Analyzing NYC Public School Test Result Scores

This notebook uses techniques from **Introduction to SQL**, including the selection of multiple columns from a database, applying filters, counting unique values, aggregating numeric data, and sorting and grouping query results.

The below mentioned tasks are done in mySQL. You can try in any other language as well by looking at the task and create pull request mentioning the change.

Below given are the task that are done in the notebook below:

Task 1: Instructions

Let's inspect the first 10 rows of the database.

- Select all columns from `schools`.
- Limit the output to 10 schools.
- The line `postgresql:///schools` is used to connect to the database; don't remove it.

Task 2: Instructions

Count the number of schools not reporting the percentage of students tested and the total number of schools in the database.

- Select the number of schools minus the number of entries for `percent_tested`, aliasing as `num_tested_missing`.
- Count how many schools are in the database, aliasing as `num_schools`.

Task 3: Instructions

Find how many unique schools there are based on building code.

- Count the number of unique values for `building_code`, aliasing as `num_school_buildings`.

Task 4: Instructions

Filter the database for all schools with math scores of at least 640.

- Select the name of the school and `average_math`, filtering for rows with a score more than or equal to 640.
- Sort by `average_math` in descending order.

Task 5: Instructions

Find the lowest average reading score.

- Select the lowest value for `average_reading`, aliased as `lowest_reading`.

Task 6: Instructions

Filter the database for the top-performing school, as measured by average writing scores.

- Select `school_name` and the largest value for `average_writing`, aliased as `max_writing`.
- Group the results by `school_name`.
- Sort results by `max_writing` in descending order.
- Limit the output to one result.

Task 7: Instructions

Create total SAT scores and find the top 10 best schools.

- Select `school_name`, and the total of `average_math`, `average_reading`, and `average_writing`, aliased as `average_sat`.
- Group by school name.
- Sort by `average_sat` in descending order.
- Return the top 10 schools.

Task 8: Instructions

Find out how NYC SAT performance varies by borough.

- Select `borough` and a count of all schools, aliased as `num_schools`.
- Select the sum of `average_math`, `average_reading`, and `average_writing`, divided by a count of all schools, aliasing as `average_borough_sat`.
- Use a function to aggregate the results by `borough`.
- Sort the results by `average_borough_sat` in descending order.

Task 9: Instructions

Find the top five best schools in Brooklyn by math score.

- Select `school_name` and `average_math`.
- Filter for rows where the `borough` is `'Brooklyn'`.
- Aggregate by `school_name`.
- Sort by `average_math` in descending order, and display the top five results.