CIS 4930/6930-002: Data Visualization (Spring 2019)

Project 5: Drawing Parallel Coordinates

1 Objectives

In this assignment you will build a well-studied information visualization interfaces, Parallel Coordinates Plot (http://en.wikipedia.org/wiki/Parallel_coordinates). Again, take care to use good software engineering practices.

2 Ground Rules

This assignment is intended to be done alone. You may ask others for help with figuring out how details of Processing. However, code must be your own (MOSS will be used!). Furthermore, NO additional libraries (such as giCentre utilities) may be used. Doing so will result in a 0 for those sketches.

3 Assignment Instructions

- Create a sketch with 1000x600 resolution that opens a file dialog box (http://processing.org/reference/selectInput_.html) and loads a selected data file.
- Create a sketch with a PARALLEL COORDINATES PLOT that shows all variables.

- Add in an axis swapping interaction.
- Add any additional interactions that you think will make your sketches more useful, such as data point tracing (highlight a data point when mouse over) or axis direction switching (swapping +/-). Your selection and their implementation may have an impact on your grade.
- Make sure your code works with the Calvin College dataset and **(Grad Req Only)** at least 1 other provided dataset (and place it in the data directory of your sketch).
- Modify your sketches such that they use additional visual channels to encoding additional variables. Consider using color, size, shape, depth, etc. Your selection and their implementation will have an impact on your grade.
- Add embellishments of your choice. These can include but are not limited to: axis lines, labels, and tick marks. Your selection and their implementation will have an impact on your grade.
- Make sure your visualizations are robust by designing them to support other data (number of elements or value range) and by designing them to support any size of canvas.

4 Submission

All of your work should be done in your git repository in the directory named **project5**. If put it anywhere else, our script will fail (and so will you). Make sure things are labeled well, so that your peers can find them.

As you work on the files make sure you frequently add the files to the repository (i.e. *git add*), commit the changes (i.e. *git commit*), and push changes to the remote server (i.e. *git push*). If you fail to do this, we won't get your files.

5 Grading and Feedback

- Your grade will be combination of objective measures (based on the assignment instructions) and subjective grading by the instructor.
- Breakdown
  - Required visualization - 6 points
  - Required interactions - 2 points
  - Additional interaction, embellishment, and additional Visual Channels - 1.0 points
    - 0.25 points for none used
    - 0.75 point for a few
    - 1.0 points for many
  - Code Professionalism - 1.0 points
    - 0.25 no comments, no classes, "hard coded" values
    - 0.75 minimally commented, few "hard coded" values
    - 1.0 commented, properly used classes, few "hard coded" values
- Peer Review will be used to provide feedback. You will review 3 of your peers' submissions, and 3 of your peers will review your work. This should be taken very seriously as it is the primary form of feedback you'll receive.