Visualization & Visual Analytics 1
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creativecoding.evl.uic.edu/courses/cs424
Color

- To label, name, identify, categorize

- To measure, quantify

- To represent, symbolize, contextualize

- To decorate, beautify, highlight
Identify, group, layer, highlight
RGB -> HSL

- Hue
  the primary “color”

- Saturation
  amount the color is mixed with white

- Luminance
  amount of black that is mixed with the color
HSL

Saturation

Lightness

Hue

b. $S_{HSL} = 1$

c. $L = \frac{1}{2}$

d. $H = 0^\circ / 180^\circ$
Showing small blue text on a black background is a bad idea. There is insufficient luminance contrast.

Showing small yellow text on a white background is a bad idea. There is insufficient luminance contrast.
“For small regions, designers should use bright, highly saturated colors to ensure that the color coding is distinguishable. When colored regions are large, as in backgrounds, the design guideline is the opposite: use low-saturation colors; that is, pastels.”
Color

- Color Encoding
  - Hue
  - Saturation
  - Luminance

- Color Map
  - Categorical
  - Sequential
  - Diverging
  - Bivariate
Colormaps

A colormap *maps* a value to a color
- categorical vs. ordered
  - sequential vs. diverging
  - continuous vs. segmented
Discriminability Mismatch

“One choice is to reduce the number of bins explicitly through a deliberate data transformation that takes into account the nature of the data and task, so that each bin can be encoded with a distinguishable color. [...]

“Another possibility is to filter the attributes to only encode a small set of the most important ones with color, and aggregate all of the rest into a new category of other.

“The other choice is to use a different visual encoding idiom that uses other visual channels instead of, or in addition to, the color channel alone.”
Homework:

- Tuesday: Coding assignment complete – Due Monday at 11:59pm

- Tuesday: Quiz on Chapters 9 & 10 and anything we’ve talked about this semester

- I will post the instructions for the final Project 2 package this weekend