STAT 445 Lab 11
ASSIGNMENT # 11
(NOT to be handed in)

Question 1

Four different formulations of an industrial glue are being tested. The tensile strength of the glue when it is applied to join parts may also be related to the application thickness. Six observations on strength (in pounds) and thickness (in 0.01 inches) are obtained ensuring randomization for each formulation. The datafile ("assign11a.dat") is on the course website.

(a) Fit a separate linear regression of strength on thickness for each of the different formulations. Show the appropriate plots.

(b) Are separate slopes necessary?

(c) What is your 'final' model for this problem?

Question 2

To investigate an epidemic outbreak of a disease, 50 individuals were randomly sampled in a city to determine if the person had recently contracted the disease under study. Each person's age (in years) and socioeconomic class (upper, middle or lower) were also recorded. The datafile ("assign11b.dat") is on the course website.

(a) Fit an appropriate model to explain disease status by age and socioeconomic condition.

(b) Consider model reductions and expansions. What is your 'final' model? Interpret the estimated parameters.