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?

   N.B My calculation using alteryx software gave a slightly different regression model than the one in the question. So, since my calculation is based on my regression model, I will use the values obtained in answering the questions.

   If the model given in the question is used, then 1 carat heavier means $8,413 more. However, according to my model obtained from alteryx, I would expect to pay $8363.4 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?
   Using, Price = -5269+(8413*Carat)+(158.1*Cut)+(454*Clarity)
   Then the price would be $10094.8

   However, with my regression:
   Price = -5255.2+(8363.4*Carat)+(160.4*Cut)+(457.8*Clarity)
   Price = $10060.1

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.

Scatterplot of carat versus price
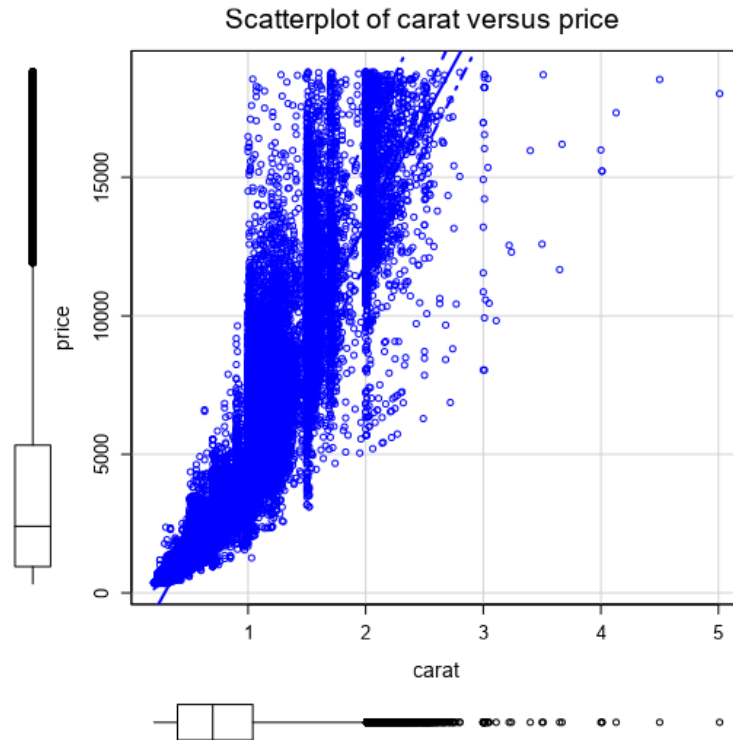
2. Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis.

Scatterplot of carat versus Score
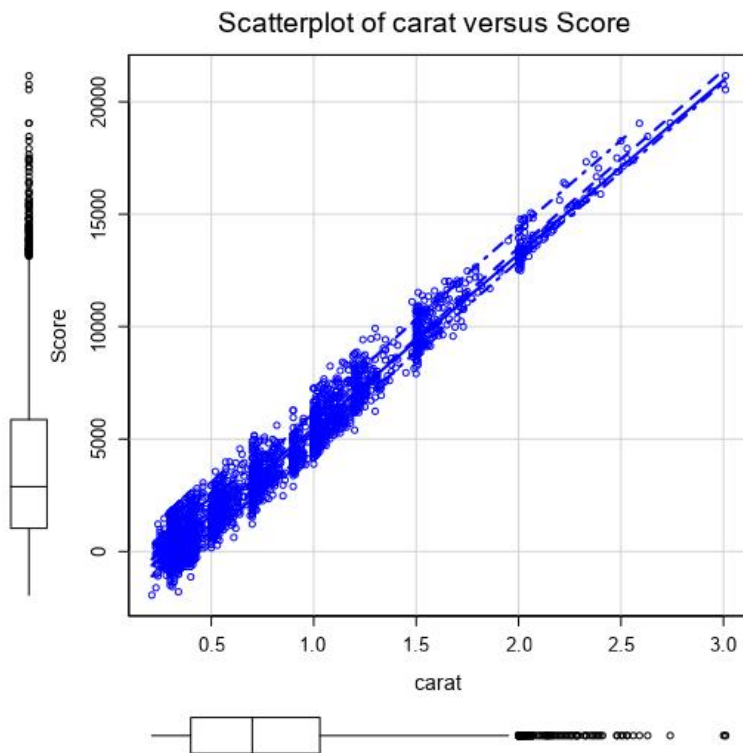
- o **Note**: You can also plot both sets of data on the same chart in different colors.
3. What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?
   The model does seem accurate by merely looking at the graph. The first graph seems have more scattered values, however the values in the second graph appear closer to the regression line. Thus the model should predict the price with considerable accuracy.

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.
   The recommended price is $8,211,163.1459
   The value was arrived at by summing the prices for the new diamond and then obtaining 70% of the sum.