Notetaking on March 11th, group D

Quick announcements:

Other resources to read
starting week 10, the final project of the course, open-ended visualization activity in groups
Recommends go through Slack first
Post snippets of code that don't work, don't post working ones

Warm-up activity:
538ish congress member
435 house of representative, thus y-axis is the number of people in Congress
Jumpy on the top, the discrete integer of human count
Narrative of this viz, what's it telling us?
Old person game
Rightmost vertical bar - today, max = 1930s

The Internet visualization, technology-related

Today:
Topic 1, evaluating visualization engines
Tons out there, matplotlib, vega lite

Costs, functionality, aesthetics to pick the optimal choice
Easy to get a hold?
Installed locally or on a server, access issues, security issues
Who developed the software
Understanding the interface(declarative or imperative, function pre-built, the function needs to be built, like scatter plot)

Understanding license, what you are allowed to do
Limitation of certain license, education/free/professional
Can u investigate open-source software, mostly poorly documented
Licensing limit the people who are allowed to see the visualization
Who can you give your visualization derivatives to, continue working on it
Sharable license, share-alike license(keep intellectual properties available)
Open license resource: https://choosealicense.com/
Corporation find it profitable if they invest in a community, the profit motive

Data intellectual property right
http://opendefinition.org/guide/data/
https://theodi.org/knowledge-opinion/guides/
Future's open data

Accessibility of the software, knowing who owns the public server, the intellectual property right around the server

Interface, how do people interact with the software, declarative built on imperative
Example: Altair doc chart, easier to use with pre-built function

Cost, not just about money, time + mental bandwidth
Installing software and visualization licenses
Documentation matters
Cost of sharing your creation depends on the system you are using

Aesthetics, trending
Does the visualization say something about you and your handling of the data
The right type and infrastructure of the visualization you use

Topic 2, markdown
Type of internet syntax
A quick and dirty way of formatting text, without rich text functions

Markdown, a tool called idyll
Data blogs, Gallery: Fugazi example, eye example
Editor, play with markdown syntax

After spring break, we will be using idyll

Top 3: map making
Useful for GIS data and other varieties of reasons involved place
Biggest problem dealing with mapping, the earth is a sphere
How to flatten a sphere

Projection is the method to turn sphere to a flat
Projection animation, what happens to turn a sphere to a flat projection
No perfect way to turn sphere data to a flat screen, breaking up into pieces

Common preservations:
Maintain amount of area, preserve the shape of the outline of continent or state,
Maintain a meaning distance between objects, very hard to get all three working together

Some projections:

Mercator, agreed upon projection on ocean navigation, maintain the shape of the coastlines but not the size

Example of Ellipse of distortion applied to Mercator;

LambertCylindrical projection, popular with NASA, a grid of longitude and latitude

Shape not maintained

Optimal use of pixel density, the resolution of pixels in the middle is better than the higher up ones;

Mollweide projection is considered best of all

Ellipses are similar;

Sinusoidal, less distortion at the north and south pole, not feeling earth like;

Gnomonic;

https://thetruesize.com/

dragging the USA to see how its size changes

Google map uses Mercator, reason if zooming in, roads are not distorted;

Waterman butterfly projection, no way to navigate around such projection;

Map: coordinates systems
Common baseline methods, things to keep track

Intro to cartopy
Crs coordinate reference system