UOM Module 4 – Pandas Challenge

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The purpose of this challenge is to assist decision makers regarding future school budgets and shaping priorities. Decisions will be based upon district-wide standardized test results and financial information for the district schools. The challenge will be compiling the data into useful forms to demonstrate trends in school performance.

Reviewing the grouped and filtered data, the most obvious trends are:

1. The charter schools generally have a lower cost per pupil.
2. The charter schools appear to have significantly higher success rates compared to the district schools. Especially in the math metrics.
3. Overall passing student rate is much higher at the charter schools.
4. An issue to address is the large schools have a much lower overall passing rate. 58% passing versus ~90% at the small and medium size schools.

Items to consider after reviewing the trends would be:

1. Consider ways to reproduce small and medium school settings within the large school structures.
   1. Is the teacher-to-student ratio similar between the large and smaller schools? Possibly hire more teachers at the larger school if that is not the case.
   2. How does the math curriculum differ between the large and small schools? Homework quantity? Technology? Tutor availability?
   3. Can the large schools be partitioned to more closely resemble smaller schools? Several schools within a large school?
   4. Is there a significant pay and instruction ability difference between teachers at the large versus small schools?
   5. Possibly setup mentoring or teaching groups between schools to discuss challenges. Setup quality review process cycles. Design -> Implement -> Review -> Modify design ->
2. Consider reviewing the demographics of the student population that may impact school performance and cost.
   1. Are large schools inner city or rural character?
   2. Large schools tend to have a school area. Bussing kids very early in the morning on long bus rides to and from school can have an impact. Attempt to keep travel times to a minimum.
   3. Are the charter schools private (financial), or entrance by lottery (any family can apply)?
   4. Are the pupils from white or blue collar backgrounds? Single parent families? Who helps the pupil with homework, and what education level do they have? For example, a college educated scientist helping their pupil with their chemistry homework.

As there are many variables to consider, and changes and context add more complexity to those variables – ongoing performance benchmarks and monthly reviews of those benchmarks may correct at-risk pupils before it is too late for them to graduate.