

Future Seekers - Business Analytics
Nanodegree Program

Project 3



UDACITY

- Abdulaziz Alboshal
- Business Analytics Nanodegree student

Diamond Prices

➤ Understanding the Model:

- 1 According to the model, if a diamond is carat heavier than another with the same cut, how much more should I expect to pay? Why?

Carat: { 4, 5 }

Cut: { 3 }

Clarity: { 6 }

$$\text{Price} = -5,269 + 8,413 \times \text{Carat} + 158.1 \times \text{Cut} + 454 \times \text{Clarity}$$

$$\begin{aligned} \text{A} &: = -5,269 + 8,413 \times \underline{5} + 158.1 \times \underline{3} + 454 \times \underline{6} \\ &= \$ 39.994.3 \end{aligned}$$

$$\begin{aligned} \text{B} &: = -5,269 + 8,413 \times \underline{4} + 158.1 \times \underline{3} + 454 \times \underline{6} \\ &= \$ 31.581.3 \\ &= \$ 39.994.3 - \$ 31.581.3 = \$ 8.418 \end{aligned}$$

The carat price is **\$8.418**

- 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?

Carat: { 1.5 }

Cut: { 3 }

Clarity: { 5 }

$$\text{Price} = -5,269 + 8,413 \times \text{Carat} + 158.1 \times \text{Cut} + 454 \times \text{Clarity}$$

$$\begin{aligned} \text{A} &: = -5,269 + 8,413 \times \underline{1.5} + 158.1 \times \underline{3} + 454 \times \underline{5} \\ &= \$ 10.094.8 \end{aligned}$$

➤ 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?

Yes, firstly because there is a good correlation between the carat and price, and this makes when the price of a carat increases, the price also increases.

➤ ***Make a Recommendation:***

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

My recommend the jewelry company to bid **\$8,213,465.93** because when I sum the predicted prices is equal \$11,733,522.76 and when I multiply with 70% (0.07). so, the result is \$8,213,465.93.



UDACITY