Introduction to Geographic Information Science
Lab 08

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Directions

The Stata portion of the lab requires you to export data for projection in ArcGIS. You will need to download the file `KCDumping.dta` from Blackboard under 'Data'. These data represent 3-1-1 calls for illegal refuse dumped in public streets during 2012 and 2013.

The ArcGIS portion of the assignment will require you to add to the geodatabase that you created for the previous lab. The original data for the geodatabase can be found on Blackboard under 'Data' in the file `KansasCity.zip`. You should use the geodatabase that you have already created for this assignment.

You will then be asked to complete Assignment 4-2 from Gorr and Kurland.

Once you are done, submit copies of all requested maps, your geodatabase, the Stata do-file, and the Stata log file in a single .zip file. This should be submitted by Wednesday, March 16th at 4:20pm.

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1 Exporting Kansas City 3-1-1 Data and Projecting it in ArcGIS

1. Using a well annotated and formatted Stata do-file, open the file `KCDumping.dta` and export it in the `.xlsx` file format.

2. Open ArcMap and add the Kansas City Boundary feature class to your map.

3. Project the X,Y coordinate data in ArcGIS, and then export the projected data to your Kansas City geodatabase. *Note that, because these data use UTM coordinates instead of latitude and longitude, the process for projecting your tabular data is much smoother. When you added the Kansas City Boundary feature class, the projected coordinate system for your data frame (named 'Layers' by default) was switched to "NAD 1983 StatePlane Missouri West FIPS 2403". When the illegal dumping incidents are projected, they take on the projected feature class of the data frame.*

4. Delete the projected tabular data from your Table of Contents and add the feature class you just created to your map.

5. In the layout view, create a dissemination-ready map (well laid out, good use of white space, title, information about data sources and authorship, and legend). The map should show the locations of dumping 3-1-1 calls in Kansas City and should contain layers from your geodatabase that are appropriate for mapping the full extent of the City. Pay particular attention to how you symbolize the figure and ground features. The map should be sized for 8.5"x11" printing with half-inch margins in the portrait orientation. Export this map as a `.pdf` at 300dpi. Make sure this map is included in your final `.zip` file.

6. Now add the City Council Districts feature class, and join the illegal dumping data to the City Councils to produce counts of illegal dumping incidents for each Council District.

7. Create choropleth map of the number of illegal dumping incidents in each Council District. Pay careful attention to your color ramp choice, and make sure to normalize the count of illegal dumping incidents by the area of each Council District.

8. Next, create a new feature class in your Kansas City geodatabase that contains the point data for each illegal dumping incident joined with data from the City Council Districts feature class so that, for each instance of illegal dumping, data about which City Council District it falls in also appears on the feature class's attribute table.

9. Using ArcCatalog, add a new feature class to your Kansas City geodatabase with data from `KC_PUBLICSAFTEY_FireStations.zip`, which is available on Blackboard under 'Data'. Add this new feature class to your map once you have completed its creation.

10. Create a new feature class in your Kansas City geodatabase that contains the point data for each illegal dumping incident joined with data from the Fire Stations feature class so that, for each instance of illegal dumping, data about which Fire Station is nearest also appears on the feature class's attribute table.

11. Finally, create a new feature class in your Kansas City geodatabase that contains the centroids for each City Council District.

2 Gorr and Kurland, Assignment 4-2

12. Complete all steps for Assignment 4-2 (pp. 168-169). Export your final map layout with the scatterplot as a `.pdf` at 300dpi. Make sure this map is included in your final `.zip` file.