Homework assignment 12

Use black text (if possible) for everything you include in this document. Keep both your answers and the original questions. Save this document in PDF format and submit it on Canvas. Please follow the general requirements described in the grading rubric.

1. Show a documentation header. Include your name, the purpose of the program, and the conditions under which others may or may not use your results.

2. Open the tab delimited text file fasting-turtles.txt and display the first ten rows of data.

3. Calculate separately for males and females, the mean and standard deviation for Fed, Fasted10, and Fasted20. Do the averages appear to change over time? Do male and female turtles have similar measurements at each time point.?

4. Restructure the data so that Fed, Fasted10, and Fasted20 are in a single column named plasma\_protein. Please save your original data as an SPSS sav file before running the restructure. In your restructured dataset, make sure to create a new variable, time, equal to either 0, 10, or 20. Save the restructured data as a new SPSS sav file. Show the first ten rows of this restructured data.

5. Calculate a random intercepts model. Specify plasma\_protein as the dependent variable, Sex as a factor and time as a covariate. Using the fixed effect dialog box, specify Sex and time as main effects, but without an interaction. Using the random effects dialog box, include the intercept as a random effect, define subject group combination using the subject number, and display parameter predictions. In the Statistics dialog box, specify parameter estimates for fixed effects. In the Save dialog box, select the second Predicted Values option and the Residuals option. In the Export dialog box, export the random intercepts (EBLUPS) to a separate file. Display the Estimates of Fixed Effects table. Is there evidence of a difference in average plasma protein between males and females? Is there evidence of an increase or decline in plasma protein over time?

6. Calculate a normal probability plot for the residuals and display it below. Interpret this plot.

7. Calculate a normal probability plot for the random intercepts and display it below. Interpret this plot.