SAS Programming
Practice #12

Using the NBA data for 2017 and 2018 (with league variable, see Practice 10, CLASS.bb17 and CLASS.bb18) and Statistical Graphics procedures, complete each of the following.

1. a. Create CLASS.BB2017_18 by combining CLASS.BBall2017 and CLASS.BB2018. Year and league variables should be in this combined data table. See Practice 10.
   b. Create a histogram for the number of points for the combined data sets. Overlay a normal distribution curve.
   b. Modify the histogram in part a. This time create a histogram for each year. Overlay a normal distribution curve on both images.
      i. Perform this task using only a single SGPLOT.
      ii. Perform this task using SGPANEL. Arrange the plots vertically.
   c. Modify the SGPANEL in part b by including conference in the panel plot. Use a modification of the PANELBY statement where you specify two variables and choose the LATTICE option for the LAYOUT. Change the order of the variables in the PANELBY statement. Do the two images change? How? Add notes regarding your observations to the SGPANEL notes you have.

2. For the four teams in both years: Oklahoma City Thunder, Miami Heat, Los Angeles Clippers, and San Antonio Spurs. You need to produce horizontal bar charts as specified:

   a. Two bar charts where the bar lengths will be determined by the mean number of offensive rebounds and the mean number of defensive rebounds for each of the four teams. (Two bar charts, four bars on each chart)

   b. One bar chart where the bar lengths are defined as in a, but the bars are overlaid. Choose a narrower width for the number of offensive rebounds. Select the color for both of the variables to be blue. Arrange the number of defensive rebounds on top and narrower than the bars for the other variable. Choose the mean number of offensive rebounds to have 50% transparency in bar color.
   Experiment with which bar should be wider, on top, and the transparency level of both. What do you think makes the best graph?

   For all teams in both years:

   c. Produce scatterplots of three point field goals versus field goals attempted with a panel
      i. for each conference. Arrange the panels horizontally.
      ii for each year. Arrange the panels vertically.

   d. Add the year using the group option in part c (i) to the above. Investigate color and marker choices using the SAS Help and Online Documentation.

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.