Assignment 2 – GGS590 Spatial Computing

Due September 22nd 2024

Please find the 5 assignment questions enclosed, totaling 100 available points.

Remember, if you just rely on genAI, you will not learn the fundamental basics, and thus fail the graded closed-book test/exam planned for later in the semester. So, the important thing here is to really make a good attempt at solving these problems without any assistive tools, based on the materials you have learnt in the first few weeks of the class.

To submit the work, you need to write your answers in a colab .ipynb notebook and then:

1. Print the .ipynb notebook to a .pdf and submit for review on blackboard.
2. Submit also the actual .ipynb notebook on blackboard allowing your code to be easily run.

Without submitting both of these files like this, you will receive a 50-point penalty to your overall grade.

Submitted work may be checked for plagiarism, including for GenAI usage. The Mason honor code applies.

1. Create one list of tuples and one list of lists representing a set of 5 point coordinates each. Iterate over the contents of each data structure (20 points).
2. Provide an example of how you would store spatial data in a list of dictionaries data structure, for these 5 point coordinates (e.g., Points of Interest) (20 points).
3. Take your list of tuples of 5 point coordinates and duplicate two of the items. Iterate over your list, writing logic to check if a set already contains each tuple of point coordinates. If the set does not, add the item to the set (20 points).
4. Write a user defined function which accepts a list of dictionaries and prints the length (20 points).
5. For a list of dictionaries containing duplicates, write a user defined function which finds the unique values (20 points).