PROJECT: EXPLORING NYC PUBLIC SCHOOL TEST RESULT SCORES

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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()

# Start coding here...

# Which schools are best for math?
best_math_schools = schools[schools["average_math"] >= 640][["school_name",
"average_math"]].sort_values("average_math", ascending=False)

# Calculate total_SAT per school
schools["total_SAT"] = schools["average_math"] + schools["average_reading"] +
schools["average_writing"]

# Who are the top 10 performing schools?
top_10_schools = schools.sort_values("total_SAT", ascending=False)[["school_name",
"total_SAT"]].head(10)

# Which NYC borough has the highest standard deviation for total_SAT?
boroughs = schools.groupby("borough")["total_SAT"].agg(["count", "mean",
"std"]).round(2)

# Filter for max std and make borough a column
largest_std_dev = boroughs[boroughs["std"] == boroughs["std"].max()]

# Rename the columns for clarity
largest_std_dev = largest_std_dev.rename(columns={"count": "num_schools", "mean":
"average_SAT", "std": "std_SAT"})

# Optional: Move borough from index to column
largest_std_dev.reset_index(inplace= True)
print(schools)
```

```
                                       school_name  ...  total_SAT
0      New Explorations into Science, Technology and ...  ...       1859
1                              Essex Street Academy  ...       1193
2                       Lower Manhattan Arts Academy  ...       1261
3        High School for Dual Language and Asian Studies  ...       1529
4          Henry Street School for International Studies  ...       1197
..                                              ...  ...        ...
370  Queens High School for Information, Research, ...  ...       1086
371  Rockaway Park High School for Environmental Su...  ...       1114
```

```
372              Channel View School for Research  ...      1280
373           Rockaway Collegiate High School  ...      1207
374                         Scholars' Academy  ...      1716

[375 rows x 8 columns]
```