**Project Proposal: Enhancing Park Safety Through Data-Driven Analysis in NYC Parks**

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**Project Topic:**

Our project aims to explore and analyze the intricate patterns of crime within the parks of New York City. Utilizing the extensive NYC Park Crime dataset from 2015 to 2023, our team will harness Python for in-depth data manipulation and analysis, and Tableau for sophisticated data visualization and trend identification. Our goal is to uncover critical insights into crime trends, the relationship between park size and crime incidents, and assess the impact of implemented safety measures. The insights derived from our project will contribute to strategic planning for enhanced park safety and community well-being.

**Project Objectives & SMART Questions:**

We will focus on the following SMART questions to guide our analysis:

**Crime Rate Evaluation:**

Determine the park with the highest overall crime rate in NYC for the year 2023.

**Borough-based Crime Trends:**

Analyze the trend of total crimes reported from 2015 to 2023 across different boroughs.

**Park Size-Crime Correlation:**

Investigate the correlation between park size and the total number of crimes in 2023.

**Crime Category Proportions:**

Evaluate the proportion of rapes within the total park crimes for Q4 2023 and compare it with the previous year.

**Benchmarking Park Safety:**

Identify the park with the lowest crime rates from 2015 to 2023 as a potential model for safety improvements.

**Data Source:**

We will utilize the NYC Park Crime dataset, which includes comprehensive records of various incidents within NYC parks, such as murder, rape, robbery, felony assault, burglary, grand larceny, and grand larceny of motor vehicles. The dataset is curated with detailed attributes like park names, boroughs, sizes, and total incident counts.

**Datasets:**

NYC Park Crime Data: 2015-2023

**Methodology:**

**Using Python:**

**Data Preparation:** Cleanse and preprocess data to address inconsistencies and prepare for analysis.

**Analytical Processing:** Employ pandas and numpy for data grouping, aggregation, and statistical analysis to discern patterns and trends.

**Exploratory Visualization:** Create preliminary plots with libraries such as matplotlib or seaborn to investigate data distribution and anomalies.

**Automation:** Develop reusable functions to streamline the calculation of metrics and facilitate periodic report generation.

**Using Tableau:**

**Data Integration:** Seamlessly import the cleaned data for visualization.

**Dashboard Creation:** Construct interactive dashboards tailored to each of our SMART questions.

**Interactivity and Exploration:** Enable dynamic filtering and in-depth data exploration through user interactions.

**Trend Discovery:** Apply Tableau’s analytical tools to perform trend analysis and forecast future patterns.

**Insight Dissemination:** Share the insights by publishing dashboards for stakeholders and utilizing Tableau's storytelling capability.

**Conclusion:**

This project will leverage the robust data processing capabilities of Python to prepare a structured dataset, which will then be visualized in Tableau to uncover actionable insights. By addressing the outlined SMART questions, we intend to deliver a comprehensive analysis that will be instrumental in guiding safety improvements in NYC parks.