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?

   Answer:

   You should expect to pay 8,413 more for the diamond one carat heavier than another with the same cut and clarity.

   The equation is made up of four values:

   - one negative number and
   - multiplication of three constant parameters (8413, 158.1, 454) with three variables (carat, cut, and clarity).

   The diamond of same cut and clarity means two variables out of three are constant. So, the amount of change in price will be the multiplication of difference in carat and its constant parameter (for one carat, it will be 8,413 * 1 = 8,413).

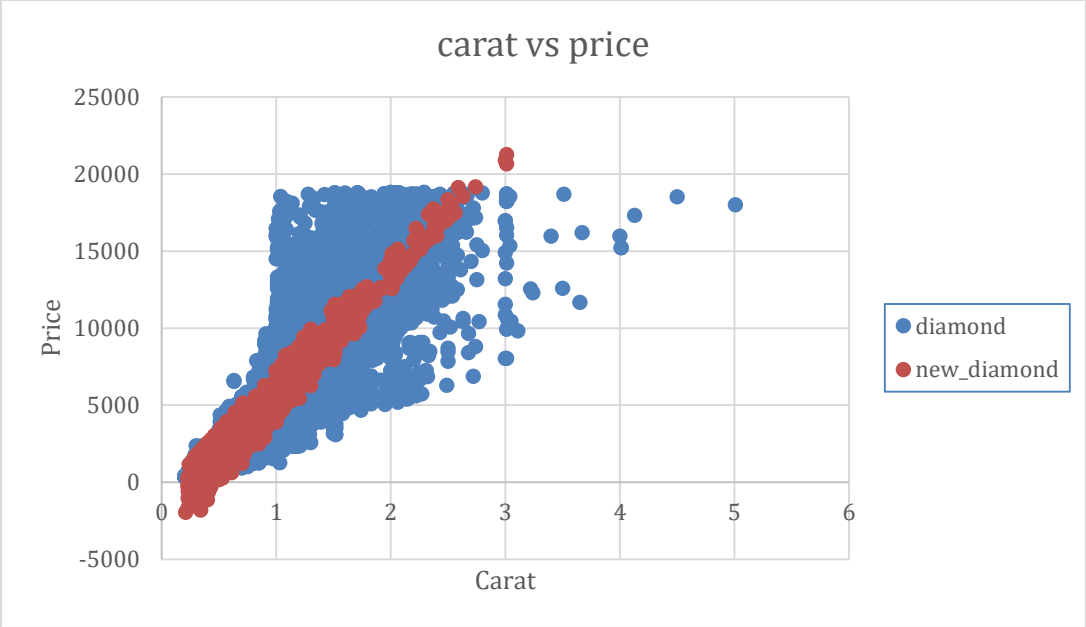
   If you were interested in a 1.5 carat diamond with a **Very Good** cut (represented by a 3 in the model) and a **VS2** clarity rating (represented by a 5 in the model), how much would the model predict you should pay for it?

   Answer: 10,094.8

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?

Answer:

The plot of predicted price contains NEGATIVE values!!
The two plots should nearly resemble. But in this case, the two plots do not resemble.
No. I don't feel confident in the model's ability to predict prices.

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.

Answer:

Recommended price = 8,200,000
The total estimated price for the whole set is 11,733,522.76. Since the company generally purchases diamond from distributors at 70% of the price, the recommended price is 0.7 * 11,733,522.76 = 8,213,466.93.