**Analyzing NYC Public School Test Result Scores**

**Introduction**

Standardized testing, particularly the SATs, plays a significant role in the American education system, serving as a crucial factor for college admissions. With each of its three sections—reading, math, and writing—carrying a maximum score of 800 points, the SATs are pivotal in assessing students' literacy, numeracy, and writing skills. Analyzing the performance of schools on these tests is vital for various stakeholders, including policymakers, educators, researchers, governmental bodies, and parents, as it provides insights into the quality of education and helps in decision-making regarding students' academic paths.

**Dataset Overview**

For this project, we utilize a dataset named schools.csv, which contains valuable insights into New York City (NYC) public school SAT performance. The dataset serves as the foundation for our analysis, containing essential metrics related to SAT scores and other relevant factors. By exploring this dataset, our objective is to uncover patterns, trends, and performance metrics of NYC public schools in SAT examinations.

**Key Questions**

Our analysis focuses on addressing three central questions concerning NYC public school SAT performance:

* Which NYC schools have the best math results?
* What are the top 10 performing schools based on the combined SAT scores?
* Which single borough has the largest standard deviation in the combined SAT score?

Through a rigorous examination and data-driven insights, we aim to provide valuable information and insights for stakeholders interested in understanding and enhancing the quality of education in NYC public schools.

**Methodology**

The analysis involves preprocessing the dataset, performing calculations, and generating visualizations to answer the key questions. We employ pandas for data manipulation and tabulate for displaying results in a structured format.

**Analysis and Results**

* **Question 1: Best Math Results**

We identify schools with the best math results by setting a threshold of at least 80% of the maximum possible score for math. Stuyvesant High School leads the list with an average math score of 754, followed closely by other top-performing schools.

* **Question 2: Top 10 Performing Schools**

We determine the top 10 performing schools based on combined SAT scores, with Stuyvesant High School topping the list with a combined SAT score of 2144, followed by Bronx High School of Science and Staten Island Technical High School.

* **Question 3: Largest Standard Deviation**

Manhattan emerges as the borough with the largest standard deviation in combined SAT scores, indicating significant variability in SAT performance across its schools.

**Conclusion**

The analysis provides valuable insights into NYC public school SAT performance, highlighting top-performing schools, and identifying areas of variability across boroughs. These findings can inform decision-making processes aimed at improving educational outcomes and enhancing the quality of education in NYC public schools.