HW11: Used car prices? (assigned on Thur Mar 5; due on Tues Mar 10)
You may work with in a group of as many as three students on this assignment, handing in one report with all names, provided that you all contribute to the work. Word-processed reports are preferred to hand-written ones. Integrate computer output into your report as appropriate.

The data in the file UsedHondaCivics.txt, available from our course website, come from a sample of used Honda Civics listed for sale online in July 2006. The variables recorded are the car’s age (in years) and asking price.

a) Determine the least squares line for predicting price from age, and submit a scatterplot with the least squares line superimposed.

b) Determine and report the value of $r^2$, and write a sentence describing what this calculation reveals.

c) Report the value of the slope coefficient, and interpret what this reveals.

d) Use the least squares line to predict the price of a 4-year-old used Honda Civic. Then do the same for a 14-year-old Honda Civic. Which prediction would you be more confident in? Explain.

e) Conduct a test of whether the sample data provide strong evidence of a linear relationship in the population between price and age. Include all components of the test (hypotheses, test statistic, and p-value), and summarize your conclusion.

f) Determine a 95% confidence interval for the population slope coefficient, and interpret what this parameter and interval represent.

g) Remove the two cars that were more than 10 years old. Determine (and report) the equation of the least squares line, and the value of $r^2$, after removing these cars. Comment on the effect of moving these two cars.