

CMP 160:Spring 2007
Final Project

The final project demo and report is due on June 13, BE 105, Wednesday, between 12-1pm.

Below is a list of possible topics for the final project. All of these projects build on top of the third and/or fourth assignment. Feel free to propose other topics that build on the the GIS Visualization you have already created.

1. **Pseudo-Coloring:** Each country is pseudo-colored based on some inequality measure. User may be able to choose between 1 or 2 coloring schemes such as rainbow and saturation maps. User may also be able to choose between some indicators.
2. **Texture Mapping:** The 3D globe is texture mapped. User can choose between different textures. You may find additional textures on the web beyond the ones supplied by us.
3. **Picking a Country:** The user picks a country and displays some information related to the country, for example, the data value associated with the indicator. The data can be displayed in the text format or on some slider scale as a visualization itself. Alternatively, you can click on a country, that takes you inside the country and provides additional information or image associated with that country.
4. **Glyph Visualization:** Use a glyph such as a sphere and a size associated with the glyph to represent the indicator value. Use can also use pseudo-color on the glyph or both using two indicators. You may also want to add a glyph such as a pie-chart or a texture on the glyph that brings out additional information about the country.
5. **Animation:** You can use a slider to show the changes in the inequality over a time period. You can also use some show an animation of global inequality where the slider scale varies over some indicators or some other data.
6. **Bringing countries closer or farther:** You can bring countries closer to the viewer or farther away from the viewer depending upon the inequality value associated with that country. Use the capital as the center to move the boundaries. Dont know how it would turn out, but worth a try!
7. **Contour Simplification:** You can simplify the boundaries of the country if you zoom out by collapsing small edges and coalescing them. You may want to show the effect of contour simplification simultaneously on the 2D plane.
8. **Trade Routes:** You may want to visualize trade routes such as exports and imports between countries. The thickness of the colors of the routes depict the volume.

9. **Deformation Mapping:** Look at worldmapper.com. Can you deform countries based on inequality measures?

It is ok to borrow code from the web. However, you MUST send an email to me informing me of your decision to do this, AND provide acknowledgment in your report AND mention it to me during the demo.

The project report should not exceed 2 pages and should include sections on: (a) the description of the problem, (b) how to use your program, (c) some challenges (or most difficult parts) you faced during implementation and succeeded, (d) some challenges you faced and could not or did not deal with them, (e) some future ideas for the project if you had three extra months, and (f) one or two high quality color images produced by your program, and (g) anything else that you consider important and is not covered by the list above.

The project will be submitted electronically as before. Please ensure that your submission includes at least one sample picture in one of the many popular graphics file formats such as gif, jpg, or ps. You can use "snapshot" to capture pictures, then use "tops" to convert them to postscript files.

Data is available at <http://www.soe.ucsc.edu/cmeps160/Spring07/Data> directory. Suggestions for using this data for different projects are also available in the same directory.