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Pandas Challenge Written Analysis

**Summary Analysis**

Our dataframes of the top 5 best and worst performing schools show one glaring difference when it comes to overall passing percentage. The top five schools are all charter schools, and the bottom five schools are all district schools. When we dive into the budget for each school, and specifically the per capita budget we actually see that more money is being spent on each student in the district schools rather than the charter schools. Moreover, when analyzing our binned data dataframe we see that the lower budget schools per capita are actually performing better that schools with higher spending per capita by a wide margin.

**Two conclusions/comparisons**

District schools by comparison fail in comparison when it comes to overall passing percent. While overall reading scores are not drastically different, math scores pale in comparison to charter school math scores. When we look at the per capita spending dataframe it shows that the two groups of schools that perform the best in math are the two lowest groups based on per capita spending. This leads us to believe that it is likely something other than money spent. It is possible that different math techniques are being taught at the two different types of schools that may be affecting this overall passing percentage when it comes to math

Looking at the reading and math scores by grade, the averages across all schools remain remarkedly similar for all schools across the four grades and both competencies. From these statistics we cannot say that different teachers in the schools perform any better than others based on the grade that they teach. In fact it would be reasonable to say that teacher performance is likely not the problem. Another discrepancy is the statistics can be seen in the difference between the average scores for both reading and math and the overall passing rates. In the Charter schools we see a solid be average for both math and reading. At the same time the overall passing percentage for both courses is significantly higher. This leads us to believe that majority of students are doing similar work, without a lot of spread or outliers. If we examine the district statistics we see a different story. The math scores are the most concerning. With a n average math score of 77% based on what we saw in the Charter schools, we would expect to see an overall percentage of students passing math somewhere in the mid 80s. This is not the case. The percentage actually goes in the opposite direction and falls to about 67%. This likely shows us there is a large gap in the learning curve between students, when it comes to math at district schools. While there is a percentage of the students that are propping up the average math score, there are a large number of students who are not doing passing work.