SOC 4650/5650: Lab-16

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Directions

Please complete all steps below. Your map should be uploaded to your GitHub assignment repository by 4:00pm on Tuesday, May 9th, 2017. This lab uses data from `/StLouis` and `/ExampleData`.

From Lab-15 - Clean and Map Condemned Property Data

You do not need to follow these steps again if you saved the condemnation data you mapped from last week. If you did save them, you can skip to Part 2.

The condemnation data contains individual variables for house number (`addrnum`), street direction (`stdir`), street name (`stname`), and street type (`sttype`). These data will have to be combined to create a single address field.

1. Create a new geodatabase for this lab.
2. Add the file `STL_STRUCTURE_Condemn.csv` to your map document, and check to make sure the attribute table imports properly (each observation should be in its own row with variable names clearly labeled). If there are any issues with the table, save it as an Excel file and use that version of the table instead.
3. Save the table (Right click ▷ Data ▷ Export...) to your geodatabase.
4. Using the *feature class* version of the condemnation table, add a new field named `address`.
5. Using the Field Calculator..., combine the four address variables using this statement:

   ```
   [addrnum] & " " & [stdir] & " " & [stname] & " " & [sttype]
   ```

   This statement will concatenate the four variables, combining them into a single variable where data is separated with a single space. It is important that you put one space between the double quotes to achieve the desired effect. If you data looks like this - `123MainSt` - you need to re-create the address variable and check the addition of spaces between each set of double quotes.

6. Geocode the condemned building data using the address geocoder that we built during the lecture. You should have a total of 30,885 matches, 327 ties, and 1,351 unmatched observations.

Board-Ups Near St. Louis Fire Department Station 10

The Captain in-charge of Quint-10 (located in The Ville neighborhood in North St. Louis) wants to better understand vacant building patterns in the area around his station. To assist them, you will need to map all board-up buildings within a half mile of Station 10.

7. Add the fire stations layer from `/ExampleData/PublicSaftey.gdb` to your map and identify the location of Station 10, which is located at 4161 Kennerly Avenue.

8. Create a half mile buffer around Station 10.

9. Select all board-up buildings that fall within this half-mile buffer and symbolize them as a feature layer. You will need to query these data to make sure only board-up buildings are displayed. The query should look like this:

   ```
   status_1 = 'B'
   ```

10. Re-symbolize all of the remaining board-up buildings as a ground layer.

11. Symbolize both Station 10 and the half mile buffer as feature layers that contrast with your symbology for the board-up buildings.

12. Add the street centerlines layer from `/ExampleData/Shapefiles` to your map and symbolize it as a ground layer.

13. Zoom your map into the buffer zone.

14. Export your map image as a `.pdf` file at 300dpi.

Board-Up Density in St. Louis

The Chief of the Fire Department would also like a map showing the *density* of vacant structures throughout the City. To assist them, you will need to create a heat map showing this density.

15. In a new data frame, add the condemned buildings layer again and execute the same query to limit the displayed data to board-up buildings.

16. Add the City boundary from `/ExampleData/Shapefiles` to your map as well.

17. Set the processing extent so that it matches the extent of the City boundary.

18. Create a heat map of the board-up buildings in the City.

19. Clip your heat map so that it conforms to the City's boundary.

20. Symbolize your clipped heat map so that '0' values are excluded and so that the the raster uses 9 equal interval classes. Change the color ramp from black and white to something more appropriate for mapping (high values should be the highest value [i.e. darkest hue]).

21. Re-symbolize the City boundary layer so that it has a hollow fill and a black outline, and position it on-top of your heat map.

22. Remove the original point layer showing condemned buildings.

23. Export your map image as a `.pdf` file at 300dpi.