

UBER CASE STUDY SUPPLY-DEMAND GAP

Subramanya Nayak


Data understanding

In the given UBER data file, we have 6 columns:

- **Request id:** A unique identifier of the request
- **Pickup point:** The point from which the request was made
- **Driver id:** The unique identification number of the driver
- **Status:** The final status of the trip, that can be either completed, cancelled by the driver or no cars available
- **Request timestamp:** The date and time at which the customer made the trip request
- **Drop timestamp:** The drop-off date and time, in case the trip was completed

Request id	Pickup point	Driver id	Status	Request timestamp	Drop timestamp
619	Airport	1.0	Trip Completed	11/7/2016 11:51	11/7/2016 13:00
867	Airport	1.0	Trip Completed	11/7/2016 17:57	11/7/2016 18:47
1807	City	1.0	Trip Completed	12/7/2016 9:17	12/7/2016 9:58
2532	Airport	1.0	Trip Completed	12/7/2016 21:08	12/7/2016 22:03
3112	City	1.0	Trip Completed	13-07-2016 08:33:16	13-07-2016 09:25:47

BUSINESS OBJECTIVES

- The aim of analysis is to identify the root cause of the problem (i.e. cancellation and non-availability of cars)
 - Recommend ways to improve the situation
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PRE-CONDITIONS

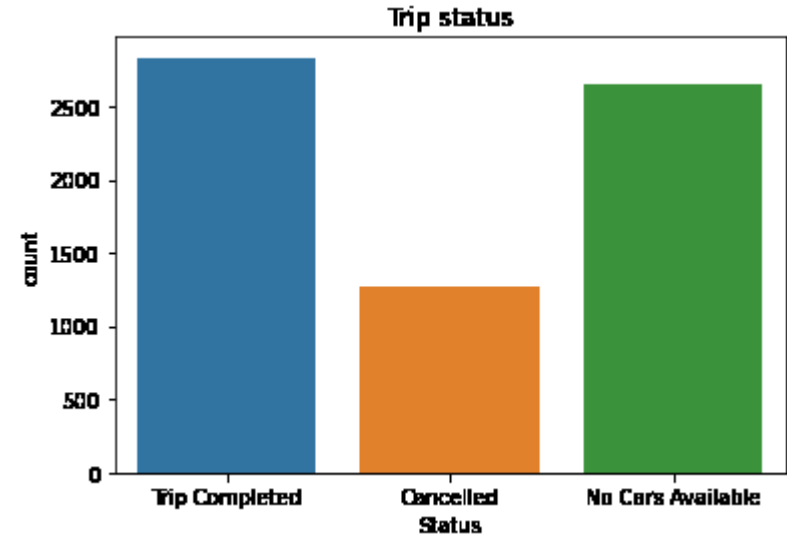
- Only trips from Airport - City and City – Airport are considered

Data Analysis – Trip Status

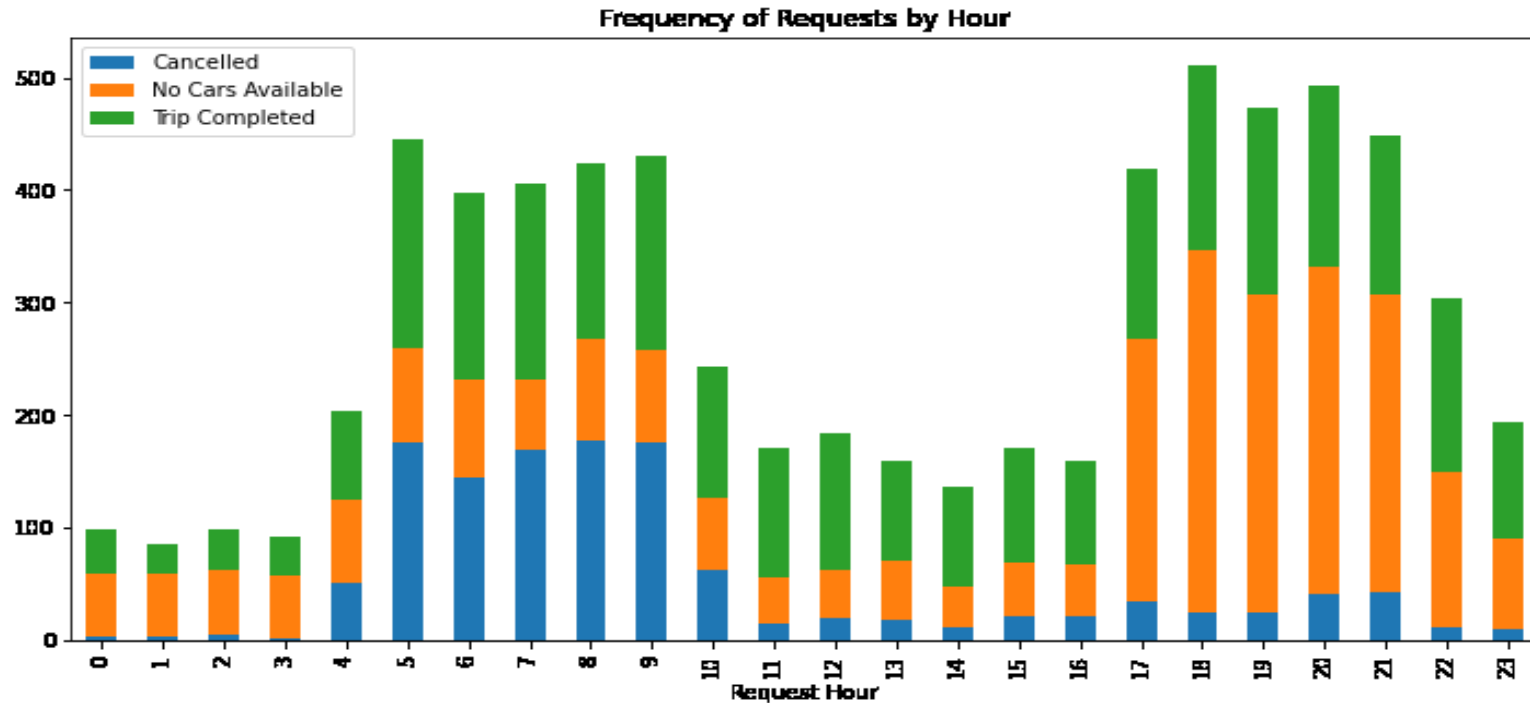
- From the graph we can observe:
 - There are total 6745 trip requests
 - In which total trips completed are 2831
 - Demand supply gap is 3914 trips

This shows only less than 50% of the total demand was met and there is gap of more than 50% of supply.

This is due to trip cancellation or no cars availability.



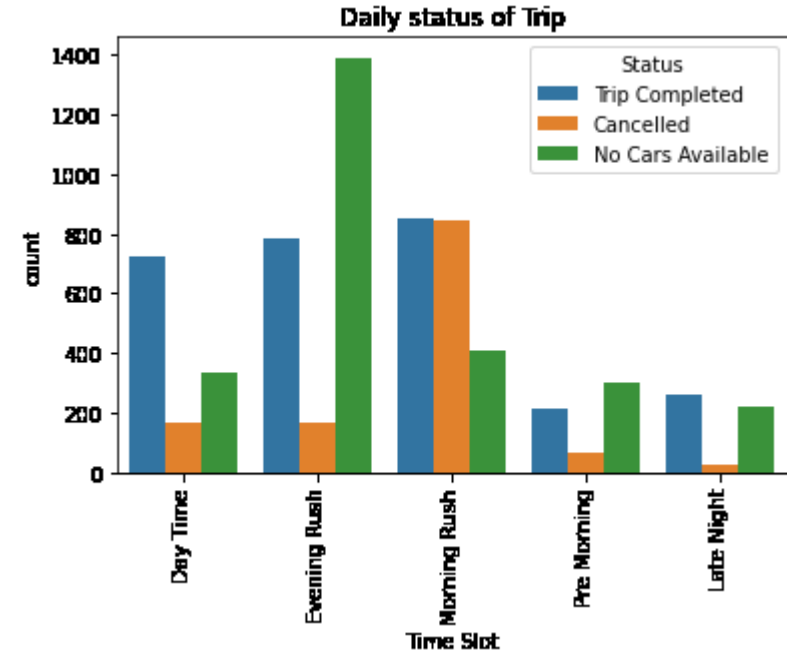
Frequency of Requests by hour



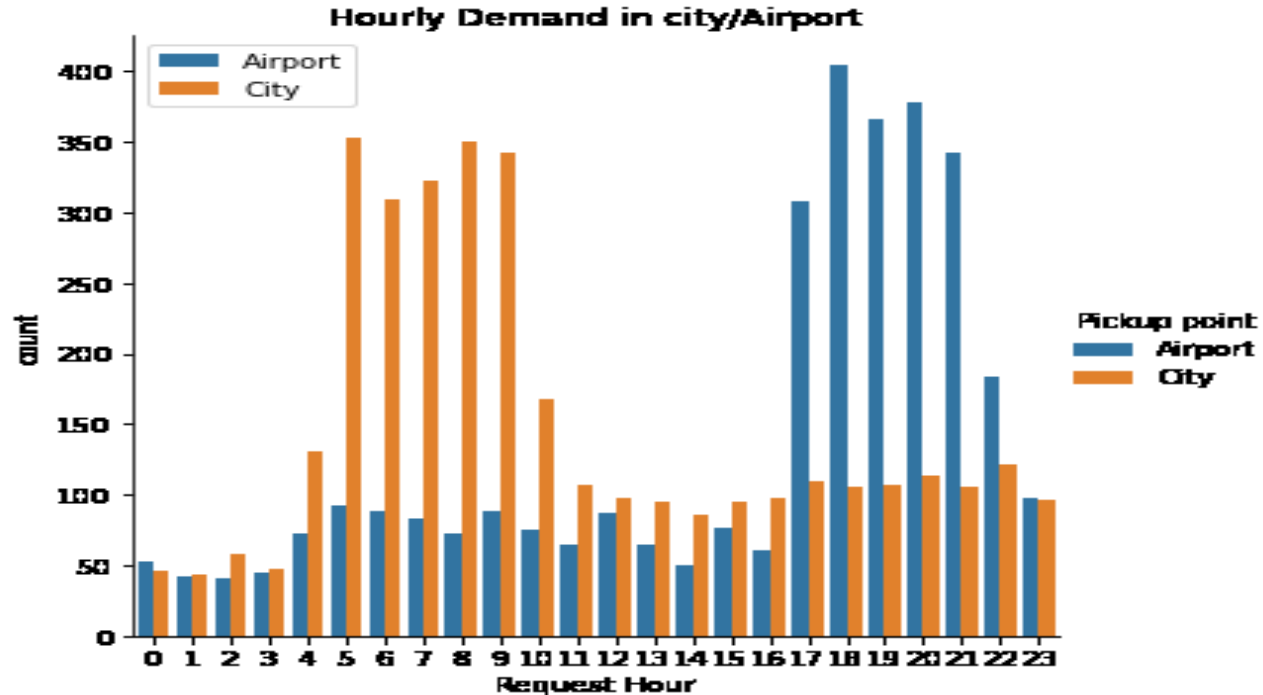
- From above graph, we can observe that peak-hours of demand is between morning **05:00-10:00** and in evening between **17:00-22:00**

Daily status of trips

- From the graph we can observe that in the **morning rush** and **evening rush** hour there are more demands in which morning rush time decent number of trips are completed but in the same time more number of trips **Cancelled**, in evening rush hour **availability of cars** is the main concern.



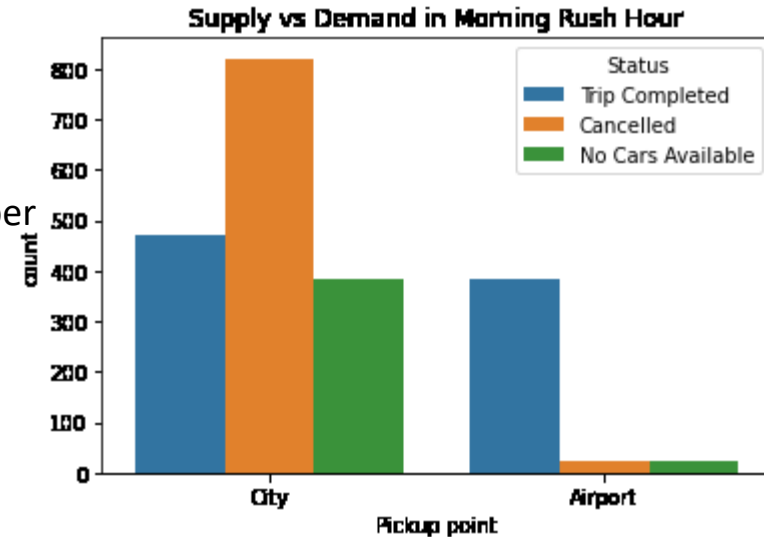
Hourly demand by location



- From above graph, we can observe that demand is high for the trips from **City - Airport** between **05:00-10:00** in the morning and high demand for the trips from **Airport - City** between **17:00-22:00** at night.

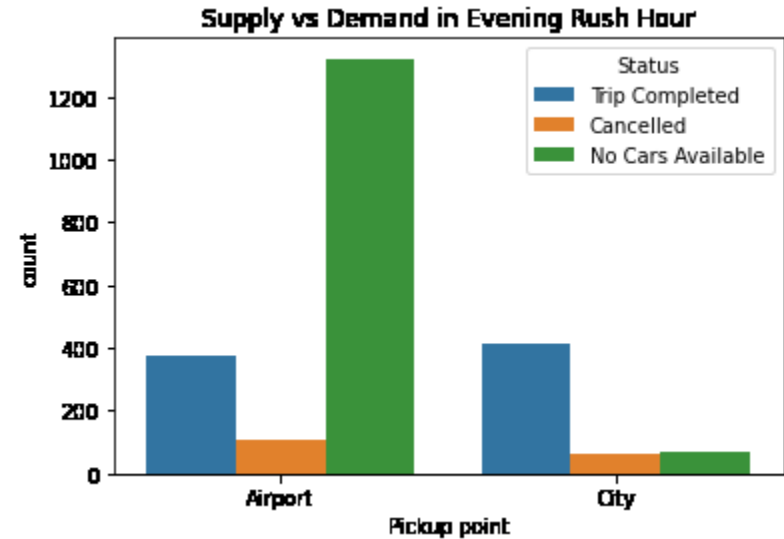
Supply vs Demand in Morning rush hour

- From the graph we can observe that in **City** there was **high demand** in the **morning rush hour** in which very less trips are completed as compare to total demand this is due to more number of trips **Cancelled** or **Cars were not available**.
- In **Airport**, there was **less demand** as compared to **City**, out of which more than 90% of the trips are **successful**.

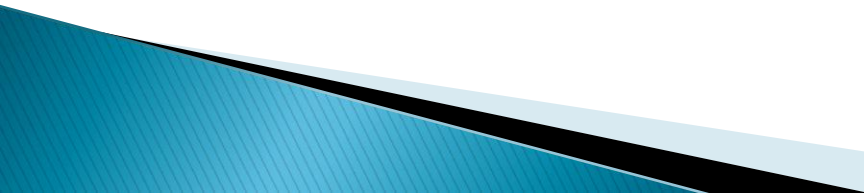


Supply vs Demand in Evening rush hour


- From the graph we can observe that in **Airport** there was **high demand** in the **evening rush hour** in which very less trips are completed as compare to total demand this is due to more number of trips **Cars were not available**.
- In **City**, there was **less demand** as compared to **Airport**, out of which more than 80% of the trips are **successful**.



Problem statement

- No cars available is the main issue for supply demand gap as we observed from “Trip Status” graph.
3914 of total request was not fulfilled due to non-availability of cars and cancellation of trips.
 - Sudden surge in demand between 5 to 10 am in the morning and 5 to 10 pm at night.
 - In morning from City to Airport trips
 - In evening from Airport to City trips
 - Cancellation of trip are higher between 5 to 10 am in City to Airport trip resulting in high gap between supply and demand.
 - Cabs non availability is the main issue between 5 to 10 pm in Airport to City trip resulting in high gap between supply and demand.
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Recommendations

- During rush hour hiring more cabs or part time drivers to overcome non-availability of cars.
 - For cancellation of trips from driver end, Uber can provide more incentives or profit margin to the drivers will help to overcome from this problem.
 - Increase demand in Airport through marketing initiatives so that drivers don't have to wait for longer time or running back to city without passengers.
 - The cab discovery range should be increased to higher radius for the airport location, so that search for the cabs would be on a wider range.
 - Uber can pay drivers to come without passengers from the Airport if they are not getting any pickups for longer time.
 - In peak hours Uber can increase price to increase its revenue while maintaining transparency.
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THANK YOU

