UBER CASE STUDY

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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.

STRUCTURE OF THE DATA SET

- There are six attributes associated with each request made by a customer:
  - Request id: A unique identifier of the request
  - Time of request: The date and time at which the customer made the trip request
  - Drop-off time: The drop-off date and time, in case the trip was completed
  - Pick-up point: The point from which the request was made
  - Driver id: The unique identification number of the driver
  - Status of the request: The final status of the trip, that can be either completed, cancelled by the driver or no cars available

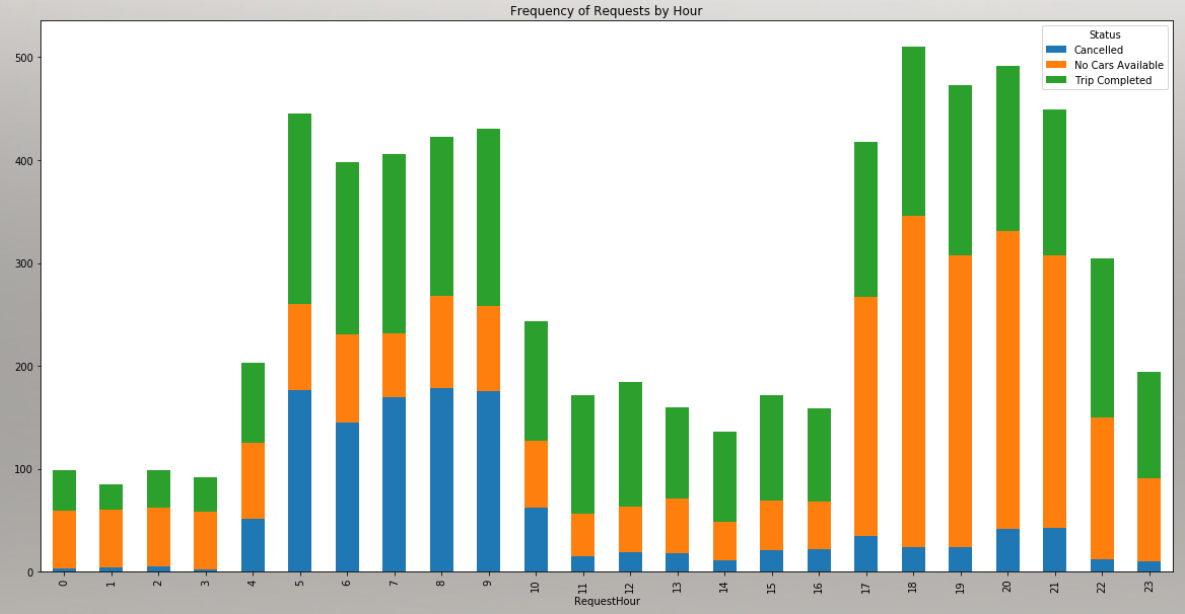
DATA CLEANING AND PREPARATION

- Import the date from the given data source
- Identify the data quality issues and clean the data so that you can use it for analysis.
- Correct the date format and fix the NA values
- Perform Univariate/Bivariate analysis in order to understand the data
- Extract derived measures such as Day, Month, Year, Hour
- Make charts / plots to understand the variations in data
- Revealing the root-cause and solution

PRE-CONDITIONS

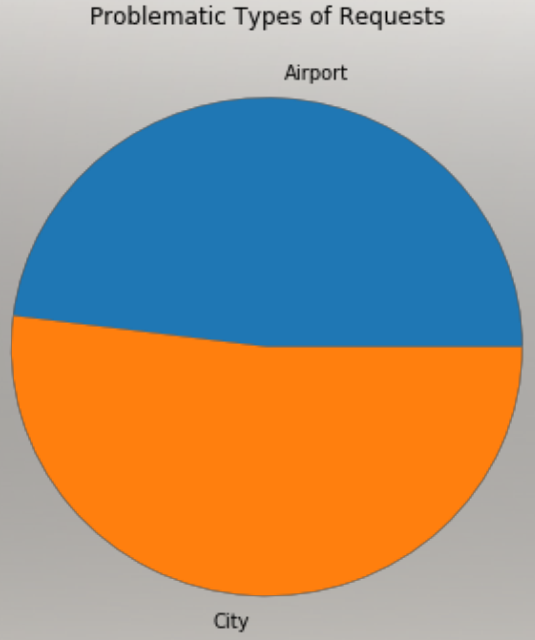
- Only trips from Airport - City and City - Airport are considered.

FREQUENCY OF REQUESTS THAT GET CANCELLED OR SHOW 'NO CARS AVAILABLE'



- The plot clearly shows the high demand for cabs from Airport to City and vice versa
- We also find that in the peak hours (5:00 AM – 9:00 AM) there are more Cancellations
- In the evening peak hours (5:00 PM – 9:00 PM) there are more 'No Cars Available'

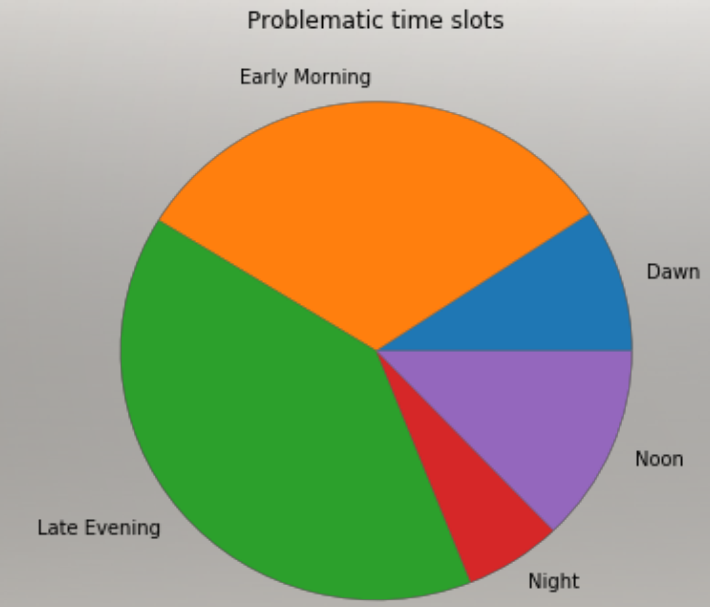
MOST PROBLEMATIC TYPES OF REQUESTS



	Airport	City
None	3238	3507

- Among the consolidated problematic type of requests, the City to Airport is the most problematic on average.

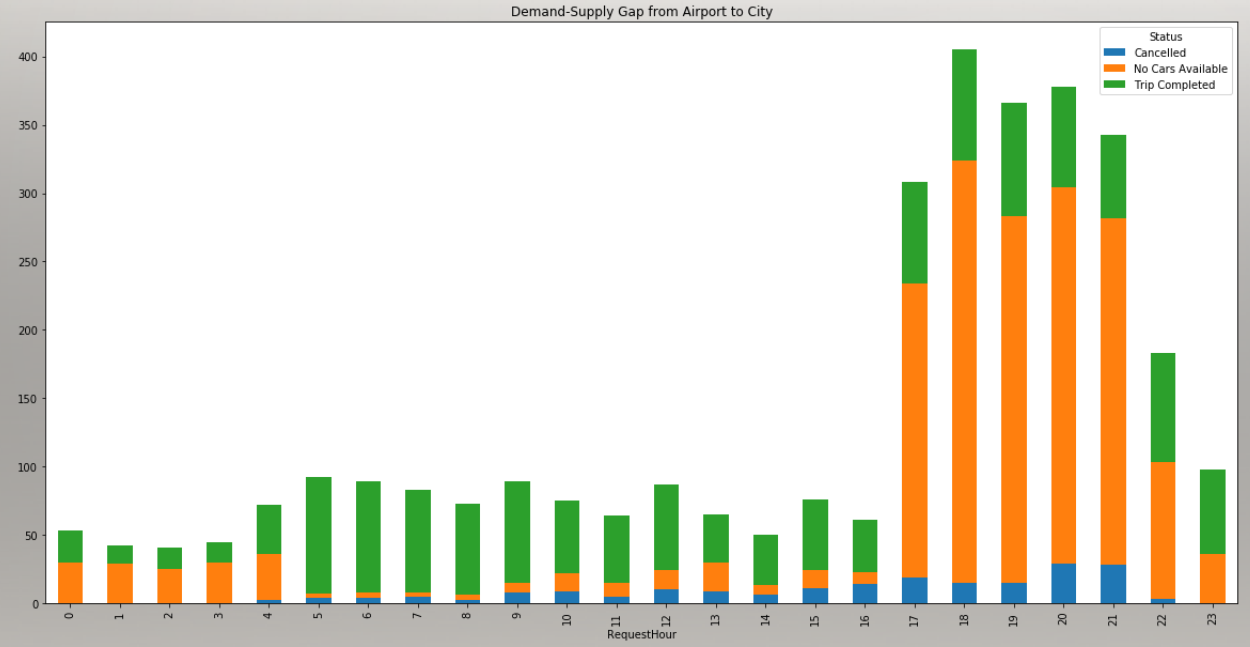
MOST PROBLEMATIC TIME SLOTS



	Dawn	Early Morning	Late Evening	Night	Noon
None	364	1249	1558	241	502

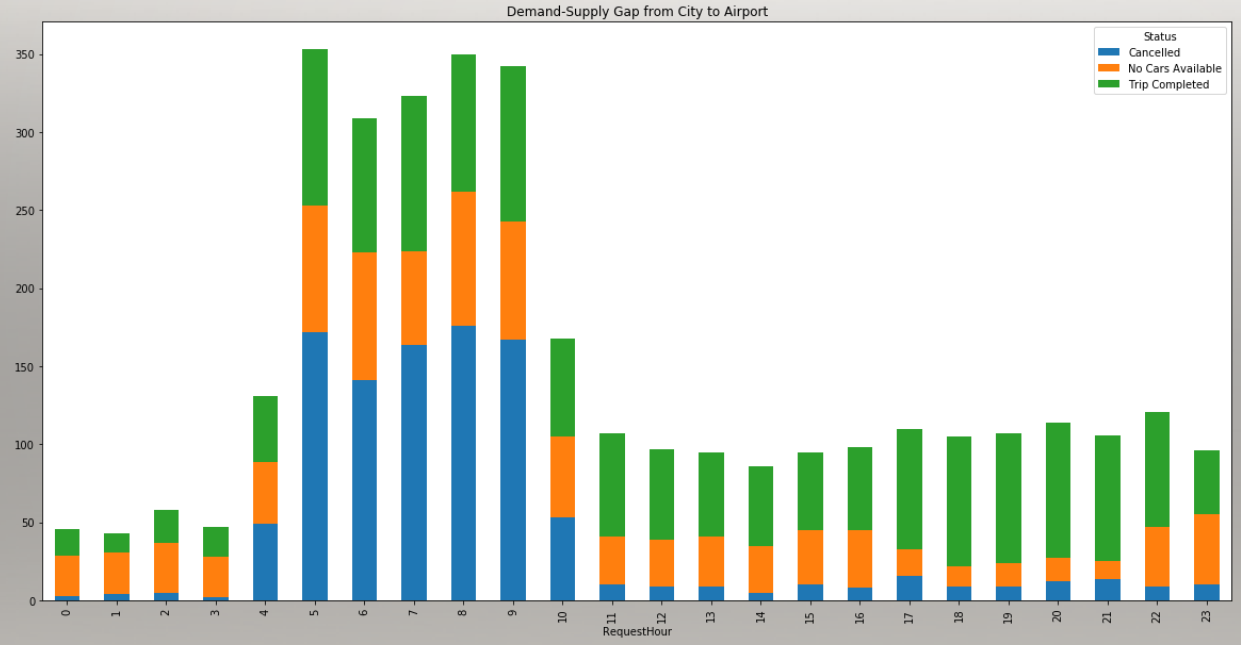
- The most problematic consolidated time slot is the Late Evening
- Thus the Late Evenings are not recommended for Airport-City or vice versa

DEMAND-SUPPLY GAP FROM AIRPORT TO CITY



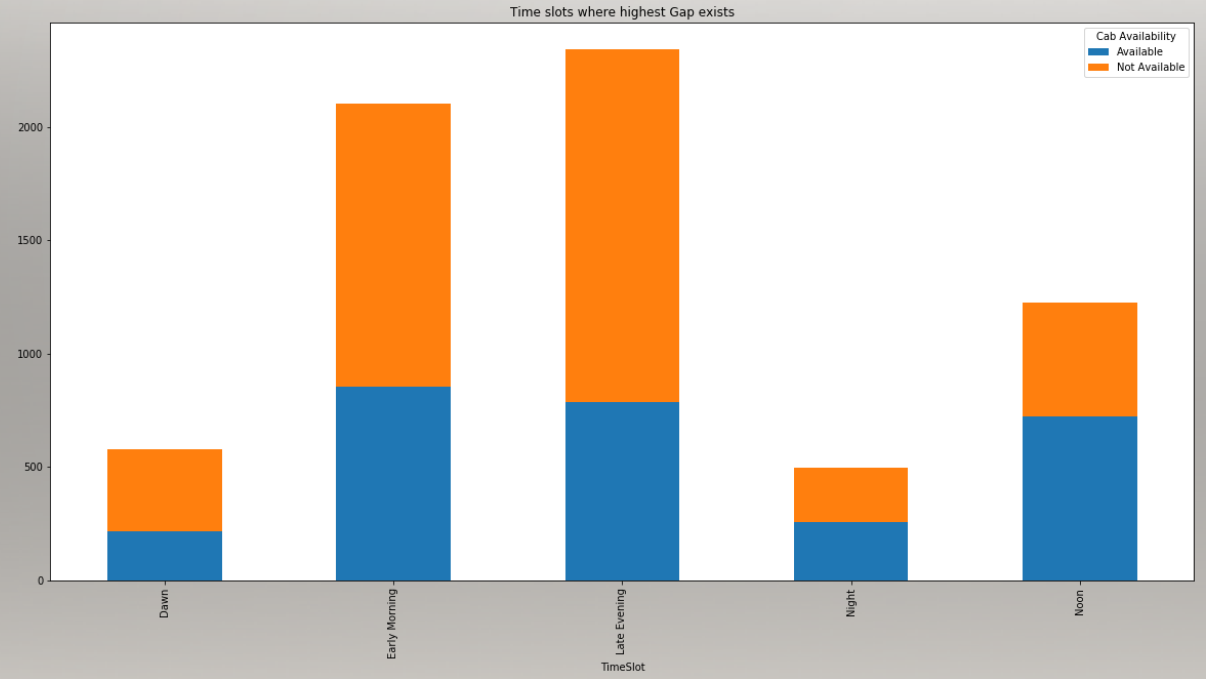
- From this plot we can deduce the Supply-Demand gap for Airport – City
- There is very high demand for cabs from Airport to City between 5:00 PM – 9:00 PM
- But the supply is very less due primarily due to 'No Cabs Available'

DEMAND-SUPPLY GAP FROM CITY TO AIRPORT



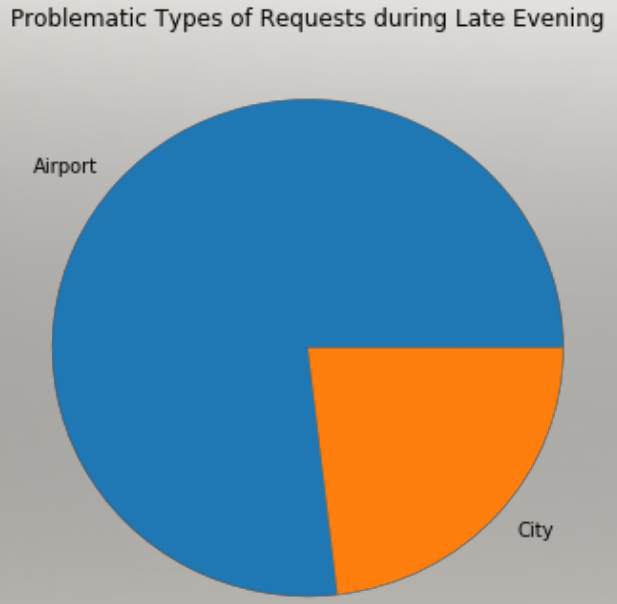
- From this plot we can deduce the Supply-Demand gap for City – Airport
- There is very high demand for cabs from City to Airport between 5:00 AM – 9:00 AM
- But the supply is very less primarily due to either Cancellation

TIME SLOTS WHERE HIGHEST GAP EXISTS



- Among the assumed time slots, we can observe that the Late Evening time slot has got the highest Gap
- This means that during late evening hours the probability of getting a cab is less

TYPES OF REQUESTS FOR WHICH THE GAP IS THE MOST SEVERE IN THE IDENTIFIED TIME SLOTS



	Airport	City
None	1800	542

- We can observe that in the Late Evening the trips from Airport to City is the most problematic
- This may be possible due to the fact that there were very few flights that took off in the previous few hours, and due to which very few cabs are near the Airport

REASON FOR SUPPLY-DEMAND GAP

- In the Supply-Demand graph from Airport to City, between 5:00 PM to 9:00 PM there is very high demand for cabs because the supply is very low due to 'No Cars Available'

- The 'No Cars Available' is due to the fact that in the previous hours fewer people travelled from City – Airport and so fewer Cars are available in near Airport. Also say if more flights have landed in that time, and the demand would spike.

- Likewise, in Supply-Demand graph from City – Airport, between 5:00 AM to 9:00 AM, there is very high demand for cabs because the supply is very low due to Cancellations.

- This is because there were fewer trips to Airport that completed in the previous hours, so now the cabs have to come from a long distance (City) to pickup the passenger and then they have to wait for the passenger's arrival, so the drivers cancel the trip.

RECOMMENDATIONS

- Awarding incentive for waiting time will encourage the drivers to wait at Airport
- Drivers could be compensated for taking the night shifts there by covering the 00:00 – 5:00 slot, so that the quantity of drivers would be more
- Seeing this analysis trends, few cabs could be placed in Airports proactively
- Drivers to be rewarded for the Airport rides making up for the loss in time
- The cab discovery range to be increased for Airport location, so that the search for cabs would be on a wider range

THANK YOU