Project 1 Proposal, Group 9

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Weather Impact of Uber Pickups in NYC

This project will investigate how weather factors, including temperature, visibility, and precipitation, influence the demand for taxi services. We will also address the temporal aspects, examining how Uber pickups fluctuate over time, hourly, daily, or monthly. Additionally, our geospatial analysis will shed light on the distribution of Uber pickups across various city boroughs.

Project Objectives

Weather Impact on Uber Rides Pickups:

- This analysis will examine how weather conditions (e.g., temperature, visibility, precipitation) relate to the number of taxi pickups.

Temporal Analysis of Uber Rides Pickups:

- This analysis could focus on how the number of taxi pickups varies over time (e.g., hours, days, or months).

Geospatial Analysis of Uber Rides Pickups by Borough:

- This analysis could investigate the distribution of taxi pickups across different city boroughs.

Audience

City planners, car service companies, transportation regulators, consumers and riders, and authorities.

Data

Data set Manhattan Uber pick-ups and Weather
https://www.kaggle.com/datasets/yannisp/uber-pickups-enriched/

Questions for the Analysis

1. How would you estimate the impact the weather has on Uber pickups?
    1. Do certain weather conditions lead to an increase or decrease in pickups?
    2. Are there any correlations between weather variables and pickups?
2. Which borough has the highest and lowest pickup rates?
3. How do pickup patterns change throughout the day?
4. Are there any significant differences in pickups on holidays compared to regular days?

Methodology

1. **Data Cleaning:** Preprocess the dataset by handling missing values, outliers, and formatting issues.

2. **Exploratory Data Analysis (EDA):** Conduct EDA to visualize data distributions, correlations, and patterns. To identify trends, generate summary statistics and visualizations.

3. **Temporal Analysis:** Analyze temporal patterns by aggregating daily, weekly, and monthly data. Identify peak hours, days, and seasons for Uber demand.

4. **Reporting and Visualization:** Present findings through comprehensive reports, visualizations, and interactive dashboards to facilitate easy interpretation and decision-making.

Expected Outcomes

This data analysis project aims to provide the following outcomes:

- Insights into Uber pickup patterns in NYC boroughs.
- Identification of factors influencing Uber demand, including weather and holidays.

- Recommendations for Uber, City planners, car service companies, transportation regulators, consumers and riders, and authorities.