Project: Diamond Prices

Understanding the Model

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?

   I should expect to pay $8,413 more because we are multiplying carat by 8413 in the formula and we are increasing carat by 1. So, I need to pay $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), how much would the model predict you should pay for it?
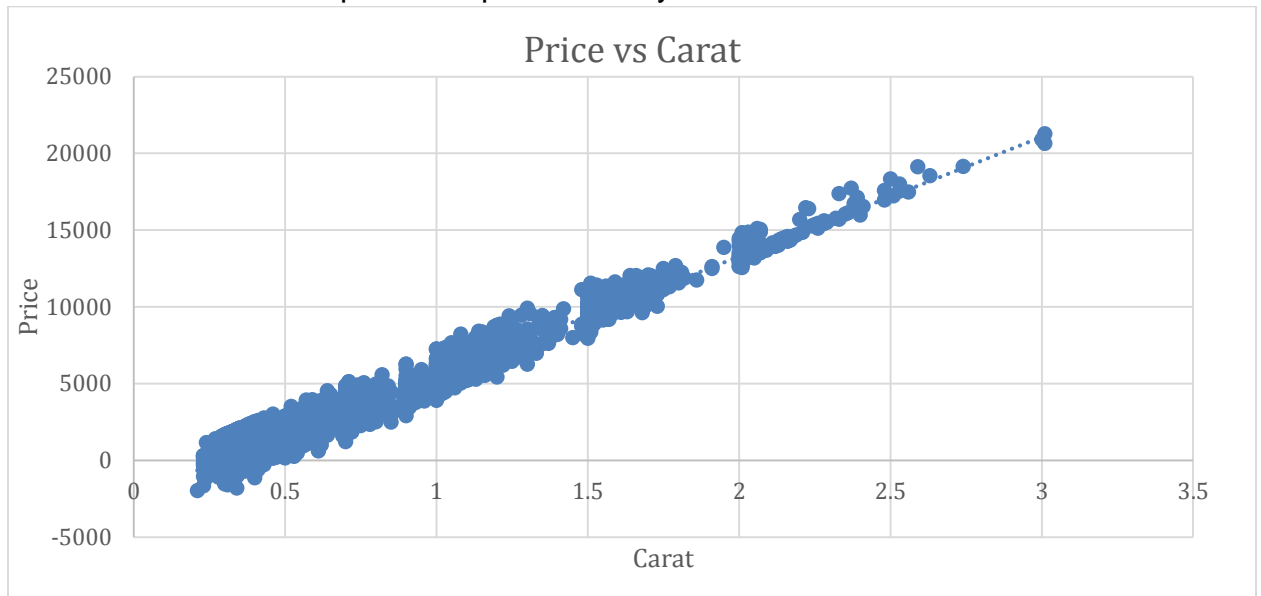
   The model will predict $10,094.8 to be paid.

Visualize the Data

1. Plot 1 - Plot the data for the diamonds in the database, with carat on the x-axis and price on the y-axis.
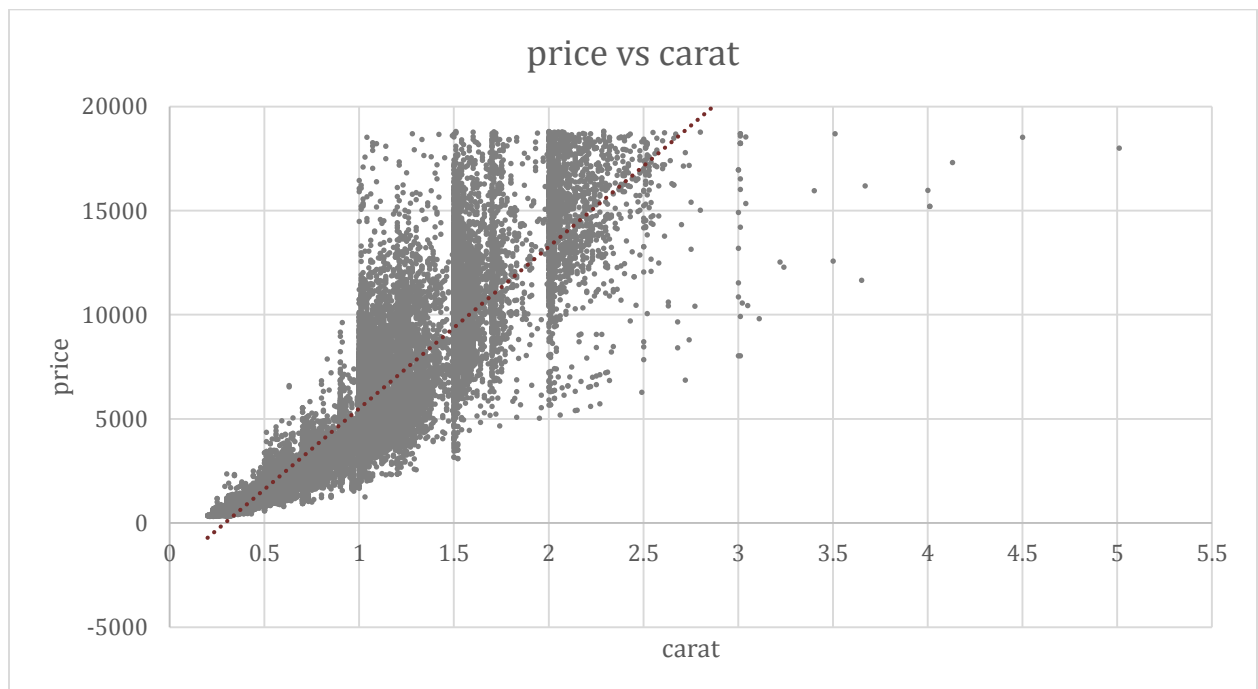
2. Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis.

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

   I don't feel confident about the model's ability as:
   i)   Prices can never be negative.
   ii)   In this case prices are going negative for some diamonds with carat value less than 0.5.
   iii)   So, there must be some error in the formula.

Make a Recommendation

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

   I calculated the sum of all prices in the table and the company generally purchases diamonds from distributors at 70% of that price.

   Sum of all prices is $11733523,
   Applying 70% to it we get, $8,213,466.
    So, I recommend the price to be bidden by company shall be $8,213,466.