Allocating budgets for district-wide education and individual school spending plans can be challenging endeavors. Determining the appropriate allocation of funds to each school is a critical decision-making process. The PyCity code offers a solution by analyzing district-wide test results and correlating them with school spending budgets, providing valuable insights for informed budgetary decisions.

Two datasets were provided for this analysis. The first dataset includes school information such as school sizes, overall budgets, and school type. The second dataset contains math and reading test scores for students in grades 9 through 12

**Analysis**

The code integrates the two datasets for concurrent analysis. Initially, the data was aggregated into a comprehensive table encompassing district-wide statistics. Subsequently, a detailed examination and segmentation of the data were conducted to delineate the performance of individual schools within the district. Where it facilitated the assessment of individual school performance based on how their students tested in math, reading and a combined category of math and reading.

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A second analysis was done, and the dataset provided valuable insights into spending patterns by examining the budget allocation for each school. This analysis included a breakdown of the budget on a per-student basis, as well as including the above information regarding school test scores.

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**Conclusions**

Based on the findings, there are some correlations that can be drawn from the data.

Through data analysis, it became apparent that the top 5 schools boasting the highest passing rates were charter schools. This finding suggests that students enrolled in charter schools tend to excel in both reading and math assessments. The findings also revealed that the bottom 5 schools were district schools, suggesting that students enrolled in district schools are at a higher risk of not meeting passing criteria. One major factor that could play a role in why charter schools have a higher success rate is the school sizes. The information shown in the “school\_spending\_df” gives good insight into the size of schools vs the pass rates.

Another significant insight gleaned from the data analysis pertains to school budgets. Contrary to conventional beliefs associating increased funding with improved academic outcomes, the data suggests that school spending does not significantly influence a student's success or failure in math and reading assessments. The figures indicated on “Scores by School Size” table that schools with a higher “Per Student Budget” doesn’t’ necessarily have better overall passing percentages.