The city’s school district wanted to analyze the district-wide standardized test results to find any trends that can be used for school improvement and budgeting purposes. The analysis took metric snapshots of each school’s math and reading results as well as the metrics for the district as a whole. There was also a measurement of whether per student spending improved the overall testing outcome. The data was also run to compare small, medium, and large schools as well as any differences between district and charter schools.

There were two interesting conclusions that came out of the analysis.

1. Charter schools performed considerably higher than district schools.
2. Schools that spent less per student performed better than schools that spent more per student.

These results would require further analysis. Is the reason for the charter school’s high performance based on the selection of students into their programs? Charter schools tend to also be smaller with a lower teacher to student ratio whereas the larger schools must accept all students and have higher teacher to student ratios.

Below is the data pulled from the analysis:

District Summary:

Perform the necessary calculations and then create a high-level snapshot of the district's key metrics in a DataFrame.

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, application

Description automatically generated

School Summary:

Perform the necessary calculations and then create a DataFrame that summarizes key metrics about each school

Text

Description automatically generated with medium confidenceGraphical user interface, table

Description automatically generated

Highest-Performing Schools (by % Overall Passing)

Sort the schools by % Overall Passing in descending order and display the top 5 rows.

Save the results in a Data Frame called "top\_schools".

A picture containing table

Description automatically generated

Lowest-Performing Schools (by % Overall Passing)

Sort the schools by % Overall Passing in ascending order and display the top 5 rows.

Save the results in a DataFrame called "bottom\_schools".Table

Description automatically generated with low confidence

Math Scores by Grade

Perform the necessary calculations to create a DataFrame that lists the average math score for students of each grade level (9th, 10th, 11th, 12th) at each school.

Text

Description automatically generated

Reading Scores by Grade

Create a DataFrame that lists the average reading score for students of each grade level (9th, 10th, 11th, 12th) at each school.

Text

Description automatically generated

Scores by School Spending

Create a table that breaks down school performance based on average spending ranges (per student).

Graphical user interface, application

Description automatically generated

Calculate mean scores per spending range.

A picture containing table

Description automatically generated

Scores by School Size

A picture containing graphical user interface

Description automatically generated

Create a DataFrame called size\_summary that breaks down school performance based on school size (small, medium, or large).

A picture containing table

Description automatically generated

Scores by School Type

Use the per\_school\_summary DataFrame from the previous step to create a new DataFrame called type\_summary.

Text

Description automatically generated