



The Information Visualization Mantra

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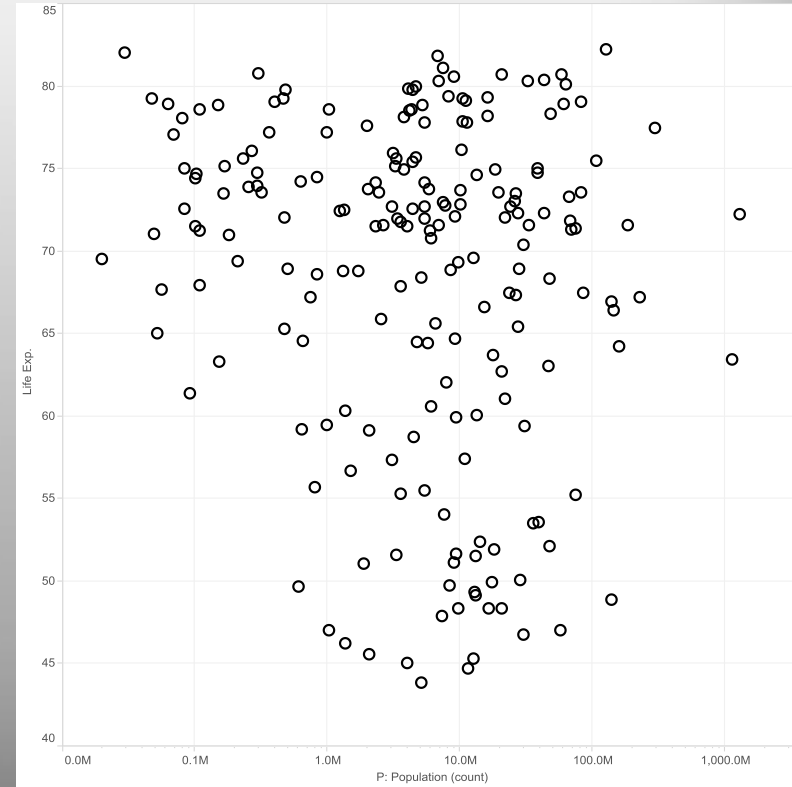
Schneiderman's Mantra

1. Overview First
2. Zoom and Filter
3. Then Details on Demand

Overview

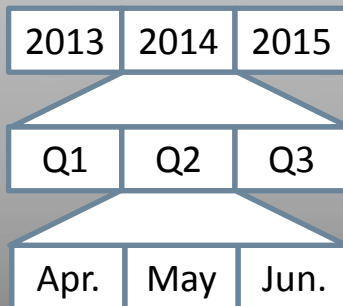
- Scatterplot of entire dataset
 - Other plots can work too
- High level view
 - “Get your head around the data”
- Choose axes that evenly spreads out the data
 - Set tight min-max bounds
 - Consider log scale, or other functions

Countries distributed by life expectancy (v) v. population (h)

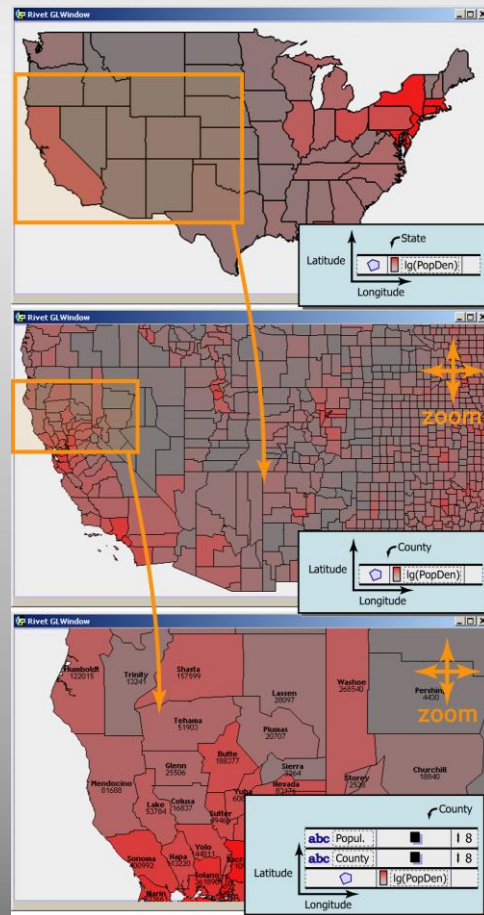


Zoom

- Removing extraneous data based on displayed coordinates
- Provides additional resolution to display and differentiate selected data in more detail
- Two ways to zoom
 - Selecting plot area
 - Expanding axis fields



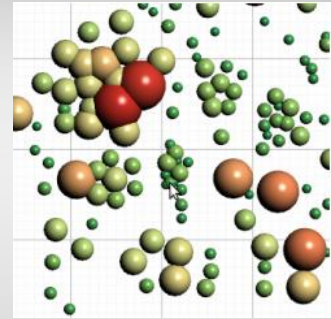
Stolte et al., Multiscale Visualization Using Data Cubes, Proc. Infovis 2002



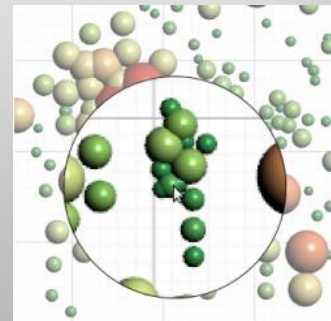
Focus + Context

- Interactive lens to zoom in on details
- Retains context, without cropping away data outside of zoomed portion
- Implemented as a distortion
- <http://bost.ocks.org/mike/fisheye/>
- Further Reading: Tominski et al. “A Survey on Interactive Lenses in Visualization” Proc. EuroVis 2014

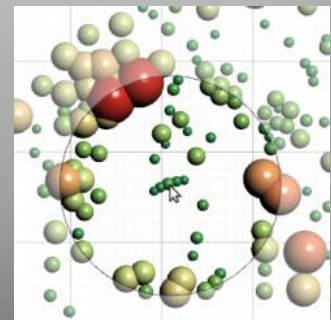
uniform
view



zoom
lens

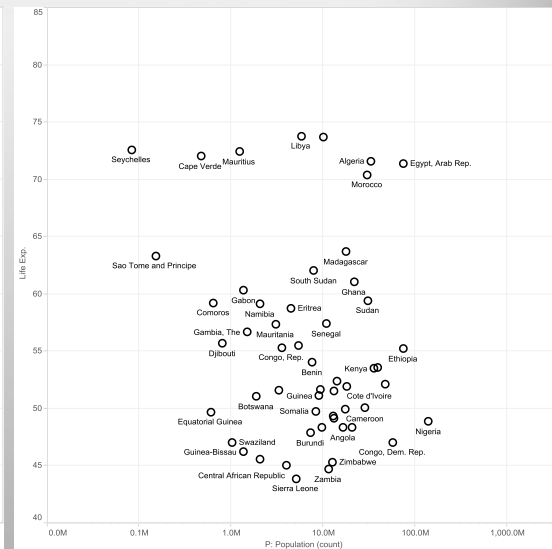
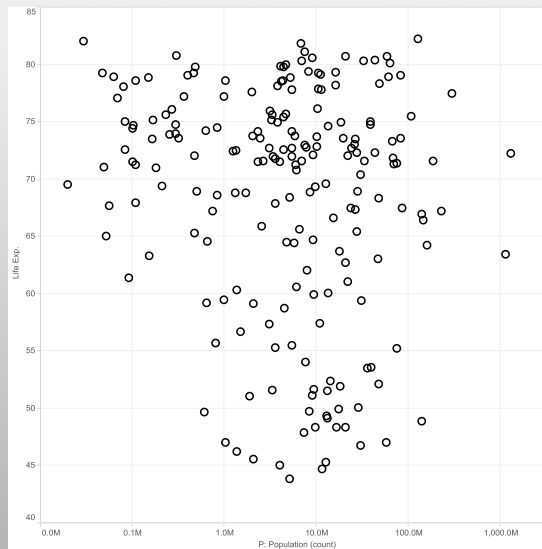


fisheye
distortion
lens

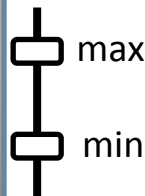


Filter

- Remove extraneous data based on attributes (not just displayed coordinates)
- Simplifies display of selected data, provides more room for details and annotation
- Selection
 - Ordinal/Nominal: checkboxes
 - Quantitative: range sliders



- ☒ Q1
- ☐ Q2
- ☐ Q3
- ☒ Q4



Life expectancy (v) v. population (h)
for world (left) v. Africa (right)
displayed with Tableau

Details on Demand

- **Tooltip:** Details presented on the current datapoint as result of a “mouseover” event
- **Field Selection:** User selects a field value and resulting datapoints with that field value are highlighted

