GST 104: Cartographic Design Lab Series

Lab 3: Layouts and Figure-to-Ground Relationships

Document Version: 2013-08-14 (Beta)

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The development of this document is funded by the Department of Labor (DOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant No. TC-22525-11-60-A-48; The National Information Security, Geospatial Technologies Consortium (NISGTC) is an entity of Collin College of Texas, Bellevue College of Washington, Bunker Hill Community College of Massachusetts, Del Mar College of Texas, Moraine Valley Community College of Illinois, Rio Salado College of Arizona, and Salt Lake Community College of Utah.

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Introduction

This lab is part of a series of lab exercises designed through a grant initiative by the National Information, Security & Geospatial Technologies Consortium (NISGTC), funded by the United States Department of Labor in partnership with the Department of Education under the Trade Adjustment Assistance Community College and Career Training Grant Program (TAACCCT).

In this lab, the student will be challenged to create five cartographically well-designed maps for a fictitious client. The student should use all of their cartographic knowledge learned up to this point and follow the directions of The Professional Geographer Graphics Guidelines.

Your instructor may require that you provide screen captures and/or exported files. Please check with your instructor for the requirements specific to your class.

This lab includes the following task: Create Map Figure(s) for the Client

Objective: Create clear figures that follow submission guidelines

When hired by a client to create maps, the design of the maps is often left up to you, the professional cartographer. While the client may have a general idea of what they wish to see on the maps, and data to provide, you will still need to design the map. For this lab, you should focus on the overall layout of the map, and setting good, clear figure-to-ground relationships. Additionally, you should pay special attention to the graphics guidelines of the journal that is accepting your maps. If you do not follow the graphics guidelines, the maps will be rejected and your client will be very unhappy.

Lab Settings

Required Virtual Machines and Applications

Windows Machine User Account	Train
Windows Machine User Password	Train1ng$

1 Create Map Figure(s) for the Client

You have been hired by an author of an article to create figures for a paper he is submitting to "*The Professional Geographer"* The ***Map Requirements from the Client*** below are the author's instructions to you.

- Follow the author's instructions and *The Professional Geographer Graphics Guidelines* document to design the figures. The data and graphics guidelines provided by the client are available on the lab machine at: *Shared Drive\GST 104\Lab 3*.

- In addition to the maps, write a report. The report must discuss your map design decisions. Discussion points should include *at least* map projection choice, figure-to-ground design decisions, layout choices, and difficulties encountered.

Map Requirements from the Client:

Hi, my name is Jerry Stanphonopolous. I am writing a paper about the 2008 USA Presidential election and need some figures showing percent ranges by which each candidate won a county in five states.

I want to see visually how commanding their win was by percentage points. In the dataset I am providing to you, I have created a column named "DEMREP" which represents the percentage of the public that voted democrat in a state minus the percentage that voted republican (PERCENTDEM – PERCENTREP). In that column, a negative value represents a republican advantage in percentage, and a positive number represents a democrat advantage in percentage. Note that I am ignoring the "Other" votes for this map.

The paper will be printed in the journal named "The Professional Geographer" so I need to keep to their document format. I need you to write the names of the figures for me in your report but do not put a title on the maps themselves, as the titles will appear in the figure's caption.

I trust that you will get the figures right the first time, so please just submit the completed figures to the managing editor (the course instructor in this case).

Instructions from the journal are found at
http://www.aag.org/libraries/cm_journals/updated_PG_Graphics_Guidelines_101010.pdf

Here is what I am thinking for the figures. If you want to combine figures into a larger figure, I am fine with that:

Figure 1	Oklahoma
Figure 2	Nebraska
Figure 3	Vermont
Figure 4	Maryland
Figure 5	North Carolina

For the percentage ranges, this is what I want:

Red	Republican Advantage
Blue	Democrat Advantage

These percentage values for each candidate:

0 – 5%
6 – 10%
11 – 25%
26 – 50%
> 50%

Tips:

- Pay attention to figure-ground relationships. Use advancing and retreating colors to your advantage.
- Outline colors are very important! Too dark, and they distract, too light and they are not useful and cause simultaneous contrast. Try to find a happy medium.
- Don't be afraid to chop up, and make copies of shapefiles.
- Choose your map projection wisely. The Equal-Area property is a good one to keep true, but feel free to choose others if you feel the need. In ArcMap, check under **Projected ->Continental->North America** for good projection options, or use the map projection reference websites pointed out in lecture.
- Even though you are creating multiple figures, they should all have the same "feel" to them. Make them look like a set, instead of multiple separate figures.
- Create a custom diverging color ramp, this might make symbolization easier, but still feel free to experiment manually.

Conclusion

In this lab, you have worked with a dataset and set of map requirements from a client. While the maps may have appeared to be simple, sometimes the simplicity of the maps makes it difficult to achieve a good layout, and figure-to-ground relationships. Additionally, the graphics requirements of both the client and the publisher can affect your design decisions.