GEOG204 - Tutorial 3

Map Display

The objective today is to compose a simple map by displaying raster and vector data. At the end of this tutorial, you should have a greater appreciation of the raster and vector data models.

The data provided are for the US state of Nebraska.

1. Unzip the 2005_NE_landuse_Geo_Tiff file. What is the file format of the data in that folder? What is the data model?
    - The aux files stores additional information such as the coordinate system, color map,
    - The twf file store georeferencing information such as the location, scale and orientation of the image.
2. Open QGIS and add the GeoTiff file.
    - Hint - it is a raster file
    - Zoom in to an area such that you can see the individual pixels of different colors clearly defined.
3. Add the shapefile in 2005_NE_shapefile.
    - It should be clear now that you are dealing with land use data
4. Change the symbology of the vector file
    - Layer Properties > Symbology
        i. Change Single Symbol to Categorized
        ii. Value -> GRIDCODE
        iii. Click Classify
        iv. Click OK to close the dialog window

5. If you Zoom out you will see that there is a lot of black, you can't easily distinguish between the different shades. We are going to modify the symbology to minimize this effect.
    - Go back to the Symbology dialog window
        i. Click in the Symbol field
        ii. Click on the "Simple Fill" line
        iii. In the Stroke Style field choose "no line"
        iv. Click ok to close the dialog window
        v. Note the difference in symbology between this step and the last one

6. We don't want to see polygons with GRIDCODE 0. How do you turn those off
7. Zoom in to an area with multiple colors. Turn on/off the vector/raster data to see how the pixel groupings and polygons line up.
    - How closely do they line up?
    - Right now it is very tempting to make up your mind about which is better. You are asked not to. Each of these data sets has its merits and demerits, appreciate them as they are. We'll clarify this further of the course of the semester.

8. Turn off both Layers and add the files in the temperature folder

- Turn off, don't remove
- Tmean represents the average temperature add different stations. Is it an effective way of representing temperature across the state?
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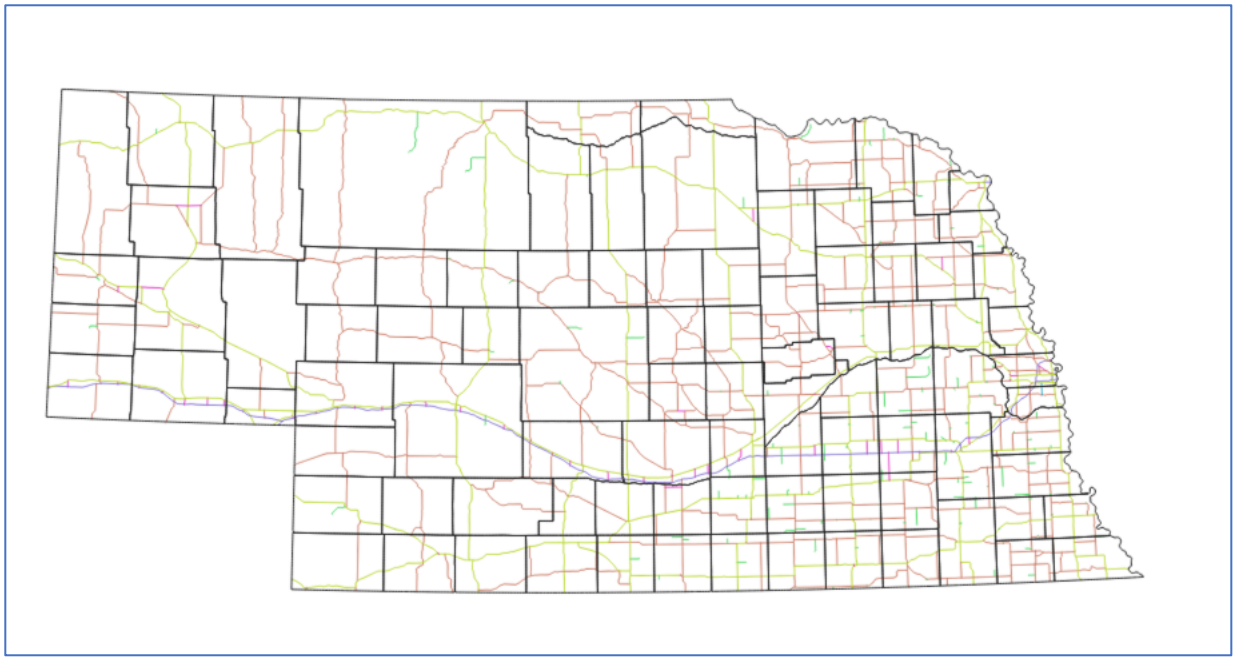
9. Add the data in the Highways folder as well as the data Counties folder
    - Change the symbology for the Highways layer using the HwyType field
    - Change the symbology of the Counties later such that it has no Fill color
    - Your data display should look like this. Please show me.



10. Save your project file.

11. Now create a print Layout

    - Project >> New Print Layout. Assign a name
    - Add Item >> Add Map
    - Drag your cursor across the Layout pane to add the map
    - Move your map around to center it. Zoom in and out to make sure in covers the pane sufficiently
    - Add a north arrow, Scale Bar, Title, Legend, Author's name, date, and Data source.

    Show me your work.

12. Open ArcGIS Pro and add the tiff and as well as the land use shape files
13. Change the symbology of the land use shapefile
    - Do you think the data loads faster in ArcGIS?