GIS 5572 Lab 4

**Due:** 3 weeks from date of assignment

**Goals**

1. Build a fully functional real-time data visualization and analysis workflow
2. Compare and contrast three types of interpolation

**Deliverables**

Submit a part 1 lab report on Canvas as a PDF (see [report form](https://docs.google.com/document/u/0/d/1gOGBtTe3dQzrXCEMl644QIVdJgMp8ahN/?rtpof=true&usp=drive_fs)). Include all your code on GitHub as both .ipynb files and PDFs of the notebooks.

**Specifics**

Your goal is to deliver a notebook and lab writeup that can interpolate the last 30 days of NDAWN data on-the-fly. Some specific steps:

* Build an ETL to pull the last 30 days of temperature data from the [DNAWN site for all of the NDAWN stations](https://ndawn.ndsu.nodak.edu/). Be able to make a map of all the station points and their average monthly temperature.
* Follow the ESRI decision guide for choosing [interpolation methods](https://desktop.arcgis.com/en/arcmap/latest/extensions/geostatistical-analyst/classification-trees-of-the-interpolation-methods-offered-in-geostatistical-analyst.htm). Use this to justify your methods.
* Compare and contrast at least 3. One must be IDW. Another must be a form of Kriging.
* Be able to run your notebook and create an interpolated temperature map for the highs and lows of the last 30 days from NDAWN in real-time.
* What does the literature recommend be used for interpolating temperature data? Why? (Find one or two articles to support your claims and reference them in the lab writeup)