

# Computer Project 1

(Due on Monday, 10/26/2009)

Real estate investors, home buyers, and home owners often use the appraised value of a property as a basis for predicting sale price. Data on sale prices and total appraised values (in thousand of dollars) of 92 residential properties sold in 1999 in an upscale Tampa, Florida, neighborhood named Tampa Palms are saved in the file - [tampalms.dat](#). The first five and last five observations of the data set are listed in the following table.

**Table 1:** 1999 House Prices in Tampa Palms, Tampa, FL. Source: W. Mendenhall and T. Sincich (2003), *A Second Course in Statistics – Regression Analysis*, Sixth Edition, Pearson Education, Inc.: NJ).

Property	Appraised Value (X)	Sale Price (Y)
1	\$ 170,432	\$180,000
2	212,827	245,100
3	68,130	85,400
4	65,505	87,900
5	68,655	84,200
...	...	...
...	...	...
88	195,862	244,000
89	176,850	219,000
90	95,718	132,000
91	137,108	156,900
92	183,704	263,000

To read the data into R, first save the data file onto a floppy disk or to any local file. Then the following R codes basically read the data into a `data.frame` called `tampalms`.

```
tampalms <- read.table("http://pegasus.cc.ucf.edu/~xsu/CLASS/STA4164/tampalms.dat",
  header=F, col.names=c("appraised", "sale"));
tampalms
```

Take the logarithm transformation on both X and Y and use them as the new response and predictor. Complete the following assignments:

1. Make a scatterplot of the data. Does it appear that a straight-line model will be an appropriate fit to the data?
2. A linear model is proposed to relate the appraised property value  $x$  to the sale price  $y$  for residential properties in this neighborhood. Compute the LS estimates for the regression parameters and output their standard deviations. And then add the fitted line to the scatterplot.
3. Give the ANOVA table.
4. Plot the 95% confidence band and 95% prediction band and comment.

Please use copy-and-paste to include necessary R output into your final report, interpret every result that you present, and place your R programming codes in an appendix.