UBER SUPPLY DEMAND GAP

SUBMISSION

Name:

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ABSTRACT

The assignment is based on the Uber Supply Demand Gap from City-to-Airport and Airport-to-City.

This assignment involves in understanding the behaviour of Uber's request like 'Cancelled' and 'No Cars Available' from City to Airport and Airport to City using EDA and data visualization. This study helps in making the company's decision better, and to decide when and where to invest in maximized their profits. The main objective of the analysis is to find out the problematic issues that Uber is facing. The strategy behind to find out in which time slots the gap is huge and how to resolve those issues from City to Airport and Airport to City route.

For the analysis, masked data set is used which is similar to what data analysts at Uber handle.

Analysis was divided into three sub-analyses as follows:

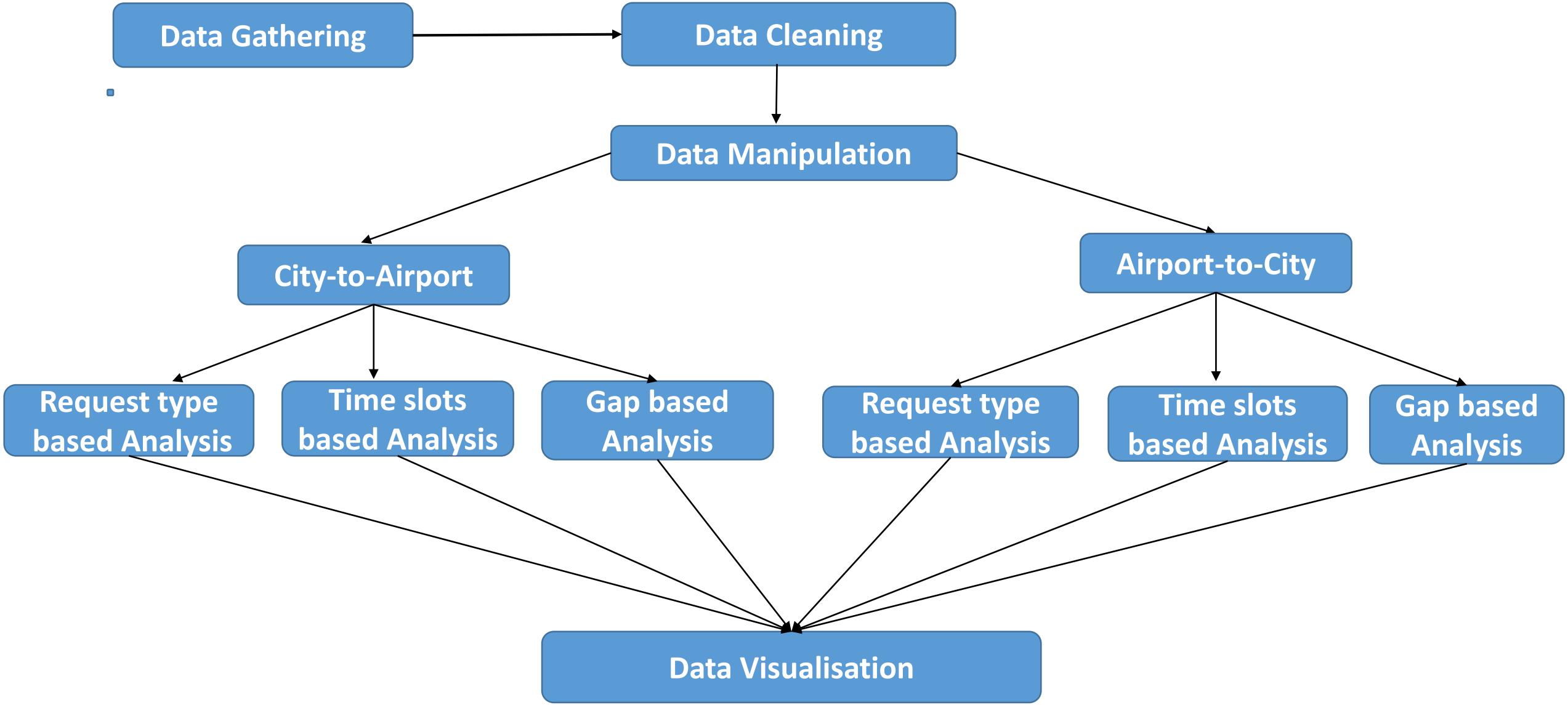
1. Frequency of requests that get cancelled or show 'no cars available'.

2. Identify the most problematic types of requests (city to airport/airport to city)

3. The gap between supply and demand in different time slots.

Representation of the analysis of the various tasks are done by using EDA and data visualization. The results illustrate the best possible inputs for the company to take cues resolving the issue.

Problem solving methodology



Analysis

To provide the best and profitable outcome, analysis is divided in further steps:

- **Data Gathering:** Masked data set is used which is similar to what data analysts at Uber handle
- **Data Cleaning:**

  a) We have considered a standard format of date timestamp for the column Request and Drop timestamp.
  b) Throughout the assignment we have used EDA concept in different columns like deriving new column, taking one column and find many insight from that.

- **Data Manipulation:**

1. **City-to-Airport:**

   a) Request type based analysis: We have analysed the data from city to airport and find the most problematic request.

   b) Time slots based analysis: We have analysed the data from city to airport and find the frequency of request in different time slots.

   c) Gap based analysis: We have analysed the data from city to airport and find the gap between supply and demand of cars in different time slots.

Analysis

2. Airport-to-City:

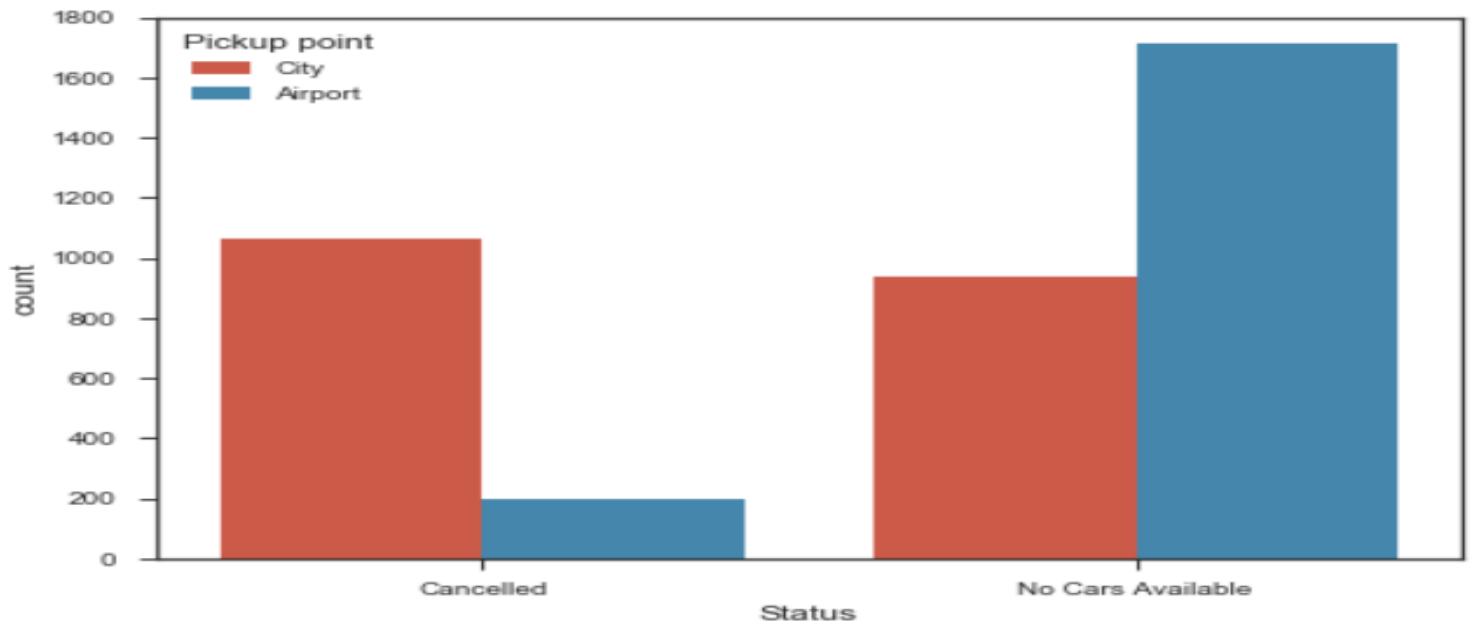
a) Request type based analysis: We have analysed the data from airport to city and find the most problematic request.

b) Time slots based analysis: We have analysed the data from airport to city and find the frequency of request in different time slots.

c) Gap based analysis: We have analysed the data from airport to city and find the gap between supply and demand of cars in different time slots.

- **Data Visualisation:** Throughout our assignment, we have analysed the data in the form of visualisation using matplotlib and seaborn libraries.

MOST PROBLEMATIC REQUEST

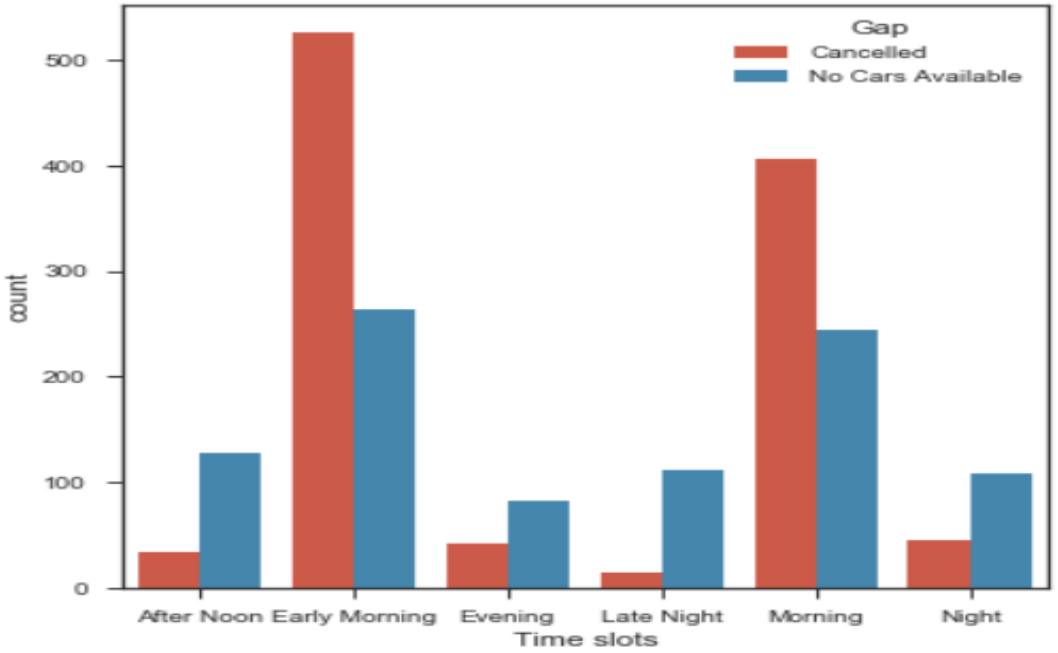


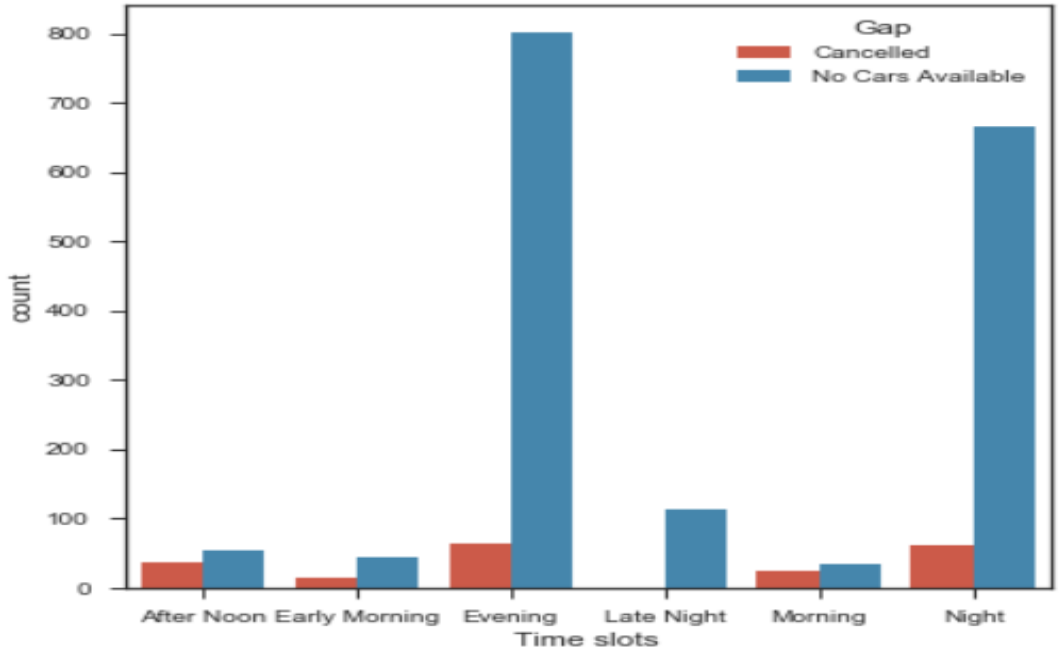
So, the above plot shows that Count of frequency of requests that get 'Cancelled' from City-to-Airport and Airport-to-City is 1066 and 198 respectively. So, we can say that cancellation is more from City to Airport.
The plot too shows the Count of frequency of requests that show 'No Cars Available' from City-to-Airport and Airport-to-City is 937 and 1713 respectively. So, we can say that availability of cars is less in Airport as compare to City.

So, total no of request that get 'Cancelled' or show 'No Cars Available' from City-to-Airport is 2003 as compared to 1911 from Airport-to-City.

So, the most **problematic request** is '**Cancelled**' or show **'No Cars Available**' from **City-to-Airport**.

HIGHEST GAP BETWEEN SUPPLY & DEMAND



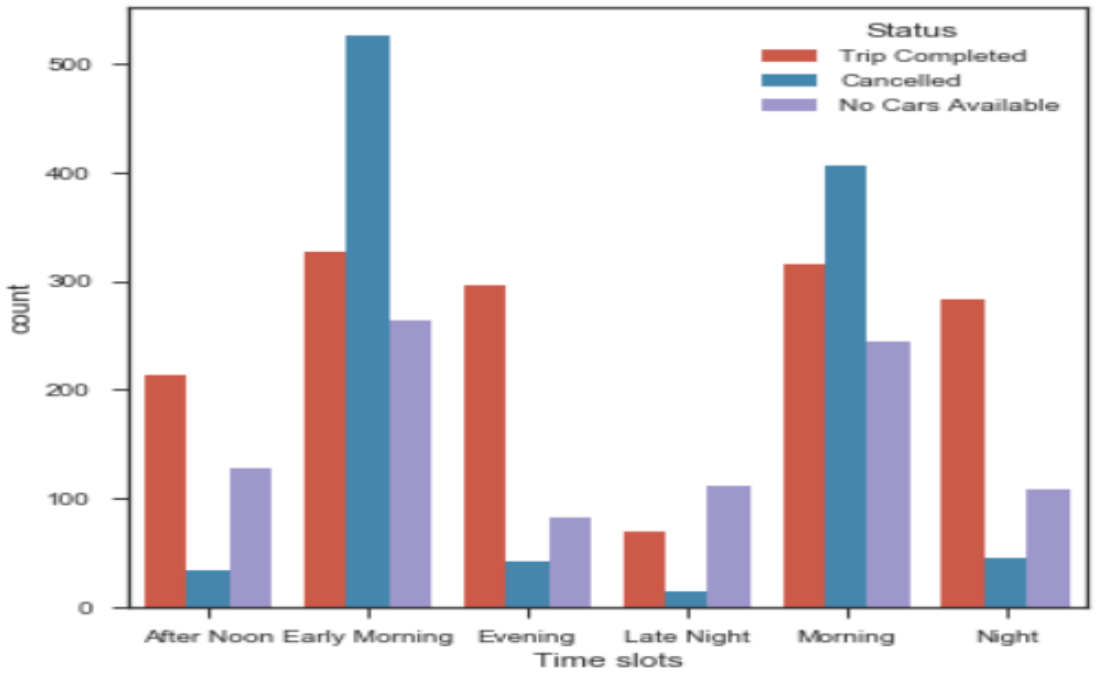


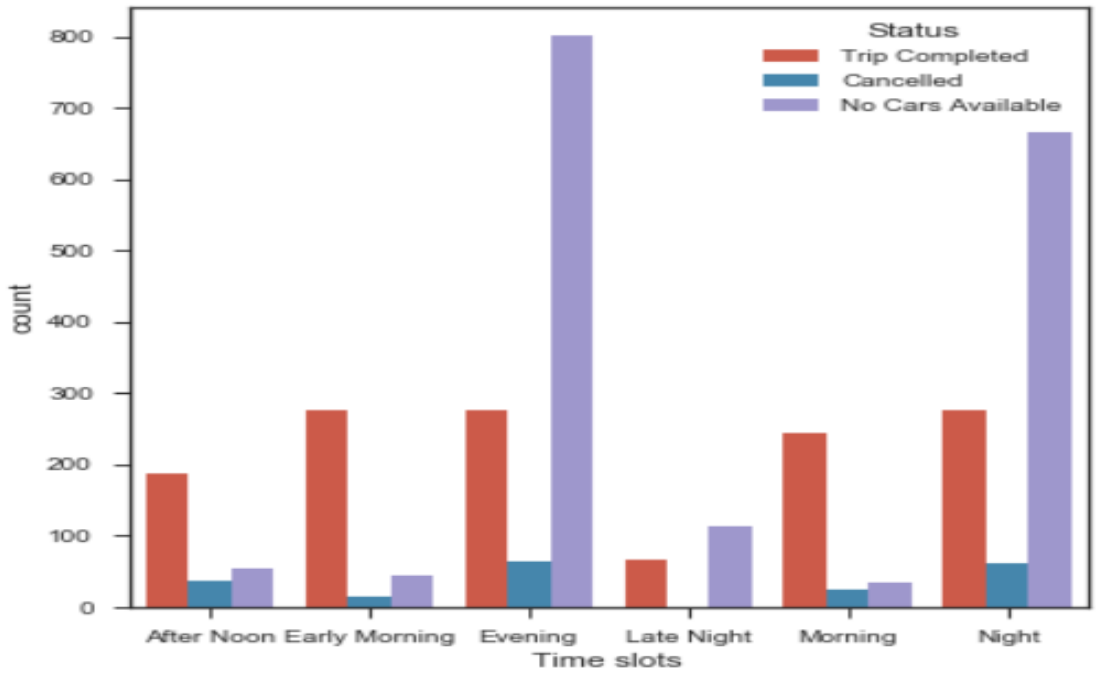
The first plot shows the Gap between **City-to-Airport** and second plot shows the Gap between **Airport-to-City**.

So, from the first plot we can say that the time slot where highest gap exist from City-to-Airport is '**Early Morning**'. The type of request from City-to-Airport for which the gap is the most severe in the 'Early Morning' time slot is '**Cancelled**'.

And from the second plot we can say that the time slot where highest gap exist from Airport-to-City is '**Evening**'. The type of request from Airport-to-City for which the gap is the most severe in the 'Evening' time slot is **'No Cars Available**'.

REASON FOR SUPPLY DEMAND GAP





The first and second plot represents the route from City-to-Airport and Airport-to-City respectively.

We can clearly see from the first plot is that the highest gap exist in Early Morning time slot from city to airport.
There may be various reason behind this:

1. Driver don't want to go as they might not get the return trip quickly.
2. Drivers are getting more trips in the city resulted into the more income as compare to trip to airport.
3. Less cars available due to the reason that the drivers may switch off their app and don't want to work in the early morning to get proper sleep or may be less supply of cabs.

REASON FOR SUPPLY DEMAND GAP

We can clearly see from the second plot in previous slide is that the highest gap exist in Evening time slot from airport to city.

There may be various reason behind this:

1. We could see that there is huge demand of cabs in the evening in city, this is the reason why drivers are cancelling their trip to airport. They can get more trips in short span of time resulted in more money.
2. Less no of cabs available to serve the need. We can see that 800 cabs are in demand but there is no cabs to serve.

RECOMMENDATIONS

After analyzing the whole situation that Uber is facing in Supply and Demand Gap, I would like to recommend the following suggestions to curb the current issue:

1. Increase the incentives of the drivers who are heading towards airport.
2. As we have seen that there is huge demand of cabs in the evening, so for meeting the requirement Uber should increase the number of cabs in the city.
3. Uber should provide the basic amenities in a reasonable price like foods, water, etc. to the driver who are not getting cabs after certain time in the airport.