**Objectiv**e

The objective of our analysis is to look at data of school students within a district from grade 9 to 12 and draw conclusions based on their performance, school type, school size and budget.

**District Summary**

First, we looked at the district as a whole, which included **39,170 students** in **15 different schools.** We can conclude that in this district, the students have an **Average Math Score of 79 points** with a **pass rate of 75%**, an **Average Reading Score of 82 points** with a **pass rate of 86%.** Overall, **65% of the students in this district passed in both math and reading.**

**School Summary**

We then proceeded to observe the district’s performance on a per school basis. Here we saw that there are **two types of schools, Charter and District**, with varying school sizse and budgets. Looking at the Per School Summary Table, we can see there is a wide range of pass rates amongst schools, indicating that schools in this district vary quite a bit in performance.

Upon further analysis, we can see that the **top performing school is Cabrera High School** with an **Average Math Score of 83 points** and a **pass rate of 94%,** an **Average Reading Score of 84 points** and a **pass rate of 97%** and an **overall pass rate of 91%.** Note that the overall pass rate of this high school is well above the district average. In addition, we observe that **all 5 schools in the top schools list are Charter schools.**

Similarly, we can see that the **worst performing school is Rodriguez High School** with an **Average Math Score of 77 points** and a **pass rate of 66%,** an **Average Reading Score of 81 points** and a **pass rate of 80%** and an **overall pass rate of 53%.** Note that the overall pass rate of this high school is well below the district average. In addition, we observe that **all 5 schools in the bottom schools list are District Schools**.

**Scores by Grade**

We observed average scores by grade in each school for Math and Reading. The results are consistent amongst all grades.

**Scores by School Spending**

We created a data frame where we categorized schools by spending on a per capita basis by binning them, to observe how student performance may be related to school budgets. Here, we saw that the spending range with the **highest overall passing rate, 90%, was the “ < $585 ” bin,** which was the smallest spending range bin and the bin with the **lowest overall passing rate, 54% was the “ $645 - $680 ” bin**, which was the highest spending range bin. This is quite surprising and counter intuitive as the consensus is that schools with more spending produce better results.

**Scores by School Size**

Similarly, we created a data frame where we categorized schools by size (i.e. number of students) by binning them, to observe how student performance may be related to size of the student body. Here, we saw that the size range with the **highest** **overall passing rate, 91%, was the “ Medium (1000 – 2000) ” bin**, and the bin with the **lowest overall passing rate, 58% was the “ Large (2000 – 5000) ” bin**, which was the highest size bin. The latter makes sense as larger schools have resources that are spread thinner, and thus tend to yield poor performances.

**Scores by School Type**

Finally, we observed differences in student performance based on school type, Charter or District. Here, we saw **that Charter schools do significantly better than District schools**, with a **pass rate of 90% compared to 54%.** This is consistent with the results we saw when we observed the top and bottom performing schools. With such significant results, it would be worthwhile to further examine why Charter schools perform so much better than their public counterparts to inform public education policies.