<u>Project: Diamond Prices</u>

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?

   So, we should expect to pay $8,413.

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?

   Price = - 5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity
   = - 5269 + 8413 x (1.5) + 158.1 x (3) + 454 x (5)

   We should pay for Price = $10,094.8

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.

Scatterplot of carat versus price
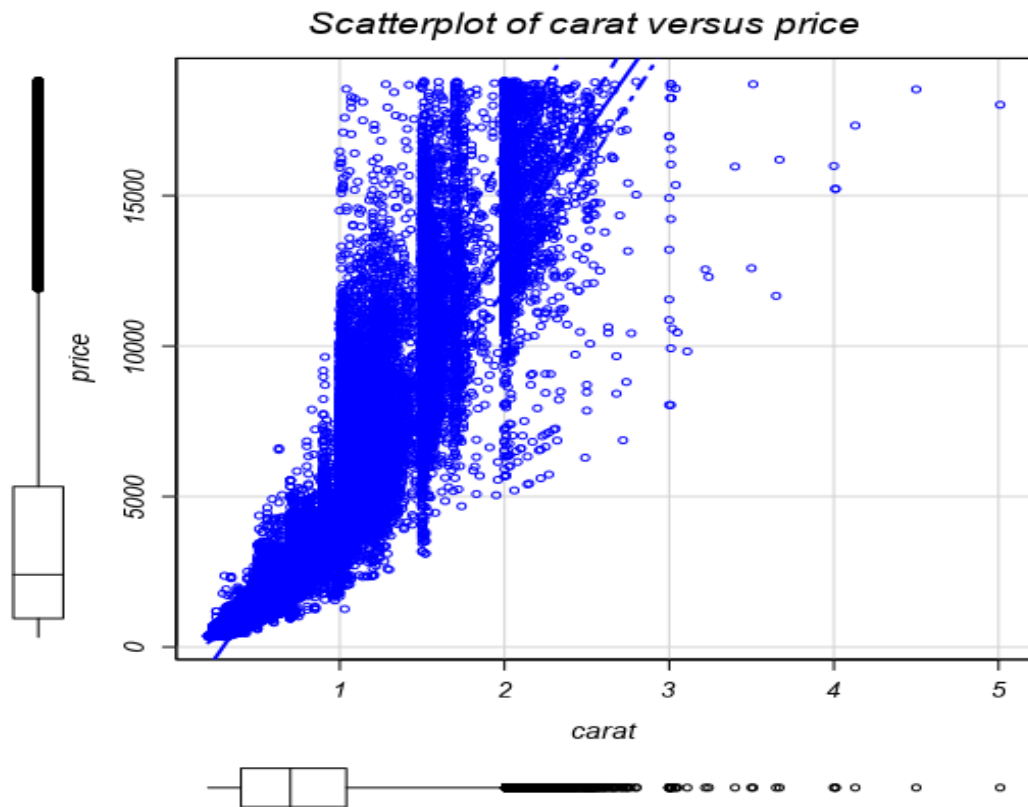
2. Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis.
    o **Note**: You can also plot both sets of data on the same chart in different colors.

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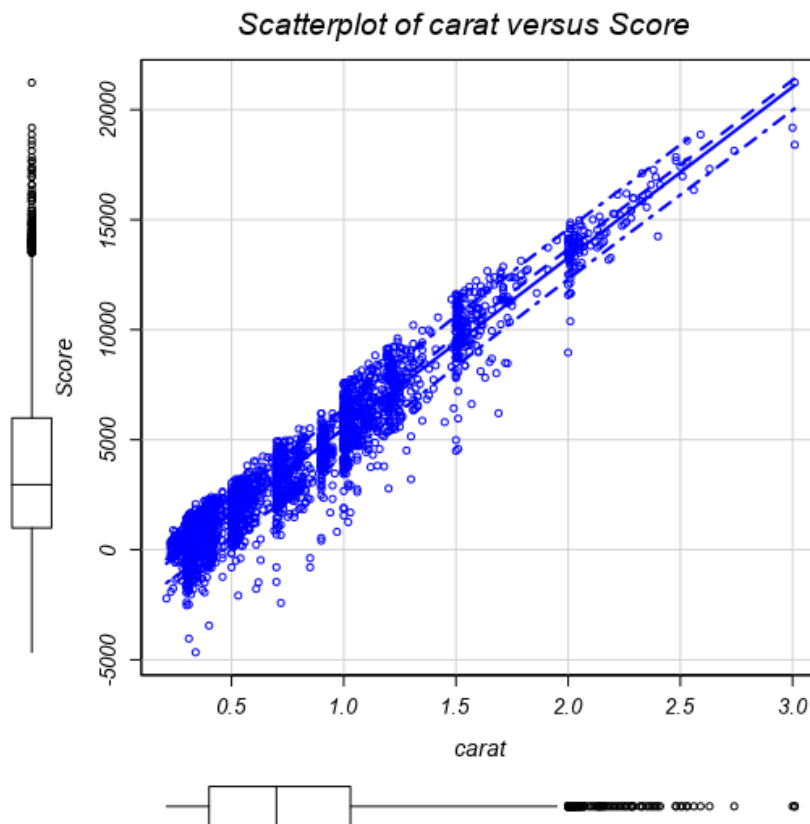
3. What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?

Yes I feel confident in the model's ability to predict prices.

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.

We will recommend the price of **$8,213,466.**
We arrived at that number by summing up the predicted prices and applying 70% on the summation for all predicted prices.