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?

   Price = -5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity

   It is expected that 8413 will be paid, which was learned from the previous equation for calculating the price of diamonds, that is, one carat of diamonds with the same cut, The more carats heavy, the higher the price, increases by 8413 dollars.

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 given equation can help us to predict the price as follow:

   The original equation, Price = -5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity

   Based on the data which the carat equal 1.5, cut equal 3 and clarity equal.

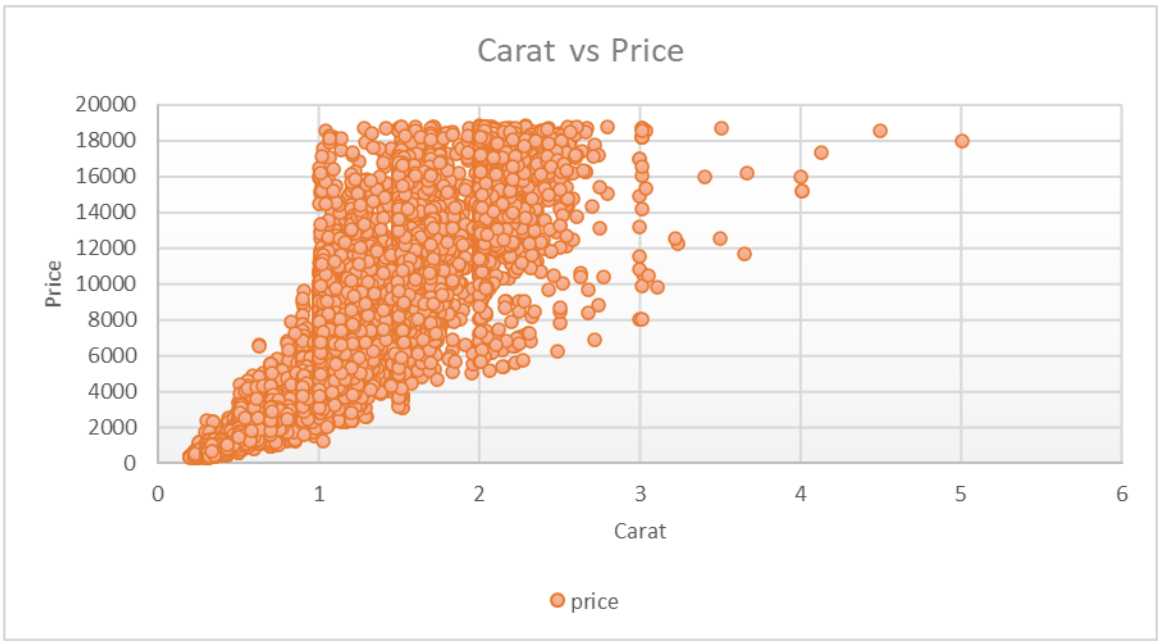
   We substitute it into the basic equation.
   Price= -5,269 + 8,413 x 1.5 + 158.1 x 3 + 454 x 5
   Price= -5,269 + 12619.5 + 474.3 + 2270
   Price= $10094.8

   The predict price that should pay is $10094.8 for 1.5 diamond carat, we can calculate for a different carat using the original equation.

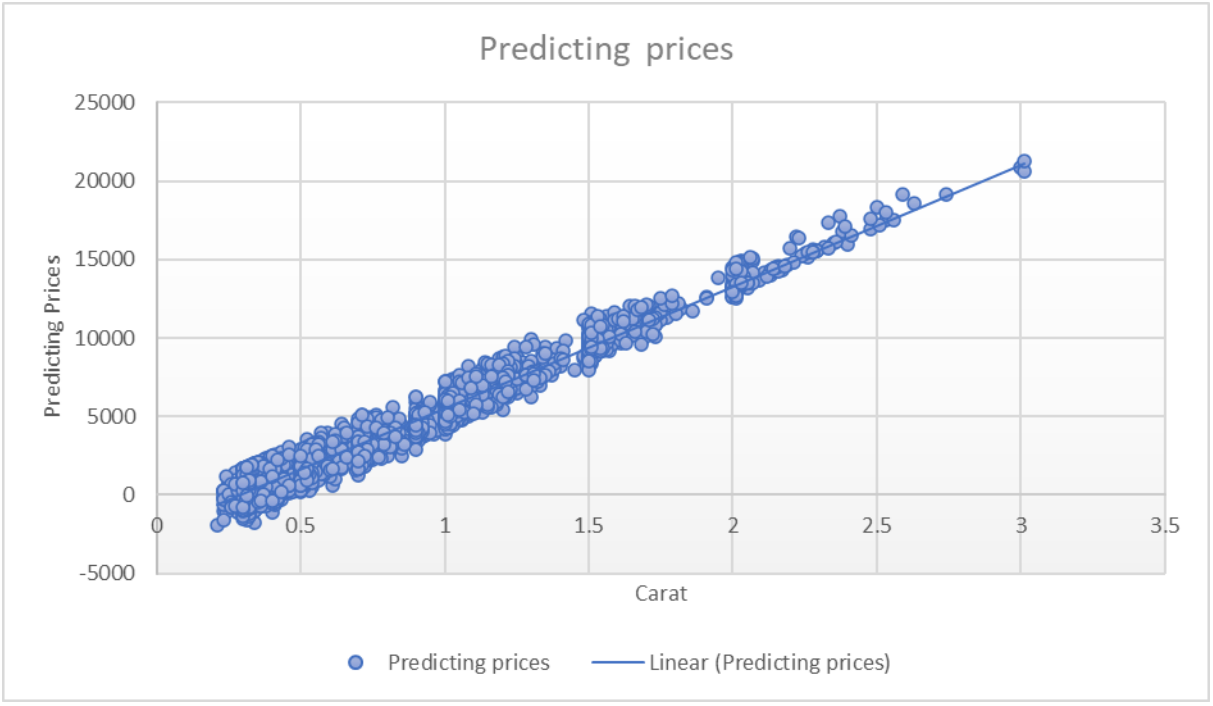
Step 2: Visualize the Data

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.



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?

   From the diagram it can be seen

   The first carat compared to the price. The correlation coefficient is not strong, and the relationship between carats and price is not linear, and this is shown in 1 to 3 for carat on the x-axis, unlike what appears in 0 to 1, the relationship between carats and the prices is linear. There are independent factors that affect the price of diamonds, in addition to the dependent variable, which is the carat, and this justifies the difference in prices.

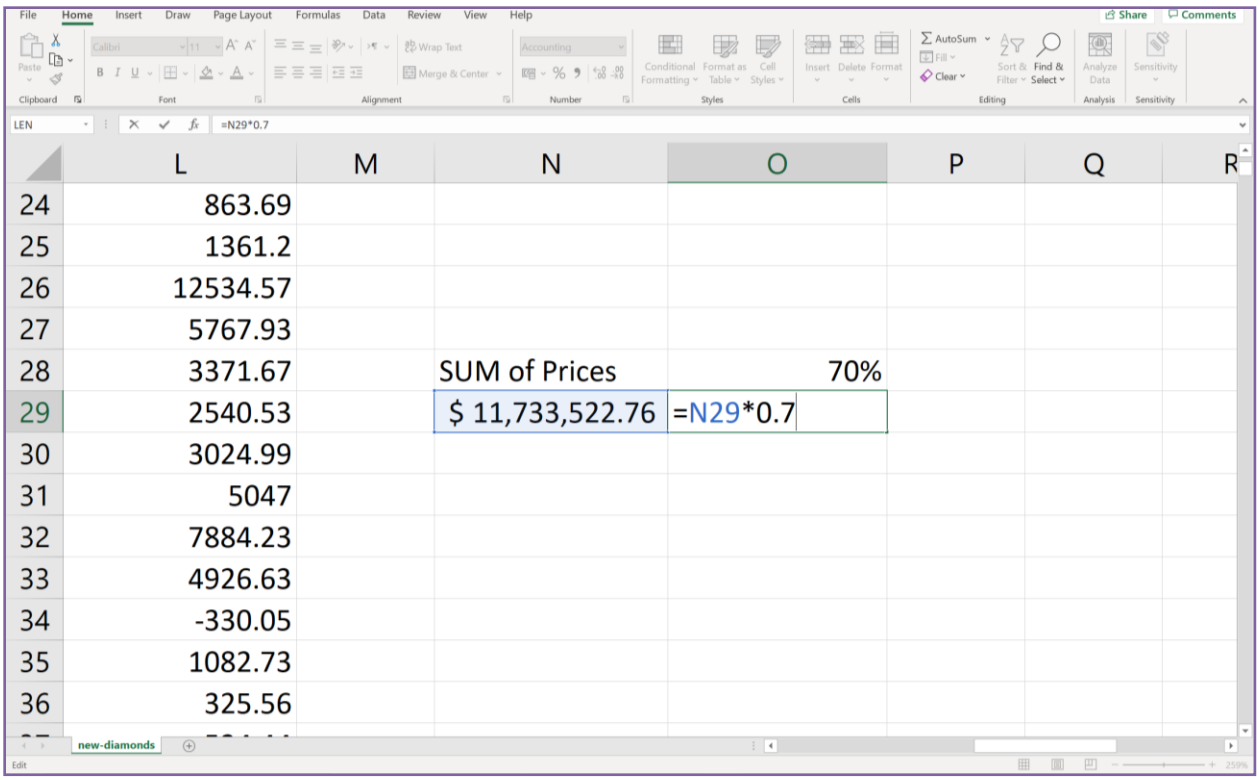
   The second graphic of the price prediction. It also shows from the drawing that there is a strong positive relationship between the carat, which represents the x-axis and the price, which is the y-axis. Despite this, the use of linear regression is not a good way to predict prices, because some prices have become negative.

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.

I suggest that we use the business problems form so that the price is calculated by multiplying the total expected price by 70%, which equals $ 82,13456.93, through the method shown in the following pictures. We calculated 70 percent of the price, which is the percentage that the distributors get from the companies.


File Home Insert Draw Page Layout Formulas Data Review View Help
Share Comments
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24 863.69
25 1361.2
26 12534.57
27 5767.93
28 3371.67 SUM of Prices 70%
29 2540.53 $ 11,733,522.76 =N29*0.7
30 3024.99
31 5047
32 7884.23
33 4926.63
34 -330.05
35 1082.73
36 325.56
new-diamonds
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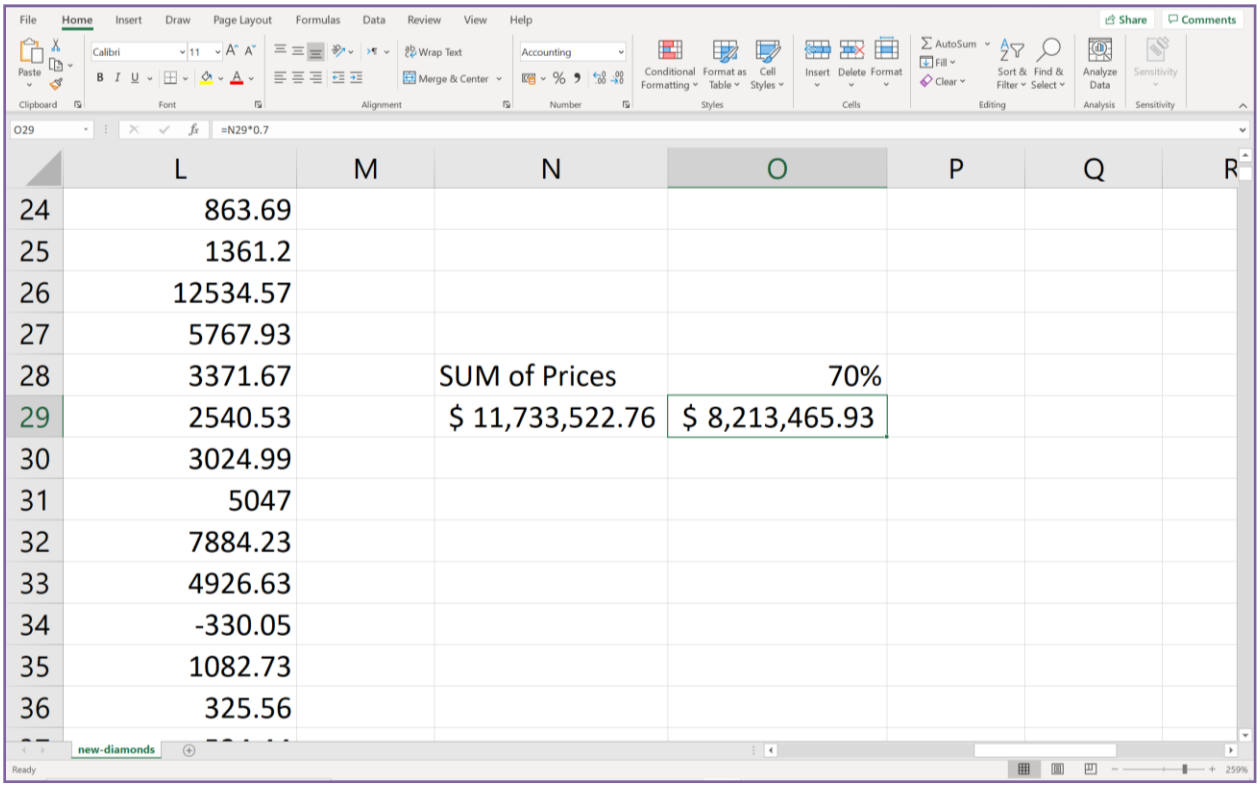
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26 12534.57
27 5767.93
28 3371.67 SUM of Prices 70%
29 2540.53 $ 11,733,522.76 $ 8,213,465.93
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34 -330.05
35 1082.73
36 325.56
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Ready