MTH 441A: Lab 5

P 1. Consider the **Electricity** data set.

(a) Observe the residual plot.

(b) Apply Box–Cox transformation on the response variable.

(c) Fit the transformed model and then observe the residual plot.

P 2. Consider the **Windmill** data set.

(a) Observe the residual plot.

(b) Apply Box–Tidewell transformation on the regressor variable.

(c) Fit the transformed model and then observe the residual plot.

P 3. Consider the **Weighted_Least_Squares** data set.

(a) Observe the residual plot.

(b) Divide the data set in appropriate groups by observing the regressor values.

(c) Compute the sample mean and variance of each groups. Observe their scatter plot.

(d) Fit an appropriate regression regression model (may be a quadratic term required).

(e) Based in the above fitted model, compute the fitted values by inserting the original regressor values.

(d) Use theses fitted values as reciprocal of the weights and fit a weighted least squares model. Observe the residual plot. If there as negative weights then take the absolute.