Mahavir Patel

Regression Methods (Stat 463)

Computer Project 2

June 17, 2019

Programmer Instructions

1. We were given 25 observations.  HOWEVER, observation 14 had a missing entry and we excluded it from our analysis.  Input the remaining 24 observations consisting of the four variables PROFIT (dependent variable), and the three (independent) variable MATERIAL A, MATERIAL B, and DAY (refer to these ads P, A, B and D respectively). Check that these data were input accurately.
2. Get univariate descriptive statistics including mean, standard deviation, minimum, maximum, and histogram for each of these four variables.
3. Get the scatterplots of all pairs of these variables (6 plots total). Display P on the y-axis when P is included. If there is an ordered variable (which is DAY in this project), display it on the x-axis when included. Specifically plot (using the notation “y” vs “x”): P vs A, P vs B, P vs D, A vs B, A vs D, and B vs D. Adjust the minimum and maximum on the x and y axes to remove blank areas from each of your plots.
4. Get the correlation matrix for these four variables.
5. Fit the first order regression model E(P) = ß0 + ß1A + ß3B plus the residual plot and the histogram of the residual.
6. Repeat step 5 for the second order regression model: E(P) = ß0 + ß1A + ß3B + ß4A2 + ß5B2 + ß6AB.
7. Save this material. Further output maybe requested based on these results.