# Module 4 Challenge – Pandas and Jupyter Notebook Analysis

This report contains a summaries and key findings of an initial analysis on data for the district’s schools. The report contains an Analysis Summary, Key Findings and a Tables of Results sections.

## Analysis Summary

Based on the data provided an overall analysis summary on the district-level and school-level is as follows.

### District Summary

There are a total of 39,170 students across 15 schools with a total spending budget of approximately 25 million USD. The average Math score is 79% with a 75% pass rate, whilst the average Reading score is 82% with an 86% pass rate. The overall pass rate for both Math and English is 65%.

These details are captured in Table 1.

### Schools Summary

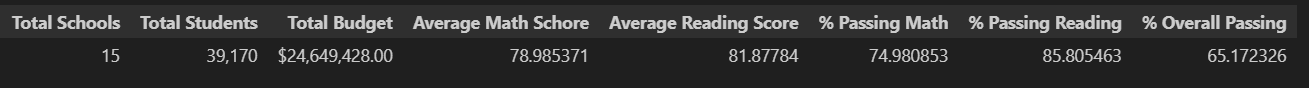
A breakdown of the above district-wide summary on a per-school basis is provided in Table 2. This table also specifies the whether a school is of the District or Charter type on the “School Type” column.

## Key Findings

* Results in “Table 3: Scores by School Spending” clearly indicate a lower Spending Range (per student) correlated with better academic outcomes. For example schools with per student spending in the category <$580 had an overall passing rate greater than 90% whilst the highest spending bracket had an overall passing rate of 53.5%.
* When considering Tables 4 and 5 which look at scores by school size, it is clear Small and Medium size schools have similar outcomes whilst Large Schools (2000-5000 students) have poorer outcomes relative to Small and Medium.
* Table 6 considers scores by School Type which shows that Charter schools outperform District schools as an overall trend.
* Table 7 and 8 looks at scores according to which Grade students are in. This table shows that within a given school, there is minimal variation between the results of the various Grades 9th, 10th, 11th and 12th.

## Tables of Results

*Table 1: District Summary*



*Table 2: Schools Summary*

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*Table 3: Scores by School Spending*

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*Table 4: Scores by School Size*

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*Table 5: Average Scores by School Size*

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*Table 6: Scores by School Type*

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*Table 7: Math Scores by Grade*

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*Table 8: Reading Scores by Grade*

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