Project Instructions

**IFSC 4345/5345**      Information Visualization

**Project (30 points total graduate; 30 points total undergraduate)**

The purpose of the project is twofold: to apply the principles of and knowledge about visualization, and to creatively design and implement an interactive graphical representation. Therefore, the project grade will depend on (a) conforming to the rules and best practices for effective visualization discussed in class, and (b) your ability to design novel interactive tools for a task of your choosing.

Note that the solution should be interactive (i.e., not just drawings) for graduate students.

There will be four phases:

1. **Group formation:** let me know by Tuesday, September 5th, your preference on who should be part of your group. A group should have four people. Those of you who did not express a preference will be assigned to a random group after the deadline. Teams may be restructured during the semester.
2. **Proposal**: due September 12th – October 3rd based on the schedule below. During this phase you define the task to be solved, the data set(s) to be used, and what information would be needed by a user working on the task. Turn in a 10-minute video describing the task, data set, samples of data, and sample of information needed by a user. The videos will be played in class, and feedback will be provided at that point. Watching these and listening to feedback may help all teams not only the one submitting the proposal. (5 points)
3. **Design (Progress Report)**: due November 7th (may need to use part of November 14th if too many teams). Determine the main elements of the visualization, including interaction. Try multiple types of visualization and tools. Make sure the design conforms to (a) in the first paragraph, and that it has a big chance of helping with the task of the proposal. Make a presentation in class and be prepared to receive and provide a critique/help from/to other teams. Turn in the presentation slides before class (10 points graduate; 10 points undergraduate)
4. **Implementation final presentation**: due December 4th. Implement your ideas in a program (feel free to code from scratch or use existing tools) or, for undergraduate students, make quality drawings that show how the data is to be presented and how the view changes with the user interaction. Graduate students must have a working program or no points will be given for this phase. Turn in the implementation and all alternatives: program, source code, and data (or drawings for undergraduate students). Also record and turn in a video presentation and demonstration of the solution and alternatives. (15 points)

There will be one presentation: the progress report. Presentations are worth one quarter of the points allocated for that phase, and each member of a team must be present either on-line or in-class when their team presents (for those in the 9U1 section, let me know in advance if there is a problem participating live). The order of presentations will be chosen at random. More than one class period may be required for all presentations.

The grading of the technical merits of the project will be based on the following six criteria. It may be difficult to maximize all criteria, but the theory and alternatives are required of all projects.

* theory: how well the project implemented the theory “discussed” during the semester, AND how well the topics were covered in the final presentation and explained individually by each student;
* alternatives: how many different visualizations were considered, and how thoroughly were different choices created and vetted/critiqued;
* coding difficulty: e.g., projects that were based on heavy and complex coding will receive more points than those using point-and-click or simple descriptive language;
* data difficulty: how difficult it was to obtain and process the data. Points will only be given for data collection or data processing steps that can be proven to be necessary;
* task definition: well-defined, non-trivial tasks will receive more points than general, repetitive, or simple ones;
* the degree to which the chosen solution matches the task.

Schedule for proposal submission:

            September 12th: Teams A, B, C, D, E, and F;

September 19th: Teams G, H, I, J, K, and L;

September 26th: Teams M, N, O, P, Q, and R; and

October 3rd: all other teams.