Project 3: Diamond Prices

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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?

A cart heavier would result in $8,413 more in price, from the formula (Price = -5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity) it shows that the carat coefficient is $8,413 therefore the price will increase by $8,413 for every carat added

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 formula = (Price = -5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity)
· 	Carat =1.5
· 	Cut = 3
· 	Clarity =5
· 	 Price = -5,269 + 8,413 x 1.5 + 158.1 x 3 + 454 x 5 = 10,094.80
· 	 So, the predicted price is $10,094.80
text

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Step 2: Visualize the Data
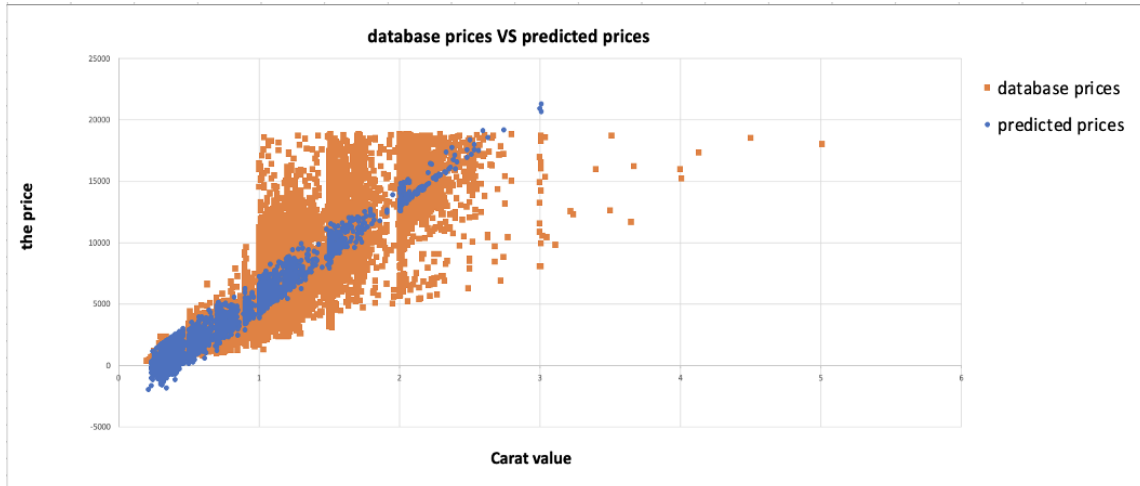
The database prices are more spread than the predicated Prices because more variables affect the price more than the carat, the clarity, and the cut.

To be more accurate, we need to take into account everything. for instance, the date of the price. Because the price will vary each year and, the formula might look different every year.

The plot chart shows that the predicted prices are not accurate. But on Average, it will do a decent job at predicting the diamond price. The Predicted price and the Carat value has a Proportional relationship and, that why the Predicted prices go up when the carat value increase.

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Step 3: Make a Recommendation

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

I recommend a bid of $8,213,465. By using a formula from the regression model provided, based on previous diamond sales, I apply it to the diamonds that were up for bid. Then Compute the sum for all predicted prices. The company generally purchases diamonds from distributors at 70% of that price, hence multiply the above resultant by 0.7 (i.e. 70%) to get the answer.