Lab 5

You have been approached by a Venture Fund Capitalist, "Grand Ventures", who require your expertise of data analysis to create a model that can give them insight into the profitability of fifty "Start- Up" companies. Grand Ventures have presented you with a spreadsheet of different companies that provides the following information: profit, research and development costs, marketing cost, administration costs, and location. They want to know the factors that contribute to the profitability of these companies.

For your analysis, the following packages will be required: "car", "MASS", and "leaps". As well as the other packages we have been using prior.

Your exploration of the data will include:

- Producing a scatterplot of the data, commenting on the relationship that exists among the variables; particularly with respect to Profit.
- Creating a suitable model that predicts Profit.
- The suitability of your model will be dependent on the significance of the coefficients, the amount of variability that can be accounted for, and whether the underlying assumptions have been satisfied.

In the process of exploring the data, the following questions should be perused as a guide to analysing the data, (of course, there can be other questions that arise apart from these):

1. Where do companies perform best? Or does the location have any impact on a company's profitability?
2. Will a company that spends more on marketing have higher levels of profit? Or which of the costs associated with the operations these companies affect the profitability?
3. Are all of these variables necessary for predicting the profit? Is the information from one variable able to explain the variability in profit that the use of others would be redundant?