**One of business problems: EDA and figure out underlying trip patterns in 2021**

To solve this business problem, we need to answer Business Question.

**Business Question:**

1. **What is the time there a lot of trips (months, quarterly, summer, winter , days, etc.)**
2. **The employees who completed the highest number of trips and those who generated the highest revenue** )What suggestions can I implement to reward him?(
3. **The most requested and least requested locations** (PULocation Id)
4. **The most common drop-off locations** (DOLocation Id)
5. **Average Trip miles**
6. **Average Trip time**
7. **Draw histogram for base passenger fare based on average trip miles**
8. **Who are the passengers who agreed to a shared ride? And why ?** (shared\_request\_flag =Y)

**Price is expensive or what ?**

1. **Did the passenger share the ride with another passenger?**

**) there is relation between Q8 and Q9,**

**Q8 is Question (Did the passenger initially agree to a shared ride?) and**

**Q9 is answer)** **Did another passenger share the ride with them or not?(**

**Create Dashboard**

After asking previous questions and solving it , we solve second business problem and some Suggestions for Business Improvement :-

**Try exploring Uber's user portrait in NYC (which orders are urgent and what kind of users should be given higher priorities?)**

1. Increase Driver Availability in High-Demand Periods
   * Since Autumn and Q4 have the most trips, consider incentivizing drivers with surge pricing or bonuses during these peak seasons.
   * Encourage more drivers to operate on Fridays and Saturdays, as these are the busiest days.
2. Targeted Marketing Campaigns
   * Promote special discounts or ride offers in February and Winter months to increase ridership during low-demand periods.
   * Offer referral bonuses to attract new riders in these slower months.
3. Optimize Routes for High-Traffic Neighborhoods
   * Since Crown Heights North and East Village have the highest trip requests, strategically position drivers in these areas.
   * Similarly, ensure enough drivers are available at JFK Airport to handle high drop-off demand.
4. Driver Incentives & Recognition
   * Reward top-performing drivers (e.g., B02510 and B03404) with financial bonuses or other incentives to encourage continued excellence.
   * Implement a leaderboard or recognition program to motivate other drivers.
5. Reduce Idle Time & Improve Efficiency
   * If the average trip time is 24 minutes, analyze whether certain routes experience delays due to traffic or inefficiencies.
   * Provide drivers with real-time traffic updates and optimize navigation routes.
6. Expand in Underserved Areas
   * Identify locations with low ride availability and promote Uber services there like (Governor's Island/Ellis Island/Liberty Island, NV (Nevada), Rikers Island , Great Kills Park , Jamaica Bay and Newark Airport) .
   * Partner with businesses or local events to increase ride demand.
7. Enhance Customer Experience
   * Provide discounted ride packages for frequent customers.
   * Offer priority service for business users or premium passengers.

**Conclusion**

**After doing EDA of the underlying trip patterns, we discovered some notes.**

1) Autumn is the season with the most trips, while winter is the season with the fewest trips.

2) October is the month with the most trips, while February is the month with the fewest trips.

3) Friday and Saturday are the days with the most trips, possibly because they are weekend days.

4) Q4 is the quarter with the most trips, while Q1 is the quarter with the fewest trips.

5) The employees who completed the most trips and generated the highest financial revenue are: B02510 and B03404, it is suggested to reward them with a financial bonus as an incentive.

6) The two neighborhoods with the highest number of trip requests are Crown Heights North and East Village

7) The two neighborhoods with the highest number of trips drop off are Crown Heights North and JFK Airport

8) Average Trip time = 24 MIN