Uber Fares Dataset Analysis Report

1. Introduction

This project analyzes Uber fare data to understand patterns in ride pricing, time of day, and demand. The insights are presented in an interactive Power BI dashboard to support business decisions.

2. Methodology

- Step 1: Data Cleaning in Python
  - Removed missing values
  - Converted 'pickup_datetime' into datetime format

- Step 2: Feature Engineering
  - Created new columns: hour, weekday, month, year, peak_hour
  - Filtered out negative or zero fares and passenger counts

- Step 3: Data Visualization in Power BI
  - Imported cleaned dataset (uber_cleaned.csv)
  - Created interactive visuals with filters

3. Analysis & Visualizations

1. Fare Amount Distribution:
   - Most fares ranged from $5-$20
   - Outliers exist above $50

2. Fare by Hour of Day:
   - Average fare spikes during morning (7-9 AM) and evening (5-7 PM) rush hours

Uber Fares Dataset Analysis Report

3. Rides by Weekday:

- Higher ride volume on Fridays and Saturdays

- Fewer rides early in the week (Monday-Tuesday)

4. Peak vs Off-Peak Hours:

- Peak rides had higher average fares

- Off-peak rides dominated overall volume

5. Monthly Ride Trends:

- Monthly variation could show seasonal patterns

6. Geographic Clustering (if data is present):

- High ride density in metro areas

4. Key Findings

- Commute hours (morning/evening) have high fares and demand

- Weekends, especially Friday evenings and Saturdays, are busiest

- Fare amounts vary significantly based on time of day

5. Recommendations

- Offer discounts during off-peak hours to balance demand

- Optimize driver availability during high-demand windows

- Use surge pricing on Friday/Saturday evenings

- Focus marketing on weekday mornings and weekend evenings

6. Conclusion

This analysis uncovered Uber's operational patterns using real-world data. Python enabled preprocessing and feature engineering, while Power BI delivered compelling visual insights. The dashboard informs data-driven strategies to enhance Uber's service delivery and efficiency.