Math 475 Homework 3

Due Monday 19th September at the beginning of lecture

The first part of this homework is from Chapter 3 of Gentle's book, and the remainder is related to Chapters 2 and 3 of the Little SAS Book.

Exercises from Gentle's *Computational Statistics*

1. Exercise 3.3
2. Exercise 3.6
3. Exercise 3.17
4. Exercise 3.21

SAS Programming

5. For this question you need to get the data set from the website for *The Little SAS Book*. The file BenAndJerrys.dat contains data representing ice cream flavors and their nutritional information. The variables are flavor name, portion size (g), calories, calories from fat, fat(g), saturated fat(g), trans fat (g), cholesterol (mg), sodium (mg), total carbohydrate (g), dietary fiber (g), sugars (g), protein (g), year introduced, year retired, content description, and notes. Read the raw data file into SAS. You should submit your SAS code to accomplish these tasks.

   (a) Subset the data to keep only flavors which are available for purchase at the grocery store, i.e. exclude retired flavors, and exclude Scoop Shop Exclusives (described in the notes variable).

   (b) Create a new variable which calculates the calories in one tablespoon (TB) of ice cream. Assume that 1 TB=15g. Subset the data again to retain only flavors that have that information available.

   (c) Calculate the total calories you would consume if you were to eat one TB of each flavor of ice cream. Your final total for this variable should appear in the row of the last observation.

   (d) Create a new variable which identifies the highest number of calories in any one flavor. The result for this variable will appear in the row of the last observation.

SAS Short Answer

6. Suppose a patient database includes the variables DoB (date of birth) and DoNV (date of next visit). Write statements to calculate a patient's current age, age at next visit, and age 90 days after the next visit, reported in years as a whole number.

SAS Multiple Choice

7. Which function can be used to replace text?

   (a) TRIM

   (b) INDEX

   (c) TRANWRD

   (d) PROPCASE

8. Which of the following is a valid function for finding the average of X1, X2, and X3?

   (a) AVERAGE(X1,X2,X3)

   (b) AVG(X1,X2,X3)

   (c) MEAN(X1,X2,X3)

   (d) MU(X1,X2,X3)

9. Which set of IF-THEN/ELSE statements will run without errors?

   (a)
```
IF 0 <= Age <= 50 THEN Group = 'A';
   ELSE 50 < Age <=70 THEN Group = 'B';
   ELSE Age > 70 THEN Group = 'C';
```

   (b)
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IF 0 <= Age <= 50 THEN Group = 'A';
   ELSE IF 50 < Age <=70 THEN Group = 'B';
   ELSE Age > 70 THEN Group = 'C';
```

   (c)
```
IF 0 <= Age <= 50 THEN Group = 'A';
   ELSE IF 50 < Age <=70 THEN Group = 'B';
   ELSE IF Age > 70 THEN Group = 'C';
```

   (d) All of the above will work.