Report for project 3

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objectives:

The following data set for this project includes information gathered about lakes mostly in Maine. We opt to analyze the data to determine if the average mercury level in the lakes differes for the different lake types in Maine. Along with this we look at the correlation between Mercury, Elevation, Surface Area, Drainage Are and Flushing rate. We run a model to see if there is a linear relationship between Mercury, our response variable, and the Flushing Rate, the predictor. We produce a 99% confidence interval for the slope parameter. Finally we produce a 99% confidence interval for the mean value of mercury at a lake with flushing rate of 0.78.

Methods:

When analyzing the data we use a proc GLM statement to determine if the average mercury level in the lakes differs for the different lake types along with outputting model diagnostic plots. We use a data step to add the variable 'log of mercury content' to the already read in data set. We use SAS to produce the 90% confidence intervals for the difference in average mercury levels of lake types. We conduct a correlation analysis between the different variables and produce scatter plots between variables and p values for the tests of correlations. After this we run a model to investigate the linear relationship using the 99% confidence interval for the 99%th confidence interval for the slope parameter.

Results:

From what we learn about the observations, there are 119 observations used that correspond to the following values. We can determine that there are certain observations that correlate to the amount of mercury found in different lakes in Maine. We conduct multiple procedures to analyze that the values for Mercury concentration are lower than the predicted value, but the residuals for the plots fit the data properly. the predicted value for the residual follow the percent graph respectively. we note the difference in the mercury concentration based on the type of lake.

Observations:

The observations are based on the following data screen shots as show attached in the subsequent files.



