BZAN 535 – HW#2 – Due September 7 2016

The purpose of this assignment is to help you become acquainted the dunnhumby data, to begin practice using JMP, and to continue practice with mysql.

1. CARBO: Using the dh carbo data, compute dollar sales per store for pasta sauce and separately the dollar sales for pasta.
   a) Present the SQL query you used for this calculation.
   b) Using JMP's Graph Builder, create side-by-side box plots of these totals per store, separated by geography. (You will have 4 box plots.) Copy the graph and comment on what insights this graph provides.

2. CARBO: The stores differ in size and location. In JMP, join the data from question 1 to the store_lookup table so that you have the zipcode for each store. Using JMP, create a map to display the total pasta sauce sales for each zipcode. Distinguish between Geography 1 and Geography 2, either with separate maps or by some other means of your choice. Are the differences in sales due to regional (or urban vs. rural) differences?

3. Slide 20 from Lecture 5 contains a query that computes the number of orders per household by zipcode. Multiply this number by 1000 to get the number of orders per 1000 households.
   a) Examine the distribution of penetration. Describe the distribution in terms of its histogram and box plot. What are the values for the 25^{th}, 50^{th}, and 75^{th} percentiles?
   b) The analysis in 4a used zipcode as the geographic unit. Repeat the computation, using scf instead (that is, group by the first 3 digits of zipcode).
   c) Now compute orders per 1000 households by state and produce a map.
   d) Discuss how you would present insights from these analyses in a meeting of this company. What analysis would you use (a, b, and/or c) and in what order?

4. In Lecture 5, you were introduced to a parallel plot using the file crime.jmp.
   a) Choose and highlight two states, display a parallel plot and discuss what you learn from this comparison. (Also, explain why you thought a comparison of those two states would be of interest.)

5. In Lecture 5, we joined windows analyzing burglary rates to create an application. Create an application with a state map and a histogram using a crime other than burglary. Include a parallel plot as well. Highlight either the low end of the high end for that rate and take a screen shot showing your application. Provide a brief discussion of insights based on the graph.