PROJECT: EXPLORING NYC PUBLIC SCHOOL TEST RESULT SCORES

datalab

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Every year, American high school students take SATs, which are standardized tests intended to measure literacy, numeracy, and writing skills. There are three sections - reading, math, and writing, each with a **maximum score of 800 points**. These tests are extremely important for students and colleges, as they play a pivotal role in the admissions process.

Analyzing the performance of schools is important for a variety of stakeholders, including policy and education professionals, researchers, government, and even parents considering which school their children should attend.

You have been provided with a dataset called `schools.csv`, which is previewed below.

You have been tasked with answering three key questions about New York City (NYC) public school SAT performance.

```python
# Re-run this cell
import pandas as pd

# Read in the data
schools = pd.read_csv("schools.csv")

# Preview the data
schools.head()

# Which NYC schools have the best math results?
best_math_schools = schools[schools["average_math"] >=
640].sort_values("average_math", ascending=False)[["school_name", "average_math"]]
print(best_math_schools)

# What are the top 10 performing schools based on the combined SAT scores?
schools["total_SAT"] = schools["average_math"] + schools["average_reading"] +
schools["average_writing"]
top_10_schools = schools.sort_values("total_SAT", ascending=False).head(10)
[["school_name", "total_SAT"]]
print(top_10_schools)

# Which single borough has the largest standard deviation in the combined SAT score?
boroughs = schools.groupby("borough")["total_SAT"].agg(["count", "mean",
"std"]).round(2)
largest_std_dev = boroughs[boroughs["std"] == boroughs["std"].max()]
largest_std_dev = largest_std_dev.rename(columns={"count": "num_schools", "mean":
"average_SAT", "std": "std_SAT"})
print(largest_std_dev)
```

```
                                   school_name    average_math
88                        Stuyvesant High School             754
170                   Bronx High School of Science           714
93              Staten Island Technical High School        711
365   Queens High School for the Sciences at York Co...    701
68    High School for Mathematics, Science, and Engi...    683
280                 Brooklyn Technical High School         682
333                    Townsend Harris High School         680
174   High School of American Studies at Lehman College   669
0     New Explorations into Science, Technology and ...    657
45                    Eleanor Roosevelt High School        641
                                   school_name    total_SAT
88                        Stuyvesant High School            2144
170                   Bronx High School of Science          2041
93              Staten Island Technical High School       2041
174   High School of American Studies at Lehman College  2013
333                    Townsend Harris High School        1981
365   Queens High School for the Sciences at York Co...   1947
```

```
5                          Bard High School Early College        1914
280                      Brooklyn Technical High School          1896
45                        Eleanor Roosevelt High School          1889
68    High School for Mathematics, Science, and Engi...          1889
              num_schools   average_SAT   std_SAT
borough
Manhattan              89       1340.13    230.29
```