Back   **Geographic Information Systems & Sociological Geography**
Mills College SOC128 Fall 1999 -- Dan Ryan

The Cartographic Elements – Points, Lines, Areas

Readings

- Monmonier, *How to Lie with Maps*, pp. 18-24.
- Kraak, Cartography, p 111.
- Johnson, p. 116-121

Instructions

1. Connect to the **ACADEMIC** server and start Mapinfo.

2. Copy the folder **ACADEMIC:SOC_Dept:SOC_Pub:SOC128:exercise01** to your desktop.

3. Cartographers have six "visual variables" to work with when trying to represent information about the world in a map. Open the six files "**value**," "**orientation**," "**size**," "**shape**," "**hue**," and "**texture**."

4. Now close the map window in which they all came up and open six new map windows (**Window > New Map Window**), one for each (select one of these tables for display in each map window).

5. Arrange the windows on the screen by tiling them (**Window > Tile Windows**).

6. Adjust the scale on each window (using and) to show all the objects in each using the command **Map > View entire layer.**

Size

1. Click on the size map. This layer consists of five point (symbol) objects and five line objects. Make the "size" layer editable (**Map > Layer Control**). Select the first object in the series. Click on the "symbol style picker" to bring up the Symbol Style dialog box.
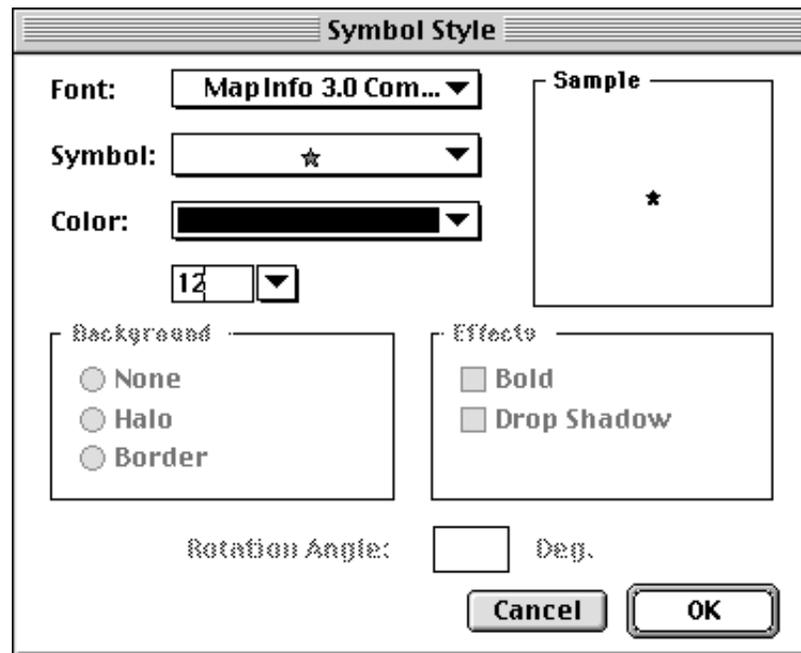
2. For symbols you can specify the font set the symbols are chosen from, the particular symbol to be used, its size, and color. If it is non-symmetrical you can specify its orienation. In addition, you can specify some graphic effects such as whether is surrounded by a halo or whether a drop shadow is included. For the purposes of this exercise, select a symbol style and color and size.

3. Repeat for the other four symbols in the size layer to produce a series of increasing or decreasing sized symbols.

4. Next select one of the line segments and click on the "line style picker" to bring up the Line Style dialog box.
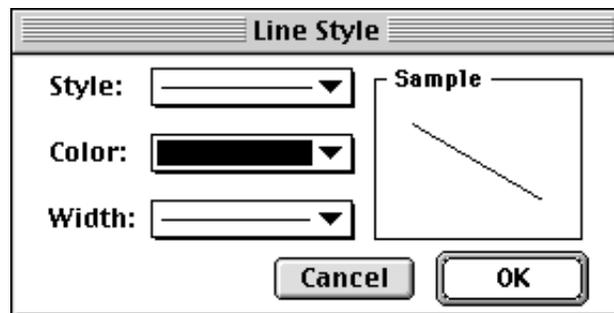
5. Line style options include "style" (which includes what Monmonier calls textures, shape, and value - - see p. 67 in MIO), color, and width. In addition, you can specify "interleaved" for line styles that have an "inside" (like this) so that when they cross themselves they look like this instead of this .

6. Set the line styles for the line segments in the size table to form a series of lines of different sizes (aka width or weigth).

7. When you are finished, save your changes (**File > Save Table**).

Hue

1. Click on the hue map.   This layer consists of five polygon (region) objects and five line objects. Make the "hue" layer editable. Select the first object in the series. Click on the "region style picker" to bring up the Region Style dialog box.
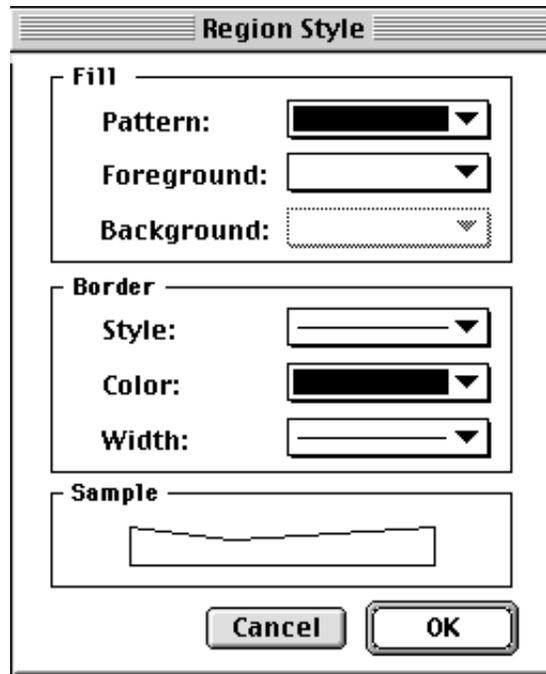
2. For regions you can specify the "fill" and the "border." Fill refers to the inside of a region or polygon. You can select a pattern or texture (including solid or none at all for transparent regions) and color. If you select a partial pattern, you can select a foreground and a background color. Have a look at the available patterns and colors. Borders can also be set to different types, colors, and weights. For the purposes of this exercise, set the fill of this region to solid, it's color (hue) to one of your choosing, and the border style to None.

3. Repeat for the other four regions in the hue layer to produce a set of contrasting hues.

4. Next select one of the line segments and click on the "line style picker"and set the line styles for the line segments in the hue table to form a series of line color alternatives.

5. When you are finished, save your changes (**File > Save Table**).

Shape

1. Click on the shape map.   This layer consists of five point (symbol) objects and five line objects. Make the "shape" layer editable. Select the first object in the series. Click on the "symbol style picker" to bring up the Symbol Style dialog box.

2. Make the first object one size, color, and shape and then repeat for the four others to produce a series

of similarly colored and sized but varying shaped objects.

3. Next select one of the line segments and click on the "line style picker"and set the line styles for the line segments in the shape table to form a series of line shape alternatives.

4. When you are finished, save your changes (**File > Save Table**).

Better safe than sorry...

Mapinfo provides a way to save "where you are" in the sense of what tables you have open, what is in what window, etc. It's called "saving a workspace." Before long you'll develop the habit of saving your workspaces "early and often." Try it now (**File > Save Workspace**). Put the workspace in the same folder as your tables for this exercise. Give it a name that has something to do with the project you are working on (for example, **visual_elements**). If the machine crashes or Mapinfo freezes up, you can restart and open the workspace and you will be back at the same place you were when you last saved your workspace.

Orientation

1. Click on the orientation map. This layer consists of five point (symbol) objects and five line objects. Make the "orientation" layer editable. Select the first object in the series. Click on the "symbol style picker" to bring up the Symbol Style dialog box.

2. Set the rotation angle of the first symbol and then repeat for the four others to produce a rotating series.

3. Lines can also have orientation. Select the first line segment in this layer. Notice how it has a "handle" at each end. Click and hold on one end and move it so that the line rotates "around" the other end. Make it more or less parallel to the symbol it is next to. Repeat for the other four line seqments.

4. When you are finished, save your changes (**File > Save Table**).

Texture

1. Click on the texture map.   This layer consists of five polygon (region) objects and five line objects. Make the "texture" layer editable. Select the first object in the series. Click on the "region style picker" to bring up the Region Style dialog box.

2. Select a pattern or texture for the first object, along with appropriate colors. Repeat for the other

objects to form an "increasing" or "decreasing" series of textures.

3. Next use the "line style picker" to set styles of the lines in this layer to what Monmonier calls different line textures.

4. When you are finished, save your changes (**File > Save Table**).

Value

1. Click on the value map. This layer consists of five polygon (region) objects and five line objects. Make the "value" layer editable. Select the first object in the series. Click on the "region style picker"to bring up the Region Style dialog box.

2. Make the fill solid and select the "maximum" of a particular color (for example, bright red). Repeat for the other objects to form a "decreasing" series of color.

3. Use the "line style picker" to set styles of the lines in this layer to different values of what Monmonier calls line values.

4. When you are finished, save your changes (**File > Save Table**).

Putting it all together

1. Make sure you have saved your tables. Go to **File > Save Table**. It should be "greyed out" indicating there is nothing to save. If not, select it and save anything that is not already saved.

2. Save your workspace once again, just in case anything goes wrong.

3. Now close all the open map windows by clicking in their close boxes.

4. Open a new map window (**Windows > New Map Window**). Select four of the six layers we've been working with.

5. Go to layer control and add the other two layers (**Map > Layer Control > Add**).

6. Now get them all in the window by (1) making the window nearly as big as the screen, and telling Mapinfo to show all of all the layers (**Map > View entire layer > All layers**).
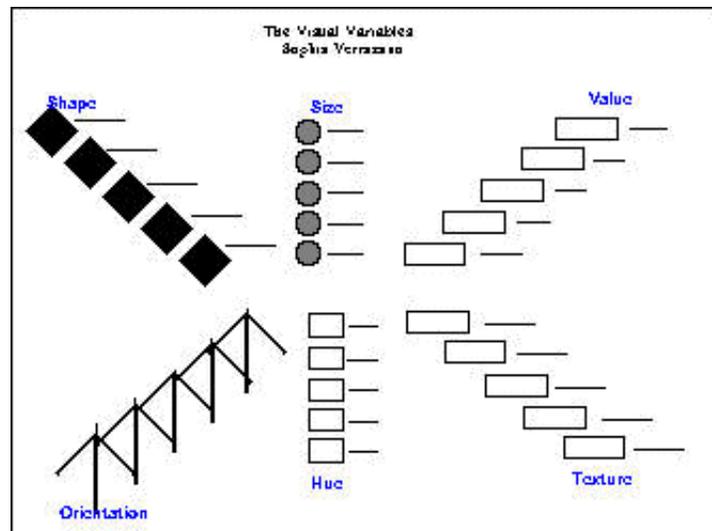
7. Next click on the text tool A . Make the cosmetic layer editable and add the following two lines of text as separate text objects. Don't worry about fonts and such for the moment.

<p style="text-align:center; color:purple;"><code>The Visual Variables
Your Name</code></p>

8. Now select the first text object and click on the "Text style picker" A? to set an appropriate size, font, color, etc. Repeat for your name.

9. Now add a label for "Textures" in the appropriate spot.   Select it and use the Text style picker to format it appropriately. Repeat this for the other five clusters of objects.

10. Now that we've placed these labels and titles in the cosmetic layer, we would like to save them. Save the cosmetic objects to a new layer (**Map > Save Cosmetic Objects > New**), perhaps called "titles" to the same folder we've been keeping other stuff in.

11. Save your workspace again.

What to hand in.

- Make the final map about the size of the screen.   It should look something like this (except the object will be different colors, textures, etc.). Print and submit.

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