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

Project 4: Adding Interaction [continuation of Projects 2 & 3]

1 Objectives

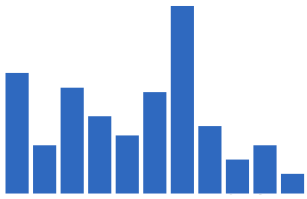
In this assignment you will add interactive elements to your previous designs. Again, take care to use good software engineering practices.

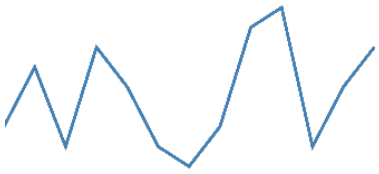
2 Ground Rules

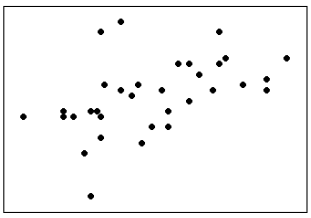
This assignment is intended to be done alone. You may ask others for help with figuring out how details of Processing. However, code must be your own (MOSS will be used!). Furthermore, NO additional libraries (such as giCentre utilities) may be used. Doing so will result in a 0 for those sketches.

3 Assignment Instructions

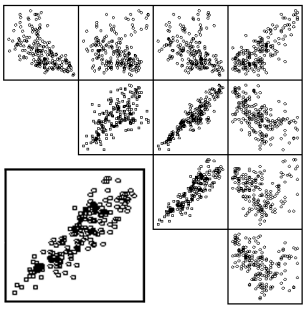
- Use the provided *srsatact.csv* dataset, which contains standardized scores for all Calvin College 2004 seniors that have taken both the ACT and the SAT, together with their GPAs. There are 271 data points and 4 dimensions.
- Modify your sketches from Project 2 and 3 to have a 1000x700 resolution.
- To your BAR CHART, LINE CHART, and SCATTERPLOT, add an interaction that pops up data information when the mouse is over/clicks a particular bar/data point. Add to all of your plots the ability switch which attributes are being visualized.







- To your SCATTERPLOT MATRIX, add a detail view (an additional large scatterplot). Add an interaction such that when a plot is selected in the scatterplot matrix, it updates the detail view to those data attributes.



- **UGrad Req Only:** In addition, test that (at least) ONE (1) of the other datasets provided works with your sketches (and place it in the data directory of your sketches).
- **Grad Req Only:** In addition, test that (at least) TWO (2) of the other datasets provided works with your sketches (and place it in the data directory of your sketches).

- Add any additional interactions that you think will make your sketches more useful.
- Modify your sketches such that they use additional visual channels to encode 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. Consider the margins for your embellishments (try to pick good values for the tick marks and a good number of them—not too many and not too few). Your selection and their implementation will have an impact on your grade.
- Make your visualizations robust by designing them to support any data (number of elements or value range) and by designing them to support any size or aspect ratio of canvas.

4 Submission

All of your work should be done in your git repository in the directory named **project4**. 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
  - 4 Visualization - 2 points (0.5 points each)
  - Required interactions - 5 points (1.25 points each)
  - Additional interaction, embellishment, and additional Visual Channels - 1.5 points
    - 0.5 points for none used
    - 1.0 point for a few
    - 1.5 points for many
  - Code Professionalism - 1.5 points
    - 0.75 no comments, no classes, "hard coded" values
    - 1.0 minimally commented, few "hard coded" values
    - 1.5 commented, 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.