

Diamond Prices

REVIEW

HISTORY

Meets Specifications

Hi,

Thank you for your submission. You've done a really good job!

Your answers are logical and well written. The project report is very well structured and neatly presented. I especially liked the two combined graphs that you've included in the project report. Well done!

Congratulations for passing the project

Onwards and upwards now! 🍌

P.S ::

Extra materials for your knowledge

- Here is a link to one of my favorite blogs - [StatisticsHowTo](#) . As you move forward and dive deeper into lessons about linear regression, this website can be especially useful to get more explanations about statistical concepts.
- Here is a link to a good read about regression analysis - [Harvard Business Review](#) . I would advise you to go through a few more lessons about linear regression in the course and then come back & read this article. I'm sure you will find that it further adds to your knowledge.

Predicting Diamond Prices

- ✓
1. The student has submitted a PDF file for commenting.

2. The student has answered *a//* the questions and provided a sufficient explanation of how they arrived at their answer.

Thank you for submitting a PDF project report with all the required answers. Please refer the feedback to your answers below ::

STEP 1

Q1

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 one additional carat would result in an additional \$8,413 in price.

The formula created by the regression determined that the coefficient for a Carat is 8413, so for every increase in the number of carats the price will increase by the amount of the coefficient.

Awesome ! The basic goal of this question is to help you understand the interpretation of the coefficient in the given linear equation. Consequently, as the carat coefficient in the given equation is 8413, we can expect that a 1-carat increase will lead to an increase of 8413 in the price. (If all other factors are constant)

Q2

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 formula for price is:

Price = -5,269 + 8,413 x **Carat** + 158.1 x **Cut** + 454 x **Clarity**

⇒ = -5269 + 8413* 1.5 + 158.1*3 + 454*5

⇒ = -5269 + 12619.5 + 474.3 + 2270

⇒ = 10094.8

So, the price to pay will be \$10,094.8

Awesome, this answer is absolutely correct!

STEP 2

Both of them are same graph one is copy paste from excel sheet and another one is screenshot of graph from excel sheet.

After looking into graph or plot it appears on average to predict the price is not ok, because for small carats the price become negative. The outliers in diamond were sold for more than \$20,000 for carat of 3. This is happening because of we are not accounting everything that effects the price. There are many more things than cartas that effects it. We had Cut and Clarity into our formula but not even that will account for all the variation. The model is not doing a decent job for predicting the price.

Awesome! Your observations are excellent.

- As you rightly observe from the graph, the predicted prices(in orange) are more compact than the actual/existing prices (in blue). This is because the linear model is not accounting for all factors that affect the price. Besides "carat", there are many other factors that affect the price of a diamond.
- Additionally, as you've said, the model predicts a few negative prices. That is unrealistic and will not happen in real life. Therefore, the model is somewhat useful to predict prices, but it should not be relied upon too much.

STEP 3

1. What price do you recommend the jewelry company to bid? Please explain how you arrived at that number.
- I recommend a bid of \$8,213,465.932. I arrived at this number by using a formula from the regression model provided that was based on previous diamond sales and applied it to the diamond that were up for bid. I then factored in the margin the investors were looking for which was 30% so I multiply the predicted amount 11733522.76 by .70 to get the final predicted bid of \$8,213,465.932.

The bid price is 100% correct. Great job! The process you've described in words is also accurate.

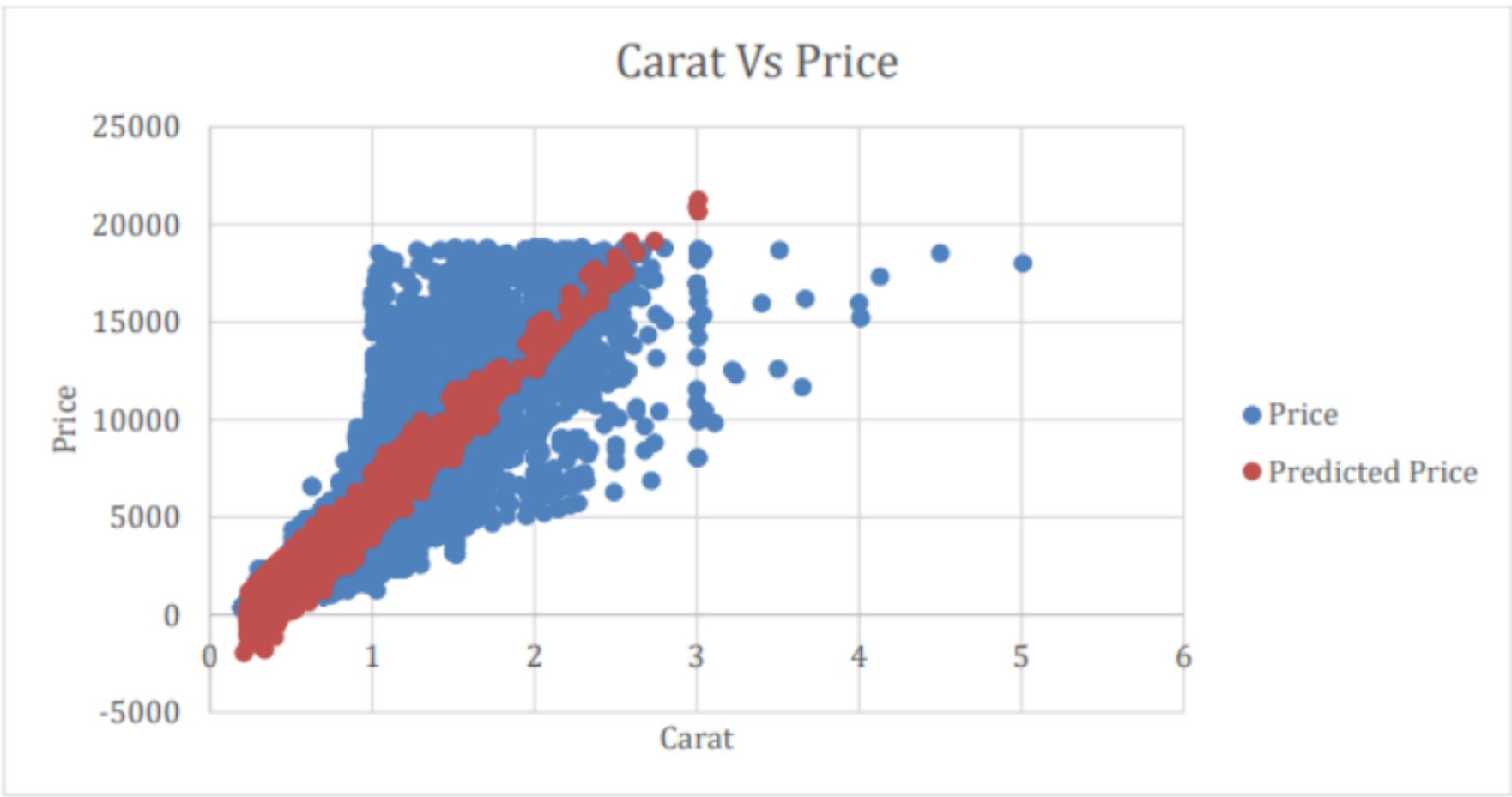
Suggestion::

In a real-life situation, we may look to first optimize the model further before computing the final bid price.

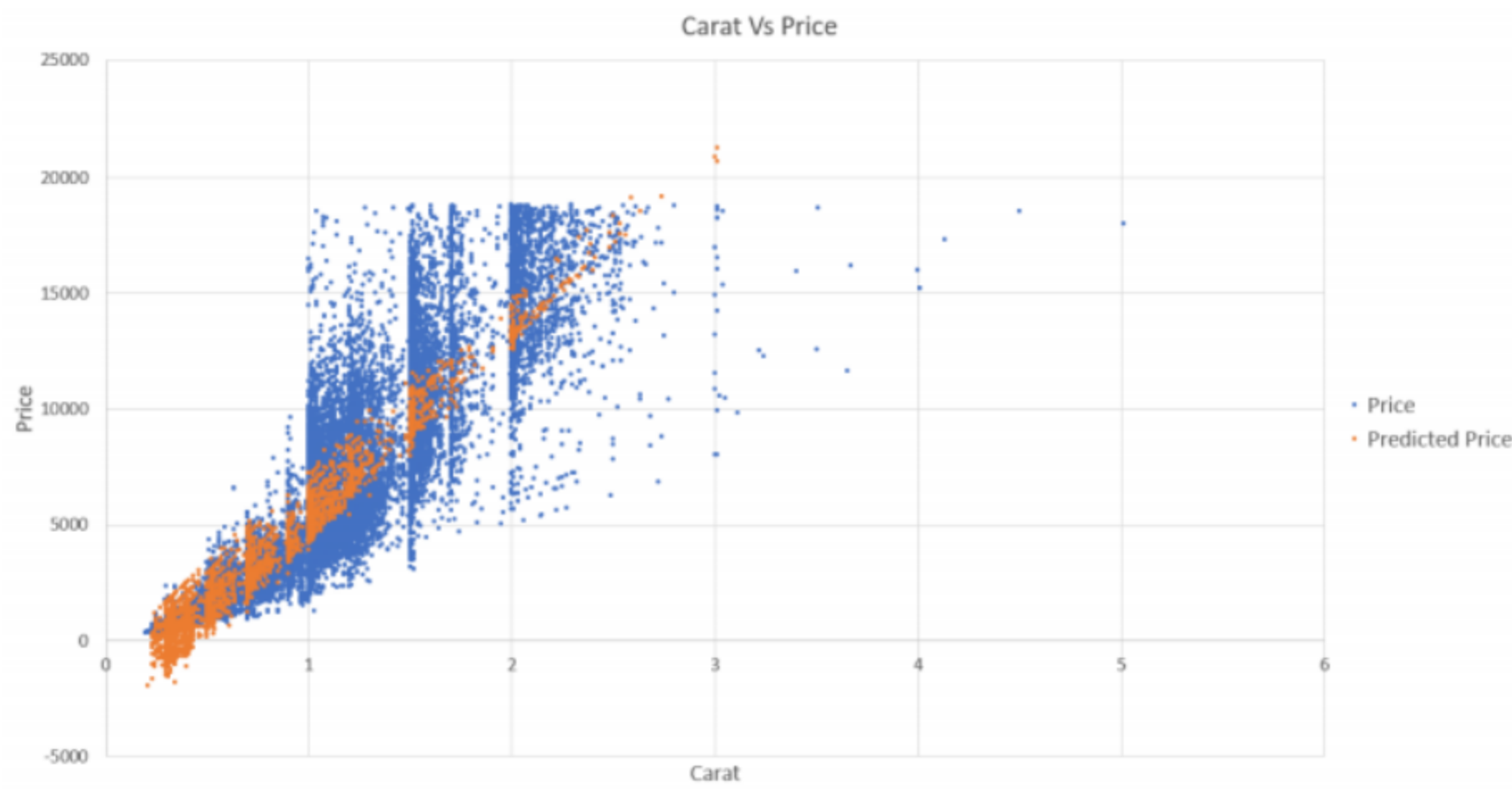
- One way of doing that would be --> Replacing all the negative predicted prices, with a value of zero.
- OR
- We can add more factors to our model which affect the price of a diamond.



1. The student has provided plots for both old and new diamond prices. The two prices can be plotted in separate plots or a single one.
2. The student has defined *carat* on X-axis and *price* on the Y-axis.



OR



Very meticulously done! The visual you've created is clear & informative.

Additional feedback

If you have the time, please go through this resource --> [Data visualization](#) . It suggests some good tips for chart formatting. I hope it will add to your knowledge.

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