Georgia Tech

WEEK 5 HOMEWORK

INSTRUCTIONS

- Every learner should submit his/her own homework solutions. However, you are allowed to discuss the homework with each other (in fact, I encourage you to form groups and/or use the forums) – but everyone must submit his/her own solution; you may not copy someone else's solution.
- The homework will be peer-graded.
- The homework grading scale reflects the fact that the primary purpose of homework is learning:

Rating	Meaning	Point value (out of 100)
4	All correct (perhaps except a few details) with a deeper solution than expected	100
3	Most or all correct	90
2	Not correct, but a reasonable attempt	75
1	Not correct, insufficient effort	50
0	Not submitted	0

Question 1

Describe a situation or problem from your job, everyday life, current events, etc., for which a linear regression model would be appropriate. List some (up to 5) predictors that you might use.

Question 2

Using crime data from http://www.statsci.org/data/general/uscrime.txt (description at http://www.statsci.org/data/general/uscrime.html), use regression (a useful R function is lm or glm) to predict the observed crime rate in a city with the following data:

M = 14.0
So = 0
Ed = 10.0
Po1 = 12.0
Po2 = 15.5
LF = 0.640
M.F = 94.0
Pop = 150
NW = 1.1
U1 = 0.120
U2 = 3.6

Wealth = 3200
Ineq = 20.1
Prob = 0.04
Time = 39.0

Show your model (factors used and their coefficients), the software output, and the quality of fit.