4.11.2 Categorize the Spending Bins

Establishing the bin ranges was quite a challenge, but it's done! Now Maria wants you to focus on grouping the schools' spending in the per_school_summary_df
DataFrame based on the bins you just created.

Using our spending bins and ranges, we can create a new column in the per_school_summary_df DataFrame which will be assigned the spending bins from the per_school_capita Series.

To do this, we will need to do the following:

- Use the <code>cut()</code> function on the <code>per_school_capita</code> Series.
- Add the bin data to a new column in the per_school_summary_df
 DataFrame.

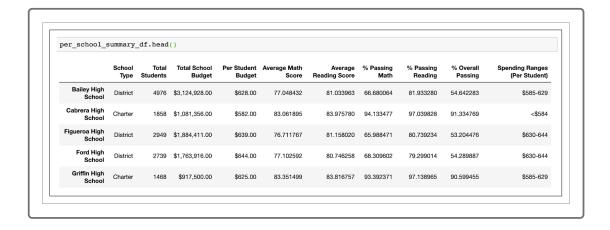
Add the following code to a new cell and run the cell.

```
# Categorize spending based on the bins.
per_school_summary_df["Spending Ranges (Per Student)"] = pd.cut(per_school_c
per_school_summary_df
```

There's a lot going on in this code, so let's break it down.

- To the left of the equals sign, we add a new column called "Spending Ranges (Per Student)" {style="font-size: 1rem;"} to the per_school_summary_df DataFrame. This column will contain the values specified by using the cut() function.
- Inside the cut() function, we add the data (per_school_capita) we are going to use for "Spending Ranges (Per Student)". The data must be a one-dimensional array, like a list or the per_school_capita Series.
- Inside the parentheses, we add the spending_bins and the labels for
 the bins using labels=group_names.

When we execute the code, the results should look like this:



The "Spending Ranges (Per Student)" column is added as the last column. Whenever a new column is added to a DataFrame, it becomes the last column. This is because each column in the DataFrame is like an item in a list.

REWIND

When we add a new item to a list, that item will always be added at the end of the list unless we specify a list index where it should be placed.

Great work! Now we need to filter the per_school_summary_df DataFrame in order to get the average scores as well as the percentage of students who passed reading and math for each range in the spending_bins.

NOTE

For more information, read the <u>Pandas documentation on the cut()</u>
<u>function.</u> (https://pandas.pydata.org/pandasdocs/stable/reference/api/pandas.cut.html)

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