Project: Diamond Prices

Complete each section. When you are ready, save your file as a PDF document and submit it in your classroom.

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: The difference between the first diamond and the second diamond would be 8413 because the slope of carat in the Linear Regression is exactly 8413 and since it is only the carat that changes, that would be the difference between the first and second diamond's price.

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?

   ANSWER: For a diamond of Carat 1.5, Very Good Cut and VS2, the price of the diamond would be 10094.8.

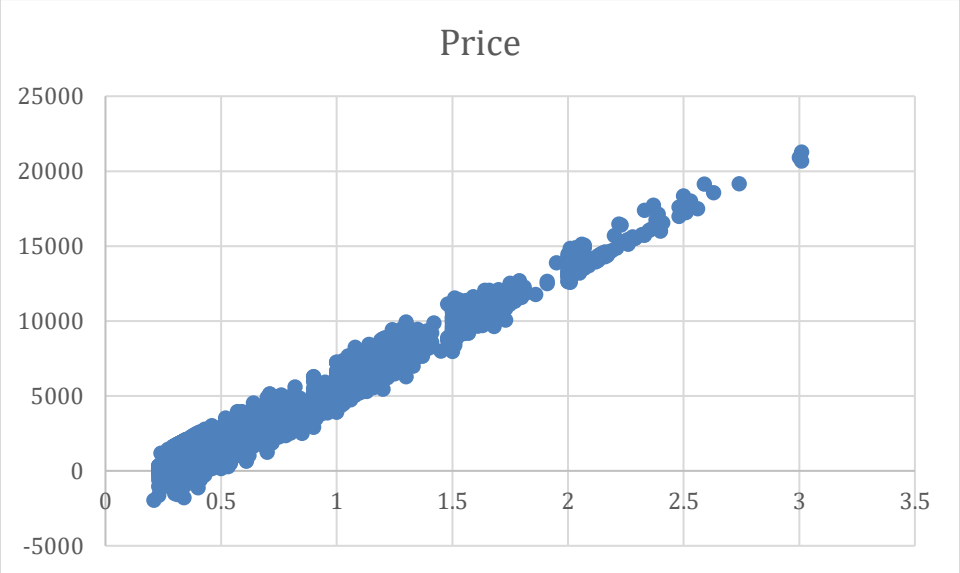
Step 2: Visualize the Data

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.

    - **Note**: You can also plot both sets of data on the same chart in different colors.



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

Answer: Whereas the actual diamond dataset is has a scattered direction, the newly predicted prices has a linear direction which could mean that the model did not accurately predict the prices of the new dataset

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: The recommended price is 8213465.932 which is 70% of the total price of the diamonds and it was included in the project details that the company generally purchases diamonds from distributions at 70% of the price.