

Lecture Notes, Module 12

GEOG 319/658

Final Project

FALL 2014

Slide 1: Final Project

Slide 2: Components of the Project

- Ideally, the project will include a web-based programming app and term paper
 - So ideally, we expect some code development
 - Could be more than one program
 - Term paper describes what you did, why you did it, and the approach that you took
 - Precise nature of term paper will probably depend on exactly what you decide to do
- Project may involve relatively little programming development
 - There is a fair amount of mapping in the cloud that does not involve extensive programming
 - Here you can still develop visualizations and write an associated term paper
 - We are not encouraging this, but it may be appropriate if you've struggled a bit with the programming; I'll give a couple of examples later
- Both approaches should include visualizations/analysis that can be shared across the Web
 - Think of the web hosting links that you placed in the Google worksheet. You need to provide us such links

Slide 3: Projects students are considering

- For those students who already have a project in mind, have them spend a few minutes talking about the potential project
- Get comments from other students and the faculty (Xingong and Terry)

Slides 4-7: Potential Web-based Applications to Evaluate

- Give them handout to look at while I go through in Google Chrome

CartoDB (I will need to have basic website open + my own account)

- [website](#)
- My login...
- One of the most popular cloud-mapping systems
 - At the recent NACIS conference I attended, it was mentioned in a number of presentations
 - Ian Muehlenhaus mentions it in his new book *Web Cartography: Map Design for Interactive and Mobile Devices*
- Start at homepage
 - Note options across the top
 - You will want to sign up if you choose to evaluate CartoDB; even if you don't, you may want to explore a bit
 - Click on Industries and select Education and Research
 - Scroll down
 - Most useful will probably be Help; click here
 - Note that you have "documentation, tutorials, APIS reference, how-to..."
 - Let's look at Tutorials
 - Map election results is a basic to get you started
 - How to import a shapefile (the link with ArcGIS)
 - Some programming ("Create your first map with CartoDB.js")
- Switch to my own account
 - One of our purposes in doing these projects is to get some information about these various apps; we've played a bit with some of them ourselves, but we haven't had the time to get into them ourselves; if each student takes a different app, we can learn a lot about these
 - I have created an account and made a simple map.
 - Click on the paintbrush (Wizards)
 - You can see some of the mapping options
 - Click on the CSS
 - You can see some of the code that underlies the map

- Look at the upper right: you can SHARE the map...
- There may be enough here for two folks to work on this; if you do this, you need to make it very clear who did what...

MapBox

- Probably not cover because one of the students will cover...
 - Note that if you scroll down, there is a JavaScript library
- Distinguishing characteristic (high quality map design)??
- Scroll down main screen...
- Click on Help at top
 - Guides to getting started...
- Might be enough for two students....

Leaflet

- We've already touched on Leaflet in Peterson's book...
- Go to homepage
 - It is an open-source JavaScript library for mobile-friendly interactive maps
- Click on Features...
 - Note the extensive features
- Click on Tutorials
 - Note that Peterson borrowed from here...
 - Thus, it is unclear how much you could expand...

ArcGIS

- Many of you are ArcGIS users. Is there some way that we can work with ArcGIS on the Web and use JavaScript?
 - Yes, the book ArcGIS Web Development is being created
 - This is probably something you would go to if you can't let go of ArcGIS
 - The code looks pretty similar to what we've been doing...
 - We downloaded the code and if you click on one of the resulting html files, you get this...Right-click and you see the source code...

Google Maps Engine

Google Earth Engine

- Learned about these at Google Headquarters this summer
- Point them to the website for [Google Maps Engine](#)
- Go through a few of the slides...
 - So you can do this with no programming, but there is an API
- Show web site for [Google Earth Engine](#)
 - Brings together 40 years of satellite data
 - We will do work with this a bit in class...

NASA Worldwind

- Google Earth is a virtual globe, but it is commercial
- NASA Worldwind is a completely open-source virtual globe
- Includes programming capability...

Geocommons

- My login....
- System wasn't working at the time I taught, but does appear to be working now...

Indiemapper

- Basic static thematic mapping program
- Muehlenhaus indicates that you can export the data as a layered SVG file and then "simply use HTML, CSS, and JavaScript to manipulate the SVG map and make it interactive."

- Bring in data from ArcGIS GEOG 517 KS_Coun.shp
- Map it!
- Export it as layered SVG
- Is this really true if you just export one map??

[Swedish National Center for Visual Analytics](#) and [World eXplorer](#)

- Visual Analytics: Highly interactive web mapping for large datasets
- What this center has done is to provide highly interactive free software with already canned datasets and stories ! (Use data and interactive software to tell a story about the data)
- Rather than writing code, you utilize already created apps, but you can add your own data
- Go to World eXplorer
 - Show the story summary on the extreme lower right...
 - We have the map of the % age 65 and above
 - Scatterplot of % age 65 and above on X, Age Dependency (click on the arrow to show) on Y, Size is population
 - Histogram of %age 65+
- Go to the user's guide (No coding is involved; no one at KU has worked with the user's guide)