**CIS 449 Final Assignment: School Districts**

**Due: August 22, 2020 @ 11:59 PM**

We have reached the end of the semester! This is the final little assignment!

In this assignment, you have been given three files:

* The counties of the US (as seen in lecture)
* The public school districts of Maine
* A .csv file of the addresses of the high schools in those school districts

With these files, you have a few jobs:

1. Geocode the high schools from their addresses.

2. Find which county each school district belongs to. The .csv file contains the county the school is in. To do that, you will need to overlay the school districts and the counties.

3. Append the school address to the school district it resides in.

4. Calculate the centroid of the school districts.

5. Find the distance between the high school and the centroid of its school district. You may need to figure out how to order them.

6. Now check the distance between the high schools and the centroids, finding the minimum. Is any school closer to another district’s centroid?

7. Pick a few addresses in Maine and figure out which public high school they would attend.

Have fun! This is something that is inherently interesting. What made me think of this is that there are plenty of places in various states that are closer to other state capitals than their own. For instance, Western Massachusetts is far closer to Albany, NY than it is to Boston, MA. I did a project on that in graduate school to look at what would happen to the states if they were redrawn in that manner (using the state capitals as balance points).