Project: Diamond Prices

Step 1: Understanding the Model

Answer the following questions:

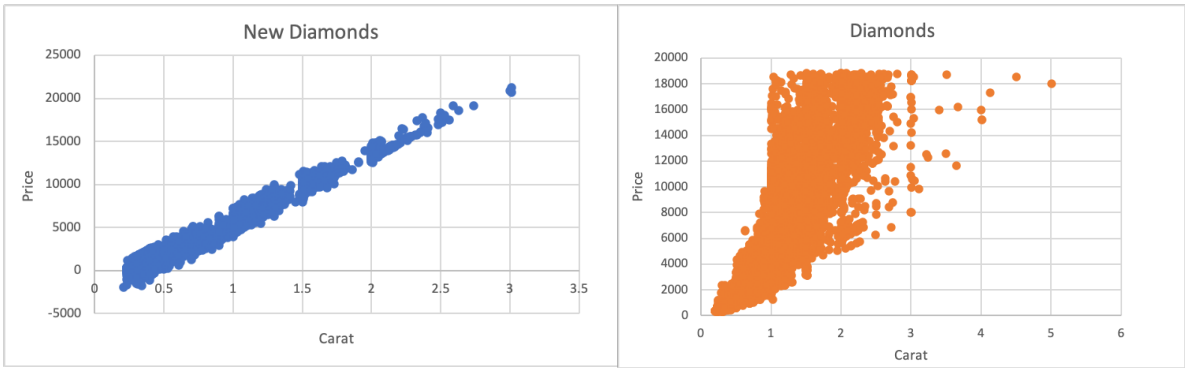
1. According to the model, if a diamond is 1 carat heavier than another with the same cut, how much more should I expect to pay? Why?
   As given in the equation, carat is multiplied by 8413. when a diamond is 1 carat heavier than another with the same cut, the price will increase by 8413.

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?
   Putting values in the regression equation will equal 10094.8; thus, the model predicts $10094.8 to pay.

Step 2: 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?



1- New diamonds dataset has some diamonds that have negative prices. hence, the regression equation appears to work fine for most cases but not all of them.
2- New diamonds scatter plot is linear distributed but the old diamonds' is non-linear.

Step 3: Make a Recommendation

Answer the following questions:

1. What price do you recommend the jewelry company to bid? Please explain how you arrived at that number.
   I recommend a bid of $8213465.932 based on the sum of all predicted prices which equal 11733522.76 multiply by 0.70.