Predicting Diamond Prices

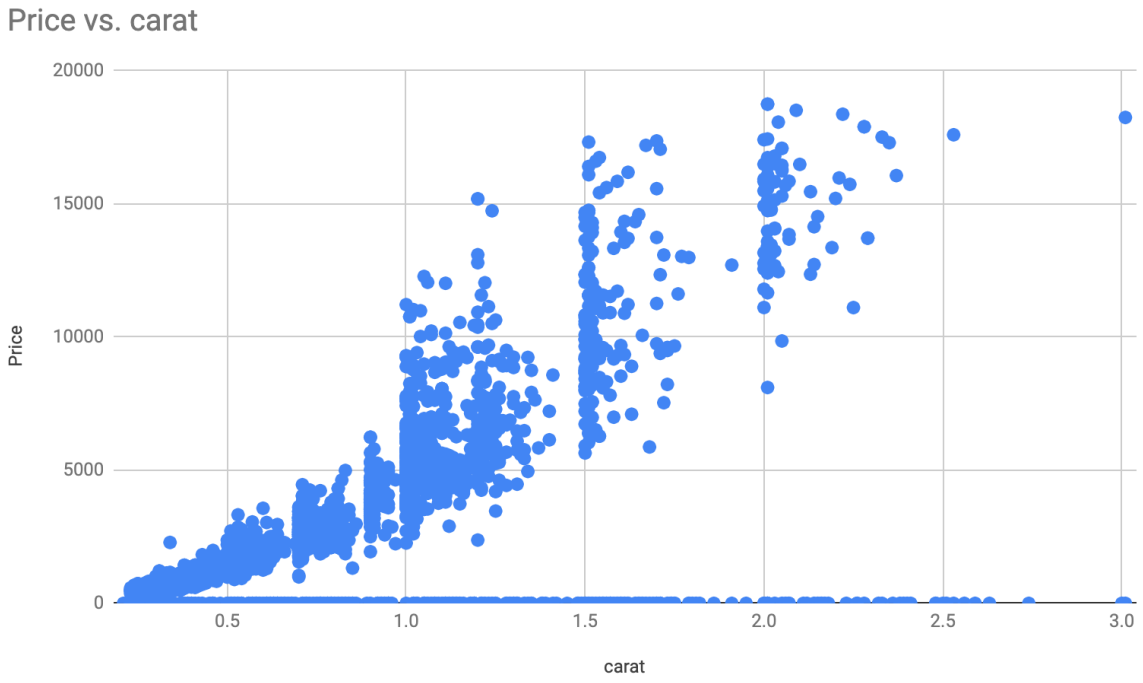
Step 1 - Understanding the Model:

1. **According to the linear model provided, if a diamond is 1 carat heavier than another with the same cut and clarity, how much more would the retail price of the heavier diamond be? Why?**
   If a diamond is 1 carat heavier than another with the same cut and clarity, the retail price of heavier diamond will be **$8,413** more.

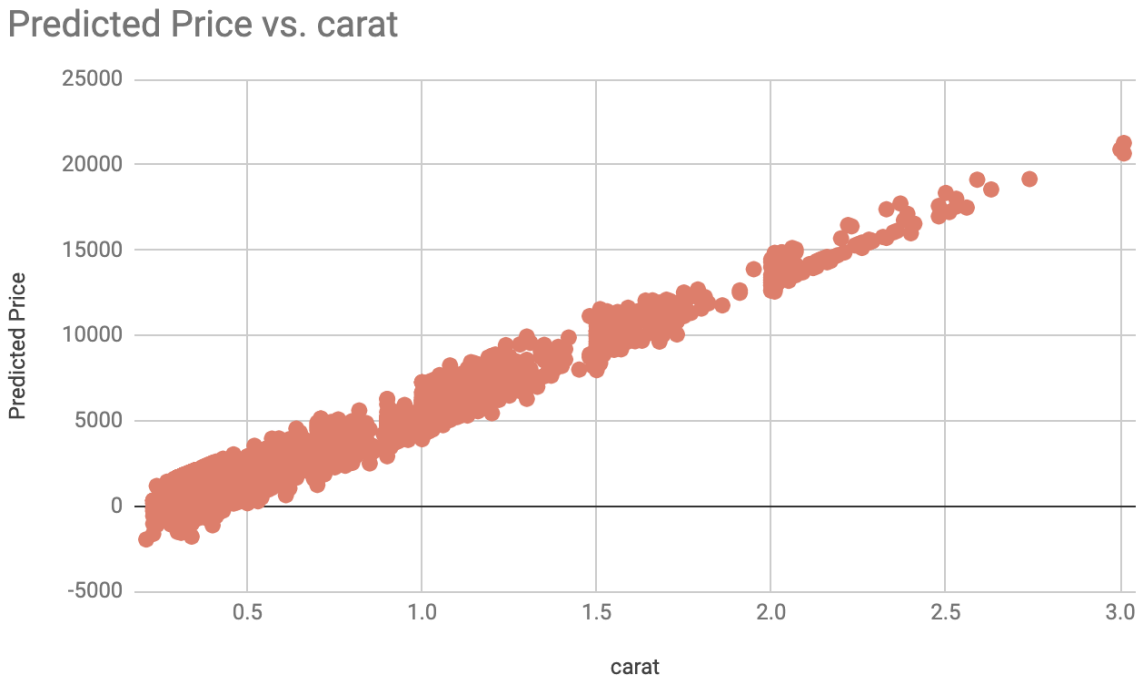
2. **If you were interested in a 1.5 carat diamond with a *Very Good* cut (represented by a 3 in the model) and a *VS2* clarity rating (represented by a 5 in the model), what retail price would the model predict for the diamond?**
   Using the linear regression model, the cost of a 1.5 carat diamond with a *Very Good* cut (represented by a 3 in the model) and a *VS2* clarity rating (represented by a 5 in the model) will be ***$10094.8***

Step 2 - Visualize the Data:

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



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.



- **What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?**
    1. Price vs Carat chart has more spread than the predicted model which is positive correlated.
    2. At carat 3, predicted prices are way higher than the historical ones.

Step 3 - The Recommendation:

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

Company generally buys diamonds from distributors at 70% of that price. So, I summed the predicted prices and came at the 70% price which is **$8,213,466**