Lab 6

1. Your market research of real estate investments reveals the sales figures for new homes of different prices over the past year. You can find this data in the `sales.txt` file (first column: price in thousand of $, second column: sales of new homes this year). Using the applet
   `http://www.shodor.org/interactivate/activities/Regression/`
   draw a scatterplot and display the line of best fit. Based on this information, answer the following questions:

   (a) Write down the regression equation and the correlation coefficient r.

   (b) Is there a positive or negative relation between number of sales and house prices? Explain.

   (c) What is the expected difference in the number of sales for two groups of houses whose prices differ by $20 thousand.

2. Use the same regression applet to draw the scatterplot for the dataset `regression2.txt`.

   (a) Is there an association between Y and X?

   (b) Is the linear regression line a good fit for these data? Explain.

3. A student who waits on tables at a Chinese restaurant in a college neighborhood records the cost of meals and the tip left by single diners. Here are some of the data

Meal	$4.79	$5.24	$3.62	$5.35
Tip	$0.50	$0.60	$0.40	$0.75

   You also know that the averages for "Meal" is 4.75 and for "Tip" is 0.5625 and the corresponding standard deviations are: $s_{Meal} = 0.79$ and $s_{Tip} = 0.15$. **Without using the applet:**

   (a) Identify the response and the explanatory variable.

   (b) Compute the correlation coefficient r.

   (c) Compute the least squares regression line for this dataset.

   (d) Draw a scatterplot of the data and draw the regression line on your plot.

   (e) The next diner orders a meal costing $3.89. Use your regression line to predict the tip.