SOC 4650/5650: PS-08

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Directions

Please complete all steps below. Both of your final map layouts should be uploaded to your GitHub assignment repository by 4:20pm on Tuesday, April 18th, 2017. This problem set uses data from `USInfra`. You will also need the merged shapefile you created for Lab-13 that has both Missouri and Illinois in a single shapefile. If you cannot find that file, you will need to merge those two shapefiles again before starting this problem set.

Petrochemical Production Zones in Missouri and Illinois

Petrochemicals are derived from petroleum and are used in a variety of manufacturing applications as well as plastics. A large amount of infrastructure exists to move petrochemical products around the United States. The file `US_GEO_SedBasins.shp` contains data on sedimentary basins in the United States that are conducive to petroleum extraction.

1. In a new map document, add data on petrochemical terminals and petrochemical pipelines from `USInfra` as well as the Missouri and Illinois state boundaries from Lab-13.
2. Set the projected coordinate system to a system appropriate for mapping across several states.
3. Create a new feature class that contains the Missouri and Illinois state boundaries combined with the sedimentary basin data. The sedimentary basin data should be modified so that it has the attributes from the Missouri and Illinois state boundary data, and the polygons for the sedimentary basins should be divided at the state boundaries.
4. Remove the state boundaries from your data frame.
5. Query your new feature class so that all of the sedimentary basin data outside of Missouri and Illinois are not visualized.
6. Symbolize your new feature class by categories so that you can choose distinct symbols for the four different sedimentary basins

as well as a distinct symbol for the area *not covered* by a sedimentary basin. Pick your symbol choices carefully - the symbol for the area *not covered* by a sedimentary basin should be markedly different than the other areas (use the Symbol Selector to pick an overlay that achieves this).

7. Create a well designed and well laid-out map layout that shows the locations of petrochemical production zones within Missouri. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.).

8. Export the map layout as a `pdf` at `300dpi`.

Petrochemical Pipelines in Missouri and Illinois

8. Copy the feature class you created in the previous section into a new data frame.

9. Re-open the properties for the petro chemical production zone layer and go to the Symbology tab. Remove the value for areas of both states that *do not* have a sedimentary basin, and un-check the `all other values` box. Change the color ramp so that it is more appropriate for a ground layer.

10. Add the state boundaries shapefile you created for Lab-13 back into this data frame and place it *below* your petrochemical production zone layer so that you can visualize the state borders again.

11. Add the petrochemical pipeline shapefile from `/USInfra` to your map. Combine its attribute table with the attribute table from your state boundary shapefile that you created for Lab-13.

12. Symbolize the petrochemical pipelines so that they are figure features that are symbolized differently for each state.

13. Create a well designed and well laid-out map layout that shows the locations of petrochemical infrastructure within the Metro West area. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.).

14. Export the map layout as a `pdf` at `300dpi`.