STAT101 – Spring 2012
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Notes for Chapters 1-9

Things You Should Know How to do:

- •standardize a variable : z = (x - mean) / s.d.
- •un-standardize a variable: x = z*s.d. + mean
- •What does it mean to standardize your variables? the new mean=0 and the new standard deviation=1
- •what is the meaning of r and r-squared
- •Creating a FENCE based on IQR to test for outliers
- •What is skewness? what is the effect of outliers on the mean? what about the median?
- •How to read a column table (PG-13 / comedies, etc)
- •How to understand conditional probabilities (e.g. the difference between "% of sunny days that were warm" and "% of warm days that were sunny")

Describing a distribution:

- •Central Tendency: mean / median / mode
- •Spread: standard deviation / min, max / IQR
- •Shape: symmetric, skewed left/right, uniform/unimodal/bimodal/multimodal

In the calculator:
Enter a list of data and find: **1-Var Stats**

- •Mean
- •Standard deviation (population s.d and sample s.d)
- •get 5-number summary (min, Q1, Median, Q3, max)
- •Do you know how to make a box-plot in the calculator? What about a histogram?

Enter Two lists of data: **LinReg(a+bx)**

- •Get r and r-squared
- •graph your line as Y1
- •make your scatter plot
- •plot your residuals (plot L1 vs RESID)
- •Zoom-9 (Stat Zoom)

Also: do you know how to make L3=log(L2) to see if L1 vs log(L2) is a linear relationship? Move the cursor up to the heading of column L3 and enter "log(L2)" and the calculator will do all of the calculations for you.

working with Normal Distributions: **normalcdf** and **invNorm**

- •Find the percentage above/below a z-score or between two z-scores
- •find the z-score that cuts off the lower/upper percentage
- •two ways to use normalcdf: **normalcdf(z1, z2)** for z-scores or **normalcdf(x1, x2, mean, standard deviation)** if you are using the units of the word problem