**Module Challenge 4: Pandas Deysi Paniagua-Perez**

**Analysis Summary:** In this challenge, we were asked to analyze a city’s school district data to assist the school board/mayor in choosing the best decisions based on future school budgets and priorities. The following summaries were generated to display the data stratified by District, School, Highest- and Lowest-Performing School Percentage of Overall Passing, Math and Reading Scores by Grade, Scores by School Spending, Scores by School Size, and Scores by School Type:

* **District Summary:** Includes overview of the Total number of Schools, Total number of Students, Total School Budget, Average Math Score, Average Reading Score, % Passing Math, % of Passing Reading, % of Overall Passing.
* **School Summary:** The data above was stratified by School Name and includes a column for Per Student Budget. This column summarizes the amount of money each school spends per student.
* **Highest/Lowest Performing School Percentage of Overall Passing:** 2 data frames (Highest, Lowest) were generated to display the data above for the five Highest/Lowest Performing Schools in the district.
* **Math/Reading Scores by Grade:** 2 data frames (Math, Reading) were generated to display Math and Reading Scores for 9th, 10th, 11th, and 12th grades across all schools.
* **Scores by School Spending:** Average Math and Reading scores, % of Passing Math and Reading Scores and Overall Passing Spending were stratified by Spending Range Per Student.
* **Scores by School Size:** The data above was stratified by School Size (Large, Medium, Small).
* **Scores by School Type:** Finally, the data above was stratified by School Type (Charter, District).

**Conclusions/Comparisons from Calculations**

Charter schools consistently outperform district schools in reading and math despite having fewer students and less funding. “The Scores by School Spending” data frame supports this idea as Spending Ranges (Per Student) of $645-680 and <$585 corresponds to Overall Passing Spending Rates of 53.3% and 90.4%, respectively. Similarly, the “Scores by School Size” data frame shows that smaller schools (<1000 students) have a higher Overall Passing Spending Rate of 89.9%, significantly higher the 58.3% observed in larger schools (2000-5000 students). Finally, the “Scores by School Type” highlights an almost 67% greater Overall Passing Spending Rate in charter schools than district schools. Furthermore, a smaller classroom size allows instructors to dedicate more 1-on-1 time per student.

Finally, the Scores by School Type data frame showed an almost 67% increase in Overall Passing Score by School Spending for Charter compared to District Schools.