Data Analysis and Conclusion

# PyCitySchools

In this exercise, we analyzed data from standardized test results from over 39,000 students district-wide to help the school board and mayor make strategic decisions regarding future school budgets and priorities. We were tasked with assessing specifically math scores, reading scores, and budget information from each student’s respective school to identify any trends and/or correlations between these metrics.

Through the use of DataFrames we created tables to outline information by District Summary, School Summary, Top Performing Schools by Overall Passing rates, Bottom Performing Schools by Overall Passing rates, Math Scores by Grade, Reading Scores by Grade, Scores by School Spending, Scores by School Size, and Scores by School Type. We first aggregated student data with school data, and we were able to efficiently parse through this combined dataset to extrapolate some key data points.

Given the provided data, some conclusions we could draw would be:

1. Students from charter schools have a significantly higher rate of passing both math and reading tests over students from district schools. In fact, the top five performing schools are charter schools, while the bottom five performing schools are district schools.
2. The per student budget in district schools is higher than in charter schools, yet students from district schools are underperforming their counterparts from charter schools. This may suggest that charter schools are more efficiently using their funding to provide a higher quality education.
3. Reading scores are consistently higher than math scores at both charter and district schools, regardless of grade level. One would expect these to be closer, possibly advocating for a shift in existing funds to the math departments of each school to bring those numbers up in the future.

We were able to form some conclusions through our analysis, and with more detailed metrics we could perform a more detailed analysis to drill deeper into our initial findings. This study provided evidence that funding on a per student basis does not necessarily lead to more educated students, and that instructors and staff at district schools may need additional professional development to provide the same level of education currently being given to students of charter schools.