Task2

School Performance DataAnalysis

Pretending to be the Chief Data Scientist for your city's school district helping the school board and mayor make strategic decisions regarding future school budgets and priorities.

The first task is to analyze the district-wide standardized test results. With access to every student's math and reading scores, as well as various information on the schools they attend, the data needs to be aggregated to showcase obvious trends in school performance.

The final report includes each of the following:

District Summary

Create a high level snapshot (in table form) of the district's key metrics, including:

- Total Schools
- Total Students
- Total Budget
- Average Math Score
- Average Reading Score
- % Passing Math
- % Passing Reading
- Overall Passing Rate (Average of the above two)
- School Summary

Create an overview table that summarizes key metrics about each school, including:

- School Name
- School Type
- Total Students
- Total School Budget
- Per Student Budget
- Average Math Score
- Average Reading Score
- % Passing Math
- % Passing Reading
- Overall Passing Rate (Average of the above two)
- Top Performing Schools (By Passing Rate)

Create a table that highlights the top 5 performing schools based on Overall Passing Rate. Include:

- School Name
- School Type
- Total Students
- Total School Budget
- Per Student Budget
- Average Math Score
- Average Reading Score
- % Passing Math
- % Passing Reading
- Overall Passing Rate (Average of the above two)
- Top Performing Schools (By Passing Rate)

Create a table that highlights the bottom 5 performing schools based on Overall Passing Rate. Include all of the same metrics as above.
Math Scores by Grade

Create a table that lists the average Math Score for students of each grade level (9th, 10th, 11th, 12th) at each school.
Reading Scores by Grade

Create a table that lists the average Reading Score for students of each grade level (9th, 10th, 11th, 12th) at each school.
Scores by School Spending

Create a table that breaks down school performances based on average Spending Ranges (Per Student). Use 4 reasonable bins to group school spending. Include in the table each of the following:

- Average Math Score
- Average Reading Score
- % Passing Math
- % Passing Reading
- Overall Passing Rate (Average of the above two)
- Scores by School Size

Repeat the above breakdown, but this time group schools based on a reasonable approximation of school size (Small, Medium, Large).
Scores by School Type

Repeat the above breakdown, but this time group schools based on school type (Charter vs. District).
As final considerations:

- Your script must work for both data-sets given.
- You must use the Pandas Library and the Jupyter Notebook.
- You must submit a link to your Jupyter Notebook with the viewable Data Frames.
- You must include a written description of three observable trends based on the data.