



# UBER CASE STUDY

SUBMITTED BY

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# UBER- a transportation network company

- ▶ **Uber Technologies Inc.** is a peer-to-peer ridesharing, taxi cab, food delivery, and transportation network company .
- ▶ It has its headquarter in San Francisco, California, with operations in 633 cities worldwide.
- ▶ Fare prices for a uber ride vary based on projected time and distance, as well as the time of day and the supply and demand for rides at the time the ride is requested.

# BUSINESS OBJECTIVE

**Uber** is facing - driver cancellation and non-availability of cars leading to loss of potential revenue. So the objective is

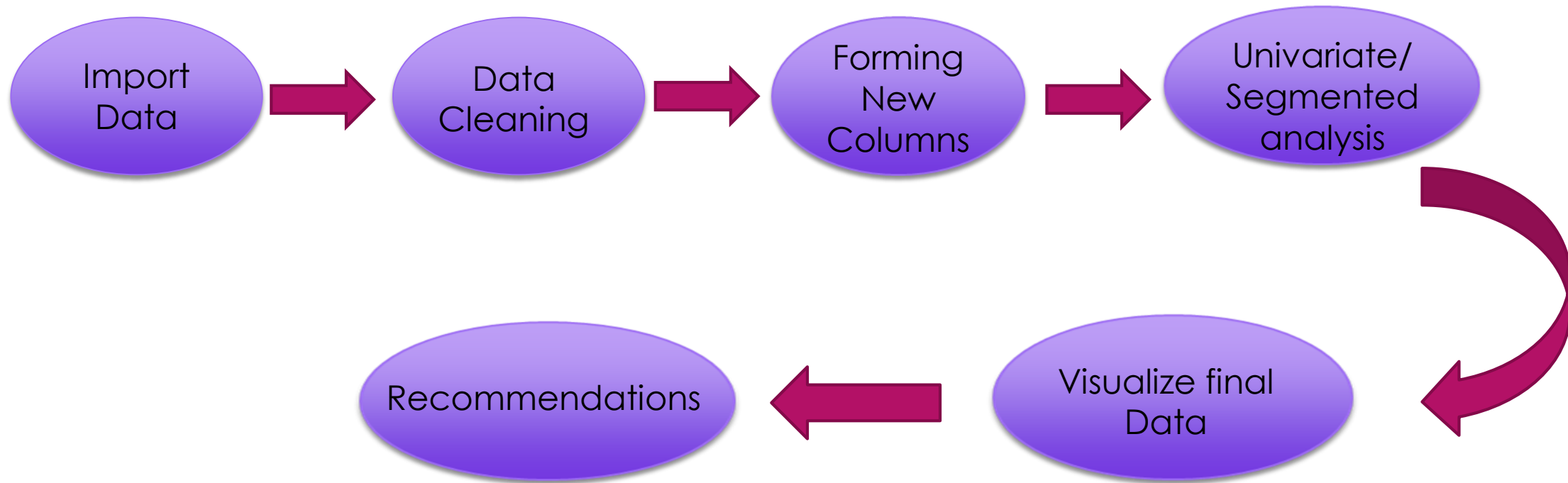
- ▶ To identify the root cause of the problem (i.e. cancellation and non-availability of cars) and recommend ways to improve the situation.
- ▶ To present to the client the root cause(s) and possible hypotheses of the problem(s) and recommend ways to improve them.

# DATA UNDERSTANDING

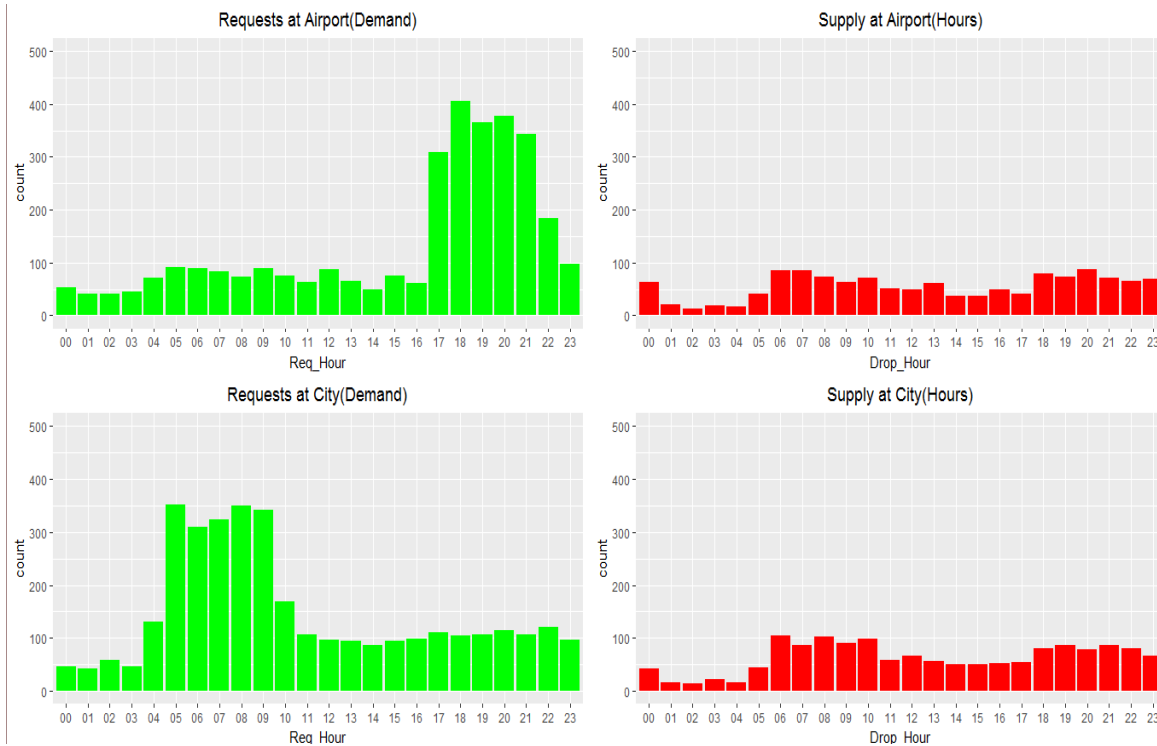
There are six attributes associated with each request made by a customer:

- ▶ **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

# METHODOLOGY



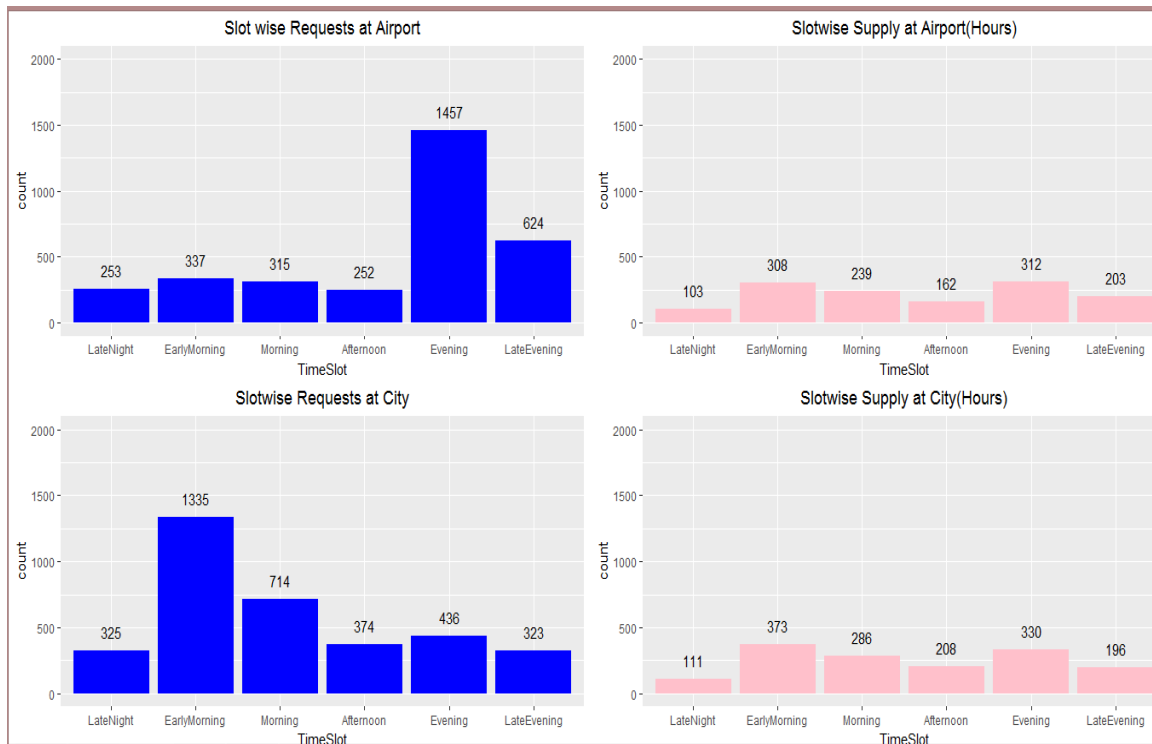
# Demand vs Supply (Hourly Basis)



Insights from the adjoining plot:

- There is high demand scenario (**Peak Time**) at Airport between **5:00 PM to 10:00 PM**.
- There is high demand scenario (**Peak Time**) at City between **4:00 AM to 10:00 AM**.

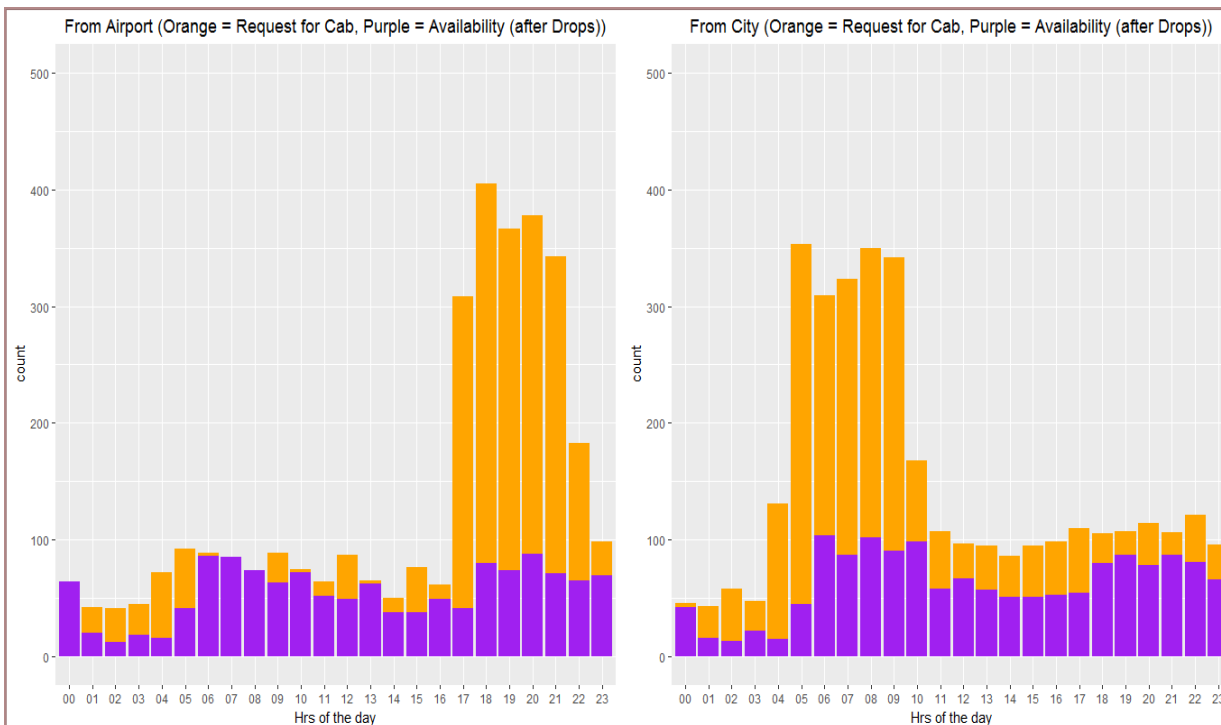
# Demand vs Supply (Slot wise)



Insights from the adjoining plot:

- ▶ There is high demand scenario (**Peak Time**) at Airport in the **Evening and Late Evening**.
- ▶ There is high demand scenario (**Peak Time**) at City in **Early Morning and Morning**.
- ▶ The supply scenario is high for both city and airport in **Early Morning and Evening**.

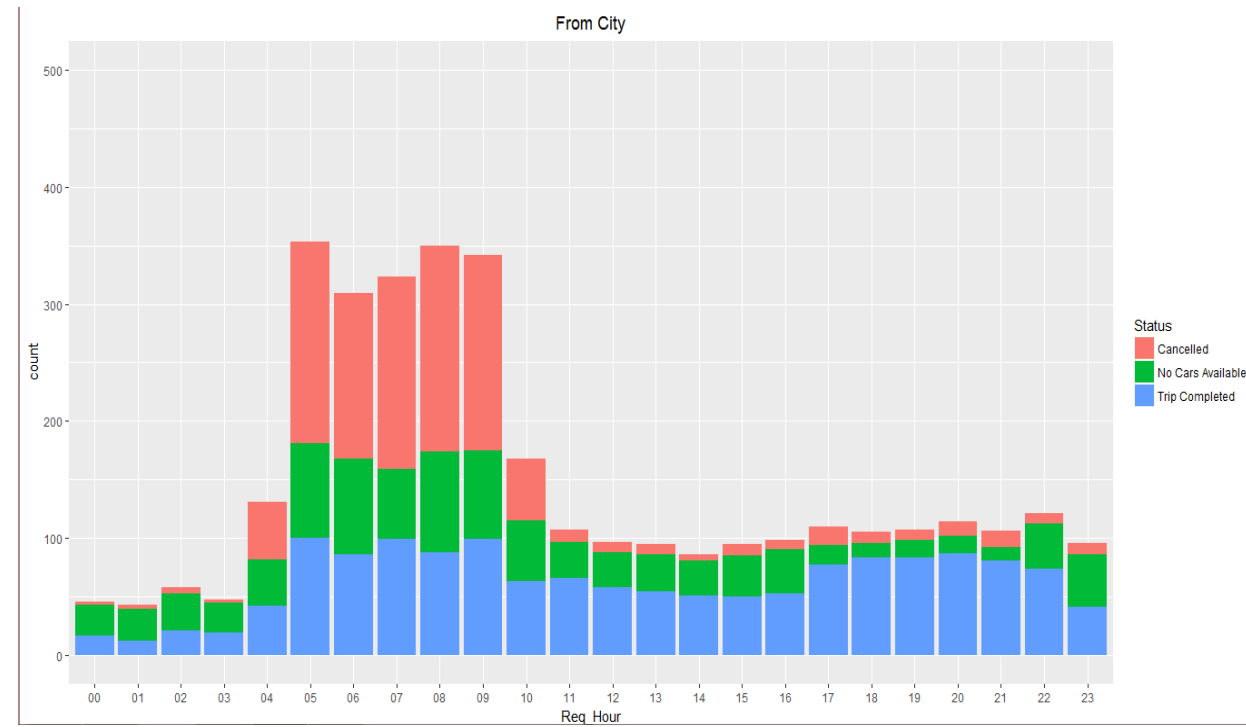
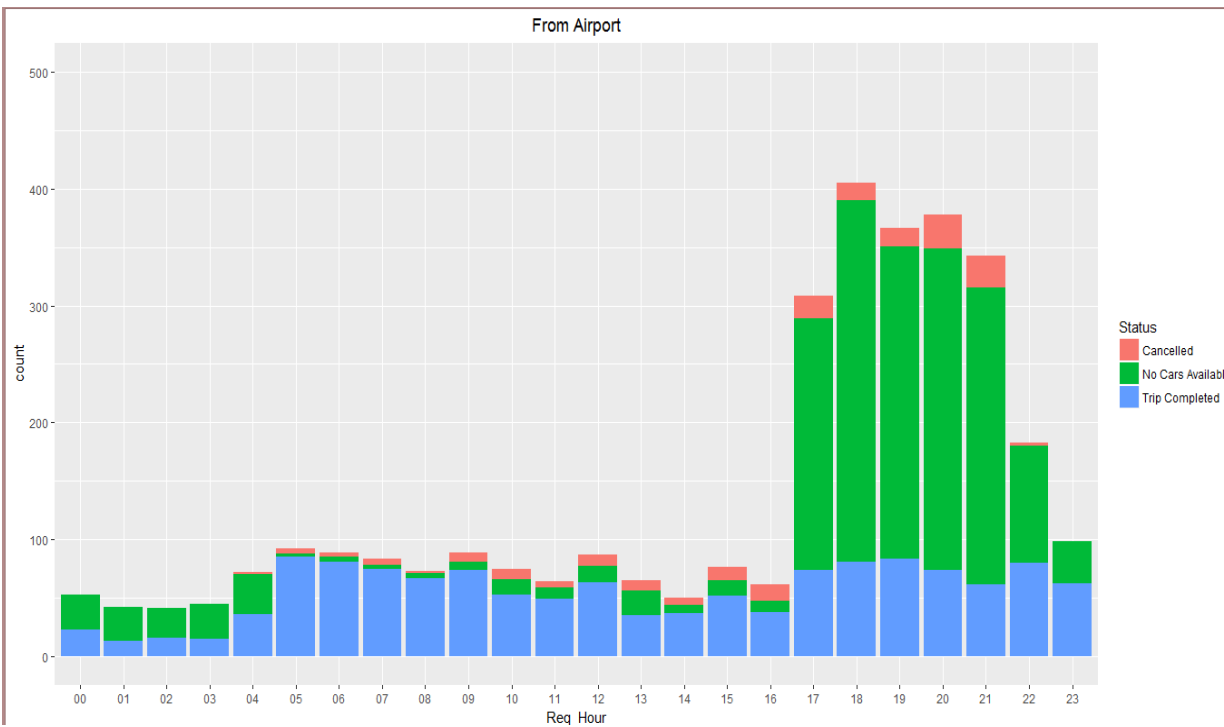
# Demand vs Supply (Dodged)



- ▶ This plot clearly shows huge demand deficiency between peak hours at Airport and City both.
- ▶ This high demand must have been responsible for No Cars Availability and Cancellations.



# Demand vs Supply (Status of Request)



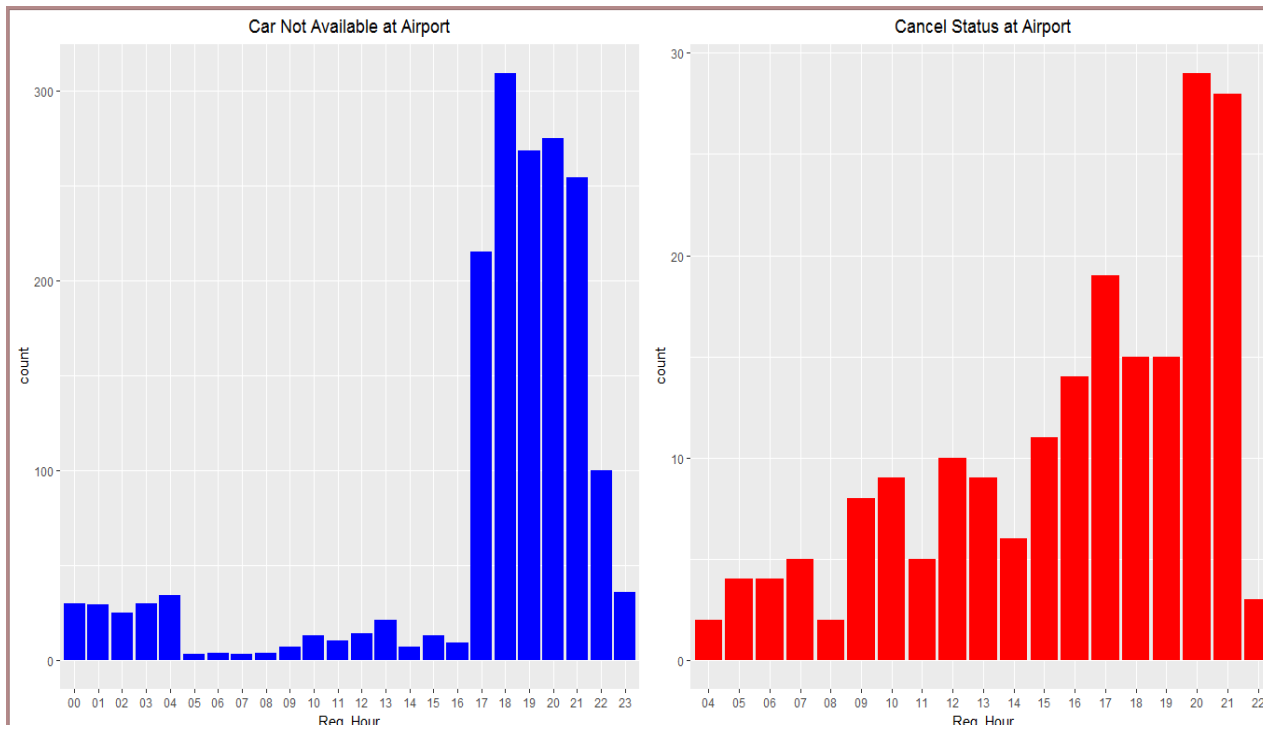
# Status of Request

- ▶ The previous plots clearly show that cancellation and no cars availability scenarios occur during the mentioned peak hours.

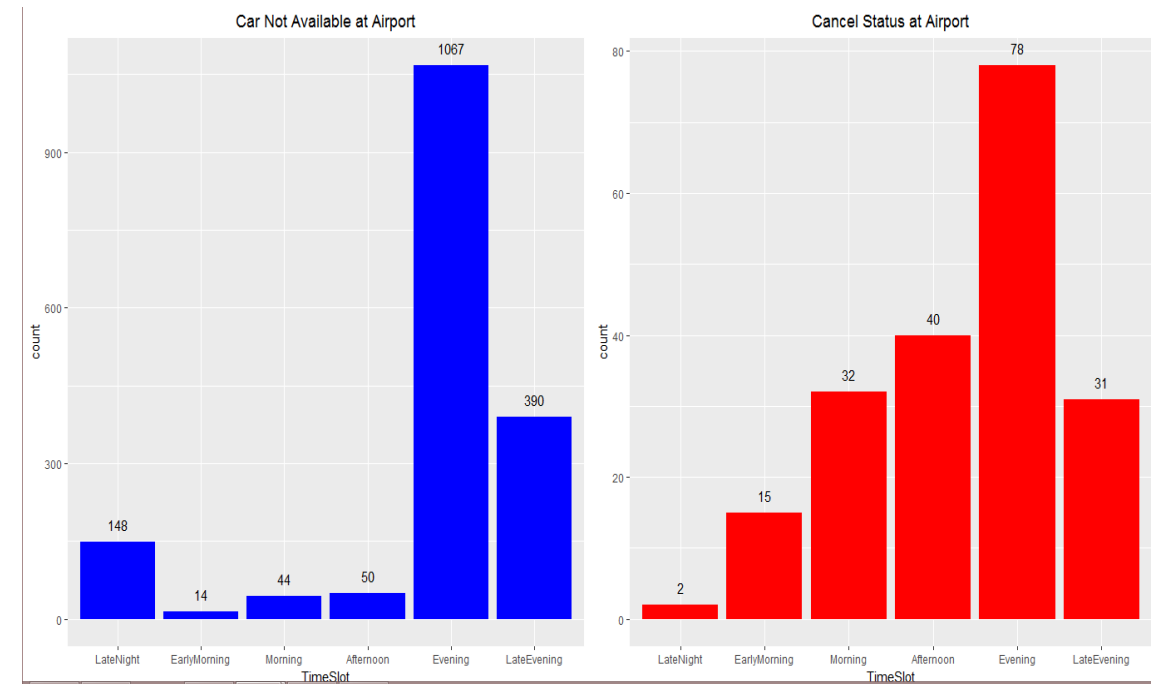
This suggests either of the following:

- ▶ Cab availability is less in these durations.
- ▶ Overall Cab utilization is poor.
- ▶ Further the gap is the most severe in the identified time slots for **Airport to City**.

# Cancellations & No Cars available(Airport)

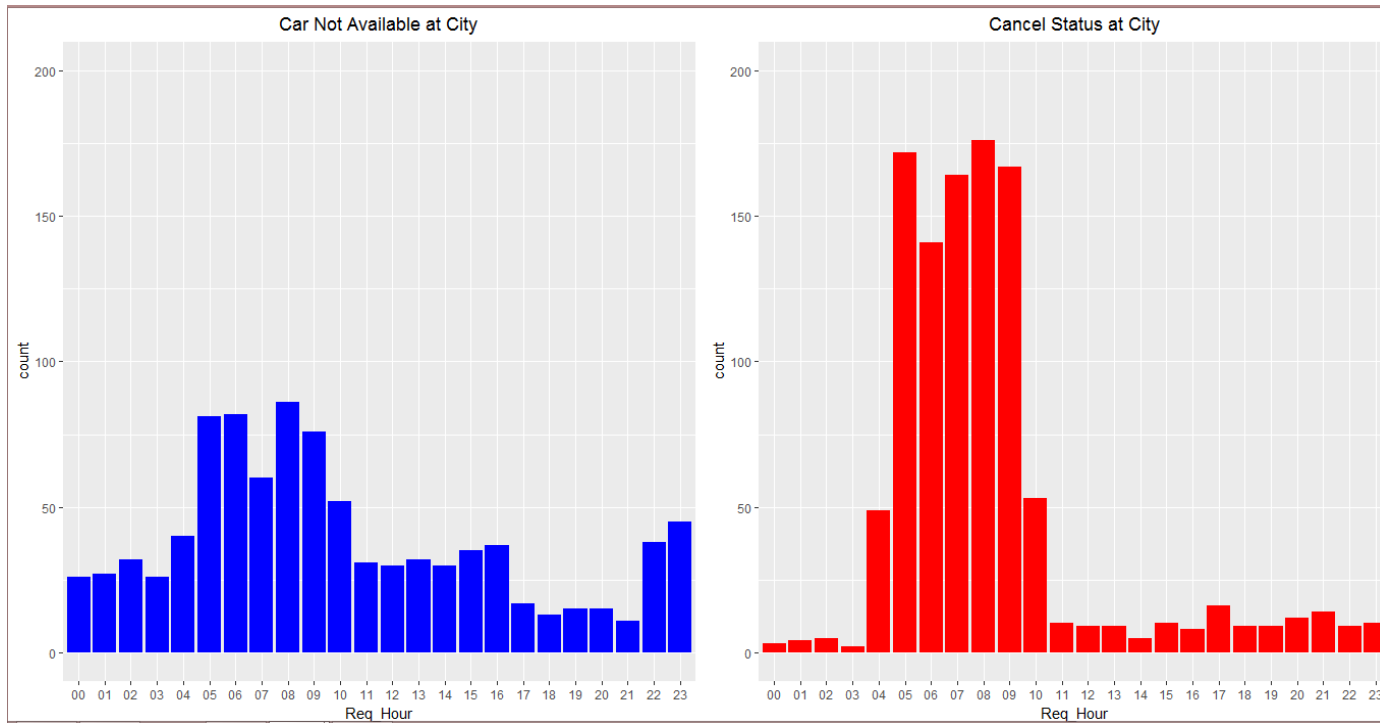


Hourly based analysis

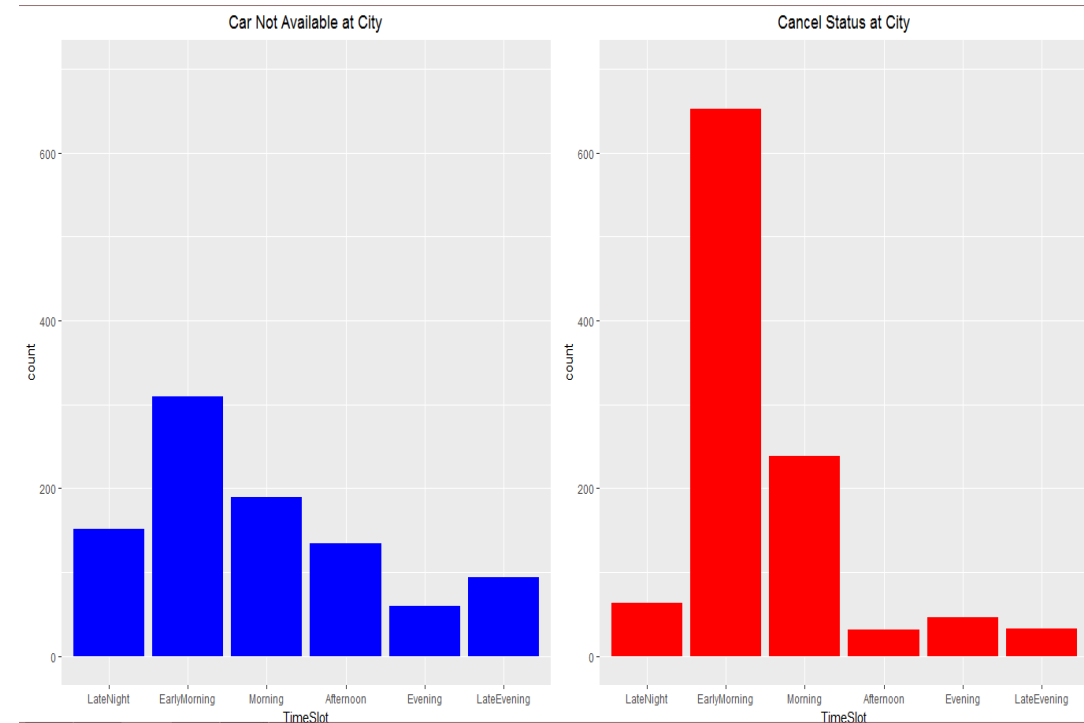


Slot wise analysis

# Cancellations & No Cars available(City)



Hourly based analysis



Slot wise Analysis

# Conclusions

- ▶ As visualized in the previous plot, there is a sharp increase in cancelled trips from **4:00am to 10:00 am(Early Morning)**.
- ▶ From the Demand vs Supply plot there is **less demand** of cabs from the Airport during 4:00am to 10:00 am(Early Morning).
- ▶ Therefore if drivers are asked to accept the trip to airport there are chances, that they might have to **wait at the airport for a long period** of time before they get a new trip.
- ▶ The Supply and Demand gap in this duration in the above time frame is very high and is forcing cab drivers to cancel the trips in favour of better business opportunities in city.

# Conclusion

- ▶ As visualized in last two plots there is rapid increase “no cars available” cases at airport from **5:00 pm-10:00 pm (Evening)**.
- ▶ However there is also a sharp increase in demand of cabs from the Airport during 5:00 pm to 10:00 pm.
- ▶ As visualized in the dodged plot, there is a gap in Demand and Supply of Cabs at the Airport. This Sharp increase in demand in this timeframe cause Lesser numbers of cars availability at airport.

# Recommendations

For trip cancellation:

- ▶ Drivers can be incentivised to carry out trips between 4:00am to 10:00 am in city.
- ▶ Drivers can also be compensated for their waiting time for above period.

For “No cars available”:

- ▶ Strict monitoring of cabs is required.
- ▶ Also cabs which are away can also be informed beforehand and incentivised suitably for reaching airport for taking trips.
- ▶ Increasing Cabs strength.