The Plan

**Goals**

By the end of Thursday’s class:

Have data fully cleaned up and structured for the specific analyses and visualizations

Do the bar chart of precipitation for 2013-2015 and 2015-2020 at minimum. If we have time, do the growth rate vs. precipitation correlation and regression analysis

By the end of Saturday class:

Complete all analyses and visualizations

Start write-up

Goal for Sunday and Monday

Complete the write-up and prepare for the presentation

**Analyses**

1. Too hot to breathe
   1. Bar chart of total nights >= 90 degrees for each timespan
      1. X-axis is timespans, y-axis is total nights
   2. Correlation/regression of saguaro deaths vs. yearly number of nights >= 90 degrees.
      1. Select nights >= 90, groupby year, aggregate to count
      2. Count up saguaro deaths per year (group by year, then aggregate to count)
      3. Create scatterplot with saguaro mortality (y-axis) vs. nights >= 90 (x-axis)
2. Growth vs. precip
   1. Visualization of precipitation over two timespans: 2013-2015 and 2015-2020
      1. Create bar chart with years (x-axis) and total precipitation (y-axis)
   2. Boxplot of saguaro growth outliers.
   3. Correlation/regression of average/max/stdev saguaro growth rate vs total precipitation by timespan
      1. Group precipitation by timespan, aggregate to sum
      2. Find average saguaro growth rate for each timespan
      3. Create scatterplot with average saguaro growth rate (y-axis) vs precipitation (x-axis)

**Report**

Intro – Veronica

Desert Botanical Garden, saguaros, research questions

Data

Saguaros – Veronica

Weather – Steve

Data clean-up – Steven

Data analyses and visualization process and results – Michael and Steve

Conclusion – Mostly Veronica

Summary of results and implications for DBG

Discussion of problems encountered and how we overcame

Steve’s “negative feedback loop”

4-dimensional dataset

Git/GitHub merge conflicts