MH3510 Assignment 2

Download the data set in the file 'aadt.txt' and use it to fit a model. You can open this file by notepad to see the data.

This data are about traffic monitoring. One of the most important traffic monitoring variables is the average annual daily traffic (aadt) for a section of road or highway. It is defined as the average, over a year, of the number of vehicles that pass through a particular section of a road each day.
Consider the first column (aadt) of the data to be the response, and

X1: population of county in which road section in located--the second column of data;
X2: number of lanes in road section-- the third column of data ;
X3: width of road section (in feet)-the fourth column of data;
Control (X4): two-category quality variable indicating whether or not there is control of access to road section

(1=access control; 2=no access control) . In this case, you may define X4 to be 1 if there is access control and to be zero if there is no access control.

Use the first five columns of the data to fit a model. Follow all the 5 steps discussed in the reference pdf document (you may refer to the model checking part discussed in part 4 of chapter 2 ) to fit a multiple regression model to the data.

You should note that the steam.txt was only used in the reference pdf document for illustration.

You may also use some other steps such as transformation of the variables which you think are necessary.

For the prediction please use x1=50000 x2=3 x3=60, x4=2 . Write the R codes and their outputs.

No need to do the parts about the confidence region and bonferroni limit.

It is due on 11th Nov.

Please submit a softcopy of your report either in pdf or word by NTU learn, which includes R codes, the scatter plot, the fitted model, residual plots and provide some explanations for the fitted model.