

SAS Programming Practice #8

1. Using a single program, for the **Stillwater Mesonet data set**
Test whether the minimum temperature and the maximum temperature are correlated (Pearson) with either the minimum humidity or maximum humidity for each of the months of March and April. Include supporting scatterplots. Use $\alpha = 0.05$ and use a *single* procedure to do these tests.

2. Starting with the **combined years basketball data set**, find the simple linear regression equation predicting the number of points from the number of field goal attempts for 2017 only. Using a single procedure for all parts of this question, include statements and options so that all of the following can be answered. You have been asked to compute the points variable in previous assignments. This is how you should have been computing points:
$$\text{Points} = 2 * (\text{FG} - \text{P3}) + 3 * \text{P3} + \text{FT} ;$$

where FG = field goals (two- and three-point field goals), P3 = three-point field goals, and FT = free throws.
 - a. Compute simple statistics for each variable in this regression analysis, and estimate the parameters of the simple linear regression model. Give the equation of the estimated regression line.
 - b. Find the standard errors of the estimates of the regression parameters. Compute a 98% confidence interval for the true regression slope. Is zero a plausible value for the true regression slope at the 98% level of confidence?
 - c. Test for the existence of a linear relationship between the two variables. Use $\alpha = 0.02$.
 - d. Find the coefficient of determination for this regression and interpret it.
 - e. Give a 98% confidence interval for the mean number of points scored by a team with 82 attempted field goals per game.
 - f. Give a 98% prediction interval for the number of points scored by a team with 85 attempted field goals per game.
 - g. Include a plot the original data, the predicted values versus the independent variable on the same graph.