Pandas Challenge

This repository contains a Jupyter Notebook file that analyzes a school’s district data on attributes of the school as well as student test performance. The analysis is done using python as the programming language and the Pandas library for data manipulation. For each school, the average scores and the average percent pass rate for math and reading were calculated. Then these findings on test performance were used to compare schools based off their size, type of school, and funding for students. The focus of this analysis is to determine if there are any noticeable trends between these school traits and the student performance on standardized tests.

After the data was manipulated and analyzed, there were some noticeable trends about how well a school performed on these standardized tests. Most apparent, was how the size of the school impacted the students average passing rates (student scoring over 70). For example, large schools of 2,000 to 5,000 students had only a 58.28% passing rate for both reading and math. While small schools with less than 1000 students had an 89.88% passing rate and medium schools 1,000 – 2,000 students had a 90.62%. These results show that schools over 2,000 students had a steep decline in average student pass rates, which implies that larger schools could be detrimental to student learning and performance.

The type of school also had a noticeable effect on student test results. The two types of schools in this data set are District schools which are funded and ran by the state while Charter schools are state funded, but independently ran by a separate organization. Overall, Charter schools had a 90.43% pass rate for both math and reading, while district schools had only a 53.67% passing rate. This suggests that charter schools are more of a productive learning environment for the students. On a side note, District schools tended to have a higher budget per student than Charter school, yet still performed worse. Suggesting that state ran schools are more expensive and less effective.

To conclude, the schools that performed the best on both math and reading standardized tests tended were schools under 2,000 students as well as Charter schools. However, in this data set only one Charter school is over 2,000 students. Meaning, that Charter schools could perform better because of their teaching styles or simply because they are smaller schools. The same could also be said vice versa on the size of the school. Therefore, more school data would have to be looked at to determine if the size or type of school has more of an influence on student performance. Statistical tests of significance could also be performed on these findings as well for more concrete results.