Based on an email exchange with the package developer Marcus Williams"
- **Your paper** needs to make clear statement regarding the help you received via the internet and people. If you did not use help, in your paper include a statement that says 100% of the work in the script or notebook is your own

Usability

- Provide documentation in the file so that the user (me) knows how to use your code
  - Is the input variable an int, str, numpy array, etc
  - Give a brief sentence on what the variable is
  - Example for the variable "speed"
    - int or float
    - The wind speed at the landfall site in m/s

Packages

- Each project should include the use of at least one package we did not explore in class
- Your **proposal** should explicitly state which package you will highlight
- Your **presentation** should briefly mention it
- Your **paper** should describe it in depth without detracting from the overall focus (think methodology section)
- And, of course, your **code** should feature it

Consultations

- In-person (or virtual) consultations regarding your project are required
- Must be completed by Friday, 1 November
- During office hours (Wednesday 11 am - noon) or via appointment (bdjohnson@fsu.edu)