Written Report - Module 4 Challenge - PyCitySchools

Q1. Summarises the analysis (5 points)

This report involves using Pandas and Jupyter Notebook to process and combine data from multiple datasets to generate a comprehensive summary of important metrics related to local government areas (LGA), schools, and student performance. The analysis involves two distinct datasets, one containing information on LGA schools and the other on LGA students. The report examines various critical metrics and employs DataFrames to store data pertaining to the highest-performing schools, lowest-performing schools, average maths and reading scores for each school, average maths and reading scores for all schools by respective school year level, maths and reading scores based on school spending, maths and reading scores based on school size, and maths and reading scores based on school type.

Q2. Draws two correct conclusions or comparisons from the calculations (10 points)

Possible conclusions that can be drawn from our analysis are:

- In this analysis, it is clear that there is a notable disparity between the performance of independent schools and government schools in terms of maths and reading average scores for all students. The lowest five scoring schools for both maths and reading are all government schools, except for Wilson High School, which although is an independent school, however, ranks in the bottom five for reading mean scores.

- Interestingly, the per-student budget does not seem to have a positive impact on student performance. In fact, the average reading and mathematics scores, as well as overall and subject pass rates, tend to decrease as the per-student budget increases. It is important to consider that the additional money invested in each student could be allocated towards other subjects or extracurricular activities not included in this analysis.

- The size of the school seems to affect the students' scores and pass rate. The scores are relatively consistent between small (less than 1000 students) and medium-sized (1000-2000 students) schools, with a slight decrease in pass rates for medium-sized schools. The difference between small/medium-sized schools and large schools is also significant, with an overall decrease of 8.77% in the pass rate percentage. Further investigation is needed to establish whether the smaller and medium-sized schools have smaller class sizes, as this could suggest that greater individual attention in smaller classes is crucial to improving Maths and Reading scores and increasing overall pass percentage.