ST555 Homework 10

When you have completed this HW, submit via Moodle the following:

I. Your SAS program (.sas) that contains the answers to the fill in the blanks as comments. Be sure to include the question number and letter for each comment.
II. Your SAS catalog that contains the permanent formats for question 1d.
III. Your SAS log
IV. Your Results, generate your results using ods as a .pdf or .rtf file

1. For this homework you will utilize a dataset from a study with the primary objective to investigate the effect of three weightlifting programs (RI, WI, CONT) on increasing strength over time. The strength of participants was measured every other day for two weeks. On Moodle, open up the SAS program that contains the dataset via datalines and read in the weights data.
    a. Create an output dataset named wgtlift that rotates the weights dataset from wide to narrow/long.
        i. Complete this rotation in one dataset and within this data step use two arrays: one to refer to each of the 7 strength measurements in an observation and a second array (a temporary array) to store the strength measurements as a lookup table.
        ii. Your "wgtlift" dataset should only include the variables: Subj, Program, Strength (the strength measurement value), TimePoint (indicates to which of the 1,2,3,…,7 measurements the Strength value represents)
    b. Print the "wgtlift" new dataset that includes the following:
        1. Do not use the abbreviations RI, WI, CONT, write out the full name of the weightlifting programs as Repetition Increase, Weight Increase, and Control
        2. Change TimePoint= 1, 2, 3, …, 7 to read TimePoint= Day 1, Day 3, Day 5, …., Day 13
    c. Now use as array in a data step that rotates the wgtlift dataset back to a wide dataset, call the dataset "back2wide"
    d. In the "back2wide" dataset, create permanent formats that respectively label RI, WI, CONT to Repetition Increase, Weight Increase, and Control
        i. Be sure to include this permanent format catalog when you upload your HW assignment (i.e. be sure to submit your SAS catalog, see II above)

e. Provide a report that gives the n, mean, std, min, median, and max for the strengths at each time point for each weightlifting program. You may utilize either the "weights", "wgtlift", or "back2wide" dataset.

2. Suppose a group of instructors (one from Statistics, one form Mathematics and one from History) at a small college are having lunch. They realize they have a number of students that are common to at least two of their courses. For such students, they decide they want to compare student performance across courses. They each produce a grade file as shown below that contains two pieces of information, id number and course average, for their students.

Statistics
1,76
7,65
2,88
3,98
9,74
4,89

Mathematics
10,100
1,89
7,43
3,76
9,54
8,99

History
10,100
7,81
2,87
5,92
6,85
9,67
8,93
4,65

Use proc sql to create and print the following 3 listing of students that are :

a. common to the Statistics and Mathematics courses. Include their scores (course average) in both classes in a side-by-side fashion.
b. common to the Statistics and History courses. Include their scores in both classes in a side-by-side fashion.
c. common to the Mathematics and History courses. Include their scores in both classes in a side-by-side fashion.
d. For each of these listings, include a format so that score is displayed as XX%