Charting options and Chart types

CODEX Data Explorer \_v2 deck: slide 24

**Loading multiple data sets**

- not yet; user would need to combine data manually into a single file

**Interactions**

- brushing and linking should work across all the plots

- compare two graphs (“fade between layers”) (slide 26)

- looking for differences between two graphs

- slider between each layer, and a “rate” of flipping (Anton)

- axes must be the same (even across data sets)

- make it easy to compare two charts:

- set the X/Y ranges to be the same across two graphs (“set axes like graph abc”)

- set window size same as another chart

- maybe this is “stacking” charts so that the axes are the same in one direction

- decide on which selection/subset color goes on top

- use the Selection panel ordering to order stuff on the charts

**Fit lines/Trend lines**

- look in Excel for the examples

- types of trendlines and options

**Histogram**

- just “x” (one Feature)

- same options as below

- selection from scatterplot would show up as *part* of a bar

- selection on histogram is “one bar” chunks

- sub-type: sorted histogram; sort the histogram so that biggest bars are sorted first (slide 25)

**X-Y Scatterplot**

- density is meaningful

- therefore dots are usually small

- change size of the dots

- “Format options”

- size, color by series/selection (need to specify which Features to represent it)

- transparency

- border or no border with color

- fill color

- swap/copy into heat map or density plot to understand overplotting

- add error bars to dots (in both X and Y direction) (additional Features)

- log or linear plots

- sort the axis by value to show relationships between X and Y (kind of like sorted histogram that orders the biggest to smallest bins)

- marginal plots with histogram on axis in heat maps

- superimpose contours (slide 26)

- fit lines

**Bubble chart**

- scatter plot where the size is another Feature/value

- also moving bubble chart with an animated x-y plot (animate time points) (slide 25)

**Radial/Polar coordinates**

- plot angle and radius

- less common

- “same as a scatter plot”

**Line plot**

- ask Lukas for Shade plot example

- “just a scatter plot”

- time series

**Maps**

- do cartographic charts with a map underneath

**Time dimensions:**

- also moving chart with an animated x-y plot (animate time points) (slide 25) for “any” type of plot

**Heat map**

- bins to count up how many things in each bin

- helps visualize overplotting

- can show count in bin; show mean of points; can show variation in bin (e.g. standard deviation)

- color map for values; single dimension or divergent scales

- colors for “out of bounds”

- choose squares or hexagons as a bucket

- marginal plots with histogram on axis in heat maps

- superimpose contours (slide 26)

- fit lines

**Color schemes**

- make good ones

- black (low) to bright (high) because we’re on a computer screen

- help people choose a color scheme properly

## “Specialty graphs”

**Correlation matrix**

- “dynamic heat map”

- standard heat map that supports sorting X, sorting Y; used to show correlation between features

- be able to do sophisticated axis sorting (e.g. block-diagonalize ~ spectral clustering)

- can be used in the Quality Scan to visualize NaNs and bad data