SAS Programming
Practice #14

1. Consider the Apartment data set given to you for Practice #6. Recall from Practice #6:

An apartment complex owner is performing a study to see what improvements or changes in her complex may bring in more rental income. From a sample of 34 complexes she obtains the monthly rent on single bedroom units and the following characteristics:

AGE: the age of the property
SQFT: square footage of unit
SD: amount of security of deposit
UNTS: number of units in complex
GAR: presence of a garage (0 – no, 1 – yes)
CP: presence of carport (0 – no, 1 – yes)
SS: security system (0 – no, 1 – yes)
FIT: fitness facilities (0 – no, 1 – yes)
RENT: monthly rent

   a. Recover your Apartment data from Assignment #6 or Practice 9. Create format(s) using the definitions of GAR – FIT above.
   b. Produce pie charts for the characteristics Garage and Security System. Use the format(s) in part a.

2. Create a new format with three 3 levels: Less than 700, 700 – 750, Above 750. Produce a pie chart for square footage of the unit using the 3 format levels. DO NOT modify the data with a new three level variable. Use the existing continuous variable for square footage.

3. Draper and Smith use an example where an oil viscosity measure is predicted by the amount of filler, f, and plasticizer, p. The equation is

$$Y = 3.231 + 0.02861f - 0.03346p + 0.00004416f^2 + 0.02752p^2 - 0.04930fp$$

   where the values of f range from 0 to 60, and p range from 0 to 30.

   a. Plot the surface equation. Label the variables. Select tick marks (such as every 10 or every 25 or whatever is appropriate for this surface) for each of the axes. Use grid lines to enhance the three-dimensional perspective.

   b. Switch the f and p axes in the graph. How do your axis selection options need to be changed?

   c. Create a contour plot for the surface. Select six "visible" contour levels. That is, all of the contour levels you select should be visible on this contour plot.

For all practice and assignments, include TITLE statements that write the Homework # and Problem # and your name on each procedure. Always bring your Practice programs to class with you on a USB device or have access to the on your H:\ drive. You may need some of that information for the in-class assignments.

i. Include a legend outside the contour plot.
ii. Remove the legend and label the contours on the plot.

4. For the NBA data, produce a three dimensional scatterplot of the free throws vs three-point field goals and on the third axis, the points variable. Use orange circles as the plotting symbol. Produce the graph with and without "needles" drawn down to the free throws/ three-point field goals plane. Use a permanent SAS data set.
   i. Create this plot using the combined data.
   ii. Using the combined data, create a plot for each year using a single procedure.