Step 1: 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?

   It is possible to observe in the regression model that for each extra carat the price of the diamond will increase for $8,413, we could assume that this is based on the value of the diamond by weight.

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 predictive price for the diamond with this characteristic will be $10,094.8 based on the regression model

Step 2: 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.
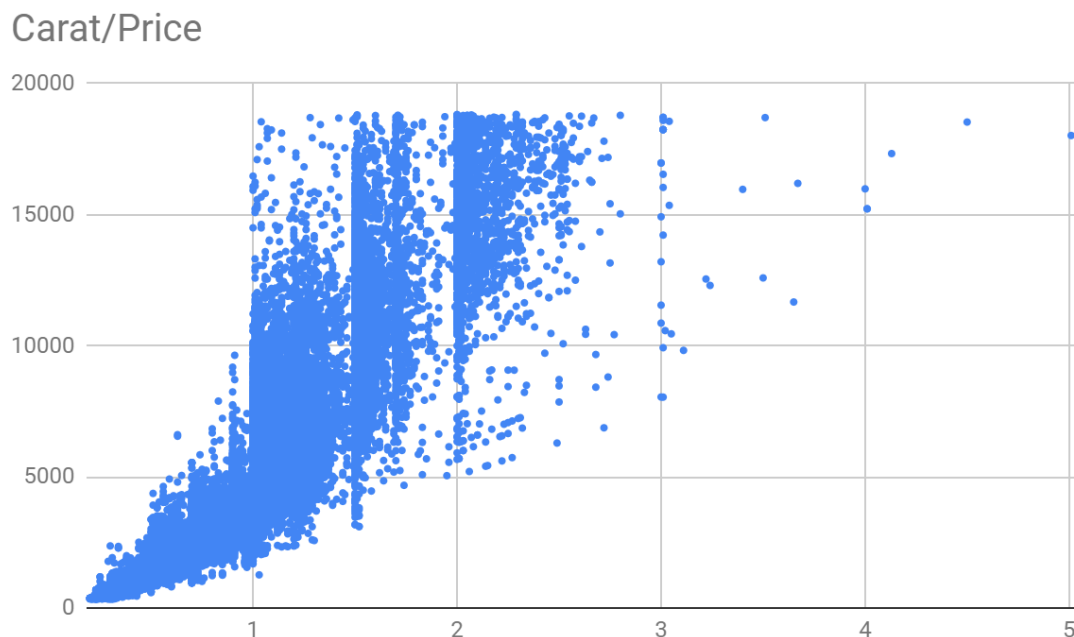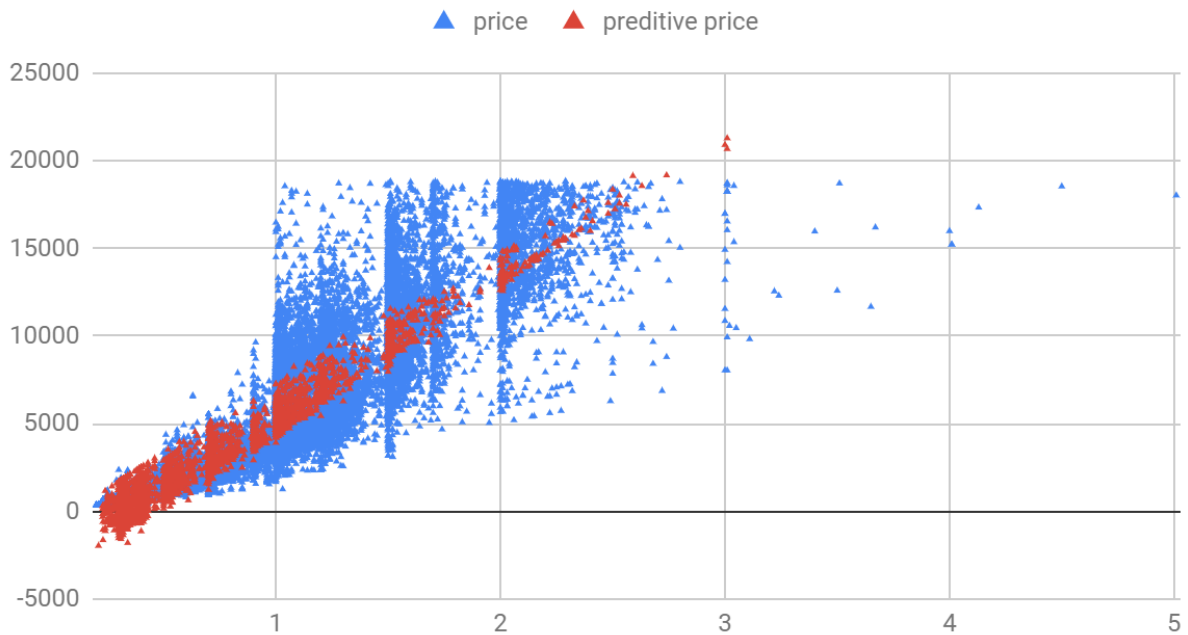

Carat/Price

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.
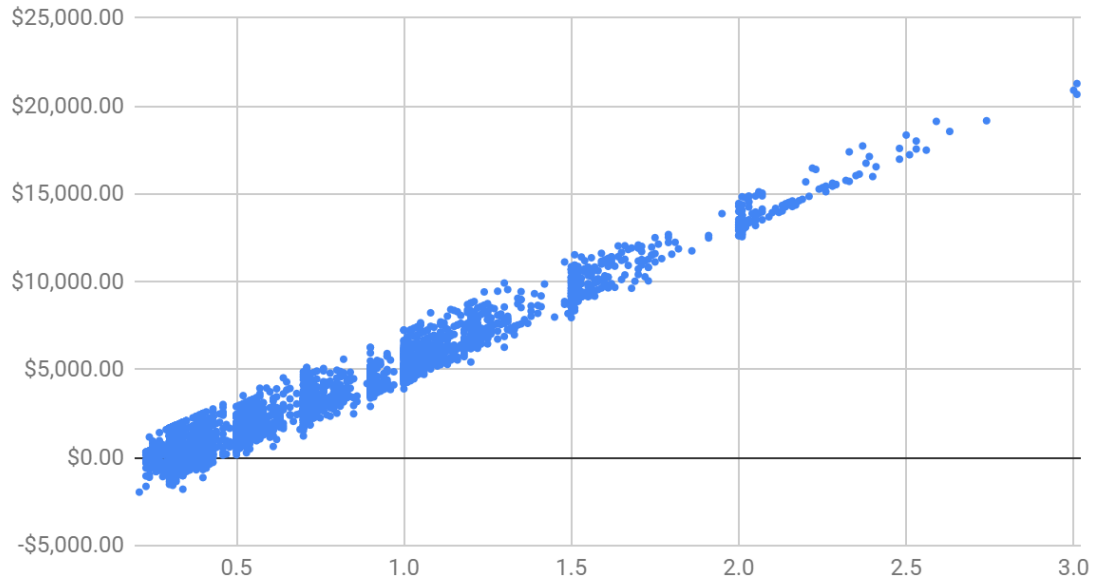
Carat / Price

- o **Note**: You can also plot both sets of data on the same chart in different colors.

Carat vs Price/Predictive Price

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

It is possible to observe a trend, the price in correlation with the carat of the diamonds.

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.

Considering the total amount of predictive price for the new diamonds is $11,733,522.76, and the company generally purchases diamonds from distributors at 70% of that price, the recommended bid is $8,213,465.93.

Total predictive price	$11,733,522.76
Distributor price 70%	0.7
Recommended bid	$8,213,465.93