Complete each section. When you are ready, save your file as a PDF document and submit it here: https://classroom.udacity.com/nanodegrees/nd008/parts/235a5408-0604-4871-8433-a6d670e37bbf/project#

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?

   It depends on coefficient, the coefficient of carat is $8413, so one additional carat will increase $8413 in price.

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?

   Price = -5,269 + 8,413 x Carat + 158.1 x Cut + 454 x Clarity
   -5,269 + (8,413 X 1.5) + (158.1 X 3) + (454 X 5) = 10094.8
   The model predict you should pay 10094.8

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.
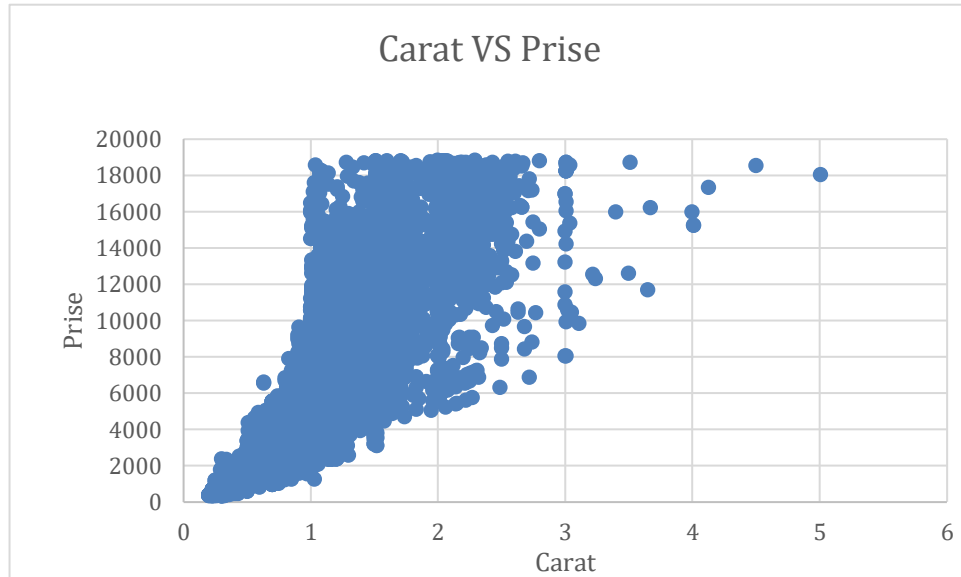
2. Plot 2 - Plot the data for the diamonds for which you are predicting prices with carat on the x-axis and predicted price on the y-axis.
    o   **Note**: You can also plot both sets of data on the same chart in different colors.
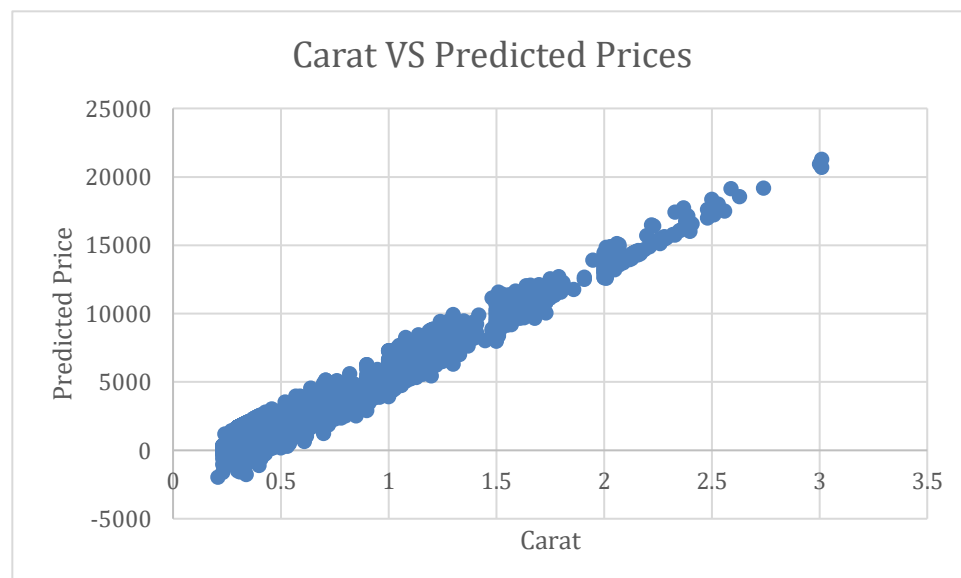
3. What strikes you about this comparison? After seeing this plot, do you feel confident in the model's ability to predict prices?

   I feel confident with the model because if we are drawing line of linear regression, we see strong and positive relationship.

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.

   8213466. Take 70% of summing predict price for 3000 diamonds (whole set)