CEIE 410/510 GIS in Engineering, Fall 2009

Exercise 2 (Due Sept 21)

Getting Your Feet Wet with ArcGIS

Learning objective(s)

- To understand the mechanisms to change map and layer scales
- To open layer's *attribute table* and familiarize with tabular data and concepts
- To understand the differences among *map (data) view*, *layout view* and data tables
- To label features and fine tune them
- To change feature appearance and differentiate features
- To *measure distances* using the measuring tool
- To perform elementary cartography and thematic mapping

Product(s):

- This document, with appropriate sections answered
- A printout of the US map (48 contiguous states) – Exercise 2A
- A printout of a Cartographic map for Washington DC – Exercise 2B

Practice Activities for Ex 2:

For all the activities listed below, you will use the setup for Ex 1. Follow the steps in the appropriate sections of the attached activity sheet to accomplish the following.

- Getting to and changing ***properties of a layer***
- Understanding the ***layer order*** (the order in which a layer appears)
  - Move the order of the layers and see how it changes the visibility of certain features (there is no graphical example in the handout)
- Opening the ***attribute table*** of a layer
  - getting familiarized with terms used with tables
- Getting familiar with ***layout view***
  - creating a layout view and adding elements in the layout (north arrow, scale, neat-line, label etc.)
- Obtain longitude and latitude for Phoenix, AZ and Boston, MA:
  - Phoenix: Longitude_____ Latitude: _____
  - Boston: Longitude_____ Latitude: _____
- Using the ***measuring tool***  to measure the distance between Phoenix, AZ and Boston, MA
  - The distance between Phoenix, AZ and Boston, MA as measured by you in this exercise is:_____ miles (call this D1)

Checklist, review and reminders:

Make sure:

- You know how to use on line *help*
- That you know how to *unselect* the selected features
- To double click to end the distance measurement activity marking the final segment with measuring tool

- That you know how to save project on *desktop* or your *thumb drive*
- That you will highlight the layer of interest to make it *active layer* before you do serious querying on the layer
- You understand the importance of order of layers
- To use the *right click* frequently to access features
- You understand that *layout view* is for presentation purposes and map/data view is for analysis purposes
- You understand the significance of scale and north arrow in a map. I would like to emphasize the importance of these with the following:
    - **if there is no North arrow and/or scale in your *layout* submissions, I will take 5% of the points first time it happens, 10% for the second time, 15% for the third time.**

Exercises:

Objectives:

1. To create a map project for political map of United States (48 contiguous states only) using ArcMap
2. To create cartographic map of Washington DC

Data:

For this exercise, you will use the Washington DC data on my website.

What to do for Exercise 2A:

1. From the templates you were provided with ArcGIS disk, print the map of United States containing enhancements:
    a. Interstate Highways showing the Hwy no. in the standard Blue Shield with White letters.
2. Submit a printout of the layout view on 8 ½ x 11 clipped along with this handout

What to do for Exercise 2B:

1. To Exercise 2A, add a new group layer called Washington DC.
2. Add the following layers to this group layer:
    a. Streets
    b. Highways
    c. Parks
    d. Landmarks
    e. Water Bodies and
    f. Institutions
3. The names of the layers in your map have to appear exactly like I typed. That is, it is not acceptable to have them named the same as the file names shown in parenthesis.
4. Using the elementary cartographic principle in exercise set 2A to create a neat cartographic map of Washington DC.
5. This map should be visible only when you zoom in to the Washington DC area.
6. Arrange the layers in an order where all the layers are visible.
7. Submit a printout of the layout view on 8 ½ x 11 clipped along with this handout