Lab Exercise

GEOG 489 Programming for GIS **Cluster Analysis**
Lab 8

Due: April 21st, 11:59:59 PM
Grading: 5 points
Late penalty: 1 point subtraction per day (No points after 5 days)

Introduction
In this lab, you will utilize a 24-hour measurement of spatial accessibility in case the time-variant data was incorporated into the measurement. This lab consists of two parts. First, we employ Pearson's correlation coefficient to explore at which hour the static measurement fails to reflect the 24-hour dynamic measurement (i.e., when the correlation coefficient is low). Second, we want to temporally cluster the 24-hour variation based on their distribution characteristics (i.e., median and median absolute deviation). Here, we implement K-means clustering to overcome the verbose of 24-hour measurement.

Things to be submitted: **ENTIRE** folder that has data and Jupyter Notebook as a zip file. (GEOG489_Lab8_[YOUR_NET_ID].zip).

Tasks

1. Launch CyberGISX (https://cybergisxhub.cigi.illinois.edu/) and create an empty Jupyter notebook (or you can reuse other notebooks created in earlier labs).

2. Copy and paste (or type) the following code into the cell you just created. This will download the lab materials from the GitHub repository to your CyberGISX environment.
   If you want to create a new cell, you can press 'b' on your keyboard or click Insert -> Insert Cell Below on the menu.

   ```
   !svn checkout https://github.com/jparkgeo/GEOG489/trunk/Labs/Lab8
   ```

3. Navigate to the root folder of your CyberGISX environment. You will see a folder named 'Lab8'. Go inside of the folder and open 'Lab8_Cluster_Analysis.ipynb'.

4. Finish the tasks described in the notebook and save the notebook in your local directory for submission.
   Name schema: 'GEOG489_Lab8_[YOUR_NET_ID].ipynb'

Done!! Please submit the deliverables to learn.illinois.edu.