STAT 445 Lab 1
ASSIGNMENT # 1
Due: Lab 2 (at the end)

Purpose: 'remembering' regression, R

Question 1. The values of 'improvement' for 3 different treatments are given below:

A	B	C
21	29	29
23	28	27
18	24	26
19	25	24
21	26	27

(a) Perform an analysis of variance and comment.

(b) Carry out the same analysis using the regression approach with
(i) indicator variables and (ii) factors.

Question 2. Copy the file '**/home/grad/jafar/stat445/assign1.dat**'. The file is also on the course website.

(a) Draw a scatterplot of (i) y & x_1 and (ii) y & x_2. Any outliers?

(b) Select either x_1 or x_2 (how?) to explain y. Call the selected variable x. Fit a simple linear regression of y on x. Use some diagnostic plots to check the assumptions. Is the regression coefficient significant?

(c) Fit a simple linear regression of y on the other variable. Is the regression coefficient significant?

(d) Fit a multiple linear regression of y on x_1 and x_2. What is the value of R^2? What does it mean? Compare this R^2 with the sum of the two R^2 values in questions (b) and (c). Any comment?