



GE110 Fall 2008 - Lab 1 ½

October 9, 2008

Project Management & Map Symbology

Setup an ArcMap Project

Project Management

Every good GIS project starts from the beginning. Save time and frustration by setting up your project and managing it along the way!

Take a look at how GE110 Lab 1a is set up in Windows Explorer

- ✓ Folder Names (Start with a number?)
- ✓ Grouped by Type (Shapefile, Imagery, Hillshade, DEM)
- ✓ Follow Proper Naming Conventions (Spaces? Non-alphanumeric characters? Hyphens?)
 - ❖ Do they make sense to you now, how about months from now?
 - ❖ Will they make sense to others?

Some geoprocessing tools create xx or scratch files during processing. These are the locations where these xx files are created and how this location can be controlled using system variables.

- If there is a system environment variable called ARCTMPDIR and it is set to a directory where the user has write access, the xx files will be written there. On a windows operating system, the system environment variables can be set by right clicking **My Computer**, clicking the **Advanced** tab, and clicking the **Environment Variables** button.
- If the ARCTMPDIR variable is not set, the xx files will be created in the following locations (if the user has write access to them):
 - When tools are run from the dialog box, the scratch files will be written in the ArcGIS install location. For example, C:\Program Files\ArcGIS\Bin.
 - When tools are run inside a model, the scratch files will be written to the following location: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes
 - When tools are run inside a script, the scratch files will be written to the folder where the script is stored.
- If the none of the above applies, the xx files will be stored in the following locations:
 - When tools are run from the dialog box, the scratch files will be written to the following location: C:\Documents and Settings\ - When tools are run inside a model, the scratch files will be written to the following location: C:\Documents and Settings\ - When tools are run inside a script, the scratch files will be written to the folder where the script is stored.



Launch ArcMap – Open Ge110_Lab1a.mxd

Today we will be working in Taiwan, Monday you will set up your own project for Tien Shan

Save Your Project

- ✓ Make a copy of Ge110_Lab1a.mxd in your student folder
- ❖ Make a backup of your project at several stages (versioning)

Saving Work

*Save your work **frequently**.*

When you save a **Map** you are only saving the instructions on how to display the data in the **Map** – you are not saving the data. Think of a **Map** as a recipe. It is not the ingredients of the meal, just the instructions on how to put them together. Your data layers are the ingredients.

If you move the data layer after saving a **Map**, your **Map** might not be able to find the data. Try and keep **Map** files and **Data** files together.

Data Frame Properties

General Tab

- ✓ Give your Data Frame a Name
- ✓ Units – Map & Display
- ✓ Simulate layer transparency in legend

Data Frame Tab

- ✓ Set Scale

Coordinate System Tab

- ✓ Set Coordinate System (defined with first layer entered in the project)

Page and Print Setup

- ✓ Map Page Size
 - ❖ Choose Standard Sizes: ANSI C (22" x 17", landscape)

Document Properties

- ✓ Title your map
- ✓ Author your map
- ✓ Save thumbnail image with map (good for display in Catalog, bad for speed)
- ✓ Data Source Options
 - ❖ Store relative path names to data sources
 - ❖ Make relative paths the default for a new map document I create

The default method is to use the absolute or full pathname. This requires that those who wish to use the file have the data on their computers using the same folder structure. Datasets can also be referenced using relative pathnames. Because relative paths do not contain drive names, data can be moved more easily between computers.

AGAIN - It is important to realize that the map document stores the layers, symbology, and layout, but does not store the actual datasets themselves. Rather, the map document simply “points to” the various files that are being accessed in ArcMap.

Work with the TOC

- ✓ Turn layers on and off, open and close
 - ❖ Trick - all at one time (CTRL)
- ✓ Repair Broken Links

When a layer in ArcMap references data that does not exist at the specified location on a computer, ArcMap flags that layer using a red exclamation point next to the layer’s name in the TOC. This is called a broken link. Links can be broken when a dataset is moved, renamed, or deleted, or if it is inaccessible for some other reason such as a down database connection. Broken links can be repaired either one at a time, or for multiple layers.

One layer at a time:

- In ArcMap, right-click on the layer with a broken link and select Properties
- Select the Source tab
- Click on the Set Data Source... button and navigate to find the desired dataset, then click ok

Multiple layers at a time:

- In ArcMap, right-click on a layer with a broken link and select Data > Set Data Source...
- Navigate to find the desired dataset, then click OK

Work with the TOC (cont)

- ✓ Create a new group layer
 - ❖ Move data to new group layer
- ✓ Create a new data frame
 - ❖ Set up data frame properties as above
 - ❖ Copy data to new data frame

Symbology

Symbols

Data Layer symbols are typically a circle, square, triangle, or some other symbol for a point layer, a colored line for a line layers and a square patch for a polygon or area layer.

Displaying or Showing Data

Data layers can be displayed in many ways. The default for ArcMap is to simply display data with all FEATURES (points or lines or polygons) in ONE color.

As most data layers have a large amount of other data, you could consider CATEGORIES from the “Show” box. This will display details of the categories from the Value Field option. Each separate category will have it’s own color.

Layer Names

- ✓ Change the names for all the layers

Draw Order in the TOC

- ✓ Match the final TOC
 - ❖ Remember that layers are drawn bottom up, so the order in the TOC is important

Layer Symbology

- ✓ Change the symbology for the following layers
 - ❖ gaz
 - ❖ taiwan_eq_1991_2000_gt_3_5_a
 - ❖ Trip_Itinerary_2008
 - ❖ Border
 - ❖ Roads
- ✓ Look at the symbology for earthquake

Using Layer Files

- ✓ Change the symbology using a layer file for geology_class and dem_40.img
- ✓ Set Transparency

Using Styles

- ✓ Change the symbology using a style file for Faults_topo_clean

Scale Dependency

- ✓ Understand the how's and whys of scale dependency

To summarize

There is no “correct” way to classify data, no one “right” map, Changing the number of classes or the class ranges through different classification schemes creates maps that emphasize different aspects about the distribution of an attribute.

Map complexity

Try not confuse or overwhelm a reader; Map data when displayed or printed should **not show more than 8 –10** categories, symbols or colors

Layout

A layout is what you make out of it. There is no right or wrong way of setting it up, however always include the layout standards

Working with Data Frames

- ✓ Place your data frames in your layout
- ✓ Add Frame
- ✓ Add Grid
- ✓ Add Extend Rectangles

Elements

- ✓ Add north arrow
- ✓ Add scale bar
- ✓ Add title
- ✓ Add “Create by”
- ✓ Add pictures (logos)

To Turn In:

1. Create a layout and save it to a *.pdf on your computer