Project: Diamond Prices

Understanding the Model

1. According to the model, if a diamond is 1 carat heavier than another with the same cut, how much more should I expect to pay? Why?

   The difference would the cost adjustment given to the carat multiplier, which in this case is 8,413, which would increase the price by $8,413.

carat	cut_ord	clarity_ord	
1	1	3	$4,664.10
2	1	3	$13,077.10
		difference	$8,413.00

2. If you were interested in a 1.5 carat diamond with a **Very Good** cut (represented by a 3 in the model) and a **VS2** clarity rating (represented by a 5 in the model), how much would the model predict you should pay for it?

   The calculated cost based on the model would price the diamond at $10,094.80. if the company purchases from a distributor, they would pay %70 of that cost, or $7,066.36.

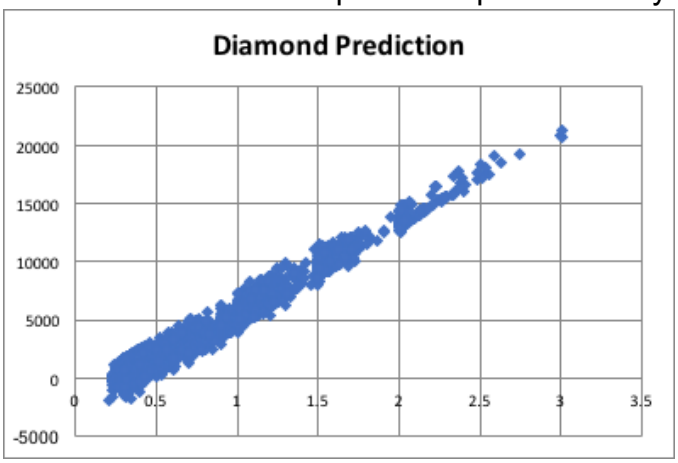
carat	cut_ord	clarity_ord	
1.5	3	5	$10,094.80
		price at .7	$7,066.36

Visualize the Data

Make sure to plot and include the visualizations in this report. For example, you can create graphs in Excel and copy and paste the graphs into this Word document.

1. Plot 1 - Plot the data for the diamonds in the database, with carat on the x-axis and price on the y-axis.

2. Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis.



3. What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?

   The historical diamond prices appear to increase in value to a larger amount than the predicted diamond prices based on the model. This leads me to believe that the other variables (cut, clarity) are being under valued in the current model. Also some diamonds are being given a price less than $0, which will affect the final bid price incorrectly. The model should be re-evaluated to ensure that all aspects of the model are being represented accurately.

Make a Recommendation

1. What price do you recommend the jewelry company to bid? Please explain how you arrived at that number.

   Based on the model, the sum of prices of the predicted diamonds would be $11,733,522.76. After accounting for buying from a distributor (at %70 the regular price) the price the company should pay would be $8,213,465.93.

Sum of prices	$11,733,522.76
Price at .7	$8,213,465.93