Project 3

Future Seekers - Business Analytics Nanodegree Program

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Diamond Prices

Project: Diamond Prices

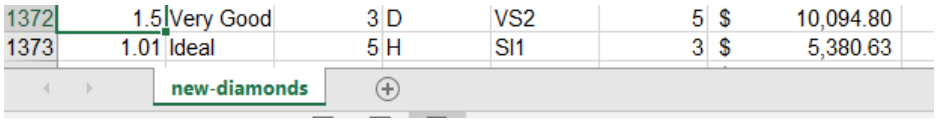
Step 1: Understanding the Model

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?

If it is 1 carat heaver that show same result $8413

Price = - 5,269 + 8,431 x **1** + 158.1 x **5** +454 x **2** = 4,842.5
= - 5,269 + 8,431 x **2** + 158.1 x **5** +454 x **2** = 13,255.5
13,255.5 - 4,842.5 = **$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?



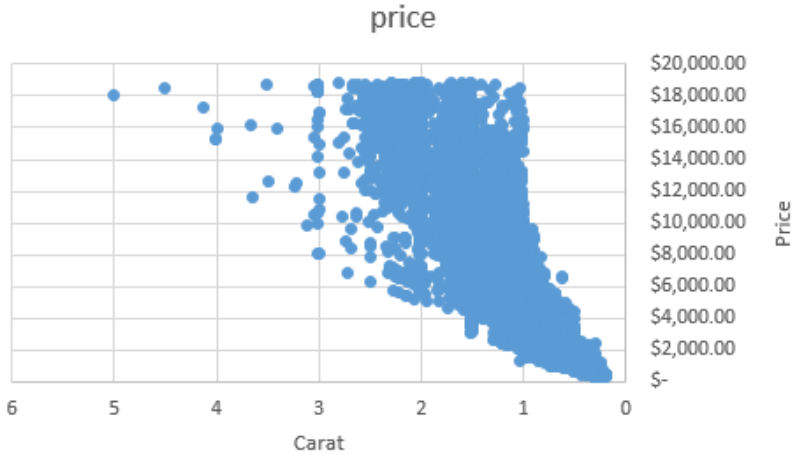
1372	1.5	Very Good	3	D	VS2	5	$ 10,094.80
1373	1.01	Ideal	5	H	SI1	3	$ 5,380.63

new-diamonds

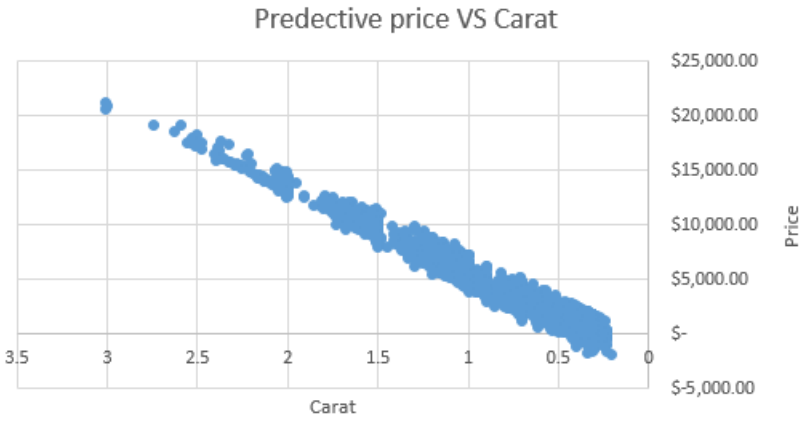
Price = - 5,269 + 8,431 x **1.5** + 158.1 x **3** +454 x **5**
= **$10,094.80**

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.



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 think that the "new dimonds" dataset has a strong correlation between price and carat. As the carat increased the price will be increased. But the "dimonds" dataset doesn't has a strong correlation , that in this case linear regression doesn't apply.

Step 3: Make a Recommendation

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

By calculating the sum of all predected price of 3000 dimonds that equal to **$11,733,522,76**. The Recommended price will be equal to **$8,213,465,93** by applying 70% of the sum result for the bid price.

G	H
Predected price	*Sum of predected price=*
$ 6,989.26	$ 11,733,522.76
$ 5,814.33	
$ 3,448.53	
$ 4,926.63	
$ 517.01	
$ 1,554.16	
$ 5,222.53	
$ 1,847.17	

G	H
Predected price	*Sum of predected price=*
$ 6,989.26	$ 11,733,522.76
$ 5,814.33	
$ 3,448.53	*Taking 70% of the result=*
$ 4,926.63	$ 8,213,465.93
$ 517.01	
$ 1,554.16	
$ 5,222.53	
$ 1,847.17	