Project 7

Group 3

1. The *mammalsleep* data set contains ecological and biological information for 62 different mammals. 10 variables are included. Here, we focus our attention on “sleep” (which measures the total hours of sleep per day) as our response and “predation” (which measures likelihood of being preyed upon on a scale of 1 to 5) as our predictor of interest. Each member of the group will focus on one part of the presentation. The initial data analysis will be presented by Rachel, where she will discuss the first observations of the data, narrowing of the variables used for our possible models, decisions regarding omission of particular data points, as well as the assessment of the missing values within the dataset. After this initial analysis, the preliminary models will be discussed by Nate and Cody. Final transformations to the variables will be discussed by Ryan. He will explain which variables we chose to transform and why. To finish, Jonothan will discuss the final model. He will show that the model meets the criteria for linear modeling and go over our final conclusions.
2. After the data has been cleaned of all NA values to find the greatest effect predation has on sleep, we focused on which combination of variables would return predation with its lowest standard error. By using the variables that Rachel cleaned and presented a for loop was designed to place all the combination of predictor variables coupled with predation with their respective p-values and standard error values. This table of combination was then sorted to show the standard error values in ascending order. This table found that with sleep as our response and predation, body, nondream, and gestation as our predictors the lowest standard error was 0.1281. Transformations were then assesed and applied to the model before this loop was re ran to insure the lowest standard error for predation stemming from these predictors was being kept.