EDS 220 - HOMEWORK 4

ASSIGNMENT SUBMISSION CHECKLIST

☐ Submit your notebooks to Gradescope by the due date: Tuesday November 28. There will be no resubmissions or late submissions for this assignment.

There will be a 10% penalty on the total assignment grade for any assignment that doesn't follow the next three items:

☐ Submit the Python notebook (in. ipynb format), not the GitHub repo.

☐ Submit your notebooks to the correct task (i.e: task 1 to task 1, task 2 to task 2).

☐ Include your GitHub repo link at the beginning of each notebook.

☐ Submit the notebooks with all your answers - all cells must show output. Cells that do not show output will have a score of 0 points.

SETUP FOR TASKS 1 & 2

1. Go to Canvas and access Assignment 4.
2. Download the notebooks for tasks 1 and 2.
3. Create a new GitHub repository named `eds220-hwk-4` for both tasks
4. **In the Tsosie server**, clone your eds220-hwk4 repository under your eds-220 directory
5. Follow the instructions for each task.

Task 1: area of interest map

This task is related to the discussion section about land use/land cover in the vicinity of Mount Whitney. In this task you will recreate the following map:

On Monday we will go over how to create a legend like that one, but you can get most of the task done already.

Task 2: false color image

This task is related to homework 2, task 2 about the AQI during the Thomas fire in Santa Barbara, CA. Follow the instructions in the notebook to complete it.

Task 3: Presentation-ready repository

Create a new repository for this task.

In this task you will create a presentation-ready GitHub repository from one of the following options:
- Hwk 2-Task 2: Air Quality Index Data + Hwk4-Task 2: False color image
- Lab 3 - Land cover statistics + Hwk4-Task 1: Area of interest map

Your final notebook should be able to run from top to bottom and be streamlined to show how you obtained your outputs. See the next two sections for specifications about the repository and the notebook.

This task is related to the post of the final project: you will turn this repository into a blog post. There will be a separate notebook for the project (more information on

REPOSITORY SPECIFICATIONS

File structure

Repositories must have the following file structure:
|--- data (*only* if data cannot be accessed via a URL)
| |__ data file1 ...
| |__ data_file2 ...
|
|--- notebook
|
|--- README.md
|
|--- .gitignore

README

The repository must include a descriptive README file with the following sections (you may others if needed):
- Title
- Short explanation of the goal/purpose of the repository
- Data citation

NOTEBOOK SPECIFICATIONS

Add enough and appropriate comments to explain your code.

First cell must include (in markdown):
- ❖ Title
- ❖ Author
- ❖ Link to GitHub repository containing this notebook (for grading purposes)

Your notebook must include an about section with the following subsections:
- Purpose
- Highlights of analysis. For example:
    - Fetch vector data from an online repository

- Visualize raster data
- Time series analysis
- etc
- Dataset description
- References to datasets.

The rest of your notebook should be organized into logical subsections for the analysis/visualization you are performing. Your analysis and data wrangling should include checks to show you've verified your output. These are some sections your could include:

1. **Importing data**
2. **Geographical context of data**
3. **Data exploration**
4. **Analysis**
   - Include subsections as necessary to guide reader through your analysis
   - Include checks to see operations worked
   - Checks must be short and informative: print specific attributes instead of running df.head() or printing entire objects.
5. **Final output**