Assembling a Matrix Using GeoVISTA Studio

1. Before you begin:

If you are not yet familiar with the basic functionality of GeoVISTA Studio, check out our Quickstart guide located at:

http://www.geovistastudio.psu.edu/jsp/tryit.jsp

2. How Matrices work in Studio

Studio currently has beans that enable the creation of fixed row, biplot, and multiform matrices. Each of these can be created by connecting their respective Java Bean matrix components to a set of desired representation forms in the GeoVISTA Studio DesignBox. For example, Figure 1 shows a sample composition of a map and scatterplot matrix (an example of which is shown in Figure 2). This design can be created by connecting the ScatterPlot bean and the MapMatrixElement bean to the BiPlotMatrix bean.

Figure 1: A map and scatterplot matrix is set up by connecting map and scatterplot beans with the generic matrix bean.

The composed map and scatterplot matrix can then be connected with the Studio coordinator bean or data input beans, so that it can be coordinated with other beans and share data, classification schemes, interactive selections, and dynamic conditioning. Figure 2 shows an example design of a map and scatterplot matrix, employing a spreadsheet bean and several converter beans to handle data inputs.
3. Building your own Matrix

The differences between the design in Figure 5 and the design built in the Quickstart guide to GeoVISTA Studio are that the FixedRowMatrix bean has been replaced by BiPlotMatrix bean and there is one additional component — the SpreadSheetBean. You can replace the BiPlotMatrix bean by deleting FixedRowMatrix bean in the design built in Quickstart Tutorial, and add the BiPlotMatrix bean from ‘geoviz’ palette to the Studio DesignBox window.

Now you need to connect the BiPlotMatrix to the CoordinationManager bean. Connect the green ‘this’ communicator from the BiPlotMatrix bean to the ‘this’ input of CoordinationManager bean. This will cause a dialog box to appear. Select ‘yes’ and click on ‘Next >.’ This will bring up another dialog box. Select ‘Do nothing’ and click ‘Finish.’ These options are there to control how beans are loaded and what should happen if they are disconnected.

Next you need to add two inputs to the BiPlotMatrix bean. Right click on the bean icon, select the ‘Property’ menu item and enable SetElementClass1( Object ) and SetElementClass2( Object ). This exposes the methods that set the types of graphs inserted in the matrix. Now, connect the ‘this’ green connector from the ScatterPlot bean to the SetElementClass1( Object ) input on the BiPlotMatrix bean. This inserts scatterplots into the first row of graphs in the BiPlotMatrix bean. To see which input is which, roll over the input with your mouse and wait for the tooltip to appear. When you connect the ScatterPlot to the BiPlotMatrix it will show you the same ‘Self Adapter Wizard’ that you just saw above. Follow the same steps and complete your connection.
Repeat the process with the **MapMatrixElement** bean, connecting it to **SetElementClass2( Object )** on the **BiPlotMatrix** bean. Now, you’ve made a design for a scatterplot and map matrix and connected it to the **CoordinationManager**.

To add a **SpreadSheetBean** to the design built above, we use the same procedure as required to connect the **BiPlotMatrix** to the **CoordinationManager** bean. Connect the green ‘this’ communicator from the **SpreadSheetBean** to the ‘this’ input of the **CoordinationManager** bean.

Congratulations – You’re finished building the design!

If you run into problems, or would simply rather not build this design yourself, click here to launch a full version of GeoVISTA **Studio** that has this design pre-loaded:

http://www.geovistastudio.psu.edu/autobuild/gvstudio-matrix.jnlp

4. **Try it out:**

That’s it! You’ve built a matrix using GeoVISTA **Studio**. Now you can tweak the interface design by manipulating the windows in the **Studio GUIBox** before you save your design and run the application.

Remember, it’s important to save your design before you load data. **Studio** designs saved after data has been loaded are unreliable and non-transferable – we’re working on resolving this issue!

Once you’re finished changing the GUI, find the **DataLoader** component and click the ‘Load data’ button to start using the application you’ve just designed.

A step-by-step guide describing how to use matrices in **Studio** is available at

http://www.geovista.psu.edu/grants/nci-esda/tutorials.html

Questions or comments? We welcome your input! Email us at arobinson@psu.edu