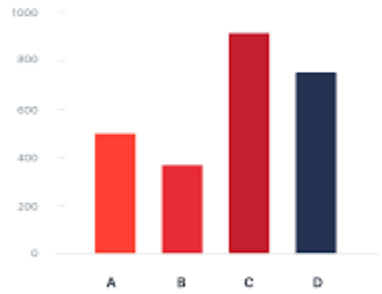
Sam Kennedy
COMP 112 - Data Visualization Summary

Types of graphs:

Univariate

- Bar graph
    - 1 categorical variable



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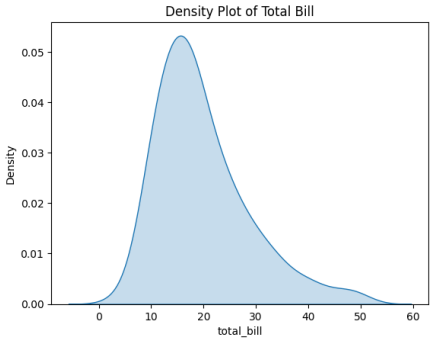
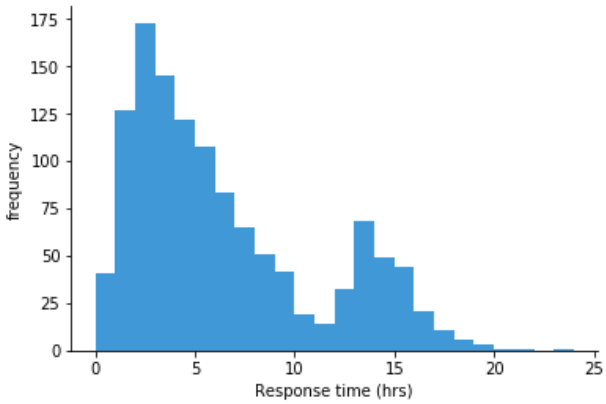
- Density plot
    - 1 numerical variable
    -

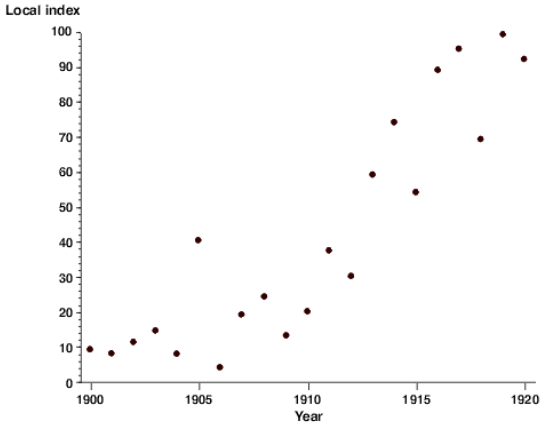


- Histogram
    - 1 numerical variable

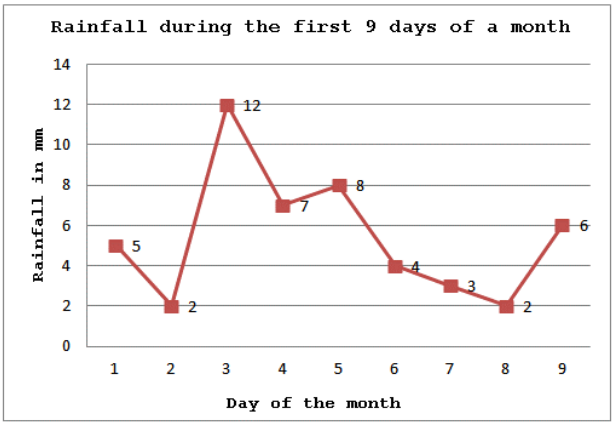


Bivariate

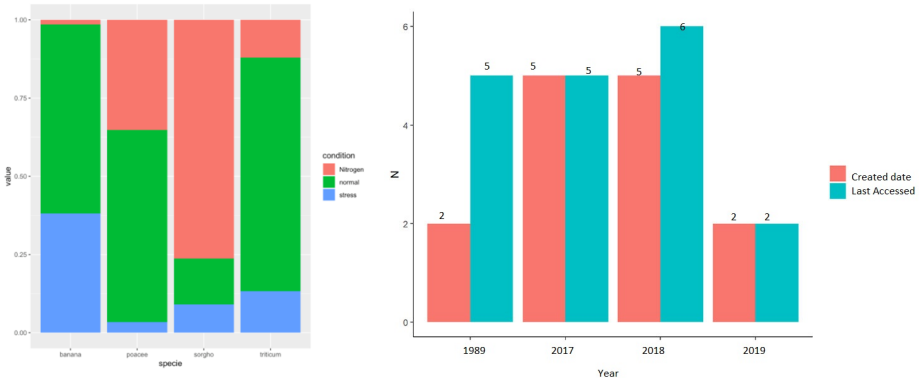
- Scatter plot
  - Two numerical variables

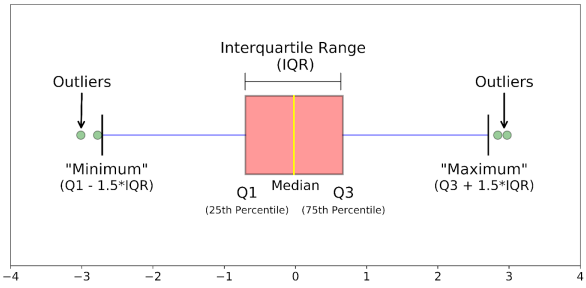


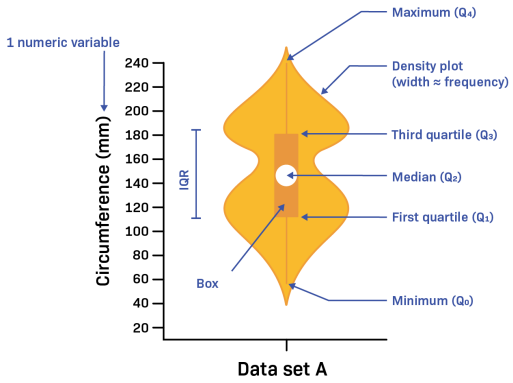
- Line graph
  - Two numerical variables



- Stacked/dodged/faceted bar graph
  - Two categorical variables

- 

- Box plot
  - One numerical variable, one categorical variable
  - 

- Violin plot
  - One numerical variable, one categorical variable
  - 

- Faceted histogram
  - One numerical variable, one categorical variable
- Overlay/faceted density plot
  - One numerical variable, one categorical variable

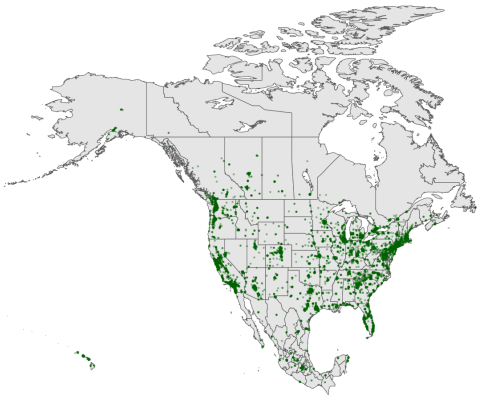
Multivariate

- Three categorical variables
  - Stack one variable, facet another variable
- Three numerical variables

    - Can use color, size, or faceting
- One categorical variable, two numerical variables
    - Can use color, size, or faceting
- One numerical variable, two categorical variables
    - Facet each categorical variable OR facet for one categorical variable when using a violin or box plot

Spatial

- Point map
    - Plots locations of individual observations



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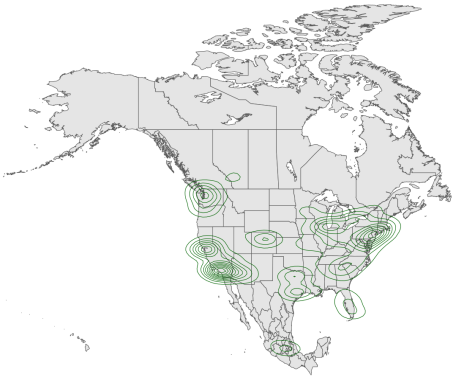
- Contour map
    - Shows density of observations across map



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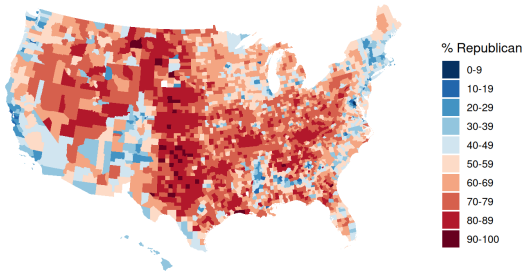
- Choropleth map
    - Observations divided by region



Effective visualization:

- Professionalism
  - Meaningful axis labels
  - Captions
- Accessibility
  - Alt text
  - Colorblind-friendly color palette
    - Using ViridisLite R package
- Ethics
  - Visualizations should not mislead viewers