

## ***A Strategy for Developing your Mapserver Application***

### **Preparation**

1. Think about what you want the PURPOSE of your online map to be. This will dictate later which options you will want to have (or not have) in your map.
2. Learn more about what Mapserver can do, and how to do it by browsing the online tutorial (<http://hypnos.cbs.umn.edu/tutorial/sections.html>) and looking at other examples on the Advanced GIS web site.
3. Decide what you want your mapping application to look like and what features you want to include. Try to locate sample .map and .html files that most closely approximate what you want to do in the examples from the tutorial and Advanced GIS web site.
4. Be sure to complete the Mapserver Mini-lab. It's a good way to get a feel for the options before you start your own map (which CAN use the map and template files from the exercise as a starting point).

### **Creation**

To create an online map you will need to prepare the following:

1. **Shapefiles** containing the data you wish to display. It is much easier if they are all in the same projection, so if they are not already, use the projection tools in ArcTools to put them in the same projection. These files need to be placed in your directory on the server so your application can use them. Basic steps are:
  - a. Select the shapefiles you want to use.
  - b. Look at their properties to see if they are in the same projection, reproject them if they are not.
  - c. Look at the shapefile properties to determine the extent (the northernmost, southernmost, easternmost and westernmost points in the area you are interested in). Since the shapefiles may have different extents, pick the one with the area that corresponds best with the area you want to display.
2. **A Map (.map) file** containing the map, layer, class, legend, scale bar and reference map information. This controls what will be included on the map itself. It also specifies the name and location of the template file you are using. If you are starting from a sample .map file from a tutorial or from class examples, at minimum you will need to:
  - a. Set the MAPEXTENT to the area of your shapefiles
  - b. Set the SHAPEPATH to point to the directory where your shapefiles are stored
  - c. Set the TEMPLATE to point to the .html file you will be using for display and control (see below)

- d. Set up the LAYERS that you wish to use, along with the CLASSES used to control color and symbols. Usually it is best to add these one at a time, so that if there are any problems, you know which layer is the source of the problem. Remember the names of the layers, as you will need them in the template file if you wish to turn them on and off.
3. **A Template (.html) file** containing the HTML and Mapserver Template codes that control how your map will display in a web browser and what controls and options will be available to you. At a minimum you will need to include:
    - a. “Hidden” input fields that set the MAP, MAPEXT, imagexy and savequery options
    - b. A HTML command that displays the [IMG]
    - c. HTML for any controls you wish to display. Note that if you are selecting layers, the NAMES of the layers must EXACTLY match the values in the options including case (“MyLayer” is not the same as “mylayer”).

## Procedure

To display the map, the shapefiles, map file and template file must all be in your directory on the server, but the easiest place to edit them is on your own PC using any standard text editor (note – do not save as WORD or other word processor files, only as text). So follow this procedure:

1. Start SecureFX – this program allows you to copy files from your PC to the server and back again simply by ‘dragging and dropping’.
2. Edit your map or template files and upload them to the server. It is recommended that you upload the files to the server for testing frequently. “Bugs” are the rule, not the exception, and taking many small steps is much easier to debug than taking a few large ones!
  - a. A tip: In a MAP file putting a # at the beginning of a line changes it into a comment. If you think a line, or block of statements might be causing a problem, you can temporarily “comment them out” and then add them back in, one by one, by removing the #
  - b. In HTML files <!-- starts a comment and --> ends the comment.

## Final Comments

Developing a Mapserver application always involves encountering unexpected problems and overcoming them. Do not wait until the last minute to complete the assignment, as added time pressure does not make the “overcoming them” part any easier! Please feel free to contact the instructor if you get stuck.