Small Project 1 (Due 4/16 Midnight)

Description: The goal of Small Projects is "learning by doing" rather than evaluating your knowledge. So, this project will be graded based on your efforts than its correctness. In other words, you will receive a full score as long as you answer all questions enough.

Instructions: Use R to estimate the model and answer the questions. Please work on the problem set and submit it in a PDF format along with your R script file via Blackboard Assignments by the end of April 16th (Friday). Please do not zip the file!

Use the data in HPRICE1 to estimate the model

$$price = \beta_0 + \beta_1 sqrft + \beta_2 bdrms + u,$$

where *price* is the house price measured in thousands of dollars.

(i) Write out the results in equation form.

(ii) What is the estimated increase in price for a house with one more bedroom, holding square footage constant?

(iii) What is the estimated increase in price for a house with an additional bedroom that is 140 square feet in size? Compare this to your answer in part (ii).

(iv) What percentage of the variation in price is explained by square footage and number of bedrooms?

(v) The first house in the sample has *sqrft* = 2,438 and *bdrms* = 4. Find the predicted selling price for this house from the OLS regression line.

(vi) The actual selling price of the first house in the sample was $300,000 (so *price* = 300). Find the residual for this house. Does it suggest that the buyer underpaid or overpaid for the house?